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The role of family expressiveness in American and Chinese adolescents' emotional experiences

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Abstract

To understand the role of family emotional socialization across cultural contexts, this research examined the associations between family emotional expressiveness and early adolescents' emotions in the United States and China. Two times over the course of one year, 566 American (n = 331) and Chinese (n = 235) adolescents (age range: 11-14 years) reported on their family members' emotional expressiveness, which was further categorized into three facets (i.e., positive, negative dominant, and negative submissive family expressiveness), and their own experience of positive and negative emotions. In both countries, positive family expressiveness (e.g., expressing excitement) was associated with adolescents' experience of positive emotions six months later, above and beyond their prior positive emotional experience. A between-country difference was evident in the association between positive family expressiveness and adolescents' experience of negative emotions, such that positive family expressiveness was associated with dampened negative emotions six months later among American but not Chinese adolescents. Negative dominant family expressiveness (e.g., expressing anger) was not associated with adolescents' emotional experience six months later in both countries. However, negative submissive family expressiveness (e.g., expressing sadness) foreshadowed reduced positive emotional experience only among American adolescents. Findings highlight the importance of culture in understanding the implications of family expressiveness for adolescents' emotional experiences.

Keywords: family, emotions, culture, adolescents, expressiveness

The Role of Family Expressiveness in American and Chinese Adolescents' Emotional Experiences

Family expressiveness refers to the predominant patterns of verbal and nonverbal conveyance of emotions among family members (Halberstadt, Cassidy, Stifter, Parke, & Fox, 1995). It is often considered an important predictor of children's socioemotional outcomes, in part because norms and expectations about emotional behaviors are transmitted through family interactions (Dunsmore & Halberstadt, 1997; Saw & Okazaki, 2010). Despite its purported significance, the role of family expressiveness during adolescence is relatively unclear, as a majority of the research in this area has focused on early childhood. Furthermore, research has primarily focused on parents' emotional expressivity, instead of the emotional expressiveness conveyed by all members of the family as a whole. Although parents play pivotal roles in children's emotional development (Klimes-Dougan & Zeman, 2007), other members of the family (e.g., siblings) can contribute to the construction of a general emotional climate that facilitates emotion socialization (Bai, Repetti, & Sperling, 2016). Importantly, given that parent-child interactions do not occur independently from the whole family system and that parent-child dyad is only one of the family subsystems (Cox & Paley, 1997), researchers argue that emotional socialization should be investigated within the family context as a whole, rather than focusing on a single socialization agent (e.g., Morris, Silk, Steinberg, Myers, & Robinson, 2007; Stocker, Richmond, Rhoades, & Kiang, 2007). To understand how early adolescents' emotional experiences are shaped by both the family and the broader cultural contexts in which they develop, this research evaluated the implications of different subtypes of family expressiveness for early adolescents' emotions in the United States and China over the course of one year.

Exchanges of Emotions in the Family

According to Family Systems Theory (Cox & Paley, 1997), children's emotional development is jointly shaped by various socialization agents, including parents, siblings, peers, and members of the larger community (see also Thompson & Meyer, 2007). Within the family context, the communication of emotions can serve as a guide for children's development of emotional expression, understanding, and regulation (Eisenberg, Cumberland, & Spinrad, 1998; Morris et al., 2007), as it facilitates emotion management through internal and external regulation (Halberstadt, Dennis, & Hess, 2011). Specifically, the exchanges of emotional expressions among family members can allow children to observe and experience emotions and provide them with opportunities to practice emotion modulation (Cole, Martin, & Dennis, 2004). As such, emotional exchanges in the family can function as regulatory systems that intensify, maintain, or alter children's emotions (Cole et al., 2004; Thompson, 2011). During adolescence, when the history of accumulated emotional exchanges within the family is increasingly internalized, emotion regulation may be less influenced by direct emotional socialization (e.g., coaching), compared to the childhood years (Klimes-Dougan & Zeman, 2007). In line with this idea, research has shown adolescents' emotions are modulated by the general emotional climate within the family (e.g., Bai et al., 2016; Mancini, Luebbe, & Bell, 2016).

Family Expressiveness and Children's Socioemotional Development

Family expressiveness is conceptualized as the general emotional climate co-constructed by all members of the family (Halberstadt, Crisp, & Eaton, 1999; Luebbe & Bell, 2014; Morris et al., 2007). Dunsmore and Halberstadt's (1997) theoretical model of family expressiveness posits that children develop expectations for how emotions are experienced and expressed in the family. These expectations are guided by norms regarding emotional expression, such as rules on the expression or suppression of emotions (Eid & Diener, 2001), as well as emotion

understanding (Cole, Tamang, & Shrestha, 2006). In addition, through exchanges of emotions within the family, children develop their interpretive schemas about emotions (Halberstadt et al., 2011), which can in turn facilitate their ability to evaluate their own and others' emotions (Dunsmore & Halberstadt, 1997).

Focusing on the implications of family expressiveness, researchers have examined the relations between emotional exchanges in the family and children's socioemotional development (e.g., Halberstadt & Eaton, 2002; Luebbe & Bell, 2014). Converging evidence indicates that positive family expressiveness (e.g., expressing excitement, praising) is associated with children's positive emotional experiences and expressiveness, social competence, self-esteem, and cognitive functioning (for a review, see Halberstadt et al., 1999; Morris et al., 2007). In addition, positive family expressiveness appears to be effective in buffering against psychological distress as children transition into middle school (Bronstein, Fitzgerald, Briones, Pieniadz, & D'Ari, 1993). Researchers argue that positive emotional climate may be linked to children's positive emotions, in part because positive emotions are elicited from positive family interactions including warm parenting (Luebbe & Bell, 2014; Morris et al., 2007). However, findings are somewhat mixed with regard to the implications of negative family expressiveness (e.g., blaming, crying). While some research has found a correlation between negative family expressiveness and negative affect or internalizing problems (e.g., Luebbe & Bell, 2014; Rabinowitz, Osigwe, Byrne, Drabick, & Reynolds, 2018), such a link is not evident in other studies (e.g., Are & Shaffer, 2016; Gao & Han, 2016).

To understand the role of negative family expressiveness in children's socioemotional outcomes, Halberstadt and colleagues postulate that differentiating between subtypes of negative family expressiveness is crucial. Specifically, *negative dominant* emotional expressiveness (e.g.,

showing anger or contempt, blaming, criticizing) should be differentiated from *negative submissive* emotional expressiveness (e.g., showing sadness or fear; Halberstadt et al., 1999; Halberstadt & Eaton, 2002), given disparities in the level of power dynamics involved in these two subtypes of negative emotional expressions. While negative submissive emotions reflect responsive and reactive expression, negative dominant emotions involve more assertive and active expression, thereby conveying a heightened sense of hostility (Bell, 1998; Halberstadt, 1986). Since exposure to negative dominant emotions may be perceived as threatening (Thompson & Meyer, 2007), the undermining effect of such emotions on child outcomes may be stronger than that of negative submissive emotions.

Despite the scarcity of empirical evidence on negative family expressiveness, researchers focusing on parental expressivity have stipulated on how the different subtypes of negative emotional expressiveness may influence children's socioemotional outcomes (e.g., S. H. Chen, Zhou, Eisenberg, Valiente, & Wang, 2011). For example, it has been argued that parents' negative dominant expressiveness can lead to dampened socioemotional functioning in children (Eisenberg et al., 1998), given that such emotions can elicit defensive or over-aroused reactions (Halberstadt & Eaton, 2002; Jones, Abbey, & Cumberland, 1998). Consistent with this notion, there is evidence that parents' negative dominant expressiveness is associated with children's externalizing problem (S. H. Chen et al., 2011), dampened effortful control (Eisenberg et al., 2001a), and reduced capability to cope with stress (Valiente, Fabes, Eisenberg, & Spinrad, 2004). However, findings are less conclusive for negative submissive expressiveness. As negative submissive emotions are less threatening and the function of negative submissive emotions includes eliciting empathy (Izard & Ackerman, 2000; Thompson & Meyer, 2007), this may facilitate children's development of socioemotional skills, such as emotional understanding.

Indeed, research has shown that parents' negative submissive expressiveness is associated with children's use of adaptive emotion regulation, such as problem-and emotion-focused strategies (Meyer, Raikes, Virmani, Waters, & Thompson, 2014). However, other research indicates that parents' expression of negative submissive emotions is associated with aggressive venting (e.g., Goodvin, Carlo, & Torquati, 2006) or externalizing behaviors (e.g., Eisenberg, Liew, & Pidada, 2001b) and that a family's negative submissive expressiveness may be related to rumination (e.g., Hilt, Armstrong, & Essex, 2012). Given that extant research has primarily focused on parental emotional expressivity, the role of negative family expressiveness remains unclear.

Culture and Family Emotional Expressivity

To understand variations in individuals' emotional experience, expression, and regulation, the roles of cultural norms and values (Eid & Diener, 2001; Ma, Tamir, & Miyamoto, 2018; Sims et al., 2015) as well as family emotion socialization practices (Campos & Kim, 2017; Cole et al., 2006) have been examined. Despite within-country variabilities in emotional expressions (Campos & Kim, 2017), studies reveal between-country differences in emotional display rules (e.g., Matsumoto et al., 2008; Safdar et al., 2009). In Western countries, such as the United States, open emotional displays are often deemed normative (Butler, Lee, & Gross, 2007). In contrast, in East Asian countries, an emphasis is placed on group harmony, social order, and cohesion, such that controlled and moderated emotions are often viewed as desirable (e.g., Butler et al., 2007; R. Y. M. Cheung & Park, 2010; Safdar et al., 2009). Additionally, in Western (vs. East Asian) cultures, positive emotions are valued, and negative emotions are devalued to a greater extent (Campos & Kim, 2017; Tsai, Louie, Chen, & Uchida, 2007). As such, individuals from Western countries tend to consider open expression of positive emotions as appropriate (Eid & Diener, 2001), whereas achieving a balanced emotional state, particularly

in public settings, is preferred in East Asian countries (Miyamoto & Ryff, 2011).

Cultural differences in valuation and normativeness of positive emotional expressivity are reflected in emotional socialization and family relationships. For example, East Asian parents tend to be more reserved in their emotional expressiveness, and parental warmth and support may not be displayed explicitly (Lim & Lim, 2003; McNeely & Barber, 2010). On the other hand, compared to East Asian families, Western families tend to show higher emotional expressivity, especially of positive emotions (Camras, Kolmodin, & Chen, 2008). Furthermore, parents in Western countries are more likely to encourage their children to recall positive emotional experiences, compared to parents in East Asia (for a review, see Halberstadt & Lozada, 2011; Yang & Wang, 2019). Given their cultural norms toward open expression of positive emotions, it is possible positive family emotional expressivity can provide children in Western cultural environments with more opportunities to experience and internalize norms of positive emotional expressivity. Additionally, cross-national research on emotional norms indicates that, perhaps unexpectedly, the expectations for individuals to follow cultural norms on emotional expressivity are stronger in the United States than China (Eid & Diener, 2001). Hence, deviation from these social norms on emotional expressivity may confer stronger effects on children's emotional outcomes in the United States than China.

To date, only a handful of cross-cultural research has examined the relations between family emotional expressiveness and children's socioemotional outcomes. These studies suggest that the prevalence and implications of family expressiveness for children's emotional development may vary across cultures. In one study, American families showed higher expressiveness of both positive and negative emotions than did Chinese families (Suveg et al., 2014). In this study, negative family expressiveness showed more robust associations with

Chinese children's emotional outcomes (e.g., negative emotions, emotion regulation). However, positive family expressiveness was related to children's emotion regulation only in the United States, suggesting that the role of positive emotional climate might be stronger in American cultures (Suveg et al., 2014). These findings add to the observation that low positive family expressiveness is not always associated with outcomes that have been viewed as detrimental, such as social anxiety, among Asian Americans (Morelen, Jacob, Suveg, Jones, & Thomassin, 2013). In another study, parents' positive emotional expressivity was associated with reduced externalizing behaviors, but higher self-regulation, sympathy, and peer popularity among children in the United States (Eisenberg et al., 2001a); however, these associations were not evident in Indonesia (Eisenberg et al., 2001b).

Overview of the Present Study

The present study aimed to investigate the associations between family expressiveness and early adolescents' emotions (i.e., experiences of positive and negative emotions) in the United States and China over the course of one year. Adolescence is an important developmental period for examining emotional socialization within the family, as it is marked by changes in biological and social experiences (Stocker et al., 2007) and emotional fluctuations (Arnett, 1999). Compared to children, adolescents also have more advanced understanding of display rules and are more sensitive to others' emotions (Blakemore & Mills, 2014; Thompson, Winer, & Goodvin, 2011), such that they may be more attuned to family members' emotional expressivity. Moreover, during adolescence, children's emotional processes are increasingly governed by goals and values in sociocultural contexts surrounding them (Thompson, 2011). Yet, research on emotional socialization during adolescence is limited, as prior research has mainly focused on younger children (Klimes-Dougan & Zeman, 2007).

Following prior practices, family expressiveness was categorized into three facets (i.e., positive, negative dominant, and negative submissive family expressiveness). This approach allowed for a more nuanced understanding of how subtypes of family expressiveness may be associated with adolescents' emotional experiences. Drawing on research on emotional socialization (Halberstadt & Eaton, 2002; Lozada, Halberstadt, Craig, Dennis, & Dunsmore, 2016; Luebbe & Bell, 2014; Mancini et al., 2016), we paid special attention to both valence-specific and cross-valence effects. For example, beyond examining the associations between positive family expressiveness and positive emotional experiences, the possible associations between positive family expressiveness and negative emotional experiences were examined. Given that the family emotional climate is often characterized by the expression of emotions of different valence, sometimes simultaneously (Tan & Smith, 2019; Thompson & Meyer, 2007), it is important that our analysis take into account cross-valence effects.

We focused on adolescents in the United States and China given the heterogeneity in emotional display rules (Matsumoto et al., 2008), as well as the relative importance of positive emotions (Joshanloo & Weijers, 2014), between these two countries. Although within-country variability in emotional socialization exists in both countries, researchers suggest that each society has a unique emotional environment, which is characterized by shared norms and guides for emotional display across situations (Eid & Diener, 2001). Thus, we expected that individuals in each group would have similar norms and values of emotions through families' exposure to shared cultural artifacts, such as the media (Cole et al., 2006; Tsai et al., 2007).

Researchers have also noted the importance of utilizing longitudinal designs in research on family expressiveness (e.g., Suveg et al., 2014), as the implications of emotional socialization tend to unfold over time (Zahn-Waxler, 2010). In addition, family expressiveness may contribute

to variations in adolescents' emotional experiences through longer-term processes, such as the gradual shaping of adolescents' emotion schemas (Dunsmore & Halberstadt, 1997) and development of emotion regulatory skills (Cole et al., 2004). Departing from the utilization of cross-sectional design characterizing much research in this domain (for an exception, see Bronstein et al., 1993), the current research provides a window into the associations between family expressiveness and adolescents' emotions across time.

Research Hypotheses

This research examined three main hypotheses:

1. Positive family expressiveness is associated with adolescents' experiences of heightened positive emotions and dampened negative emotions six months later.
2. The associations between positive family expressiveness and adolescents' emotional experiences are stronger in the United States than China.
3. In both countries, negative dominant family expressiveness is associated with dampened positive emotions and heightened negative emotions six months later.

We also explored the role of negative submissive family expressiveness but did not specify an a priori hypothesis, given that findings in the literature are mixed.

Method

Participants

Data reported in this study were drawn from a larger longitudinal study on adolescents' emotional and academic development in the United States and China (see Monroy, Cheung, & Cheung, 2019). Data were collected between 2014 and 2015, prior to the COVID-19 pandemic. The current analysis focused on data from the first two waves of the study, with a 6-month interval between the two waves. This timeframe was selected given that ratings of emotional

well-being often show fluctuation during this period of development, and a 6-month lag has been recommended to detect meaningful changes (Lerner, Schwartz, & Phelps, 2009). At Wave 1, participants were 331 American (127 boys and 194 girls) and 235 Chinese (143 boys and 92 girls) adolescents, ranging between 11 and 14 years of age. The American adolescents were recruited from an ethnically diverse region in the United States. Public demographic data of the school districts from which the samples were drawn indicated that 47% of the students in the school districts were Hispanic-Latino American, 23% were European American, 17% were African American, 8% were Asian American, and 5% were multi-race or unknown. The Chinese participants were ethnic *Han* Chinese. Both the American and Chinese samples were drawn from urban areas. In the two regions from which the American sample was drawn, the medians of yearly household income were $52,479 and $60,164 (U.S. Census Bureau, 2019), and in the region where Chinese sample was drawn, the median income was HK$302,400 (approximately US$39,006; Hong Kong Census and Statistics Department, 2017). The average attrition rate across waves was 22% (32% in the United States and 8% in China). Ten adolescents in the United States (3%) and 13 adolescents (4%) in China were excluded, as they did not provide data required for analysis in either wave. In both countries, the means of all of the main variables included in the analysis did not differ between the groups with and without complete data for both waves. The missingness was completely random as indicated by Little's MCAR test ($\chi^2(41) = 36.31$, *ns* in the United States; $\chi^2(5) = 2.28$, *ns* in China). The data that support the findings of this study are available from the corresponding author upon reasonable request.

Procedure

Adolescents in the United States were recruited from four middle schools and one summer program, and adolescents in China were recruited from five middle schools. An opt-in

procedure was used, such that participants were required to return a signed parental consent form and a personal assent form to be eligible for participation. Adolescents completed a survey during class time at two waves with a 6-month interval. In both countries, trained native researchers were present in the classrooms to provide instructions and answer questions during data collection. As a token of appreciation, adolescents in both the United States and China received a $5 gift card for each survey they completed. The procedures were approved by the institutional review boards of the University of California, Riverside and The Education University of Hong Kong.

To ensure confidentiality, completed surveys were placed in sealed envelopes before the researchers collected them. A portion (12%) of the American adolescents recruited from the summer program either completed the surveys at home and mailed the survey packet or took the survey online via *Qualtrics*. Personalized Uniform Resource Locators (URL's) were provided to participants who completed the survey online to ensure security and confidentiality. American adolescents who completed the survey online (n = 40 at Wave 1 and n = 29 at Wave 2) reported lower negative emotions at Wave 1, higher positive emotions at Wave 2, and lower positive family expressiveness at both waves than those who took the paper-and-pencil survey, ts > 1.99, ps < .05. Despite these mean-level differences, excluding the online survey group from the American sample did not change the pattern of findings in our main analysis (i.e., path models examining the associations between family expressiveness and emotional experiences), and the coefficients yielded were virtually the same.

Measures

The measures were originally created in English and were translated into Chinese and back-translated into English following the procedure outlined in Brislin (1980). Native speakers

from the research team discussed the translated versions to ensure validity (Erkut, 2010).

Family Expressiveness. The level of emotional expressiveness within the family was assessed with the Family Expressiveness Questionnaire (FEQ; Halberstadt, 1986). The FEQ assessed expressive situations in the family, which included 20 positive (e.g., "praising someone for good work", "thanking family members for something they have done"), 10 negative dominant (e.g., "blaming one another for family troubles"), and 10 negative submissive (e.g., "crying after an unpleasant disagreement") statements. Participants indicated how often each emotional expression occurred in their family, using a 9-point Likert scale (1 = *never/rarely*, 9 = *very frequently*). Prior research has established the validity of the family expressiveness scale among Chinese participants (e.g., Gao & Han, 2016; Suveg et al., 2014). In the current research, the scale was reliable at each wave in the United States (αs > .90 for positive, αs > .84 for negative dominant, and αs > .76 for negative submissive expressiveness) and China (αs > .90 for positive, αs > .83 for negative dominant, and αs > .68 for negative submissive expressiveness).

Adolescent Emotional Experiences. Two facets of adolescents' emotional experiences were assessed. Following prior research (Scollon, Diener, Oishi, & Biswas-Diener, 2004), retrospective reports of positive and negative emotional experiences were used. The current 34-item measure was adapted from Diener, Smith, and Fujita (1995) and Watson, Clark, and Tellegen (1988). Adolescents indicated on a 5-point Likert scale (1 = *never*, 5 = *very often*) the extent to which they experienced 16 positive (e.g., "happy", "joyful", "satisfied") and 18 negative (e.g., "depressed", "sad", "anxious") emotions in the past week. This measure has been used in prior cross-national research with American and Chinese adolescents (e.g., C. S. Cheung & Pomerantz, 2011). In the current research, the scale was reliable at each wave in both the United States (αs > .86 for positive and αs > .91 for negative emotions) and China (αs > .90 for

both positive and negative emotions).

Results

Two core sets of analyses were conducted. First, measurement invariance analysis was conducted to ensure that meaningful comparisons between the United States and China could be made. Second, autoregressive path models were evaluated to examine the associations between family emotional expressiveness at Wave 1 and adolescents' emotional experiences at Wave 2. Using nested model comparisons, we examined whether the strength of associations between family expressiveness and adolescents' emotions differed between the two countries. All analyses were conducted in Mplus 8.4 (Muthén & Muthén, 1998–2017), which utilizes full information maximum likelihood (FIML) estimation. FIML yields less biased estimates than other approaches, such as list- and pair-wise deletion, in handling the missing data (Graham, 2009).

Measurement Invariance

To assess metric invariance, two-group confirmatory factor analyses were conducted. Metric invariance is required to ensure that comparisons of the associations across the two countries are valid (F. F. Chen, 2008). For each variable, a latent construct was created using parcels comprising of four or five items that were determined randomly (for a discussion on the use of parcels, see Little, Rhemtulla, Gibson, & Schoemann, 2013).

The unconstrained model, where all parameters were freely estimated, was compared to a corresponding constrained model, where the factor loadings were specified to be equal between the two countries. To determine metric invariance, chi-square difference statistics ($\Delta\chi^2$) and the corresponding degrees of freedom (*df*) were used. A significant χ^2 difference relative to the difference in *df* between the constrained and unconstrained models is indicative of a lack of

metric invariance. As presented in Table 1, the fit of the constrained model did not differ significantly from the unconstrained model for all the measures at both Wave 1 and Wave 2, indicating that all measures used in this study had metric invariance. Scalar invariance was also examined by comparing the unconstrained and constrained models, where latent means were constrained to be equal between the two countries in the latter model. Results indicated that none of the measures attained scalar invariance. Given that the current study focused on the associations among the constructs, only metric invariance, but not scalar invariance, was required for making valid comparisons of the correlations between the two countries.

Descriptive Statistics and Concurrent Associations

The means and standard deviations of the key variables are presented in Table 2. At Wave 1, American adolescents reported higher negative dominant and submissive family expressiveness compared to their Chinese counterparts. Consistent with the prior findings comparing self-reported emotions in East Asian vs. Western countries (Safdar et al., 2009), at both waves, Chinese adolescents reported lower levels of positive emotions and higher levels of negative emotions than American adolescents. The lack of scalar invariance prevented further interpretations of the mean-level differences.

As shown in Table 2, valence-specific correlations (i.e., positive family expressiveness and positive emotions; two facets of negative family expressiveness and negative emotions) were evident at each wave in both countries. Interestingly, there was a cross-valence correlation in the United States at Wave 1, such that negative dominant family expressiveness was inversely associated with positive emotions. In China, there was an association between positive family expressiveness and negative emotions at Wave 2; in addition, negative submissive family expressiveness and positive emotions were associated at both waves.

Predicting Adolescents' Emotional Experiences

The associations between family expressiveness and adolescents' emotional experiences six months later were evaluated using path analysis (see Figure 1). Composite scores were used for each variable. In each model, family expressiveness at Wave 1 was specified to predict adolescents' emotional experiences at Wave 2. To account for autoregressive effects, adolescents' emotional experiences at Wave 1 was included in the models. In all models, gender (0 = *boys*, 1 = *girls*) was included as a covariate, given that girls tend to report higher emotional experiences (vs. boys) in general (e.g., Brody & Hall, 2008).

Three sets of analyses were conducted for each criterion variable, positive emotions (Models P1, P2, P3) and negative emotions (Models N1, N2, N3). We used an incremental approach, as it allowed for the examination of the non-contingent contributions of each subtype of family expressiveness (P1, P2 and N1, N2 models). To provide a test of simultaneous cross-valence effects, additional models taking into account the contributions of all subtypes of family expressiveness (P3 and N3 models) were evaluated. Alternative bidirectional models were also examined, with all cross-lagged paths considered, and results are reported in the Supplementary Materials.

Country differences were tested using two-group nested model comparisons. In each comparison, the unconstrained model was compared to a corresponding constrained model with equality constraints placed on the path coefficients of interest (i.e., the path from family expressiveness to emotional experiences) between the two countries. A significant chi-square difference ($\Delta\chi^2$) between an unconstrained and a more parsimonious constrained model indicates a between-country difference. Effect sizes were gauged using the magnitude of standardized path coefficients (Kelley & Preacher, 2012), based on Cohen's (1992) criteria.

Predicting Positive Emotions. In each model (i.e., Model P1, P2, P3), the association between family expressiveness and adolescents' positive emotions was evaluated. In the unconstrained models, adolescents' reports of family expressiveness at Wave 1 were specified to predict their positive emotions at Wave 2. In the constrained models, the path from family expressiveness to positive emotions was constrained to be equal across the United States and China. For each model, based on the χ^2 difference tests, a final model was selected. In addition, adolescents' experience of positive emotions at Wave 1 was included in the model as a predictor to account for autoregressive effects. All three final models fit the data adequately, CFIs > .98, TLIs > .95, RMSEAs < .066. A summary of all coefficients based on the final models is presented in Table 3.

Model P1, with only positive family expressiveness included as a predictor, indicated that the associations between positive family expressiveness and positive emotions did not differ between the two countries, $\Delta\chi^2(1) = 2.32$, *ns*. As shown in Table 3, in both countries, positive family expressiveness was predictive of adolescents' positive emotions, $\gamma = .19$ in the United States and .17 in China, *p*s < .001, six months later, adjusting for adolescents' prior levels of positive emotions. The effect size (i.e., the magnitude of standardized path coefficient) was small according to Cohen's criteria.

Model P2 included two negative family expressiveness dimensions (i.e., negative dominant and submissive) as predictors of positive emotions. Results indicated that negative dominant family expressiveness was not associated with positive emotions in both countries, γs = -.03 in the United States and China, *ns*, and the lack of association was similarly evident in the two countries, $\Delta\chi^2(1) = 2.30$, *ns*. The path coefficients between negative submissive family expressiveness and positive emotions differed between the two countries, $\Delta\chi^2(1) = 5.09$, $p < .05$.

However, similar to negative dominant expressiveness, the associations between negative submissive family expressiveness and positive emotions were not statistically significant in either country, γ = -.08 in the United States and .07 in China, *ns*.

Model P3 evaluated the simultaneous contributions of all subtypes of family expressiveness (see Figure 2, Panel A). Replicating the findings in Model P1 and P2, results indicated that the implications of both positive and negative dominant family expressiveness were similar across the United States and China, $\Delta\chi^2$s(1) < 1.31, *ns*, whereas the associations between negative submissive family expressiveness and positive emotions were marginally different between the two countries, $\Delta\chi^2(1) = 3.73$, $p = .05$. Positive family expressiveness predicted adolescents' positive emotions six months later, γ = .32 in the United States and .28 in China, *p*s < .001, and the associations between negative dominant family expressiveness and positive emotions were not significant, γ = .04 in the United States and .03 in China, *ns*. In the United States, negative submissive family expressiveness predicted dampened positive emotions six months later, γ = -.30, $p < .01$, with a small effect size as indicated by the magnitude of standardized path coefficient. However, this was not the case in China, where such an association was not statistically significant, γ = -.09, *ns*.

Predicting Negative Emotions. In each model (i.e., Model N1, N2, N3), the association between family expressiveness and adolescents' negative emotions was evaluated. In the unconstrained models, family expressiveness at Wave 1 was specified to predict adolescents' negative emotions at Wave 2. In the constrained models, the path from family expressiveness to negative emotions was constrained to be equal between the two countries. For each model, based on the χ^2 difference tests, a final model was selected. In addition, adolescents' experience of negative emotions at Wave 1 was included in the model as a predictor to account for

autoregressive effects. All three final models fit the data adequately, CFIs > .987, TLIs > .967, RMSEAs < .058. A summary of all coefficients based on the final models is presented in Table 4.

Model N1 included only positive family expressiveness as a predictor. Nested model comparisons indicated that the associations between positive family expressiveness and negative emotions were different between the United States and China, $\Delta\chi^2(1) = 5.28$, $p < .05$. As shown in Table 4, positive family expressiveness predicted dampened negative emotions six months later in the United States, $\gamma = -.18$, $p < .01$, with a small effect size. However, this was not the case in China, where such an association was not evident, $\gamma = .01$, *ns.*

In Model N2, negative dominant and submissive expressiveness were included as predictors. Nested model comparisons revealed that the implications of both negative dominant and submissive family expressiveness on negative emotions were similar across the two countries, $\Delta\chi^2$s(1) < 1.31, *ns*. Specifically, neither negative dominant nor submissive family expressiveness predicted negative emotions in either country, $\gamma = .10$ in the United States and .09 in China, *ns* for negative dominant, and $\gamma = -.04$ in the United States and -.03 in China, *ns* for negative submissive family expressiveness.

Model N3 included all three subtypes of family expressiveness as predictors (see Figure 2, Panel B). Nested model comparisons indicated that the implications of both negative dominant and submissive family expressiveness were similar across the United States and China, $\Delta\chi^2$s(1) < 0.39, *ns*, whereas the associations between positive family expressiveness and negative emotions differed across the two countries, $\Delta\chi^2(1) = 4.86$, $p < .05$. Consistent with Model N1, positive family expressiveness predicted dampened negative emotions six months later only among American adolescents, $\gamma = -.23$, $p < .001$, whereas such association was not evident in China, $\gamma =$

-.02, *ns*. Additionally, both facets of negative family expressiveness did not predict negative emotions in both countries, $\gamma = .07$ in the United States and .06 in China, *ns* for negative dominant, and $\gamma = .08$ in the United States and .07 in China, *ns* for negative submissive family expressiveness.

Discussion

Adding to the limited cross-national work on family expressiveness (e.g., Suveg et al., 2014), the current study examined the implications of different subtypes of family expressiveness for American and Chinese adolescents' emotions over the course of one year. Results indicated that positive family expressiveness was associated with adolescents' heightened positive emotions in both countries. However, differential associations between positive family expressiveness and negative emotions were found, such that positive family expressiveness predicted dampened negative emotions in the United States, but not in China. In addition, when other dimensions of family expressiveness were taken into account, negative submissive family expressiveness was predictive of dampened positive emotions in the United States only.

The discrepant findings on the implications of positive family expressiveness for positive and negative emotions are remarkable – they suggest that the role of positive family expressiveness may depend on the valence of children's emotions, as well as the larger cultural context in which adolescents reside. Consistent with much prior research based on Western samples (Bronstein et al., 1993; Halberstadt et al., 1999; Morris et al., 2007), positive family expressiveness was similarly conducive to adolescents' general positive emotional experiences, regardless of the cultural context. Although there are cross-cultural variations in the extent to which open acknowledgement of positive emotions is considered normative (Eid & Diener,

2001), findings from the current research suggest that the implications of positive family expressiveness on positive emotions may be culturally invariant. Hence, despite the mean-level differences in positive emotions between the two countries, the functional significance of positive emotions and positive family expressiveness can be largely similar.

In line with culture-specific views on family emotional processes, we found that positive family expressiveness foreshadowed dampened negative emotions among American but not Chinese adolescents. In the United States, family environments that promote open expression of positive emotions may be particularly effective in alleviating negative emotions among adolescents. Indeed, researchers have proposed that positive family expressiveness may enable individuals to be less defensive against negative emotions, which may in turn serve to mitigate distressed feelings (Halberstadt et al., 1999; Luebbe & Bell, 2014). This finding demonstrates the viability of cross-valence effects in family emotional expressiveness as evident in the United States. In addition, given that positive emotions are more valued and encouraged in American than in Chinese cultural context (Campos & Kim, 2017; Tsai et al., 2007), family environments that deviate from this norm (i.e., being low on positive family expressiveness) may be less conducive to relieving negative emotions for American adolescents. Indeed, Eid and Diener's (2001) cross-national studies suggest that the norms for positive emotions are stronger in the United States than China. Thus, deviations from such norms may be more disruptive to adolescents' emotional experiences in the United States.

Building on prior research (e.g., Are & Shaffer, 2016; Gao & Han, 2016), the current study investigated the role of both negative dominant and submissive family expressiveness in adolescents' emotional experiences. Findings indicate that the two facets of negative family expressiveness showed differential associations with adolescents' emotional experiences in the

two countries. Specifically, the association between negative submissive family expressiveness and positive emotions – a cross-valence effect – was only evident in the United States. As in the relations between positive family expressiveness and negative emotions, such a country difference may stem from social norms and values about emotion. Given that negative submissive emotions often are devalued in Western cultural contexts, such as the United States (e.g., Tsai, Knutson, & Fung, 2006), American adolescents' positive emotions may be impacted to a greater extent when they are exposed to a negative submissive emotional climate within the family. Notably, this association was evident when the role of positive family expressiveness was controlled for statistically (i.e., Model P3); negative dominant and submissive expressiveness alone did not reveal such differences in the association (i.e., Model P2). This finding suggests that as the three subtypes of family expressiveness likely coexist within the family, a wholistic understanding of the simultaneous effects of different emotional expressiveness can depict the dynamic emotional interchanges within the family more accurately and realistically. These findings also shed light on the importance of differentiating between expressing hostile negative emotions (e.g., contempt) and non-hostile negative emotions (e.g., sadness) in studies of family emotional processes (e.g., Halberstadt & Eaton, 2002).

It is notable that negative dominant family expressiveness did not predict adolescents' emotional experiences six months later. This is somewhat unexpected, as prior research on parents' expressivity demonstrated the role of negative dominant expressiveness in children's socioemotional outcomes, such as emotion regulation (e.g., Eisenberg et al., 2001a). However, in the current research, negative dominant family expressiveness was concurrently associated with negative emotions at all waves in both countries. These findings suggest that negative dominant family expressiveness may not exacerbate any preexisting levels of emotions among adolescents

over time, despite the co-occurrence of negative dominant family environments and adolescents' negative emotional experiences. Alternatively, the associations between negative dominant family expressiveness and adolescents' emotional experiences may be evident, if a more specific measure of emotional expressiveness was used (e.g., a sibling expressing anger toward the adolescent). Indeed, it has been suggested that adolescents' longer-term functioning can be undermined when hostile negative emotions are targeted toward them, given that such emotions can induce a sense of rejection and threat (Morris et al., 2007; Thompson & Meyer, 2007).

Although this research did not examine the mechanisms underlying the link between family expressiveness and adolescents' emotional experiences, it is possible that emotion regulatory skills serve as a viable mechanism. In Morris and colleagues' (2007) theoretical model, family contexts including general emotional climate are postulated to directly influence child outcomes, as well as indirectly through children's emotion regulation (e.g., problem solving, attention shifting). Hence, by constantly exposing adolescents to emotional situations and following coping strategies employed by family members, family expressiveness may influence adolescents' emotion regulation processes or strategies for emotion management, with competency in emotion regulation in turn affecting their emotional experiences. Beyond emotion regulation, adolescents' beliefs about emotions (e.g., goodness, controllability; Ford & Gross, 2019) or the normativeness of certain emotions can serve as an underlying mechanism. For example, theorists argue that children develop interpretive schemas about emotions based on repetitive emotional communications within the family, such that family expressiveness may shape children's beliefs, values, or perceived norms about emotions (Dunsmore & Halberstadt, 1997). As such, emotion beliefs may contribute to adolescents' chronic emotional experiences or habitual mood patterns (Ford & Gross, 2019).

Limitations and Future Directions

Findings from the current research should be interpreted in light of several limitations. First, the samples in our study did not fully reflect the demographic characteristics of the United States and China. In the current research, the American participants were from diverse cultural backgrounds, and there is evidence that family traditions and practices differ across ethnic groups (e.g., Brown, Craig, & Halberstadt, 2015; Saw & Okazaki, 2010). Similarly, in China, there are substantial regional differences in values and styles of interpersonal interactions (Talhelm et al., 2014), which could lead to differences in the display and experience of emotions within the family (Camras et al., 2008). A fruitful avenue for future research is to examine variations in the implications of family expressiveness across ethnic subgroups and geographical regions within countries. In addition, immigrant parents often endorse emotional socialization strategies that fit traditional values of their cultures of origin (Wang, 2013), and the implications of emotional socialization on child outcome may also depend on ethnicity and immigration status (McCord & Raval, 2016; Morelen et al., 2013). Hence, it would be beneficial to examine the contributions of cultural variables, including adolescents' and family members' ethnic-cultural identity, cultural scripts, and possible acculturation experiences, to further shed light on how family emotional expressiveness shapes adolescents' socioemotional outcomes. A recent longitudinal study demonstrates the value of such research through their investigation of how cultural orientations of immigrant parents and children contribute to parents' emotional expressivity (S. H. Chen & Zhou, 2019).

Second, our family expressiveness measure only assessed the frequency of emotional expressive situations within the family and relied on adolescents as the primary informant. Although adolescents' reports are effective in providing insights into their subjective evaluation

of the family emotional climate, their self-reports may be prone to bias. Utilizing multiple informants may be important for reducing reporter bias, given that the family emotional environment is multifaceted (Rabinowitz et al., 2018). In addition, Boyum and Parke (1995) recommend the use of family expressiveness measures that include a clarity dimension – that is, the extent to which emotions are clearly conveyed to their receiver. These researchers argue that the clarity dimension can add important information beyond simply focusing on the frequency of expressive events in the family.

Third, this research conceptualized positive emotions and negative emotions as two distinct dimensions of emotionality. As such, our measure did not focus on specific discrete, as well as mixed or dialectical, emotions. There is evidence that dialectical emotions are more prevalent among East Asian individuals than Western individuals (e.g., Miyamoto & Ryff, 2011), suggesting that negative emotions do not necessarily imply psychosocial maladjustment in some cultures (Ma et al., 2018). Researchers have also noted the importance of incorporating arousal level (e.g., Tsai et al., 2006) and self-construal (independence vs. interdependence; e.g., Kitayama, Mesquita, & Karasawa, 2006) in operationalizing emotions. Future research using more refined measures of emotional experiences would provide valuable insights into the relations between family emotional expressiveness and adolescents' emotional outcomes.

Conclusions

This research provided new insights into the role of family expressiveness in adolescents' emotional experiences. Although negative dominant family expressiveness was not associated with American and Chinese adolescents' emotional experiences six months later, positive family expressiveness was predictive of their positive emotions within the same time frame. Consistent with culture-specific views of emotions, positive family expressiveness predicted dampened

adolescents' negative emotional experiences in the United States, but not in China. In addition, negative submissive family expressiveness predicted dampened positive emotions among adolescents in the United States, but not in China. These findings suggest that cross-valence effects of family expressiveness were particularly salient in the United States, compared to China. Taken together, the current study highlights the importance of positive family expressiveness in adolescents' emotional experiences and underscores the value of extending research in this area to diverse cultural milieus.

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Table 1

Summary of Fit Indices and Model Comparisons for the Measurement Invariance Analysis

Model	Wave 1						Wave 2					
	χ^2	*df*	CFI	TLI	RMSEA	$\Delta\chi^2$	χ^2	*df*	CFI	TLI	RMSEA	$\Delta\chi^2$
Positive Family Expressiveness												
1. Unconstrained	10.59	4	.995	.984	.080		1.35	4	1.00	1.01	.000	
2. Metric Invariance	18.17	7	.991	.985	.078	7.58	4.00	7	1.00	1.01	.000	2.65
Negative Dominant Family Expressiveness												
1. Unconstrained	7.29	4	.996	.987	.056		7.22	4	.996	.988	.061	
2. Metric Invariance	12.28	7	.993	.988	.054	4.99	10.60	7	.995	.992	.049	3.38
Negative Submissive Family Expressiveness												
1. Unconstrained	2.19	4	1.00	1.01	.000		2.40	4	1.00	1.02	.000	
2. Metric Invariance	3.11	7	1.00	1.01	.000	0.92	5.00	7	1.00	1.01	.000	2.60
Positive Emotions												
1. Unconstrained	9.42	4	.995	.985	.071		6.47	4	.997	.992	.053	
2. Metric Invariance	11.35	7	.996	.993	.048	1.93	13.25	7	.993	.989	.064	6.78
Negative Emotions												
1. Unconstrained	8.89	4	.996	.989	.067		6.22	4	.998	.994	.051	
2. Metric Invariance	15.17	7	.994	.989	.066	6.28	6.41	7	1.00	1.00	.000	0.19

Note. df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation.

Table 2

Associations Among All Variables Under Study

	Positive FE		Negative Dominant FE		Negative Submissive FE		Positive Emotions		Negative Emotions	
	1	2	3	4	5	6	7	8	9	10
Positive FE										
1. Wave 1	–	.60**	.02	-.11	.53**	.24**	.56**	.48**	.05	.02
2. Wave 2	.39**	–	.06	.19**	.29**	.59**	.42**	.56**	-.02	.18**
Negative Dominant FE										
3. Wave 1	.13*	-.01	–	.57**	.53**	.35**	-.07	-.08	.43**	.34**
4. Wave 2	-.10	.24**	.43**	–	.22**	.62**	.00	-.08	.22**	.36**
Negative Submissive FE										
5. Wave 1	.56**	.23**	.56**	.19**	–	.43**	.21**	.17*	.45**	.30**
6. Wave 2	.16*	.56**	.14	.64**	.29**	–	.15*	.20**	.22**	.41**
Positive Emotions										
7. Wave 1	.43**	.23**	-.21**	-.27**	.09	-.07	–	.53**	-.11	-.06
8. Wave 2	.30**	.39**	-.10	-.08	-.03	.04	.52**	–	-.13	.05
Negative Emotions										
9. Wave 1	-.03	-.04	.32**	.27**	.31**	.24**	-.11	-.18*	–	.50**
10. Wave 2	-.14	-.02	.23**	.36**	.14*	.40**	-.23**	-.29**	.62**	–
Mean (*SD*)										
U.S.	6.33	6.29	4.50	4.56	5.61	5.48	3.77	3.77	2.48	2.51
	(1.34)	(1.32)	(1.56)	(1.54)	(1.49)	(1.42)	(0.65)	(0.61)	(0.70)	(0.69)
China	6.25	6.22	4.09	4.66	5.04	5.40	3.42	3.33	2.65	2.72
	(1.37)	(1.23)	(1.49)	(1.53)	(1.34)	(1.31)	(0.75)	(0.70)	(0.73)	(0.71)
t	0.68	0.54	3.02**	-0.67	4.53***	0.61	5.73***	6.87***	-2.65**	-3.04**

Note. Correlations for the American sample are presented below the diagonal, and correlations for the Chinese sample are presented above the diagonal. Responses for the Family Expressiveness (FE) measure range from 1 to 9. Responses for the Positive and Negative Emotions measure range from 1 to 5.

*$p < .05$, **$p < .01$, ***$p < .001$, two-tailed.

Table 3

Associations between Family Expressiveness at Wave 1 and Adolescents' Positive Emotions at Wave 2

	Model P1		Model P2		Model P3	
Predictors	U.S.	China	U.S.	China	U.S.	China
Wave 1 Positive Emotions	.41***	.44***	.50***	.52***	.39***	.40***
Wave 1 Positive FE	.19***	.17***	–	–	.32***	.28***
Wave 1 Negative Dominant FE	–	–	-.03	-.03	.04	.03
Wave 1 Negative Submissive FE	–	–	-.08[a]	.07[a]	-.30[a]**	-.08[a]
Gender	-.09	-.03	-.08	-.02	-.09	-.03
Model fit indices						
CFI	0.99		0.98		1.00	
TLI	0.97		0.95		1.02	
RMSEA	0.06 [90% CI: 0 – 0.16]		0.07 [90% CI: 0 – 0.15]		0 [90% CI: 0 – 0.10]	

Note. FE = Family Expressiveness. All estimates are standardized from the final path models. In each model, adolescents' positive emotions at Wave 1 was included to account for autoregressive effects; gender (0 = *boys*, 1 = *girls*) was included as a covariate.

[a] Coefficients differed between the United States and China.

** $p < .01$, *** $p < .001$.

Table 4

Associations between Family Expressiveness at Wave 1 and Adolescents' Negative Emotions at Wave 2

	Model N1		Model N2		Model N3	
	U.S.	China	U.S.	China	U.S.	China
Wave 1 Negative Emotions	.57***	.53***	.53***	.50***	.51***	.48***
Wave 1 Positive FE	-.18$_a$**	.01$_a$	–	–	-.23$_a$***	-.02$_a$
Wave 1 Negative Dominant FE	–	–	.10	.09	.07	.06
Wave 1 Negative Submissive FE	–	–	-.04	-.03	.08	.07
Gender	.16**	.12*	.16**	.11	.17**	.11
Model fit indices						
CFI	1.00		0.99		1.00	
TLI	0.99		0.97		1.01	
RMSEA	0.04 [90% CI: 0 – 0.19]		0.06 [90% CI: 0 – 0.14]		0 [90% CI: 0 – 0.11]	

Note. FE = Family Expressiveness. All estimates are standardized from the final path models. In each model, adolescents' negative emotions at Wave 1 was included to account for autoregressive effects; gender (0 = *boys*, 1 = *girls*) was included as a covariate.

[a] Coefficients differed between the United States and China.

*$p < .05$, **$p < .01$, ***$p < .001$.

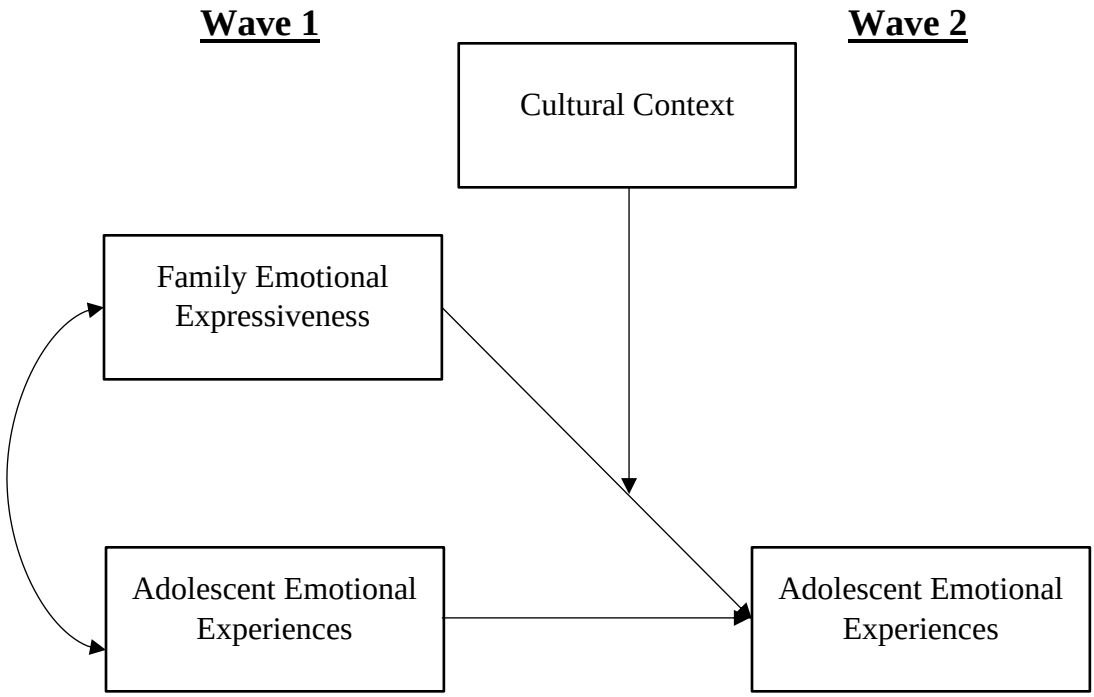

Figure 1. Conceptual model of the relation between family expressiveness at Wave 1 and adolescent emotional experiences at Wave 2, with cultural context serving as a moderator.

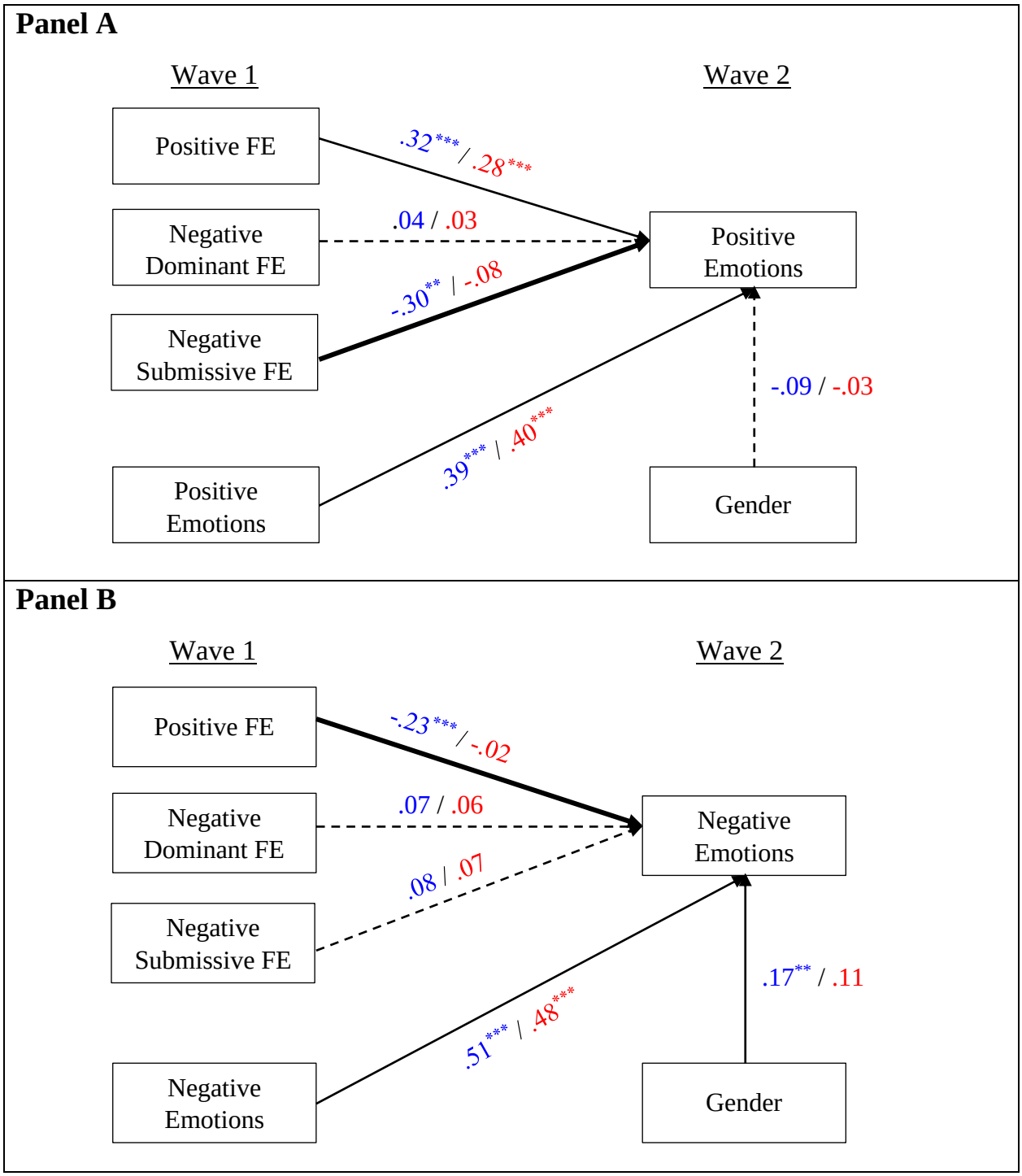

Figure 2. Results from autoregressive models showing the associations between the three facets of family expressiveness (FE) at Wave 1 and positive emotions (Model P3; Panel A) and negative emotions (Model N3; Panel B) at Wave 2. Emotional experiences at Wave 1 and gender (0 = *boys*, 1 = *girls*) were adjusted for statistically. Standardized estimates from the final models are presented. Coefficients for the American and the Chinese sample are highlighted in blue and red, respectively. Bolded lines denote the significant between-country differences.
$^{**}p < .01$, $^{***}p < .001$.