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and Lei Wang³

Abstract

Emotional complexity (the co-occurrence of positive and negative affect) is more prevalent in East Asian than North American cultures. Although researchers have attributed this robust finding to dialectical thinking (tolerance of contradiction), this hypothesis has not been experimentally tested. In this study, dialectical thinking about salient life events was manipulated among mainland Chinese and Euro-American participants, and increased dialectical thinking led to greater emotional complexity. Moreover, Chinese exhibited greater dialectical thinking and emotional complexity than did Euro-Americans, and cultural differences in emotional complexity were mediated by a direct measure of dialecticism (Dialectical Self Scale).

Keywords

culture, emotion, affect, mixed emotions, East Asians

For misery, happiness is leaning against it; for happiness, misery is hiding in it.

Book of Changes, chap. 58

Since the publication of two seminal articles (Bagozzi, Wong, & Yi, 1999; Peng & Nisbett, 1999), scholars have become increasingly interested in the relationship between positive and negative affect across cultures. Emotional complexity (EC)—the co-occurrence of pleasant and unpleasant emotions—is more prevalent in East Asian than Western cultures (Schimmack, Oishi, & Diener, 2002). Euro-Americans traditionally show an inverse relationship between good and bad feelings at both the trait and the state levels (Bagozzi et al., 1999; Kitayama, Markus, & Kurokawa, 2000; Schimmack et al., 2002); individuals who report experiencing positive affect frequently or intensely also report experiencing negative affect less often or intensely. In contrast, East Asians show a positive, null, or significantly weaker negative relationship between

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good and bad feelings, differences that have been documented among Chinese and Koreans (Bagozzi et al., 1999), Japanese (Kitayama et al., 2000), and Asian Americans (Spencer-Rodgers, Peng, Wang, & Hou, 2004).

These well-documented differences in aggregate, retrospective reports of positive/negative affect could be because of differences in the basic structure of emotion (i.e., actual momentary experience); overall “trait” tendencies (e.g., personality factors); the relative occurrence of positive, negative, and mixed life events in East Asia and North America; lay beliefs about emotional experience, the self, and well-being; and a variety of cognitive biases (see Goetz, Spencer-Rodgers, & Peng, 2008). Experience sampling studies suggest that cultural differences in EC do not typically emerge at the time of actual experience; positive/negative affect is strongly inversely correlated among both East Asians and North Americans at the state level (Scollon, Diener, Oishi, & Biswas-Diener, 2005; Yik, 2007; although see Perunovic, Heller, & Rafaeli, 2007). Hence, cultural variation in aggregate emotion memories likely reflects the other aforementioned factors.

In addition to examining the mechanisms that give rise to group differences in EC, scholars have investigated the cultural roots of this phenomenon. Several cultural variables have been put forth, including dialecticism (Bagozzi et al., 1999; Schimmack et al., 2002) and interdependence/collectivism (Kitayama et al., 2000; Scollon et al., 2005). Taking an international approach, Schimmack et al. (2002) examined the association between four pleasant and unpleasant emotions in 38 countries classified as dialectical (China), collectivist/nondialectical (Peru), or individualist/nondialectical (United States). A dialectical classification was a more potent predictor of EC than was a collectivist classification. In a diary study, Perunovic et al. (2007) found that when East Asian constructs (i.e., language) were recently activated, Asian Canadian biculturals showed no correlation between positive/negative affect—even at the state level. When Western constructs were activated, they showed an inverse association. As with emotion memories in general (Ross, 1989), these findings suggest that implicit knowledge structures, such as lay beliefs, influence the co-occurrence of good/bad feelings.

We investigated the role of dialectical lay beliefs in mediating cultural variation in EC. This research makes several novel contributions. We tested an additional mechanism that may account for cultural differences in the co-occurrence of pleasant/unpleasant emotions: lay beliefs. We also present the first experimental evidence that dialecticism gives rise to EC by manipulating and directly measuring the cultural variable of interest via the Dialectical Self Scale (DSS; Spencer-Rodgers et al., 2008). Previous research has exclusively relied on correlational evidence (cross-sectional or longitudinal) and the simple categorization of national groups as dialectical versus nondialectical.

A lengthy description of the theory of naïve dialecticism is beyond the scope of this report. To briefly summarize, in Western approaches, pleasant and unpleasant emotions are conceptualized as discrete, short-lived, and oppositional phenomena that do not co-occur (Goetz et al., 2008). As exemplified in the above Chinese proverb, in East Asian representations, constructs such as happy/sad are viewed as mutually dependent, coevolving, and existing in a state of balance. East Asians conceptualize the self in a dualistic manner and are more tolerant of contradiction (Choi & Choi, 2002; Spencer-Rodgers et al., 2004; Spencer-Rodgers & Peng, 2005). Consequently, they may have more complex emotional reactions to self-relevant experiences.

In this study, complexity scores are used to measure the extent to which participants reported experiencing both good and bad feelings over the past few weeks. Originally developed to measure ambivalence, these scores index the extent to which individuals hold *both* positive and negative attitudes or emotions (Scott, 1966). We present two forms of evidence that dialecticism accounts for cultural variation in EC (i.e., culture → dialecticism → EC). First, an experimental manipulation showed that increased dialectical thinking leads to greater EC. Second, a Baron

and Kenny (1986)–type mediational analysis revealed that dialecticism (scores on the DSS) mediates cultural differences in EC. We also examined the relationship between EC and life satisfaction across cultures. If EC is viewed as a natural consequence of contradiction in the universe, then the co-occurrence of good/bad feelings should have a weaker negative impact on well-being among East Asians.

Method

Participants and Procedures

Chinese undergraduates ($N = 53$, 60% female, $M_{\text{age}} = 19.8$) at Peking University and American undergraduates at the University of California, Santa Barbara who self-identified as Euro-American ($N = 54$, 72% female, $M_{\text{age}} = 20.7$) volunteered to participate in the study. The number of participants in each condition was as follows (a) 26 Chinese and 28 Euro-Americans (prime) and (b) 27 Chinese and 26 Euro-Americans (control).

Participants in the prime condition completed the following instructions (adapted from Parker-Tapias & Peng, 2001), which were followed by 30 blank lines:

We would like you to recall experiences in which you were very aware of both the pros and cons of the situations and there were no right answers. The situations or experiences had positive outcomes and consequences for you . . . as well as equally negative outcomes or consequences. . . . Think about these contradictory experiences. . . . Describe how you thought through all of the facts and possible perspectives, including the opposing ones.

Participants in the prime condition then rated the valence of their life experiences. All participants subsequently completed the DSS, Positive and Negative Affect Schedule (PANAS), and Satisfaction with Life Scale (SWLS) as part of a larger study on dialecticism and well-being and were debriefed and thanked.¹

Measures

Life experiences. Participants in the prime condition rated the valence of the life experiences they wrote about as follows: “Just thinking about the positive aspects of these experiences, how positive were they for you?” (on a 0 = *not at all positive* to 6 = *extremely positive* scale) and “Just thinking about the negative aspects of these experiences, how negative were they for you?” (on a 0 = *not at all negative* to 6 = *extremely negative* scale). Participants described life events such as graduation, moving away from home for the first time, the start or end of romantic relationships, and the deaths of loved ones.

Dialecticism. Participants completed the brief 14-item version of the DSS (Spencer-Rodgers et al., 2008), with items such as “When I hear two sides of an argument, I often agree with both” rated on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale. The DSS possesses adequate cross-cultural validity and reliability (Hamamura, Heine, & Paulhus, 2008; Spencer-Rodgers et al., 2008). Cronbach’s alphas were .73 (Chinese) and .86 (Euro-Americans).

EC. EC was assessed using 20 items adapted from the PANAS (Watson, Clark, & Tellegen, 1988). Participants indicated “the extent to which you have felt this way during the past few weeks” on a unipolar scale ranging from 1 (*not at all*) to 9 (*very much*). They rated 10 positive emotions (confident, content, calm, proud, bold, satisfied, pleased, energetic, happy, and interested) and 10 negative emotions (sad, tired, bored, upset, disappointed, nervous, insecure, ashamed, angry, and embarrassed). EC scores were computed using the negative acceleration

model (NAM; Scott, 1966) by applying the formula, $([2 \times S] + 1)/(S + L + 2)$, where S is the smaller and L is the larger mean affect rating.² Higher scores indicate greater EC.

Life satisfaction. Participants completed the SWLS (Diener, Emmons, Larsen, & Griffin, 1985), with items rated on a 1 (*not at all*) to 7 (*very much*) scale. Cronbach's alphas were .76 (Chinese) and .85 (Euro-Americans).

Results

There were no main effects or interactions involving gender. Therefore, gender is not discussed further.³

Manipulation check. Chinese participants ($M = 4.03$) scored higher on dialecticism (DSS) than did Euro-Americans ($M = 3.51$), $F(1, 98) = 9.39, p < .01, \eta^2 = .09$, as did participants in the prime ($M = 3.93$) vs. control ($M = 3.62$) conditions, $F(1, 98) = 3.30, p = .072, \eta^2 = .03$. There was no Culture \times Condition interaction.

Life experiences. Chinese participants in the prime condition rated the life experiences they wrote about as more positive ($M = 4.57$) than negative ($M = 3.10$), $F(1, 23) = 15.54, p < .001, \eta^2 = .40$, as did Euro-Americans ($M = 4.03, M = 3.21$), $F(1, 26) = 3.82, p = .062, \eta^2 = .13$. To examine the extent to which the life experiences were perceived as *both* positive and negative, an evaluative complexity score was computed (NAM method, with the positive and negative ratings as the S and L values). Chinese ($M = .70$) tended to rate the experiences as more evaluatively complex than did Euro-Americans ($M = .60$), $t(45) = 3.35, p = .074, \eta^2 = .07$.

EC. Chinese ($M = .76$) scored higher on EC than did Euro-Americans ($M = .70$), $F(1, 97) = 4.60, p < .05, \eta^2 = .05$, as did participants in the prime ($M = .76$) versus control ($M = .70$) conditions, $F(1, 97) = 4.69, p < .05, \eta^2 = .05$. There was no interaction.

Mediational analysis. In the mediational model, the predictor was culture (*Euro-American* = 0, *Chinese* = 1), the mediator was dialecticism (DSS), and the criterion was EC.⁴ Culture and dialecticism were significantly related, unstandardized $b = .50, p < .01$, as were dialecticism and EC, $b = .041, p < .01$. Nonparametric bootstrapping procedures (Preacher & Hayes, 2008) indicated that the mediated, indirect effect (culture \rightarrow dialecticism \rightarrow EC) was significant, $b = .020$ (95% confidence interval = .0039 to .047).

Correlational analyses. Similar to prior research (e.g., Bagozzi et al., 1999), there was a strong negative correlation between positive and negative affect among Euro-Americans, $r = -.61, p < .001$, but no association among Chinese, $r = -.018, ns$. These correlations differed significantly from each other, $z_{diff} = 3.44, p < .001$.

Life satisfaction. EC was strongly related to lower life satisfaction among Euro-Americans, $r = -.70, p < .001$, but weakly so among Chinese, $r = -.24, p = .084$, with $z_{diff} = 3.09, p < .001$.

Discussion

We examined whether dialecticism—a lay belief system prevalent in East Asian countries—accounts for cultural differences in EC. Two forms of evidence supported this hypothesis. Support for our causal claim that dialecticism gives rise to EC comes from the experimental manipulation. Specifically, we primed dialectical thinking among mainland Chinese and Euro-Americans and investigated its influence on the recall of positive/negative emotions experienced over the past few weeks. As predicted, increased dialecticism led to the greater co-occurrence of good/bad feelings (i.e., more complex, aggregate emotion reports). Evidence for the role of dialecticism in mediating cultural differences in EC (culture \rightarrow dialecticism \rightarrow EC) comes from the Baron and Kenny (1986)–type mediational analysis. As expected, Chinese scored higher on dialectical thinking and EC than did Euro-Americans, and a direct measure of dialectical thinking (DSS scores) mediated cultural variation in EC.

One might argue that our results are because of the induction of a negative mood state or a general negativity bias among East Asians (e.g., a greater tendency to recall negative life events or to tolerate negative emotions, such as shame or embarrassment; Kitayama et al., 2000). However, it is important to note that the Chinese participants rated their life experiences as significantly more positive than negative. Hence, the results are unlikely to be because of a negativity bias among Chinese.

This study demonstrates that aggregate, retrospective reports of good/bad feelings are influenced by culturally based lay belief systems, as captured by the DSS. Because psychological phenomena are often multiply determined, other factors likely contribute to these effects, and more research is needed on the various causes of EC. Another area of research that is ripe for further investigation is the mental health implications of EC across cultures. EC and life satisfaction were strongly correlated among Euro-Americans but weakly so among Chinese. In Western approaches, the co-occurrence of positive/negative affect or “mixed” feelings is conceptualized as an aversive, unnatural, relatively fleeting state that is associated with dissonance and discomfort (Goetz et al., 2008). EC may be more acceptable, comfortable, and long lasting for East Asians and have few, if any, detrimental consequences for psychological health.

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Declaration of Conflicting Interests

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Notes

1. These data are part of a larger cross-cultural study, portions of which have been reported elsewhere (Spencer-Rodgers, Peng, Wang, & Hou, 2004). However, the 2004 article is concerned with a different topic (self-esteem) from the one examined here (emotional complexity), and, consequently, there is no conceptual overlap with the current article.
2. For each individual, the participant's larger mean affect rating is categorized as the dominant response (L) and the smaller as the conflicting response (S). For example, if a participant's mean positive affect score is 7.5 and his or her mean negative affect score is 2.5, then positive affect is the dominant response (or vice versa). Participants who feel predominantly positive *or* predominantly negative emotions obtain relatively low complexity scores, whereas those who feel *both* types of emotions obtain higher scores.
3. Previous research has revealed gender differences in emotional complexity (Bagozzi et al., 1999). Therefore, in all analyses, gender was included as a factor or covariate. The moderated regression analyses also were conducted using culture, gender, and the interaction terms as predictors (i.e., positive affect was regressed on negative affect; life satisfaction was regressed on emotional complexity). In all analyses, there were no significant main effects or interactions with gender.
4. To maximize statistical power, the analysis was conducted using the total sample (collapsing across conditions). In the total sample, both culture (0 = *Euro-American*, 1 = *Chinese*) and the priming manipulation were related to greater emotional complexity, via their effects on dialectical thinking. Our goal in this analysis was to examine the unique effect of culture on emotional complexity, via its unique

effect on dialectical thinking, independent of the manipulation. Therefore, we included experimental condition (0 = control, 1 = prime) as a covariate in the bootstrapping analysis.

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