Culture, Causal Attribution, and Coping in Chinese College Students in the United States

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Abstract

This study explored how cultural orientation may influence the way Chinese college students cope with stress and whether their causal attributions mediate a cultural orientation-coping behavior relation. We manipulated cultural orientation in 96 Chinese college students (75% females; $M = 19.96$ years, $SD = 1.24$) who were randomly assigned to individualistic (IND-PRIME) or collectivistic (COL-PRIME) priming conditions. Participants evaluated the extent to which they attributed the cause of a hypothetical academic stressor to locus of causality, controllability, and stability; and indicated strategies they would use to cope with the stressor. Participants in the IND-PRIME condition were more likely to use active coping strategies and make more attributions of stability and controllability than participants in the COL-PRIME condition. Stability attributions mediated the relation between cultural orientation and active and avoidant coping. Participants in the IND-PRIME condition were more likely to attribute the stressor's cause to temporary factors and these unstable attributions were in turn linked to more active coping and less avoidant coping. Controllability attributions also mediated the link between cultural orientation and active coping, albeit inconsistently, suggesting a suppressor effect. The findings highlight the importance of the cultural orientation and the effects of individuals' perceptions of their problems in understanding their coping behaviors.

Keywords: cultural orientation; coping; cultural priming; causal attribution; Asian

Public Health Significance: The study highlights how cultural orientation influences Asian American college students' coping strategies and the relative effects of individuals' perceptions of their problems.

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Research suggests that individuals' cultural orientation shapes their coping strategies when they are stressed. Specifically, those who endorse an individualistic cultural value system often use active coping strategies that are problem-focused and require directly engaging with a stressful situation (Tweed, White, & Lehman, 2004), whereas collectivistic-oriented individuals tend to use avoidant coping strategies, such as giving up direct efforts to manage a stressor. Although a preference for avoidant coping strategies may reflect a culturally appropriate form of coping within a collectivistic perspective as it preserves group harmony (Kuo, 2013; Morling & Evered, 2006), studies have found that avoidant coping strategies are generally associated with increased risk for internalizing and externalizing problems (Liu, Tein, & Zhao 2004) and suicidal ideation (Zhang, Wang, Xia, Liu, & Jung, 2012) among Mainland Chinese youth in China, as well as depressive symptoms among Asian Americans (Iwamoto, Liao, & Liu, 2010). In these studies, active coping strategies were found to be negatively associated with mental health problems.

Despite these important clinical implications for Asian populations, our knowledge about how collectivistic-oriented individuals cope with stress and why they choose particular coping strategies over others remains limited. Broadly defined, culture refers to the shared values, beliefs, and norms of a community that influence human development and behavior (Lehman, Chiu, & Schaller, 2004). Triandis (1995) proposed that patterns of social behavior can be construed along two dimensions—collectivism (generally associated with Eastern cultures of Asia) and individualism (generally associated with Western cultures of Europe and North America). The extent to which people adhere to an individualistic or collectivistic value system, shapes their sense of self, how they interact within their social environment (Markus & Kitayama, 2010), and accordingly how they respond to stress in ways that are consistent with their self-construal and the norms of their culture.

Markus and Kitayama (2010) argued that in individualistic-oriented cultures, people possess independent self-construals and regard themselves as inherently unique and distinct from others. As they act in ways that reflect their own personal thoughts, feelings, and behaviors, they value self-expression and cope with stress by directly confronting others, or speaking up for themselves (Lam & Zane, 2004; Weisz, Rothbaum, & Blackburn, 1984). In contrast, people from collectivistic-oriented cultures often construe the self as fundamentally interconnected to their social context. In a desire to maintain social harmony, and consistent with an interdependent self-construal, they tend to evaluate, validate, and regulate their behavior in relation to others and may choose coping strategies that focus on changing themselves rather than others or the situation. Hence, they appear to avoid *directly* confronting a challenging situation (Morling & Evered, 2006; Weisz et al., 1984).

Although research has established cultural differences in coping strategies, little is known about the mechanisms underlying these variations in coping behavior. Existing models propose that culture broadly influences how individuals cope with stressful situations by shaping their stress appraisal process and the perceived appropriateness of their coping responses (e.g., Wong & Ujimoto, 1998). For example, in their transactional model of coping, Chun, Moos, and Cronkite (2006) argue that the focus (e.g., avoidance or approach) and method (e.g., cognitive or behavioral) of individuals' strategies depend on how threatened or challenged they feel by the stressor and how efficacious they feel in responding to it given their available resources. The model suggests that perceptions about the root of their problems, or the attributions individuals make about the cause of their stress, at least partially account for cultural differences in coping strategies because causal attributions contribute to how much individuals feel they are responsible for their problems and how well they believe they can respond to the stress.

Causal attributions are post-hoc explanations that individuals form to explain and understand the origin of a situation, construct their assumptions about it, and then guide their response (Roesch & Weiner, 2001). According to Weiner (1985), individuals interpret an event as positive (i.e., success) or negative (i.e., failure); then they determine the cause of the event and assign it to one of three causal dimensions: whether the cause is internal or external to the self (locus of causality); stable or unstable (stability); and externally or personally controllable (controllability). Therefore, how individuals attribute cause to a situation is likely to influence the extent to which they believe they are accountable for the outcome, and whether they expect that they will be able to change the situation; which in turn affects their coping strategy (Chun et al., 2006; Yeh & Inman, 2007). In a meta-analytic review, Roesch and Weiner (2001) found that attributions of personal control were positively associated with the use of active coping strategies, whereas attributions of external control were linked to avoidant coping strategies; additionally, internal and unstable attributions were associated with active coping strategies. Thus, individuals who perceive their failure to be internally-driven, controllable, and changeable may be motivated to actively modify their situation, and accordingly choose active coping strategies when faced with a stressful event (Amirkhan, 1998; Mikulincer & Solomon, 1989).

Similarly, cultural orientation may also influence how individuals ascribe meaning and attribute cause to situations (Chun et al., 2006; Cousins, 1989). Studies show that those who adhere to an individualistic orientation view the world as malleable, and believe they are individual agents who can shape their environment according to their desires (Choi, Nisbett, & Norenzayan, 1999; Heine, 2001). In contrast, those who adhere to a collectivistic orientation tend to believe that the environment is less malleable to accommodate the individual, and they must be flexible to effect change (Chiu, Dweck, Tong, & Fu, 1997; Heine, 2001). Hence, they may focus

on the social context as a determinant of their actions and rely on external factors to explain events (Miller, 1984). Therefore, some researchers have argued that those who maintain an individualistic orientation may view their problems as being internally-driven, personally controllable, and temporary, and accordingly engage in active coping strategies to change their circumstances (for alternative argument, see Heine et al., 2001).

Although existing research suggests that causal attribution may be a key explanatory mechanism in understanding cultural differences in coping strategies, few studies have examined the associations among culture, causal attribution, and coping strategies and our understanding of how these constructs are linked remains limited. Furthermore, research in this area has primarily involved correlational methods or compared two ethnic groups as a proxy for cultural effects, and implicitly concluded that ethnic group differences reflected specific cultural orientations without explicitly measuring them. This problem stems from a common error of treating culture as an unexplored independent variable. While we often learn that culture is related to a particular psychological construct, we learn little about the specific elements of culture that contribute to the proposed relation (Gauvain, 1998).

To address these methodological limitations, we used an experimental priming procedure. Priming creates an experimental equivalent of stable cultural differences by temporarily manipulating the salience and accessibility of an individualistic or collectivistic orientation in the minds of participants to compare their responses to questionnaires, and so forth. Through random assignment and the activation of precise culturally-relevant goals or values in each condition, the priming technique offers a test of cultural outcome with greater internal validity than tests provided by quasi-experimental cross-cultural studies (Hong, Morris, Chiu, & Benet-Martinez, 2000). Priming of individualism and collectivism was used in a significant number of studies

investigating cultural differences in psychological outcomes with small to moderate effects (see meta-analysis by Oyserman & Lee, 2008).

The current study extended previous research by using a novel experimental paradigm to explore how cultural orientation and causal attribution may be related to Chinese college students' coping strategies. First, we predicted that when faced with a hypothetical academic stressor, Chinese students who were primed with individualistic values (IND-PRIME) would be more likely to report using active coping strategies and less likely to use avoidant coping strategies than would students who were primed with collectivistic values (COL-PRIME). Second, we expected that students in the IND-PRIME condition would be more likely to attribute the cause of a stressor to internal, controllable, and unstable factors, than students in the COL-PRIME condition. Third, we expected that causal attribution would mediate the relation between cultural orientation and coping strategies (see Figure 1).

Method

Participants and Procedure

Participants were 96 undergraduate students of Chinese descent (*M* age = 19.96 years old; 75% female; 52% US-born) recruited through the undergraduate subject pool of a large west coast university (see Table 1). At the outset, participants provided informed consent and the study complied with the university's Institutional Review Board policies.

Students were randomly assigned to an individualistic prime condition (IND-PRIME) or a collectivistic prime condition (COL-PRIME) based on a group assignment list created a priori using a random number generator algorithm in Microsoft Excel. The 8-minute priming procedure involved a modification of the *Similarities and Differences with Family and Friends* task (SDFF; Trafimow, Triandis, & Goto, 1991). In the original SDFF task, students in the IND-PRIME

condition were asked to think about what makes them *different* from their family and friends for two minutes before moving onto the main task, whereas those in the COL-PRIME condition were asked to think about what makes them *similar* to their family and friends. We used the same experimental prompts, however, participants were also asked to write an essay about the topic for six minutes. In prior research (Chiao et al., 2009), this modification ensured that students were engaged in the task. Studies reported the original task reliably influenced self-construal with an average effect size of .49 (Gardner, Gabriel, & Lee, 1999; Oyserman & Lee, 2008). After the priming procedures, students were presented with a short vignette developed by Grant and Dweck (2003) to examine how learning and performance goals predict college students' motivation, achievement, and coping when they experience major setbacks or failure on highly valued tasks:

"Imagine that during your second semester at XXX, you take an important course in your major, in which students are required to read their essays out loud to the entire class. This happens several times throughout the semester. The time comes for the first readings. By the time it's your turn, most students have already presented their essays. All of them did pretty well, and you know their essays got good grades from the professor. But when you read your essay in class, the professor and other students don't seem to like your presentation very much, and later you find out that the grade he gave you was a C-."

Next, students were asked to indicate the strategies they would use to cope with such a situation using an inventory of coping methods. Finally, they were asked to respond to questions about their cultural orientation and demographic background.

Measures

Demographics. Participants completed a questionnaire about their age, place of birth (US Born: 0 = Yes, 1 = No), gender (0 = male; 1 = female), ethnicity, and parents' education (1 = less

than 6th grade education; 2 = 6th – 9th grade education, 3 = 9th – 12th grade education, 4 = high

school graduate; 5 = some college, no degree; 6 = Associates' degree; 7 = Bachelors' degree; 8 =

Graduate or Professional Degree).

Coping. Participants completed the Active Coping (AC) and Behavioral Disengagement

(BD) subscales of the Brief COPE inventory (Carver, 1997). The AC subscale had two items: *I*

take action to try to make the situation better and *I concentrate my efforts on doing something*

about the situation I am in; and the BD subscale had two items *I give up trying to deal with it* and

I give up the attempt to cope, which were rated on a 4-point scale (1 = I would not do this at all; 4

= I would do this a lot). The α co-efficients for the AC (.74) and BD (.64) subscales are consistent

with the psychometric properties of the measures in the original validation study (AC α = .68; BD

α = .65; Carver, 1997) and with studies of Hong Kong Chinese (AC α = .67 - .78; BD α = .61 -

.79; Tang, Chan, Ng, & Yip, 2016) and East Asian American samples (AC α = .72; BC α = .77;

Perera & Chang, 2015).

Causal attribution. To assess how individuals perceive cause associated with the

hypothetical stressor, participants completed the 12-item Revised Causal Dimensions Scale

(CDSII; McAuley, Duncan, & Russell, 1992). Because some of the subscales showed poor

reliability, single items from the scale were used to measure locus of causality (1 = something

about others; 9 = something about you), controllability (1 = over which others have no control; 9

= over which others have control), and stability (1 = temporary; 9 = permanent).

Manipulation Check. To assess the effectiveness of the priming task in manipulating

cultural orientation, participants completed the 7-item Collectivism subscale of the Asian

American Values Scale – Multidimensional (AAVS-M; Kim, Li, & Ng, 2005) (e.g., *One's efforts*

should be directed toward maintaining the well-being of the group first and the individual second

and *The group should be less important than the individual),* using a 7-point scale (1 = *strongly*

disagree; 7 = *strongly agree*), with a possible score range 7 – 49. In prior studies, the total scale

and five subscales had high internal reliability (range = .79 - .90; Kim et al., 2005). In the present

study the collectivism subscale reliability was, α = .85.

Results

Manipulation Check

To assess the effectiveness of the priming task, students' scores on the AAVS-M

Collectivism subscale (Kim et al., 2005) were compared using independent t-tests. Results

showed that those in the COL-PRIME condition (*M* = 29.36, *SD* = 3.25) reported more adherence

to collectivistic values than did those in the IND-PRIME condition (*M* = 27.31, *SD* = 4.22; *t*(94) =

2.59, *p* = .01), suggesting that the priming task was successful.

Preliminary Analyses

There were no significant group differences in the two conditions for age, gender, and

parents' education levels (see Table 1). However, there were significant group differences for

active coping and attributions of controllability and stability. Specifically, participants in the IND-

PRIME condition more frequently endorsed active coping strategies and made fewer attributions

of external controllability and stability than did those in the COL-PRIME condition.

Correlations computed among the study variables (see Table 2) showed that active and

avoidant coping were negatively correlated. Active coping was negatively related to attributions

of stability; whereas avoidant coping was positively related to attributions of stability.

Attributions of controllability were also negatively correlated to attributions of locus of causality.

Mediation Analyses

To test the proposed multiple mediation model, in our analysis we used Hayes (2018)

PROCESS macro for SPSS, with variables mean centered. This non-parametric, resampling method (bias-corrected bootstrapping procedure) was selected because it is more robust to violations of normality typically seen in small to moderate size sample distributions and therefore provides greater statistical power than other mediation methods that rely on such assumptions, such as Baron and Kenny's (1986) causal steps approach (see Preacher & Hayes, 2004). When a significant indirect effect is present in this bootstrap procedure, the 95% confidence intervals (CIs) for indirect effects does not include zero; it is not necessary for the independent variable to be significantly associated with the dependent variable to show mediation (Shrout & Bolger, 2002). Although some researchers have advocated using structural equation modeling (SEM) rather than PROCESS because latent variable analyses through SEM allows us to rule out measurement error, Hayes, Montoya, and Rockwood (2017) argue that SEM is generally regarded as a large sample technique and standard errors arising from maximum likelihood estimation tend to be biased downwards in small samples (see Hoogland & Boomsma, 1998). In addition, they note that "the proper estimation of interactions between latent variables [in SEM] remains highly controversial" and that, for models that are based on observed variables, the results using PROCESS or SEM are "substantively identical" (Hayes et al., 2017, pp. 80–81).

Results based on 5,000 bootstrapped resamples indicated a significant indirect effect of Condition on active coping, $\beta = .01$, $SE = .04$, 95% CI: .04 to .42, $P_M = .38$, and behavioral disengagement, $\beta = -.15$, $SE = .09$, 95% CI: -.36 to -.01, $P_M = -.15$ through attributions of stability. In addition, there was a significant indirect effect of Condition on active coping through controllability, $\beta = -.14$, $SE = .09$, 95% CI: -.35 to -.01, $P_M = -.26$ (see Tables 3 and 4). Approximately 18% of the variance in active coping and 9% of variance in avoidant coping were accounted for by the predictors ($R^2 = .18$ and .09, respectively). Attributions of stability mediated

the relation between cultural orientation and coping, such that participants in the IND-PRIME condition were less likely to attribute causes of the stressor to stable factors, and via decreased stability attributions, were more likely to use active coping strategies and less likely to use avoidant coping in response to the hypothesized academic stressor. Attributions of controllability also mediated the relation between cultural orientation and active coping, albeit inconsistently. That is, participants in the IND-PRIME condition were less likely to believe that the cause of the problem was externally controlled; however, attributing cause of a problem to less externally controllable sources was associated with less frequent use of active coping strategies in response to the stressor. This inconsistent mediation effect indicates that attributions of controllability may suppress the relation between cultural orientation and active coping.

Discussion

This study used an experimental priming procedure to manipulate the independent and interdependent self-construals of Chinese college students in the United States and explore the associations among their cultural orientation, causal attribution, and coping strategies.

The hypothesis that students who were primed with individualistic values would be more likely to use active coping strategies in response to a hypothetical academic stressor than those primed with collectivistic values was supported. This finding is consistent with existing research on cultural variations in coping behaviors (Chang, 1996; Sheu & Sedlacek, 2004; Tweed et al., 2004), but contrasts with Heine et al's. (2001) work suggesting that East Asians often persist and exert more effort in the face of academic failure. One possibility for this conflicting result is that Heine et al.'s (2001) study focused specifically on persistence related to a single task, whereas the current study emphasized general acts of coping. Nonetheless, our findings shed light on how independent and interdependent self-construals influence individuals' preference for certain coping strategies.

Contrary to expectations, no priming effects were found for avoidant coping. This finding suggests that while collectivistic-oriented individuals may use fewer active coping strategies compared to their individualistic-oriented peers, it does not necessarily imply they are also more likely to disengage when faced with a stressful situation. As such, it is too simplistic to view active and avoidant coping strategies as dichotomous. Research shows that collectivistic-oriented individuals often use acceptance and meaning-making coping strategies to manage difficult situations (Morling & Evered, 2006; Weisz et al., 1984). Therefore, while collectivistic-oriented individuals may choose not to *directly* confront a difficult situation, they may still engage with the stressor, albeit in a more indirect manner. Future research should be cautious in making this conceptual distinction.

The hypothesis that students primed with individualistic values would be more likely to attribute the cause of a hypothetical academic stressor to internal, unstable, and controllable factors than students primed with collectivistic values was partially supported. Compared to students in the COL-PRIME condition, those in the IND-PRIME condition more frequently attributed cause of the stressor to factors that were temporary and less frequently attributed cause of the stressor to externally controllable forces. This finding is consistent with a tendency noted in the research literature that individuals with independent self-construals often perceive having personal control over a problem whereby they are able to change or fix their situation (Chun et al., 2006; Tweed et al., 2004). Surprisingly, there was no significant priming effect on locus of causality. One speculation is that perceived causes of academic failure often revolve around personal or internal responsibility, such as effort and ability, regardless of cultural orientation (Graham, 1991; p. 6; Weiner, 1972). Because the stimulus vignette was related to academic performance, most of the students were likely to attribute their failure to either effort or ability,

both of which represent internal attribution of causality (and differ only on the dimensions of controllability and stability). This may have attenuated any expected differences in attributions of locus of causality between the experimental conditions for this variable. Indeed, previous studies (e.g., Yan & Gaier, 1994) that have examined the relations between academic stress and causal attribution have typically used *perceived causes* of a problem, such as ability, effort, task difficulty, luck, as measures of causal attribution. Such measures of causal attribution conflate the various causal dimensions (locus of causality, controllability, and stability) and contribute to some of the inconsistencies in prediction in the research.

The hypothesis that attributions of locus of causality, controllability, and stability would mediate the relation between cultural orientation and coping strategies was also partially supported. Because there was no significant priming effect on locus of causality, we focused our interpretation of the mediation analyses on controllability and stability. The results indicated that students primed with individualistic values were more likely to attribute cause of the hypothetical academic stressor to temporary factors; in turn, this attribution was associated with greater active coping and less avoidant coping. The finding is consistent with research suggesting that individuals who perceive a situation as temporary or changeable are more likely to take remedial action (i.e., active coping) if they believe their performance is unsatisfactory (Hong, Chiu, Dweck, Lin, & Wan, 1999).

The results also revealed a significant but inconsistent, mediation effect of controllability on the link between cultural orientation and the use of active coping strategies. While individualistic orientation was associated with active coping, individualistic orientation was also associated with a reduced likelihood of causal attribution to externally controllable factors (i.e., more internally responsible), which in turn was linked to less active coping. Although

controllability did not significantly mediate the relation between cultural orientation and avoidant coping strategies, the results suggested a trend in a similar direction in which attributions of internal responsibility were associated with increased use of avoidant coping strategies. In as much as the direction of the mediation effect was unexpected, this finding is somewhat consistent with Wong et al., (2010)'s results which reported that internal attribution of responsibility for depression was associated with greater use of disengagement and a decreased use of engagement coping strategies among Asian Americans. Wong and colleagues argued that Asian Americans who believed they were personally responsible for their depression seemed to prefer avoidant coping strategies because of the stigma and shame related to confronting their problems (see also Brickman et al., 1982; Stepleman, Darcy, & Tracey, 2005). The counterintuitive finding also makes sense in light of studies indicating that people with individualistic orientations tend to have self-enhancing or self-serving biases and often avoid tasks that may damage their positive self-image (Heine et al., 2001). Therefore, if individualistic-oriented people believe they have control over the cause of a problem, they may be less likely than collectivistic-oriented peers to actively improve the situation as an act of self-preservation, in case such actions remind them of their personal weaknesses.

Overall, the findings underscore the importance of the cultural orientation in understanding coping behaviors and provide empirical support for existing cultural models of coping that have identified causal attribution as a key mechanisms underlying the link between cultural orientation and coping (Chun et al., 2006; Tweed et al., 2004). Nonetheless, it is clear the relations among cultural orientation, causal attribution, and coping are complex. One possible explanation for the cultural differences in our results is that we focused specifically on coping with academic stressors rather than more general coping strategies. Factors such as problem type

and the effects of a problem on self-esteem can influence coping strategies and this implies that coping strategies may be context-specific, rather than dispositional in nature (Brown, Phillips, Abdullah, Vinson, & Robertson, 2011). Thus, how one copes with a problem is related more to the type of problem (e.g., academic) and less so with an overall coping style. Future research should reflect this dynamic nature of coping behaviors.

Our results have important implications for clinicians who focus on coping among diverse populations. First, clinicians should consider their client's cultural orientation and the potential influence on their perceptions of their problems and consequently their coping preference; particularly because certain coping strategies may be more adaptive than others (Carver, Scheier, & Weintraub, 1989). Second, given that causal attribution influences coping strategies, targeting individuals' perceptions of the cause of their problems may encourage them to develop more adaptive coping strategies to manage stress.

Several limitations should be noted. First, the study is based on self-report data. Although standardized measures were used to assess cultural orientation, coping strategies, and causal attribution, the data were dependent on participants' willingness and ability to accurately report their thoughts, feelings, and behaviors. Furthermore, responses based on hypothetical scenarios are particularly vulnerable to social desirability biases and other satisficing effects made by respondents. Future studies should therefore include behavioral observations, multi-informant reports, or behavioral assessments.

Second, the sample was limited to ethnic Chinese college students in a large west coast university. Therefore, the results may not be generalizable to individuals of different ethnic backgrounds and age groups, those who differ in their level of acculturation, or are not as highly educated. While a strength of our study was the use of an ethnically homogenous group, future

research should include participants from a wider range of Asian populations and communities or other collectivistic-oriented cultural groups to ensure generalizability of the findings.

Third, our non-significant results for locus of causality attributions were possibly due to the restricted range of normative responses provided by a relatively homogeneous sample about a specific hypothetical stimulus situation. Previous research on differential causal attributions about general academic stressors with a heterogeneous group of Asian and European American students reported small to moderate effects ($.10 < d < .40$) between the two cultural groups (Yan & Gaier, 1994). Therefore, in retrospect, it is not surprising that asking a highly homogeneous Asian college sample to respond to a standardized hypothetical academic stressor would produce a limited range of responses and small effects. To clarify the influence of cultural orientation on causal attribution, future research should consider using other stimulus situations to elicit a wide range of causal attributions, and with a more heterogeneous sample.

Fourth, because of poor reliability of the original causal attribution subscales, single items were used to measure causal attribution. The use of single-item measures is potentially problematic because internal consistency cannot be computed and they are vulnerable to random measurement errors and biases in meaning and interpretation. Nonetheless, studies have found that if the construct being measured is sufficiently narrow or is unambiguous to the respondent, a single item measure may suffice as it could show similar predictive capabilities as multiple-item measures (Bergkvist & Rossiter, 2007).

Finally, while the study's manipulation check assessed the collectivistic orientation of the participants, it did not assess for changes in individualistic orientation due to limitations of the cultural orientation measure selected. However, it is important to note that the study's use of an objective measure of cultural orientation is strength. Previous cultural priming studies have not

typically measured changes in cultural orientation as a manipulation check; rather many assume that any variation in experimental outcome (DV) is due to the priming manipulation (IV). In addition, while the effect size of the manipulation may have been relatively small, it is important to consider the significance of the effect: that a simple experimental manipulation of a few minutes was able to effect change on the cultural orientation (and associated behaviors) of a relatively homogeneous sample of participants. Nonetheless, future cultural priming research should measure changes in individualistic and collectivistic orientation in its participants.

Despite these shortcomings, the study is noteworthy because it is among the first to use an experimental paradigm to manipulate cognitions related to independent and interdependent self-construals to examine cultural differences in coping strategies. This procedure allowed us to clarify the relation between culture and coping behaviors observed in previous research (Chang, Tugade, & Asakawa, 2006) and make stronger inferences about the role of cultural orientation and causal attribution in explaining differences in the use of coping strategies. It also highlights the key role attribution plays in explaining coping behaviors. Because coping with stress is fundamental to psychological well-being, it is imperative that researchers and clinicians develop a more nuanced understanding of coping behavior that is specific enough to guide prevention and intervention efforts.

References

Amirkhan, J. H. (1998). Attributions as predictors of coping and distress. *Personality and Social Psychology Bulletin*, *24*(9), 1006–1018. https://doi.org/10.1177/0146167298249008

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research*, *44*(2), 175–184. https://doi.org/10.1509/jmkr.44.2.175

Brickman, P., Rabinowitz, V. C., Karuza, J., Coates, D., Cohn, E., & Kidder, L. (1982). Models of helping and coping. *American Psychologist*, *37*(4), 368–384. https://doi.org/10.1037/0003-066X.37.4.368

Brown, T. L., Phillips, C. M., Abdullah, T., Vinson, E., & Robertson, J. (2011). Dispositional versus situational coping: Are the coping strategies African Americans use different for general versus racism-related stressors? *Journal of Black Psychology*, *37*(3), 311–335. https://doi.org/10.1177/0095798410390688

Carver, C. S. (1997). You want to measure coping but your protocol'too long: Consider the brief cope. *International Journal of Behavioral Medicine*, *4*(1), 92–100. https://doi.org/10.1207/s15327558ijbm0401_6

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, *56*(2), 267–283. https://doi.org/10.1037/0022-3514.56.2.267

Chang, E. C. (1996). Cultural differences in optimism, pessimism, and coping: Predictors of

subsequent adjustment in Asian American and Caucasian American college students.
Journal of Counseling Psychology, *43*(1), 113–123. https://doi.org/10.1037/0022-
0167.43.1.113

Chang, E. C., Tugade, M. M., & Asakawa, K. (2006). Stress and coping among Asian Americans:
Lazarus and Folkman's model and beyond. In P. T. P. Wong & L. C. J. Wong (Eds.),
Handbook of Multicultural Perspectives on Stress and Coping (pp. 439–455). Boston,
MA, US: Springer.

Chiao, J. Y., Harada, T., Komeda, H., Li, Z., Mano, Y., Saito, D., … Iidaka, T. (2009). Neural
basis of individualistic and collectivistic views of self. *Human Brain Mapping*, *30*(9),
2813–2820. https://doi.org/10.1002/hbm.20707

Chiu, C., Dweck, C. S., Tong, J. Y., & Fu, J. H. (1997). Implicit theories and conceptions of
morality. *Journal of Personality and Social Psychology*, *73*(5), 923–940. https://doi.org/
10.1037/0022-3514.73.5.923

Choi, I., Nisbett, R. E., & Norenzayan, A. (1999). Causal attribution across cultures: Variation
and universality. *Psychological Bulletin*, *125*(1), 47–63. https://doi.org/10.1037/0033-
2909.125.1.47

Chun, C.-A., Moos, R. H., & Cronkite, R. C. (2006). Culture: A fundamental context for the
stress and coping paradigm. In P. T. P. Wong & L. C. J. Wong (Eds.), *Handbook of
Multicultural Perspectives on Stress and Coping* (pp. 29–53). Boston, MA, US: Springer.

Cousins, S. D. (1989). Culture and self-perception in Japan and the United States. *Journal of
Personality and Social Psychology*, *56*(1), 124–131. https://doi.org/10.1037/0022-
3514.56.1.124

Gardner, W. L., Gabriel, S., & Lee, A. Y. (1999). "I" value freedom, but "We" value

relationships: Self-construal priming mirrors cultural differences in judgment.

Psychological Science, *10*(4), 321–326. https://doi.org/10.1111/1467-9280.00162

Gauvain, M. (1998). Culture, development, and theory of mind: Comment on Lillard (1998).

Psychological Bulletin, *123*(1), 37–42. https://doi.org/10.1037/0033-2909.123.1.37

Grant, H., & Dweck, C. S. (2003). Clarifying achievement goals and their impact. *Journal of*

Personality and Social Psychology, *85*(3), 541–553. https://doi.org/10.1037/0022-

3514.85.3.541

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A*

regression-based approach. New York: The Guildford Press.

Hayes, Andrew F., Montoya, A. K., & Rockwood, N. J. (2017). The analysis of mechanisms and

their contingencies: PROCESS versus structural equation modeling. *Australasian*

Marketing Journal, *25*(1), 76–81. https://doi.org/10.1016/j.ausmj.2017.02.001

Heine, S. J. (2001). Self as cultural product: An examination of East Asian and North American

selves. *Journal of Personality*, *69*(6), 881–905. https://doi.org/10.1111/1467-6494.696168

Heine, S. J., Lehman, D. R., Ide, E., Leung, C., Kitayama, S., Takata, T., & Matsumoto, H.

(2001). Divergent consequences of success and failure in Japan and North America: An

investigation of self-improving motivations and malleable selves. *Journal of Personality*

and Social Psychology, *81*(4), 599–615. https://doi.org/10.1037/0022-3514.81.4.599

Hong, Y., Chiu, C., Dweck, C. S., Lin, D. M.-S., & Wan, W. (1999). Implicit theories,

attributions, and coping: A meaning system approach. *Journal of Personality and Social*

Psychology, *77*(3), 588–599. https://doi.org/10.1037/0022-3514.77.3.588

Hong, Y., Morris, M. W., Chiu, C., & Benet-Martinez, V. (2000). Multicultural minds: A

dynamic constructivist approach to culture and cognition. *American Psychologist*, *55*(7),

709–720. https://doi.org/10.1177/0049124198026003003

Hoogland, J. J., & Boomsma, A. (1998). Robustness studies in covariance structure modeling: An overview and a meta-analysis. *Sociological Methods & Research*, *26*(3), 329–367.

Iwamoto, D. K., Liao, L., & Liu, W. M. (2010). Masculine norms, avoidant coping, Asian values, and depression among Asian American men. *Psychology of Men & Masculinity*, *11*(1), 15–24. https://doi.org/10.1037/a0017874

Kim, B. S. K., Li, L. C., & Ng, G. F. (2005). The Asian American values scale--multidimensional: Development, reliability, and validity. *Cultural Diversity & Ethnic Minority Psychology*, *11*(3), 187–201. https://doi.org/10.1037/1099-9809.11.3.187

Kuo, B. C. H. (2013). Collectivism and coping: Current theories, evidence, and measurements of collective coping. *International Journal of Psychology*, *48*(3), 374–388. https://doi.org/10.1080/00207594.2011.640681

Lam, A. G., & Zane, N. W. (2004). Ethnic differences in coping with interpersonal stressors: A test of self-construals as cultural mediators. *Journal of Cross-Cultural Psychology*, *35*(4), 446–459. https://doi.org/10.1177/0022022104266108

Lehman, D. R., Chiu, C., & Schaller, M. (2004). Psychology and culture. *Annual Review of Psychology*, *55*, 689–714. https://doi.org/10.1146/annurev.psych.55.090902.141927

Liu, X., Tein, J.-Y., & Zhao, Z. (2004). Coping strategies and behavioral/emotional problems among Chinese adolescents. *Psychiatry Research*, *126*(3), 275–285. https://doi.org/10.1016/j.psychres.2004.02.006

Markus, H. R., & Kitayama, S. (2010). Cultures and selves: A cycle of mutual constitution. *Perspectives on Psychological Science*, *5*(4), 420–430. https://doi.org/10.1177/1745691610375557

McAuley, E., Duncan, T. E., & Russell, D. W. (1992). Measuring causal attributions: The

Revised Causal Dimension Scale (CDSII). *Personality and Social Psychology Bulletin*,

18(5), 566–573. https://doi.org/10.1177/0146167292185006

Mikulincer, M., & Solomon, Z. (1989). Causal attribution, coping strategies, and combat- related

post- traumatic stress disorder. *European Journal of Personality*, *3*(4), 269–284.

https://doi.org/10.1002/per.2410030404

Miller, J. G. (1984). Culture and the development of everyday social explanation. *Journal of

Personality and Social Psychology*, *46*(5), 961–978. https://doi.org/10.1037/0022-

3514.46.5.961

Morling, B., & Evered, S. (2006). Secondary control reviewed and defined. *Psychological

Bulletin*, *132*(2), 269–296. http://dx.doi.org/10.1037/0033-2909.132.2.269

Oyserman, D., & Lee, S. W. (2008). Does culture influence what and how we think? Effects of

priming individualism and collectivism. *Psychological Bulletin*, *134*(2), 311–343.

http://doi.org/10.1037/0033-2909.134.2.311

Perera, M. J., & Chang, E. C. (2015). Depressive symptoms in South Asian, East Asian, and

European Americans: Evidence for ethnic differences in coping with academic versus

interpersonal stress? *Asian American Journal of Psychology*, *6*(4), 350–358.

https://doi.org/10.1037/aap0000030

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects

in simple mediation models. *Behavior Research Methods, Instruments, & Computers*,

36(4), 717–731. https://doi.org/10.3758/BF03206553

Roesch, S. C., & Weiner, B. (2001). A meta-analytic review of coping with illness: Do causal

attributions matter? *Journal of Psychosomatic Research*, *50*(4), 205–219.

https://doi.org/10.1016/S0022-3999(01)00188-X

Sheu, H.-B., & Sedlacek, W. H. (2004). An exploratory study of help-seeking attitudes and

coping strategies among college students by race and gender. *Measurement and*

Evaluation in Counseling and Development, *37*(3), 130–143.

https://doi.org/10.1080/07481756.2004.11909755

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New

procedures and recommendations. *Psychological Methods*, *7*(4), 422–445.

http://doi.org/10.1037/1082-989X.7.4.422

Stepleman, L. M., Darcy, M. U., & Tracey, T. J. (2005). Helping and coping attributions:

Development of the Attribution of Problem Cause and Solution Scale. *Educational and*

Psychological Measurement, *65*(3), 525–542. https://doi.org/10.1177/0013164404272490

Tang, K. N., S, Chan, C. S., Ng, J., & Yip, C. (2016). Action type-based factorial structure of

Brief COPE among Hong Kong Chinese. *Journal of Psychopathology and Behavioral*

Assessment, *38*(4), 631–644. http://doi.org/10.1007/s10862-016-9551-0

Trafimow, D., Triandis, H. C., & Goto, S. G. (1991). Some tests of the distinction between the

private self and the collective self. *Journal of Personality and Social Psychology*, *60*(5),

649–655. https://doi.org/10.1037/0022-3514.60.5.649

Triandis, H. C. (1995). *Individualism and Collectivism*. Boulder, CO, US: Westview Press.

Tweed, R. G., White, K., & Lehman, D. R. (2004). Culture, stress, and coping: Internally- and

externally-targeted control strategies of European Canadians, East Asian Canadians, and

Japanese. *Journal of Cross-Cultural Psychology*, *35*(6), 652–668.

https://doi.org/10.1177/0022022104270109

Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological*

Review, *92*(4), 548–573.

Weisz, J. R., Rothbaum, F. M., & Blackburn, T. C. (1984). Standing out and standing in: The

psychology of control in America and Japan. *American Psychologist*, *39*(9), 955–969.

https://doi.org/10.1037/0003-066X.39.9.955

Wong, P. T. P., & Ujimoto, K. V. (1998). The elderly: Their stress, coping, and mental health. In

In L. C. Lee & N. W. S. Zane (Eds.), *Handbook of Asian American Psychology.* (pp. 165–

209). Thousand Oaks, CA, US: Sage Publications, Inc.

Wong, Y. J., Kim, S.-H., & Tran, K. K. (2010). Asian Americans' adherence to Asian values,

attributions about depression, and coping strategies. *Cultural Diversity and Ethnic*

Minority Psychology, *16*(1), 1–8. http://doi.org/10.1037/a0015045

Yan, W., & Gaier, E. L. (1994). Causal attributions for college success and failure: An Asian-

American comparison. *Journal of Cross-Cultural Psychology*, *25*(1), 146–158.

https://doi.org/10.1177/0022022194251009

Yeh, C. J., & Inman, A. G. (2007). Qualitative data analysis and interpretation in counseling

psychology: Strategies for best practices. *The Counseling Psychologist*, *35*(3), 369–403.

https://doi.org/10.1177/0011000006292596

Table 1

Sample Descriptives and the Dependent Variables by Condition

	Range	Sample (N = 96) M (SD)	IND-PRIME (N = 54) M (SD)	COL-PRIME (N = 42) M (SD)	t-value/χ^2	d
Age	18 – 23	19.96 (1.24)	19.85 (1.27)	20.10 (1.21)	.95	.20
Females	0 – 1	72 (75.00%)	38 (70.37%)	34 (80.85%)	1.41	.01
US Born	0 – 1	50 (52.08%)	20 (37.04%)	30 (71.43%)[a]	11.20**	.34
Fathers' Education	1 – 8	6.57 (2.02)[b]	6.74 (1.88)	6.28 (2.16)	-.88	.23
Mothers' Education	1 – 8	6.26 (1.90)[b]	6.37 (2.19)	6.22 (1.69)	-.16	.08
Active Coping	3 – 8	6.43 (1.27)	6.67 (1.20)	6.12 (1.31)	-2.13*	.44
Avoidant Coping	2 – 7	3.07 (1.13)	3.02 (1.00)	3.14 (1.28)	.54	.11
Locus of Causality	4 – 9	6.56 (1.49)	6.76 (1.53)	6.31 (1.42)	-1.47	.30
Controllability	1 – 9	4.51 (2.05)	4.11 (2.07)	5.02 (1.92)	2.21*	.46
Stability	1 – 7	3.46 (1.86)	3.00 (1.64)	4.05 (1.97)	2.84**	.58
Collectivistic Values	16 – 39	28.21 (3.94)	27.31 (4.22)	29.36 (3.25)	2.59**	.54

Table

[a]Although there were significantly more US-born students than foreign-born students in the COL-PRIME condition (and vice-versa), the manipulation check suggests that these differences did not affect successful experimental priming of the sample cultural orientation. [b]Average highest level of education for father and mothers was between an Associates' degree (6) and a Bachelors' degree (7). $^{*}p <.05$ (2-tailed), $^{**}p <.01$ (2-tailed)

Table 2

Correlations Among the Variables (n = 96)

	1	2	3	4	5	6	7	8	9	10	11	12
1. Condition	1.00											
2. Age	-.10	1.00										
3. Gender	-.12	.02	1.00									
4. US Born	.34**	-.02	.17	1.00								
5. Father's Education	.08	-.08	-.18	-.11	1.00							
6. Mother's Education	.01	-.16	-.17	-.13	78**	1.00						
7. Active Coping	.22*	.11	.10	.17	.02	-.01	1.00					
8. Avoidant Coping	-.06	.04	-.01	-.06	.01	-.02	-.48**	1.00				
9. Locus of Causality	.15	.14	.07	.10	-.09	-.12	-.05	.08	1.00			
10. Controllability	-.22*	-.05	.11	.06	.01	.05	.20	-.18	-.42**	1.00		
11. Stability	-.28**	-.04	.17	-.05	-.07	-.11	-.33**	.24*	-.06	.02	1.00	
12. Collectivistic Values	-.26*	-.14	.03	-.13	-.06	-.06	.05	-.05	.03	.18	.08	1.00

Note. Cultural orientation (CO) was coded with COL-Prime = 0 and IND-Prime = 1. * p <.05 (2-tailed), ** p <.01 (2-tailed)

Table 3

Causal Attribution as a Mediator of the Relation Between Cultural Orientation (CO) and Active Coping (AC)

Mediator	Regression pathway	B	SE	t	Bootstrap results for indirect effect	
					95% CI LL	95% CI UL
Locus of Causality (LOC)	CO → AC	.55*	.26	2.13*	.04	1.06
	CO → LOC	.45	.31	1.47	-.16	1.06
	LOC → AC	.01	.09	.08	-.17	.18
	CO → LOC → AC	.01	.04		-.09	.10
Controllability (CON)	CO → AC	.55*	.26	2.13*	.04	1.06
	CO → CON	-.91	.41	-2.21*	-1.73	-.09
	CON → AC	.16	.07	2.31*	.02	.28
	CO → CON → AC	-.14	.09		-.35	-.01
Stability (STB)	CO → AC	.55*	.26	2.13*	.04	1.06
	CO → STB	-1.05	.37	-2.84*	-1.78	-.32
	STB → AC	-.20	.07	-2.88*	-.33	-.06
	CO → STB → AC	.20	.10		.04	.42

Note. Cultural orientation (CO) was dummy coded with COL-Prime = 0 and IND-Prime = 1. *p <.05 (2-tailed), **p <.01 (2-tailed)

Table 4

Causal Attribution as a Mediator of the Relation Between Cultural Orientation (CO) and Avoidant Coping (BD)

Mediator	Regression pathway	B	SE	t	Bootstrap results for indirect effect	
					95% CI LL	95% CI UL
Locus of Causality (LOC)	CO → BD	-.12	.23	-.53	-.59	.34
	CO → LOC	.45	.31	1.47	-.16	1.06
	LOC → BD	.02	.08	.23	-.15	.19
	CO → LOC → BD	.01	.05		-.08	.13
Controllability (CON)	CO → BD	-.12	.23	-.53	-.59	.34
	CO → CON	-.91	.41	-2.21*	-1.73	-.09
	CON → BD	-.10	.06	-1.58	-.22	.03
	CO → CON → BD	.09	.08		-.03	.28
Stability (STB)	CO → BD	-.12	.23	-.53	-.59	.34
	CO → STB	-1.05	.37	-2.84*	-1.78	-.32
	STB → BD	.14	.06	2.27*	.02	.27
	CO → STB → BD	-.15	.09		-.36	-.01

Note. Cultural orientation (CO) was dummy coded with COL-Prime = 0 and IND-Prime = 1. * $p < .05$ (2-tailed), ** $p < .01$ (2-tailed)

Figure

Causal Attribution

(Locus of Causality/Controllability/Stability)

Coping Behavior

(Active/Avoidant)

Cultural Orientation

(IND-COL/COL-PRIME)

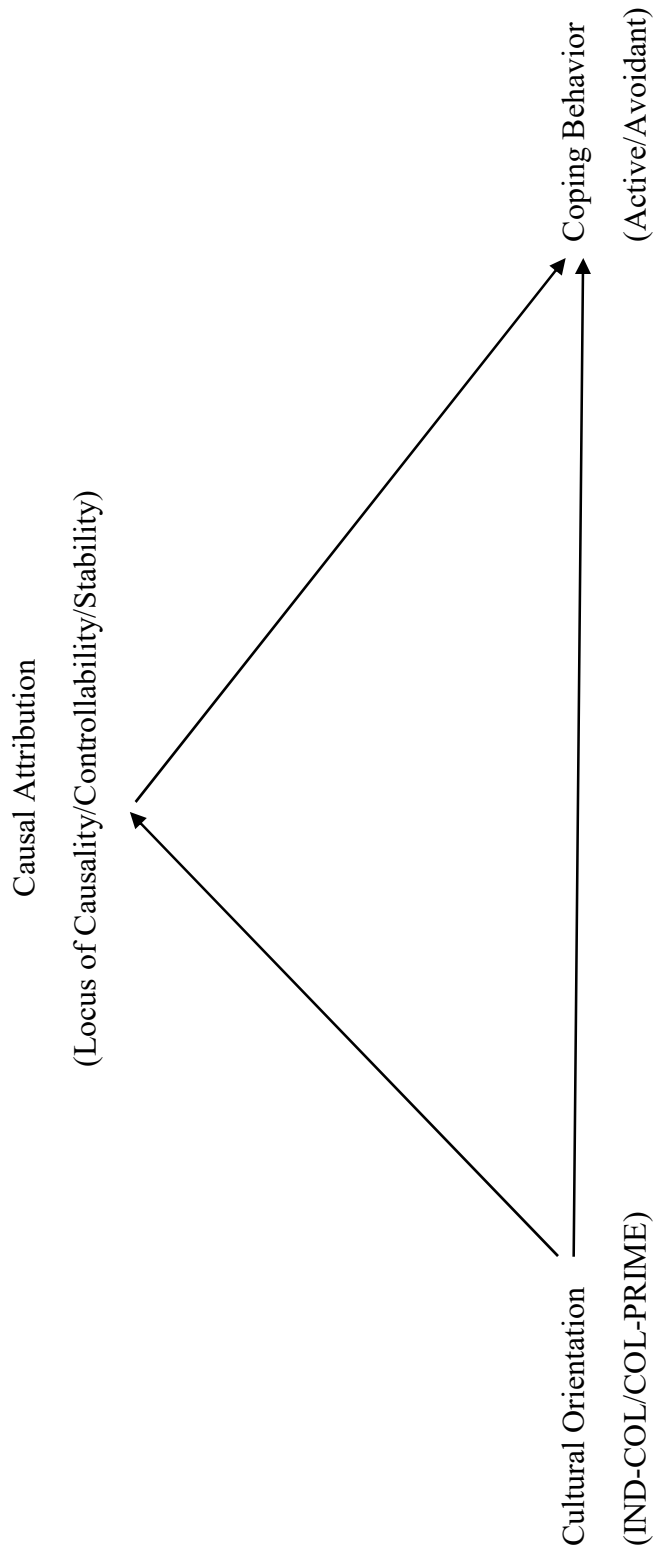*Figure 1.* Causal Attribution as a Mediator of Cultural Orientation and Coping Behaviors