Interestingly, some recent behavioral studies further found that, when faced with social-evaluative threats, participants tend to evaluate themselves in more flattering ways (Vohs

should be no difference between independent self-construal and interdependent self-construal priming.

EXPERIMENT 1

In order to identify whether East Asians have 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 (19 females and 17 males; $M_{age} = 21.3$, $SD_{age} = 1.9$) participated in Experiment 1. The 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., 2013; Hughes and Beer, 2013). Two weeks before the target 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 led to believe that

the crossed effects of social threat and self-construal on self-evaluation. The experiment drew on experimental procedures used in Experiment 1 and a widely-used manipulation of self-construal priming.

Materials and Methods

Participants

Eighty-one healthy Chinese participants (42 females and 39 males; $M_{age} = 21.7$, $SD_{age} = 2.7$) participated in experiment 2. Participants were randomly assigned to an independent priming condition, an interdependent priming condition or a neutral priming condition. The 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 2 had a 3 (self-construal priming: independent priming, interdependent priming or neutral priming condition) × 2 (social-evaluative threat manipulation: threatening or nonthreatening feedback) mixed design, with repeated measures on the second factor.

Participants completed the procedures from Experiment 1 with some additional steps. Before the target experimental session (i.e., social-evaluative threat manipulation and self-evaluation), participants were first asked to complete a self-construal priming task (Sui and Han, 2007). In the independent priming condition, participants were asked to read two stories about countryside containing independent pronouns (e.g., *I, mine*) and to count the number of pronouns that appeared. Similarly, 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 where participants read two stories about the countryside 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 1. Participants received the threatening or nonthreatening feedback, which lasted 10 s. Across the experiment, there were 3 threatening and 3 nonthreatening pieces of feedback, which were randomly presented. After each feedback session, there was a block of 10 personality traits that needed to be evaluated. As in Experiment 1, at the end of the experiment, the Rosenberg Self-esteem Scale (RSES; Rosenberg, 1965), a 10-item instrument, was used to assess self-esteem. Moreover, participants were 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, which was applied to the scores on the self-esteem scale data of the Experiment 2, showed no significant differences in the scores of the self-esteem scale among different self-construal priming conditions, $F_{(2, 78)} = 1.624$, $p = 0.204$, $\eta_p^2 = 0.040$ (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 3 (self-construal priming: independent priming, interdependent priming or neutral priming condition) × 2 (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, $F_{(2, 78)} = 0.063$, $p = 0.939$, $\eta_p^2 = 0.002$; $F_{(1, 78)} = 2.535$, $p = 0.115$, $\eta_p^2 = 0.031$, respectively. However, we found a reliable self-construal priming × social-evaluative threat manipulation two-way interaction, $F_{(2, 78)} = 11.384$, $p < 0.001$, $\eta_p^2 = 0.226$ (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, $F_{(1, 78)} = 8.53$, $p = 0.005$, $\eta_p^2 = 0.109$; $F_{(1, 78)} = 11.65$, $p = 0.001$, $\eta_p^2 = 0.150$; $F_{(1, 78)} = 5.12$, $p = 0.026$, $\eta_p^2 = 0.064$, 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., 2013; Hughes and Beer, 2013). 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, $t_{(26)} = 3.23$, $p < 0.005$, Cohen's $d = 0.62$. 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, $t_{(26)} = -3.04$, $p = 0.005$, Cohen's $d = 0.59$; $t_{(26)} = -2.34$, $p < 0.05$, Cohen's $d = 0.45$, 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 faced were 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 overemphasized 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 cons

different levels of self-esteem or depressive symptoms, why can self-construal priming modulate the pattern of self-evaluation under social threat? Across the current two experiments, we speculated that choosing different strategies for protecting the self with different types of self-construal might contribute to this difference. Humans are social animals. To maximize the likelihood and quality of survival in the social environment, an individual may tend to choose a self-protection strategy that is catered to their self-construal and cultural environment. As mentioned before, for people with an independent self-construal, the self is an autonomous entity, separate from other individuals (Markus and Kitayama, 1991; Heine, 2001), so they do not have to ruminate about other people's negative opinions or even fight the social-evaluative threat through emphasizing their desirability. However, for people with an interdependent self-construal, the self is a socially embedded entity with strong interconnectedness with others, and they often care very much about others' attitudes toward oneself. Therefore, to deny others' negative evaluations by emphasizing their desirability by leveraging threats is not a wise self-protection strategy.

Although, this study provides an initial step toward understanding self-evaluation and social threat in a cultural perspective, several limitations of the study should be noted. First, because only negative traits were selected as evaluative materials, our study provided a preliminary test of the modulating effect of self-construal priming on self-evaluation in the context of social threat. It is unclear whether the modulation found in the present study also exists with regard to positive traits. However, Beer et al. (2013) showed that, when participants evaluated themselves in threatening and nonthreatening condition, there were similar patterns between negative traits and common positive events. Future studies should systematically examine the modulating effect found in the present study by using positive materials. Second, in the current study we recruited Chinese participants to observe whether they have different response patterns when faced with social-evaluative threat. Although, we used the same paradigm as previous Western studies and observed the opposite pattern to previous findings, the current study did not recruit Western participants and compare their magnitude of above-average effect with Chinese participants within one experiment. Future studies should use revised paradigms, recruit the samples from two cultural environments and compare them directly. Finally, it has been found that self-evaluations made in response to social-evaluative threat increased activation in some brain regions such as OFC, mPFC, and amygdala (e.g., Flagan and Beer, 2013; Hughes and Beer, 2013). However, according the current study findings, it is unclear whether the cultural environment or self-construal can modulate the activation of specific brain regions. Based on the existing research findings, next step work may

combine functional neuroimaging techniques and behavioral tasks to examine the possibility mentioned above.

In summary, the current study demonstrated the effects of cultural factor on self-evaluation under social threat. On one hand, by collecting Chinese samples, we found that compared to the Western studies, Chinese participants showed an opposite pattern to self-evaluation under social threat. That is, the participants only evaluated them themselves more positively when they faced with nonthreatening feedback. On the other hand, by manipulating self-construal and the type of social-evaluative threat in self-evaluation processing, we found that participants evaluated themselves in an especially flattering way to face the social-evaluative threat but only when they had been primed under the independent self-construal view. However, the phenomenon of emphasizing their desire to face the social-evaluative threat disappeared upon priming the participants for interdependent self-construal view. Our findings generally indicate that whether the participants emphasize their desirability in response to social threat largely depends on which cultural environment they live in, and how they view themselves. These findings may provide initial empirical evidence toward extending cognitive models of self-evaluation to social threat contexts by considering cultural factors.

ETHICS STATEMENT

This study was carried out in accordance with the recommendations of experimental guidelines from Ethics Committee of the School of Psychological and Cognitive Sciences, Peking University with written informed consent from all subjects. All subjects gave written informed consent in accordance with the Declaration of Helsinki. The protocol was approved by the Ethics Committee of the School of Psychological and Cognitive Sciences, Peking University.

AUTHOR CONTRIBUTIONS

YW and TZ proposed the main research idea. TZ and SX made the research design and conducted the experiments. TZ designed the experimental materials and ran the statistics. TZ, YW, and SX made the discussion and wrote the manuscript. YJ took the charge of language revision. All authors reviewed the manuscript.

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