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### Authors

Luong, Gloria

Arredondo, Carla

Charles, Susan

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## Cultural Differences in Coping with Interpersonal Tensions Lead to Divergent Shorter- and Longer-Term Affective Consequences

**Gloria Luong,**

Colorado State University

**Carla M. Arredondo,**

Colorado State University

**Susan T. Charles**

University of California, Irvine

### Abstract

Culture influences how people cope with interpersonal tensions, with those from more collectivistic contexts (e.g., Chinese Americans (CA)) generally opting for strategies promoting social harmony whereas those from more individualistic contexts (e.g., European Americans (EA)) preferring confrontational strategies. The current study examined cultural differences in coping strategy choices and their linkages to immediate affective reactions and subsequent affective memories. Participants ( $N = 159$ ) discussed hypothetical dilemmas with a disagreeable confederate matched by age group, gender, and cultural group. CA exhibited less positive affect reactivity (i.e., smaller decreases in positive affect) and greater positive affect recovery (i.e., greater increases in post-task positive affect) compared to EA, which was explained by CAs' appraisals of greater emotional support from the confederate and lower endorsement of defending one's opinions. In contrast, one week later, EA, but not CA, recalled experiencing more task positive affect and less task negative affect than originally reported. Cultural differences in negative affect memory discrepancies were explained by EAs' greater tendency to defend their opinions, relative to CA. Culture shapes coping choices, which predict affective consequences over different time scales.

### Keywords

emotion regulation; collectivistic coping; stress and coping; memory for emotion

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Correspondence concerning this article should be addressed to Gloria Luong, Department of Human Development and Family Studies, Colorado State University, Campus Delivery 1570, Fort Collins, CO 80523-1570, Gloria.Luong@colostate.edu.

#### Author Note

Gloria Luong and Carla M. Arredondo, Department of Human Development and Family Studies, Colorado State University; Susan T. Charles, Department of Psychological Science, University of California, Irvine.

#### Declaration of Interest Statement

The authors have no conflicts of interest to disclose.

#### Data Availability and Open Practices Statement

The study reported in this article was not formally pre-registered. Neither the data nor the materials have been made available on a permanent third-party archive; requests for the data or materials can be sent via email to the lead author at Gloria.Luong@colostate.edu.

Interpersonal tensions, such as arguments and disagreements, are the most common and detrimental daily life stressors (Almeida, 2005). It is therefore important to understand how coping strategies may reduce immediate and longer-term affective distress. Moreover, cultural values shape which coping strategies are appropriate in interpersonal contexts (Ford et al., 2015). For example, collectivism and social harmony are highly valued in East Asian cultural contexts, so compatible coping strategies are also valued, such as de-escalating the conflict (Lam & Zane, 2004). Conversely, in Western contexts, individualism and self-promotion via competition are valued, which increases the likelihood that people would use confrontational strategies (Lam & Zane, 2004). Confrontational coping strategies may incur greater momentary affective distress, but over time, the experience may be appraised as less threatening.

Few studies have examined both the immediate- and longer-term affective consequences of using different coping strategies in response to interpersonal stressors, or cultural differences therein (e.g., Ford et al., 2015; Tsai, Chiang, & Lau, 2016). Individuals with more collectivistic orientations, such as East Asians, view the self as intrinsically connected to their social partners, and often appraise social partners more positively (Uchida, Kitayama, Mesquita, Reyes, & Morling, 2008). Thus, when faced with an interpersonal conflict, East Asians are more likely to reappraise their social partners less negatively or avoid conflict to maintain social harmony (Tsai, Miao, Seppala, Fung, & Yeung, 2007). Asians and East Asians also prefer social support strategies that involve appraising their partners as more supportive (Kim, Sherman, & Taylor, 2008). In contrast, European Americans, who generally have a more individualistic orientation, may instead try to influence or confront others (Lam & Zane, 2004). Different coping choices may lead to affective consequences that manifest over varying time scales (Miyamoto, Ma, & Petermann, 2014).

## Coping and Different Short- and Longer-Term Affective Consequences

Coping strategies can influence both immediate momentary affective responses and later affective memories. Previous studies have generally focused on the former, examining how people engage in coping and emotion regulation efforts to reduce affective reactivity and promote greater affective recovery (see review by Luong, Arredondo, & Wrzus, 2018). *Affective reactivity* involves changes in affect in response to a stressor. When exposed to a stressor, *negative affect (NA) reactivity* is defined as *increases* in NA whereas *positive affect (PA) reactivity* is defined as *decreases* in PA (Luong et al., 2018). In contrast, *affective recovery* involves returning to baseline states (reductions in peak NA or increases in PA) following a stressor. Coping strategies are not always effective, however, and may result in greater affective reactivity or attenuated recovery across cultural contexts (Miyamoto et al., 2014). Thus, cultural differences in the use of coping strategies may pay off across different time scales.

One longer-term affective consequence involves how people remember their affective experiences. Coping strategies may influence memory for affect, which may differ from the actual positive and negative affect experienced during the stressor (Walker, Skowronski, & Thompson, 2003). Although inaccurate memories can be maladaptive, it may sometimes be adaptive to recall stressful experiences as more benign than they were (Walker et al., 2003).

Emotion regulation and coping strategies can alter memory for emotional events (Richards & Gross, 2006). *Positively-biased memories*, whereby people recall experiencing more PA and/or less NA than they actually did, can help people reappraise past stressors and enhance well-being. European Americans exhibit greater self-enhancement tendencies and are more likely to report positively-biased memories, whereas East Asians/Asian Americans may be more self-critical and value more dialectical, balanced views of themselves (Ross & Wang, 2010). Positively-biased memories have also been observed among older, compared to younger, adults (Charles, Mather, & Carstensen, 2003) and may interact with culture (Grossmann, Karasawa, Kan, & Kitayama, 2014). These questions will be explored in the current study.

## The Current Study

The literature suggests that coping with interpersonal tensions may align with cultural values and predict varying affective consequences that unfold over different time scales. These propositions, however, have never been tested empirically, to our knowledge. The current study addresses these issues by examining how European Americans (EA) and Chinese Americans (CA) cope with a standardized negative social interaction with an unfriendly confederate (i.e., research assistant posing as another study participant). We assessed immediate affective reactivity to, and recovery from, the task, and affective memories one week later.

We predicted that CA, whose cultural values focus on preserving social harmony, would engage in greater efforts to avoid conflict, de-escalate conflict, and appraise their social partner as supportive. In contrast, we hypothesized that EA, who are more likely to value independence and self-promotion, would use confrontational strategies such as standing up for their opinions. We tested the extent to which cultural differences in coping efforts may be differentially associated with both immediate affective distress and biases in longer-term affective memories. We also explored the extent to which cultural differences may interact with age.

## Method

### Participants

In the Socioemotional Development and Health study, participants had to read and speak in English fluently, be between 18–30 years of age (younger adult) or over 60 years old (older adult), and identify as European American (EA) or Chinese American (CA; Luong & Charles, 2014). Younger adults were recruited through the university participant pool for course extra credit. Community flyers and advertisements were used to recruit older adults, who received \$50.00 as compensation. Of the original 181 participants, 22 were excluded from the analyses because they had suspicions about the emotion manipulation or confederate. The final sample size ( $N=159$ ) was stratified by culture (79 EA, 80 CA), age (80 younger adults, 79 older adults), and gender (80 men, 79 women). A priori power analyses assuming medium effect sizes showed sufficient power to test our hypotheses.

Age and gender distributions did not differ by cultural group (see Supplemental Materials Table A for descriptive statistics by cultural group). Most CA were first generation (60.0%; U.S. immigrants), followed by second generation (36.2%; born in the U.S. to immigrant parents) and third generation (3.8%; born in the U.S. to parents who were also born in the U.S.). Most participants reported having some college to a college degree (72.2% of EA and 50.0% of CA), followed by some graduate school to a graduate degree (16.5% of EA and 21.4% of CA), and the rest reported a high school education or less (11.4% of EA and 23.8% of CA). A chi-square test of homogeneity revealed that more CA had both the lowest (high school education or less) and highest levels of education (graduate degree) compared to EA,  $\chi^2(7, N = 159) = 14.92, p = .037$ .

## Procedure

Participants completed a 1.5 hour laboratory session and a 30 minute telephone interview one week later. Participants discussed their answers to hypothetical dilemmas with another research participant (i.e., confederate) in this “problem solving” study. Participants and confederates were matched on cultural group (EA vs. CA), age group (younger vs. older adult), and gender (male vs. female). At the beginning of the lab session (but after informed consent was given), participants were introduced to the confederate. Next, the participant and confederate filled out questionnaires in separate rooms regarding their current (T1; pre-task) positive affect (PA) and negative affect (NA). Following, participants and confederates were reunited to work on a “problem-solving” task.

During this task, the pair was videotaped discussing hypothetical dilemmas for 20 minutes. The confederate was scripted to disagree with the participant on most scenarios (see Supplemental Materials for hypothetical dilemmas (Appendix A) and information on the confederates’ scripted behaviors (Appendix B)). Immediately after the task, the participant and confederate were separated into private rooms, where the participant filled out questionnaires regarding their experiences during the task, including their task (T2) PA and NA and coping strategies used. These questionnaires took approximately 20–25 minutes to complete. Afterwards, participants completed another assessment of their current (T3; post-task) PA and NA. This 20–25 min delay between T2 and T3 affective reports was deliberately included in the study design to examine affective recovery.

One week later, participants completed a follow-up telephone interview. Participants were asked about their current PA and NA (T4; affect at the beginning of the telephone interview). After answering other questions, they recalled the PA and NA they experienced during the “problem-solving” task in the prior week (i.e., memory for task affect). We assessed affect during the interview (T4) to adjust for the influence of current affect on recall of task affect in the prior week. At the end of the telephone interview, participants were debriefed and compensated. The study was approved by the Institutional Review Board of the University of California, Irvine.

## Measures

**Demographics**—Participants reported their age, race/ethnicity, gender, highest level of education (1 = *elementary school* to 10 = *doctorate degree*), and generational status.

**Collectivism**—An adapted version of the Asian American Values Scale (Kim, Li, & Ng, 2005) was used to measure the extent to which people value collectivism (viewing oneself as part of a larger group; 4 items). Participants rated their agreement with each statement from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample statements included, “One should think about one’s group before oneself” and “One should consider the needs of others before considering one’s own needs.” (Cronbach’s  $\alpha = .70$  for EA,  $\alpha = .61$  for CA).

**Interpersonal conflict coping**—We examined 4 situational coping strategies used during the problem-solving task. Coping strategies were either associated with more collectivistic values such as social harmony (i.e., emotional support, concern for partner, and conflict avoidance) or more individualistic values, such as standing up for one’s opinions and ideas. *Perceived emotional support* was assessed with a modified version of the Brief COPE (Carver, 1997). Participants rated their agreement with two items from 1 (*I did not do this at all*) to 4 (*I did this often*), including, “I got emotional support from others [the confederate]” and “I got comfort and understanding from someone [the confederate]” (Cronbach’s  $\alpha = .56$  for EA;  $\alpha = .74$  for CA). This measure focuses on perceived availability of social support, which is more often endorsed by Asian Americans than by EA, although the item wording could also capture actual social support. The remaining three coping strategies were measured by participants’ agreement with single items created for the current study from 1 (*strongly disagree*) to 5 (*strongly agree*). The items included, “I tried not to hurt my partner’s feelings” (*concern for partner*), “I avoided getting into an argument with my partner” (*conflict avoidance*), and “I stood up for my ideas and opinions” (*standing up for one’s opinions*).

**Behavioral de-escalation of conflict**—In addition to the self-reported coping measures, two raters blind to the hypotheses coded the videotapes for *behavioral conflict de-escalation*. Coders identified the number of statements that participants made to de-escalate conflict after a negative statement was made by the confederate. These statements and behaviors included complimenting the confederate, agreeing with the confederate’s answers, or compromising with the confederate. Two raters coded 38% of the videotapes to establish inter-rater reliability (ICC = .74), with discrepancies in coding resolved by discussion. All remaining videos were coded separately by raters after establishing reliability. This strategy was used at least once by 95% of EA and 81% of CA in the study.

**Positive and negative affect**—A modified Emotion Sampler (Carstensen et al., 2011) assessed positive affect (8 items: joy, happiness, interest, accomplishment, amusement, contentment, excitement, and pride) and negative affect (11 items: anger, sadness, disgust, guilt, fear, shame, anxiety/worry, irritation, frustration, embarrassment, and boredom) from 1 (*not at all*) to 7 (*extremely*). Participants reported their affect: at a pre-task period (T1), during the discussion task with the confederate (T2; which was reported immediately after the problem-solving task), and about 20–25 minutes post-task (T3). Positive affect (PA) reactivity involved general decreases in PA and negative affect (NA) reactivity involved general increases from T1 to T2. Affective recovery (for PA and NA) were based on affect scores at T3 (adjusting for T1 and T2). Generally higher PA and lower NA at T3 (controlling for prior time points) represents the degree to which participants were able to maintain

relatively high emotional well-being at the end of the lab session and return to homeostasis. Thus, we would expect that from the baseline, task, and post-task periods, PA and NA would show opposite quadratic curves whereby PA is lowest during the task whereas NA is highest during the task.

Negative affect (T1-T3) was Winsorized (i.e., adjusting outlier values greater than 3 SD from the mean to be trimmed to the 90<sup>th</sup> percentile) to reduce the influence of outliers. This led to 9 cases having their outlier values adjusted. Cronbach's  $\alpha$  for task PA at T1-T3 were .89, .88, and .92 for EA, respectively, and .94 for each PA assessment for CA. Cronbach's  $\alpha$  for task NA at T1-T3 were .92, .86, and .89 for EA and .87, .85, and .77 for CA, respectively.

**Memory for positive and negative affect**—One week following the task, participants reported their current affect (T4). After some filler questionnaires, they recalled their affective intensity during the problem-solving task in the prior week using the same adapted 19-item Emotion Sampler. Cronbach's  $\alpha = .91$  for EA and .93 for CA for memory for PA and Cronbach's  $\alpha = .87$  for both EA and CA for memory for NA.

## Results

### Preliminary Analyses

To ensure that the confederates' behaviors were equally negative across cultural groups, videotapes were coded by raters blind to the study hypotheses. Coders shared 37% of the videotapes and established good inter-rater reliability (ICC = .74). Coding discrepancies were resolved via discussion. The remaining videotapes were coded individually. Coders rated the confederate's negativity from 0 (*not at all negative*) to 3 (*extremely negative*). Results showed that EA and CA participants interacted with equally disagreeable confederates,  $t(154) = 1.00, p = .32$ .

Next, we found that CA were more oriented to collectivistic values than were the EA,  $t(155) = -3.95, 95\% \text{ CI} [-1.05, -0.35], p < .001$  (see Supplemental Materials for descriptives by cultural group (Table A) and correlation matrix of key study variables (Table B)). Thus, although the CA were generally bicultural, they were more oriented to collectivistic values theorized to underlie cultural differences in coping with interpersonal stressors. For the following analyses, we explored generational effects among the CA but found no differences so they are not discussed further.

### Cultural Differences in Coping with Interpersonal Stressors

We hypothesized that relative to EA, CA would engage more in cognitive and behavioral coping strategies consistent with maintaining social harmony (i.e., appraise greater emotional support from the confederate and behaviors such as trying not to hurt the confederate's feelings, avoiding conflict, and de-escalating conflict). CA reported greater emotional support from the confederate compared to EA,  $t(152.56) = -3.91, \text{ unequal variances assumed}, 95\% \text{ CI of the difference} [-0.72, -0.24], p < .001, \text{ Cohen's } d = 0.62$ . We did not, however, find cultural differences in trying not to hurt the confederate's feelings or in avoiding conflict,  $p$ 's  $> .05$ . Also contrary to our prediction, EA were *more often* observed



de-escalating conflict in the videotapes compared to CA,  $t(156) = 3.99$ , 95% CI of the difference [0.68, 2.02],  $p < .001$ , Cohen's  $d = 0.64$ . We also hypothesized, and found, that EA were more likely to stand up for their opinions more than did CA,  $t(130.89) = 2.65$ , unequal variances assumed, 95% CI of the difference [0.09, 0.65],  $p = .009$ , Cohen's  $d = 0.42$ .

### Cultural Differences in Negative and Positive Affect Reactivity and Recovery

Next, we examined whether there were cultural differences ( $0 = EA$ ,  $1 = CA$ ) in NA and PA reactivity and recovery to the negative social interaction, relative to the baseline (pre-task) affect at the start of the study, using repeated measures analysis of covariance (RM ANCOVA). For all of the following analyses, we adjusted for age group, gender, and education. Using Winsorized NA values did not change the pattern of results compared to unadjusted values for any analyses.

**NA reactivity and recovery**—As shown in Figure 1A, we found no cultural differences in within-person changes in negative affect across the pre-task, task, and post-task periods, for linear,  $F(1, 146) = 0.48$ ,  $p = 0.490$ , partial  $\eta^2 = .003$ , or quadratic (U-shaped) change,  $F(1, 146) = 3.47$ ,  $p = .064$ , partial  $\eta^2 = .023$ . However, as previously reported (Luong & Charles, 2014), we found a significant quadratic effect by age group, such that younger adults exhibited greater NA reactivity (i.e., elevated NA at T2 compared to T1) and poorer recovery (elevated NA at T3 adjusting for NA at T1 and T2) than did older adults,  $F(1, 146) = 7.90$ ,  $p = .006$ , partial  $\eta^2 = .051$ . There were no gender or education effects,  $p$ 's  $> .05$ .

**PA reactivity and recovery**—Using the same approach for PA, we found a statistically significant difference between CA and EA in both linear,  $F(1, 146) = 4.10$ ,  $p = .045$ , partial  $\eta^2 = .027$ , and quadratic PA changes during the lab session,  $F(1, 146) = 8.44$ ,  $p = .004$ , partial  $\eta^2 = .055$ . Figure 1B shows that CA exhibited less PA reactivity (smaller reductions in PA at T2 from T1) and greater PA recovery (higher PA at T3 adjusting for T1 and T2) than EA. None of the covariates were statistically significant ( $p$ 's  $> .05$ ).

### Cultural Differences in Memory for Positive and Negative Affect

Using RM ANCOVAs, we tested how actual task affect differed from memories for task affect for each valence separately (PA vs. NA) as within subjects factors, and how these memory discrepancies varied by cultural group (between subjects factor). Analyses adjusted for age group, gender, education level, and affect during the follow-up telephone interview (T4) to control for influences of concurrent mood.

**Memory for task NA**—We found a statistically significant cultural group difference in memory bias for negative affect,  $F(1, 149) = 4.95$ ,  $p = .028$ , partial  $\eta^2 = .032$ . Consistent with our hypotheses, EA recalled experiencing *less* NA during the task than they had actually reported in the prior week,  $t(78) = 3.05$ ,  $p = .003$ , 95% CI of the difference [.08, .37], (see Figure 2A). For CA, conversely, there were no memory discrepancies in NA,  $p = .904$ . Age group, gender, and education did not predict NA memory discrepancies,  $p$ 's  $> .05$ .



We explored a Culture  $\times$  Age interaction predicting NA memory discrepancies in a RM ANCOVA, given the literature on the age-related positivity effect (whereby older adults recall a larger proportion of positive to negative information compared to younger adults; Charles et al., 2003) and cultural differences in self-enhancement biases (whereby EA remember aspects of the self more positively relative to CA). This interaction was not significant,  $p = .447$ .

**Memory for task PA**—As hypothesized, the cultural groups differed in discrepancies between actual and recalled task PA,  $F(1, 148) = 5.26, p = .023$ , partial  $\eta^2 = .034$ . As shown in Figure 2B, EA recalled experiencing *more* PA during the task than they had reported in the prior week,  $t(78) = -3.00, p = .004$ , 95% CI of the difference  $[-0.53, -0.11]$ . CA, however, did not show discrepancies in recalled and actual task PA,  $p = .411$ . Similar to the analyses for memory for NA, none of the covariates predicted PA memory discrepancies,  $p$ 's  $> .05$ . Moreover, exploratory analyses of the Culture  $\times$  Age interaction were not statistically significant,  $p = .421$ .

### **Do Coping Strategies Account For Cultural Differences in Shorter-Term vs. Longer-Term Affective Consequences?**

CA may have used strategies that benefited their immediate affective experience compared to EA because they experienced less PA reactivity to, and greater PA recovery from, the interpersonal stressor. For longer-term affective outcomes, however, EA had positively-biased affective memories for the event that were not observed among CA. We also found cultural group differences in coping strategies. CA reported more emotional support from the confederate, but were less likely to use behavioral conflict de-escalation strategies or stand up for their opinions, compared to EA. Next, we tested hypotheses that differences in coping will account for (mediate) cultural group differences in these affective outcomes.

We used the PROCESS macro in SPSS v. 25 with 5,000 bootstrap samples (Preacher & Hayes, 2008). These analyses allowed us to examine the indirect (mediating) effects of each coping strategy explaining cultural group differences for each affective outcome (PA reactivity and recovery; memory for NA; and memory for PA). Given that we found cultural group differences in 3 coping strategies (perceived emotional support, behavioral de-escalation of conflict, and standing up for one's opinions), all 3 variables were included in multiple mediator models, which allowed us to more parsimoniously examine which effects persist when adjusting for all other mediators. We also included collectivism as a mediator to test the possibility that cultural values (rather than coping choices) would account for these cultural differences. Age group, gender, and education were included as covariates.

**Mediating effects explaining cultural differences in PA reactivity**—We tested the extent to which coping strategies mediate cultural differences in PA reactivity and recovery in separate models. For PA reactivity, we included the covariates described above, and pre-task (T1) PA. The dependent variable was task (T2) PA. The independent variable included cultural group (0 = EA, 1 = CA) and the 4 mediators described previously (perceived emotional support, behavioral de-escalation, standing up for one's opinion, and collectivism). Although the cultural difference in PA reactivity (i.e., direct effect) persisted,

$b(SE) = .45(.19)$ ,  $p = .018$ , 95% CI [.08, .83], we found a statistically significant indirect (mediating) effect of emotional support,  $b(SE) = .12(.06)$ , 95% CI [.02, .24]. CA appraised greater emotional support from the confederate, which was associated with less PA reactivity (i.e., smaller reductions in PA from the pre-task to task period). No other mediators were significant (see Supplemental Materials – Figure A).

**Mediating effects explaining cultural differences in PA recovery**—We used a similar method to examine mediators of cultural group differences in PA recovery. We included the same covariates listed above and task (T2) PA. The dependent variable in this model was post-task (T3) PA. Analyses revealed that the direct effect of cultural group on PA recovery was no longer statistically significant,  $b(SE) = .04(.19)$ ,  $p = .842$ , 95% CI [−0.34, 0.41] and 2 of the mediators showed statistically significant indirect effects: emotional support,  $b(SE) = .12(.08)$ , 95% CI [.01, .30] and standing up for one’s opinions,  $b(SE) = −0.10(.05)$ , 95% CI [−0.22, −0.01]. These findings suggest that CAs’ greater PA recovery (i.e., larger increases in post-task PA) relative to EA was explained by CAs’ greater likelihood of perceiving emotional support from the confederate (which was associated with greater post-task PA) and less frequent endorsement of standing up for one’s opinions (which was associated with lower post-task PA; see Supplemental Materials – Figure B).

**Mediating effects explaining cultural differences in NA memory discrepancies**—To test potential mediators for memory for affect, the same general covariates (age group, gender, and education) were included in the models. In addition, actual task (T2) NA and NA at the time of recall (one week after the lab session; T4) were included to examine the discrepancies between actual NA and memory for task NA, adjusting for current mood (T4) effects. When including the mediators in the model, the direct effect (cultural group differences in discrepancies in memory for NA and task NA) were no longer statistically significant,  $b(SE) = .19(.11)$ ,  $p = .09$ , 95% CI [−0.03, .41]. The indirect effect for standing up for one’s opinions was statistically significant,  $b(SE) = .04(.03)$ , 95% CI [.001, .10], suggesting that EAs’ greater endorsement of standing up for their opinions during the interpersonal stressor in the prior week (compared to CA) accounted for their more positively-biased negative affect memories (see Supplemental Materials – Figure C).

**Mediating effects explaining cultural differences in PA memory discrepancies**—Paralleling the analyses for memory for NA, we added the same covariates but instead included task PA (T2) and PA at the time of recall one week later (T4). The dependent variable was memory for task PA. The analyses demonstrated that the direct effect of culture on memory for PA was no longer statistically significant,  $b(SE) = −0.24(.16)$ ,  $p = .13$ , 95% CI [−0.55, 0.07]. None of the indirect effects were statistically significant, total indirect effects  $b(SE) = .07(.08)$ , 95% CI [−0.09, 0.22], suggesting that none of the coping strategies mediated this effect.

## Discussion

Until now, questions were left unanswered about how cultural differences in coping strategies in response to interpersonal stressors may lead to affective consequences on different time scales. The current study filled these gaps and demonstrated that CA reported

less of a decrease in positive affect in response to the conflict than EA, and this effect was partially explained by CA perceiving more emotional support from the confederate. Moreover, CA reported greater PA recovery than EA, and this effect was mediated by CA reporting more emotional support and also less effort to stand up for themselves. Notably, although CA appraised their partners as providing more emotional support than did their EA counterparts, coders blind to the hypotheses rated the confederates' behaviors as equally negative across cultural groups. One reason why CA perceived the confederates' behaviors as more supportive despite the similar behavior across groups may be that in collectivist contexts, CA may be more likely to endorse coping strategies that facilitate relatedness-promoting emotions and enhance social connectedness (Kitayama, Mesquita, & Karasawa, 2006). In contrast, in individualistic contexts, EA may be more likely to engage in coping strategies that are more autonomy-promoting (Kitayama, Markus, & Kurokawa, 2000; Kitayama et al., 2006). Finally, we acknowledge that the Cronbach's  $\alpha$  for the emotional support measure was lower for European Americans. It is possible that these items were less reliable or resonant for this group. Future research should test these explanations.

In addition, we found that EA recalled experiencing more PA and less NA than they had actually reported during the task in the prior week. CA exhibited no such memory bias. Moreover, EA engaged in greater attempts to stand up to the confederate, which fully mediated cultural differences in discrepancies in memory for negative affect one week later. It is possible that by standing one's ground, EA were able to view the interpersonal conflict in a less threatening manner over time because they defended their ideas and did not back down from the confederate. Perhaps EA perceived that they won the argument and that it was important not to let others go unchallenged when calling their beliefs into question, a stance consistent with independent and influence values. Coping strategies, however, did not explain these cultural differences. It is possible that other coping strategies not assessed in the current study, such as those related to trying to influence the confederate or adjusting to the circumstances (e.g., suppression), may account for these differences (e.g., Tsai et al., 2007).

Additionally, contrary to our hypotheses, EA were more often observed de-escalating conflict. Perhaps the CA did not work to mitigate conflict to the same degree as EA because they perceived the interaction as more supportive. Importantly, the large cultural differences in collectivism did not explain these differences. These findings strengthen the conclusions of our study that different coping choices, rather than general cultural values, lead to different affective consequences.

Exploratory analyses examined the extent to which positively-based emotional memories were predicted by age, and interactions between culture and age. None of these effects emerged, however. It is possible that in our paradigm, cultural effects outweighed age differences in emotional memory processing. Another possibility is that age effects are dampened when examining autobiographical memories, as opposed to lab stimuli (e.g., photographs, words; Charles et al., 2003). Future research should elucidate such boundary conditions.

## Strengths, Limitations, and Future Directions

Our study had many strengths, such as the inclusion of community participants, multiple affective assessments tracking changes over time, self-reported and behavioral coping data, and experimental control equating confederates' negative behaviors across groups. To maintain study feasibility, participants interacted with a confederate matched by culture, age, and gender groups. It is possible, however, that people would cope differently when engaged in conflict with other social partners. Moreover, this design may explain why we did not find cultural differences in conflict avoidance or concern for partners – in social interactions in standardized lab settings, participants may share similar social/task goals. Future studies should study participants in other contexts to replicate our research and examine how people may choose different coping strategies with existing social partners varying in perceived closeness and similarity.

Additionally, different coping responses to conflict can lead to other affective, cognitive and interpersonal consequences, which also unfold across different time scales. For example, an individual who solicits supportive responses during conflict, when not reciprocated, may experience other longer-term consequences, such as depressive symptoms, rumination about the event or resentment towards one's partner. In this case, future research should also disentangle implicit (perceived) from explicit (received) support as implicit support has been known to be more important for predicting well-being in Asian contexts. Alternatively, an individual who chooses to "get the last word" in an argument may be perceived negatively by others, which may undermine future social interactions or relationship quality. Future studies should explore these additional outcomes and examine how culture may modulate these processes.

## Conclusion

The current study is innovative and contributes to the scientific literature by using a standardized negative social interaction to demonstrate that cultural variation in coping responses is associated with affective consequences which play out over different time scales (i.e., reducing immediate affective distress vs. reconstructing more positively-biased affective memories one week later). Although passive coping (e.g., not standing up for one's beliefs) is generally a less effective way of coping with interpersonal tensions (Birditt, Polenick, Luong, Charles, & Fingerman, 2019), the current study shows the importance and complexity when considering how culture may shape not only the use of these coping strategies, but also how they differentially benefit affective experiences immediately and over time. Thus, for CA, other-focused coping strategies with social partners confer immediate affective benefits and are maintained over the week. For EA, however, more active and confrontational strategies may lead to emotional pay offs in the long-run (in the form of more positively-biased affective memories), but not in the short-run. In sum, our research findings have important implications that one size does not fit all, and that people may deliberately choose strategies that come with differentially valued affective consequences.

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

## Acknowledgments

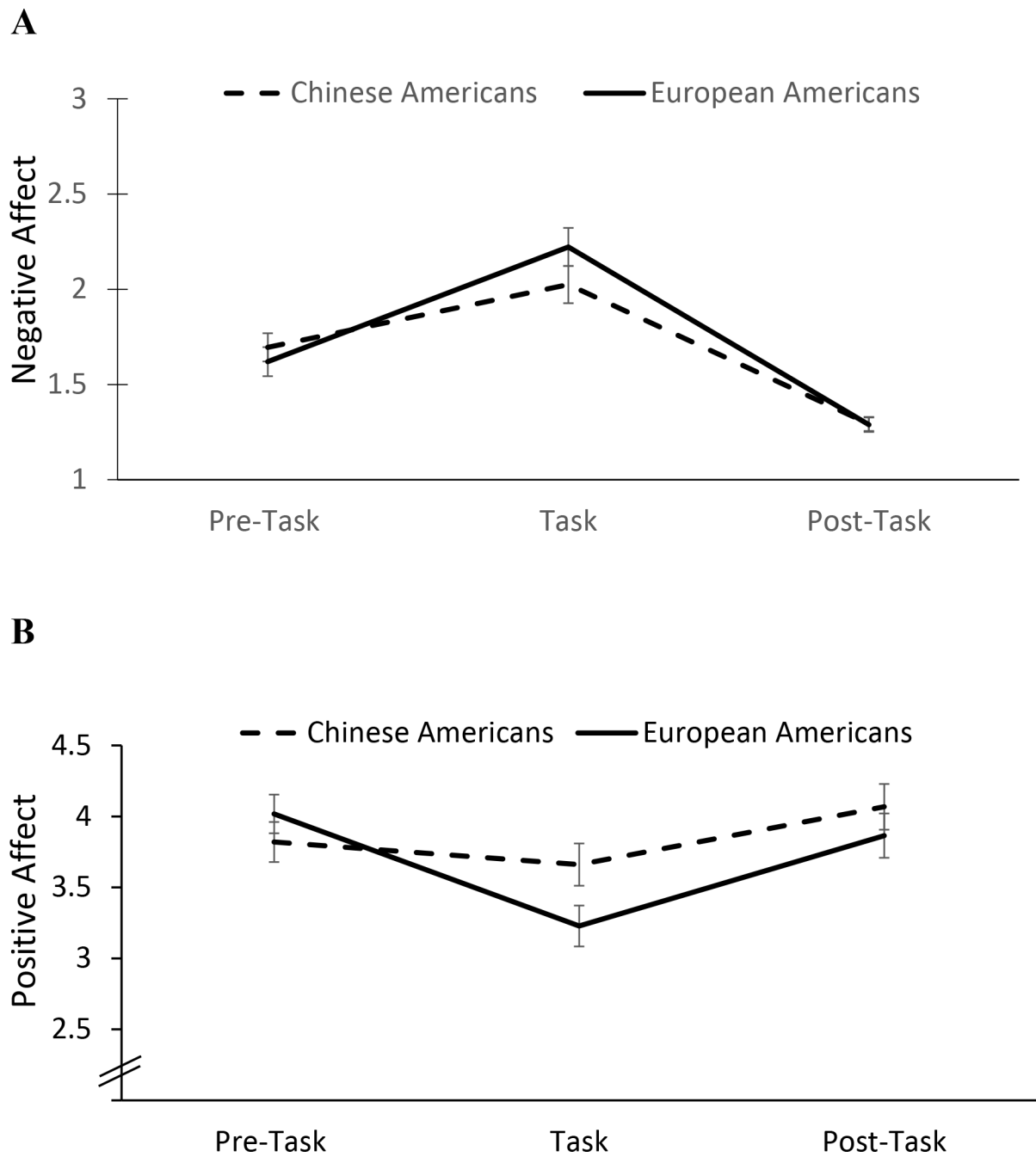
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## References

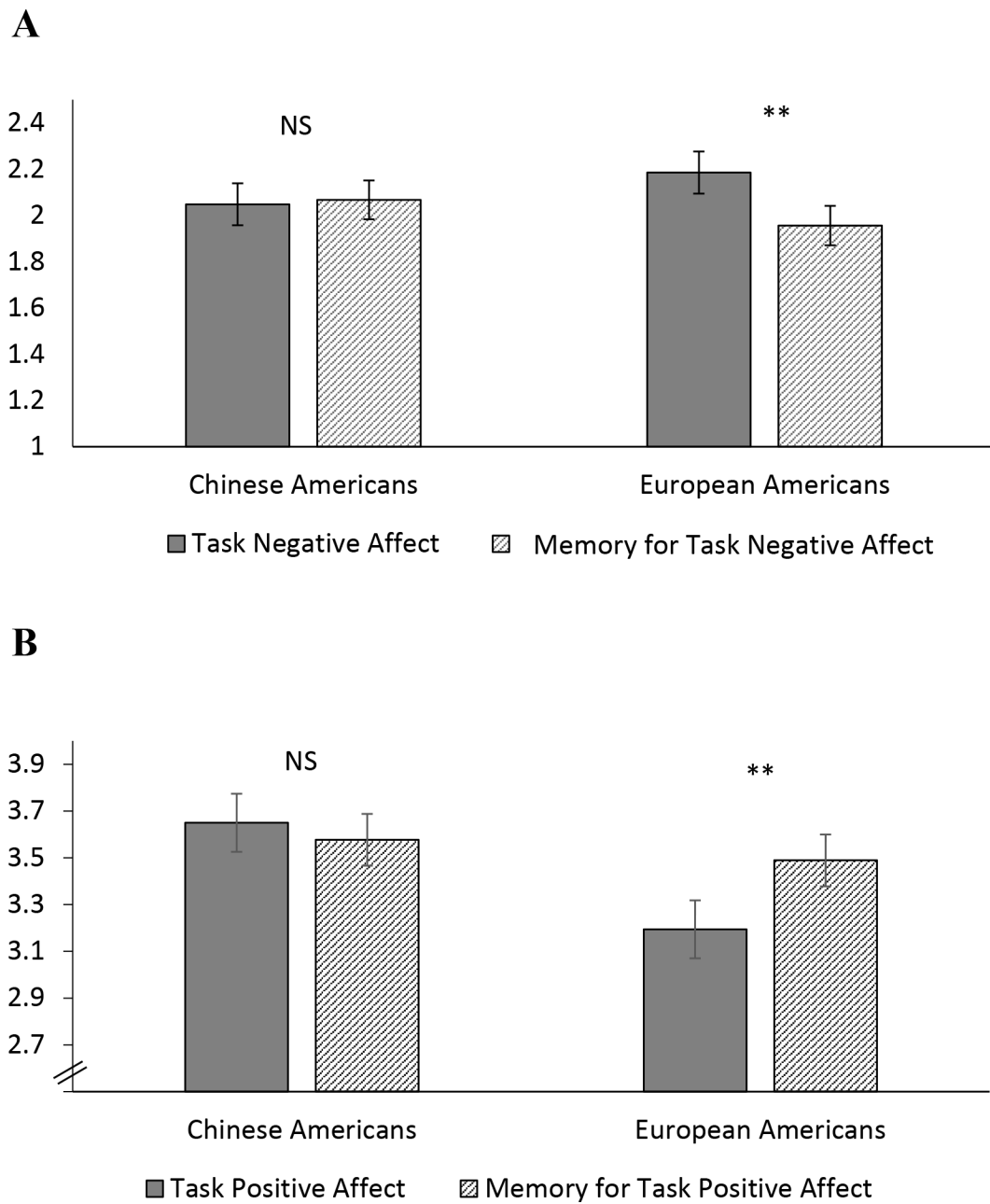
- Almeida DM (2005). Resilience and vulnerability to daily stressors assessed via diary methods. *Current Directions in Psychological Science*, 14, 64–68.
- Birditt KS, Polenick CA, Luong G, Charles ST, & Fingerhman KL (2019). Daily interpersonal tensions and well-being among older adults: Benefits of reappraisal and active coping. *Psychology and Aging*. Advance online publication.
- Carstensen LL, Turan B, Scheibe S, Ram N, Ersner-Hershfield H, Samenez-Larkin GR, ..., & Nesselroade JR (2011). Emotional experience improves with age: Evidence based on over 10 years of experience sampling. *Psychology and Aging*, 26, 21–33. [PubMed: 20973600]
- Carver CS (1997). You want to measure coping but your protocol's too long: Consider the brief cope. *International Journal of Behavioral Medicine*, 4, 92–100. [PubMed: 16250744]
- Charles ST, Mather M, & Carstensen LL (2003). Aging and emotional memory: The forgettable nature of negative images for older adults. *Journal of Experimental Psychology: General*, 132, 310–324. [PubMed: 12825643]
- Ford BQ, Dmitrieva JO, Heller D, Chentsova-Dutton Y, Grossman I, Tamir M, ..., Mauss IB (2015). Culture shapes whether the pursuit of happiness predicts higher or lower well-being. *Journal of Experimental Psychology: General*, 144, 1053–1062. [PubMed: 26347945]
- Grossmann I, Karasawa M, Kan C, & Kitayama S (2014). A cultural perspective on emotional experiences across the life span. *Emotion*, 14, 679–692. [PubMed: 24749641]
- Kim BSK, Li. L. C., & Ng GF (2005). The Asian American Values Scale – Multidimensional: Development, reliability, and validity. *Cultural Diversity and Ethnic Minority Psychology*, 11, 187–201. [PubMed: 16117587]
- Kim HS, Sherman DK, & Taylor SE (2008). Culture and social support. *American Psychologist*, 63, 518–526. [PubMed: 18793039]
- Kitayama S, Markus HR, & Kurokawa M (2000). Culture, emotion, and well-being: Good feelings in Japan and the United States. *Cognition & Emotion*, 14, 93–124.
- Kitayama S, Mesquita B, & Karasawa M (2006). Cultural affordances and emotional experience: socially engaging and disengaging emotions in Japan and the United States. *Journal of Personality and Social Psychology*, 91, 890–903. [PubMed: 17059308]
- Lam AG, & Zane NWS (2004). Ethnic differences in coping with interpersonal stressors: A test of self-construals as cultural mediators. *Journal of Cross-Cultural Psychology*, 35, 446–459.
- Luong G, Arredondo CM, & Wrzus C (2018). Age differences in emotion regulation dynamics: Anticipatory, reactivity, and recovery processes. In Cole PM & Hollenstein T (Eds.), *Emotion Regulation: A Matter of Time* (pp. 226–249). Oxford: Taylor & Francis.
- Luong G, & Charles ST (2014). Age differences in affective and cardiovascular responses to a negative social interaction: The role of goals, appraisals, and emotion regulation. *Developmental Psychology*, 50, 1919–1930. [PubMed: 24773101]
- Miyamoto Y, Ma X, & Petermann AG (2014). Cultural differences in hedonic emotion regulation after a negative event. *Emotion*, 14, 804–815. [PubMed: 24708499]

- Preacher KJ, & Hayes AF (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879–891. [PubMed: 18697684]
- Richards JM, & Gross JJ (2006). Personality and emotional memory: How regulating emotion impairs memory for emotional events. *Journal of Research in Personality*, 40, 631–651.
- Ross M, & Wang Q (2010). Why we remember and what we remember: Culture and autobiographical memory. *Perspectives on Psychological Science*, 5, 401–409. [PubMed: 26162186]
- Tsai J, Miao FF, Seppala E, Fung HH, & Yeung DY (2007). Influence and adjustment goals: Sources of cultural differences in ideal affect. *Journal of Personality and Social Psychology*, 92, 1102–1117. [PubMed: 17547491]
- Tsai W, Chiang JJ, & Lau AS (2016). The effects of self-enhancement and self-improvement on recovery from stress differ across cultural groups. *Social Psychological and Personality Science*, 7, 21–28.
- Uchida Y, Kitayama S, Mesquita B, Reyes JAS, & Morling B (2008). Is perceived emotional support beneficial? Well-being and health in independent and interdependent cultures. *Personality and Social Psychology Bulletin*, 34, 741–754. [PubMed: 18359927]
- Walker WR, Skowronski JJ, & Thompson CP (2003). Life is pleasant – and memory helps to keep it that way! *Review of General Psychology*, 7, 203–210.



**Figure 1.** Estimated marginal means of negative affect (Panel 1A) and positive affect (Panel 1B) during the pre-task (T1), task (T2), and post-task (T3) periods of the lab session by cultural group. Affect reactivity is represented by changes from the pre-task to task period and affect recovery is represented by post-task positive affect adjusting for pre-task and task positive affect. Error bars denote  $\pm$  one standard error of the mean.





**Figure 2.**

Estimated marginal means showing cultural group differences in discrepancies between task negative affect and memory for task negative affect one week later (Panel 2A) as well as between task positive affect and memory for task positive affect (Panel 2B). Error bars denote  $\pm$  one standard error of the mean. \*\*  $p < .01$ .