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Longitudinal Relations of Cultural Orientation and Emotional Expressivity in Chinese American Immigrant Parents: Sociocultural Influences on Emotional Development in Adulthood

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Abstract

Research in developmental psychology has traditionally focused on parents' roles as agents of emotion socialization in their children's socioemotional development. By contrast, little longitudinal research has examined sociocultural mechanisms shaping parents' own emotional development. Immigrant parents are an ideal population in which to examine these processes and advance conceptual models of culture and continuing emotional development in adulthood. Using developmental functionalism and bioecological models of development as theoretical frameworks, the present study examined how immigrant parents' and children's cultural orientations were prospectively related to parents' self-reported emotional expressivity in the family context. Chinese American immigrant parents ($n = 210$) with elementary-aged children were assessed at two time points approximately two years apart. Path analyses using longitudinal panel models indicated that immigrant parents' cultural orientation in various cultural domains (language, social relationships, media) prospectively predicted their emotional expressivity in the family context. Parents' emotional expressivity was also predicted by children's cultural orientation and by discrepancies between their own and their children's cultural orientations. Our results underscore pathways through which immigrants' interactions with the family and broader sociocultural context can contribute to continued emotional development in adulthood. We discuss implications of our findings for developmentally-informed approaches to the study of culture and emotion.

Keywords

Emotion; acculturation; adult development; immigrant families

As central agents of emotion socialization in the family, parents use a variety of emotion-related behaviors to convey expectations, values, and beliefs regarding their children's emotional processes. They may provide models of emotional expression, discuss their expectations for emotion regulation, or respond to children's emotional states (Eisenberg,

Cumberland, & Spinrad, 1998). The family environment, and the parent-child relationship in particular, serves as a primary vehicle for transmitting and acquiring culture-specific norms of emotional expression (Thompson & Meyer, 2007). Thus, examining emotion socialization processes in the context of the family provides a window into the process through which cultural variations across individuals or groups begin to emerge (Camras, Shuster, & Fraumeni, 2014).

To-date, research in developmental psychology has focused disproportionately on emotion socialization in childhood and on parents' roles as agents of emotion socialization. By comparison, little research has extended these investigations to adulthood or examined mechanisms influencing parents' own emotional processes. As adults undergoing cultural change, immigrant parents provide an ideal population with which to advance conceptual models of emotional development in adulthood. However, as limited research has examined these processes within this population, it remains unknown how different sociocultural experiences in adulthood influence immigrant parents' emotional processes in the family context (Camras et al., 2014).

Our previous research (Chen, Zhou, Main, & Lee, 2015) found concurrent associations between immigrant parents' expression of emotion in the family and their *cultural orientations* – individuals' affiliations and engagement with the ethnic and/or majority cultures (Tsai, Chentsova-Dutton, & Wong, 2002; Ying, Lee, & Tsai, 2000). However, prospective relations among these constructs have not been examined. Furthermore, research on emotion socialization processes in immigrant families has yet to test bidirectional models of cultural transmission and examine the potential effects of children's cultural orientation on parents' emotional expression. A longitudinal study of immigrant parents' emotional processes can highlight the sociocultural and familial mechanisms that contribute to continued emotion development in adulthood.

To address these gaps in the literature, the present study utilized data from a two-wave longitudinal study of Chinese American immigrant parents and their children, beginning when children were in first and second grade and continuing two years later. The aims of the study were: (1) to examine the prospective relations between immigrant parents' host and heritage cultural orientations and their emotional expressivity in the family context; and (2) to examine how parents' and children's cultural orientations uniquely, prospectively, and interactively predict parents' emotional expressivity.

Relations between Cultural Orientation and Emotional Expression

A rich body of theoretical and empirical research suggests that members of different cultural groups vary in their emotional expression. These cross-cultural differences have been highlighted most prominently in contrasts of Asian and European American populations. Seminal studies suggest that members of more collectivist cultures emphasize a general restraint or control of emotions in the interest of maintaining group harmony, while members of more individualist cultures emphasize open expression of emotion in the interest of emphasizing individual rights (Markus & Kitayama, 1991; Oyserman, Coon, & Kimmelmeier, 2002; Russell & Yik, 1996). Consistent with these views, two extensive

cross-national surveys by Matsumoto and colleagues (2008a; 2008b) found that endorsements of emotional expression were positively associated with values of individualism, while emotional suppression was highly associated with cultural values of embeddedness – a concept emphasizing the individual’s identity, relationships, and goals within a group setting (Matsumoto, Yoo, Fontaine et al., 2008; Matsumoto, Yoo, & Nakagawa, 2008; Schwartz, 2004).

Biocultural models of emotion (Buck, 1984; Hinton, 1999; Levenson et al., 2007) posit that these cultural influences on emotional expression may be observed primarily among self-reported, rather than observed components of emotional expression (e.g., facial expressions). Specifically, these models suggest that adherence to culture-specific expectations of emotional expression requires voluntary control, which is present to a higher degree in self-reported, rather than observed components of emotional expression (Buck, 1984; Levenson et al., 2007). As such, self-reports of emotion may be culture-specific and differ between members of different cultures, while facial expression and physiological emotional response may be more universal across cultural groups.

Support for the biocultural model has been well-documented, particularly in cross-cultural comparisons of European American and Asian American groups. European American and Asian Americans differed in self-reports of their current emotional experience (Tsai & Levenson, 1997; Tsai, Levenson, & Carstensen, 2000), as well as in self-reported *expressivity* – a “persistent pattern or style of exhibiting facial, body, vocal, and verbal expressions that are often but not exclusively emotional in nature” (Halberstadt et al., 1999, p. 110). In particular, previous research on culture and emotion has examined parents’ patterns of expressivity within the context of the family. In contrast to emotions expressed in dyadic family interactions (e.g., marital interactions, parent-child interactions), parental expressivity in the family context has been operationalized as a parent’s broader pattern of emotional expression across relationships and family situations (Camras et al., 2008; Halberstadt et al., 1999), and is thus theorized to contribute to the overall emotional climate in the home. Indeed, previous research with Asian and Asian American immigrant families has found parental expressivity in this broader family context to be related to, but distinct from, parents’ emotion in dyadic family relationships (i.e., parent-child interactions) (Chen et al., 2011; Chen et al., 2015).

In describing their own patterns of emotional expressivity within the family, European American mothers report expressing positive emotions more frequently than Mainland Chinese and Chinese American mothers (Camras, Chen, Bakeman, Norris, & Cain, 2006; Camras, Kolmodin, & Chen, 2008). In addition, cross-sectional analysis with the present sample indicated that parents’ orientations to Chinese or American culture were primarily associated with their self-reported emotional expressivity (e.g., self-reported positive expressivity was positively associated with English media use, and negatively associated with Chinese media use), whereas cultural orientations were unrelated to parents’ observed emotional expression during a parent-child interaction task (Chen et al., 2015).

Emotional Development in Immigrant Parents

Two theoretical frameworks of emotional development in adulthood inform our investigation of culture and emotional expressivity among immigrant parents. First, developmental functionalism (Consedine, 2011; Consedine & Magai, 2006; Consedine & Mauss, 2014), a lifespan theory of emotional development, proposes that the functions of discrete emotions vary across the lifespan in accordance with developmental changes in an individual's tasks, challenges, and opportunities. During early to middle adulthood, for example, the tasks and challenges of parenthood include modeling adaptive emotional expression for children, responding to children's emotional reactions, and contributing to the overall emotional climate of the family (Eisenberg, Cumberland, & Spinrad, 1998; Morris et al., 2007). A developmental functionalist perspective also suggests that emotional targets – e.g., an ideal emotional state (Tsai et al., 2006) – may vary over the course of the lifespan in accordance with culturally-shaped goals (Consedine, 2011). For immigrant parents, these emotional goals may be influenced by both their own and their children's cultural orientations, which may shift over the course of the lifespan (Pitman, Eisikovits, & Dobbert, 1989; Trommsdorff, 2009). Immigrant parents whose children are regularly engaged in the host culture, for instance, may model patterns of emotional expression that are preferred and viewed as adaptive within this culture.

Finally, developmental functionalism also proposes that changes in emotional processes over the course of adulthood are linked to changes in individual capacities, which include both biological capacities (e.g., cognitive function, executive processes, physiological reactivity) and learned, or acquired capacities (e.g., emotional awareness, situational knowledge, cultural referencing) (Consedine & Mauss, 2014; Tuck, Mauss, & Consedine, 2014). While a number of studies have used a developmental functionalist framework to examine changes in biological capacities over the course of adulthood (Tuck, et al., 2014; Magai, Consedine, Krivoshekova, McPherson, & Kudadjie-Gyamfi, 2006), to our knowledge, no previous research has specifically tested the effects of cultural orientations within the developmental functionalism framework. In addition, while developmental functionalism highlights parenthood as a central adaptive task in adulthood (Consedine, 2011), no research to-date has applied a developmental functionalist perspective to parents' emotional development.

A second theoretical model, Bronfenbrenner's bioecological model of human development (Bronfenbrenner & Morris, 2006) provides theoretical support for three mechanisms that can influence emotional development in adulthood. First, the process component of the bioecological model postulates that direct, reciprocal transactions between individuals and their immediate environment (i.e., "microsystem"-level influences) are primary influences on an individual's development. Thus, it is likely that parents' emotional expressivity may be influenced by their direct engagement in specific cultural domains, such as language, media, and friendships. In support of this theory, our previous work with the present sample indicated that parents' English fluency and use of English media were positively associated with their self-reports of emotional expressivity in the family context (Chen et al., 2015).

Second, the contextual component of the bioecological model suggests that individuals may be influenced by factors in the *exosystem*, a context linking the individual's immediate

context to one in which s/he is not directly engaged. Thus, an immigrant parents' emotional expressivity may be influenced not only by his or her own engagement with language, media, or social relationships, but also by their children's engagement with these domains. From early childhood to adolescence, cultural transmission in the family is conceptualized as primarily unidirectional, with parents transmitting cultural values, behaviors, and expectations to their children (Trommsdorff, 2009). Within Western societies, this direction of cultural transmission has been theorized to shift in adolescence, during which "adolescents' adoption of changing cultural values can initiate a change in the direction of transmission, thereby effecting changes in the values, beliefs, and behavior of their parents" (Trommsdorff, 2009, p. 135). In immigrant families, where children often acculturate to the host culture more quickly than their parents and serve as their families' "cultural brokers" (Birman & Trickett, 2001; Jones, Trickett, & Birman, 2012), it is possible that these child-directed changes in cultural transmission can be observed even prior to adolescence (Orellana, Dorner, & Pulido, 2003). In particular, middle childhood has been suggested as a developmental period in which children of immigrants become increasingly aware of multiple social contexts and their stratifications within mainstream society (Coll & Szalacha, 2004). As such, immigrant parents' emotional expressivity may be influenced not only by their own, but also by their children's cultural orientations in middle childhood, such that children's higher orientation to American culture would be associated with increased parental expressivity.

Finally, a central tenet of the bioecological model is its emphasis on the interactions between contextual systems. For example, immigrant parents' patterns of emotional expressivity may be influenced by their own cultural orientation (a microsystem-level factor), their child's cultural orientation (an exosystem-level factor), as well as by an interaction between these two systems. Previous research with immigrant families has characterized these interactions between parents' and children's cultural orientations as intergenerational acculturation gaps that have unique effects on family psychological functioning, above and beyond parents' or children's individual cultural orientations (Chen, Hua, et al., 2014; Costigan & Dokis, 2006). Applied to the present study, it is likely that these intergenerational gaps in cultural orientations may serve a similar function in moderating the effects of parents' and children's individual cultural orientations and parents' emotional expression. For example, parents' higher orientation to American culture may be associated with higher expressivity primarily among families in which children are also highly oriented to American culture.

The Present Study

Using developmental functionalism and bioecological models of development as theoretical frameworks, the present study examined the prospective associations between parents' and children's cultural orientations and Chinese American immigrant parents' emotional expressivity in the family context (i.e., among immediate and extended family members in household). Chinese American immigrant parents provide a unique population in which to examine the sociocultural and interpersonal mechanisms of emotion socialization in adulthood. In addition to being one of the largest and fastest-growing foreign-born populations in the United States, Chinese Americans are striking in their acculturative diversity: foreign-born Chinese American immigrants constitute over 60% of the Chinese

American population, and nearly 50% of Chinese American adults are limited in their English proficiency (Lopez, Ruiz, & Patten, 2017). By investigating relations of cultural orientation and expressivity in a Chinese American immigrant sample, the present study was able to examine how orientations to a host culture (i.e., American) and the culture of origin (i.e., Chinese) culture were uniquely associated with parents' emotional expressivity.

First, we hypothesized that Chinese immigrant parents' cultural orientations would be prospectively associated with their self-reported expressivity in the family context, such that higher orientation to American culture would be positively associated with expressivity, while higher orientation to Chinese culture would be negatively associated with expressivity. Second, based on the bidirectional models of cultural transmission in the family, and the potential for child-driven effects of cultural transmission in middle childhood, we hypothesized that parents' self-reported expressivity would also be prospectively influenced in the same directions by children's orientations to American and Chinese cultural domains. Third, based on the research on parent-child cultural orientation gaps in immigrant families, we hypothesized that parents' and children's cultural orientations would interact in relation to parental expressivity, such that parents' American orientation would be associated with higher expressivity only when children were also higher in American orientation, and parents' higher Chinese orientation would be associated with lower expressivity only when children were also higher in Chinese orientation.

Method

Participants

Data were collected from an ongoing longitudinal investigation seeking to identify risk and protective factors in the socioemotional and academic development of first-generation (i.e., born outside the United States) and second-generation (i.e., born in the United States) Chinese American immigrant children and their parents. The following conditions were set as eligibility criteria for the study: (a) the child was in first or second grade at the time of screening; (b) the child lived with at least one of her/his biological parents; (c) both biological parents identified as ethnic Chinese; (d) the child was either a first generation (born outside the U.S.) or a second generation (born in the U.S. with at least one foreign-born parent) Chinese American; and (e) the parent and child were able to understand and speak English or Chinese (Mandarin or Cantonese). Families with more than one child meeting eligibility criteria were given the option of enrolling each eligible child. 258 eligible families completed the 2.5-hour laboratory assessment. 63.6% were recruited through community recruitment fairs, 17.4% through school events, and 19% were recruited through community referrals. As reported in previous research with this sample (Lee et al., 2014), examination of tract-level Census data indicated that approximately twenty-five percent of families lived in neighborhoods with Asian densities greater than 50%, while approximately 25% percent lived in neighborhoods with Asian densities less than 20%. The majority of families (68%) lived in neighborhoods with poverty rates lower than 20%, while a minority of families (4%) lived in neighborhoods with poverty rates greater than, or equal to 4%. To control for baseline levels of parent expressivity, analyses for the present study included only those families in which the same parent participated at both waves of assessment (n=210).

Parent characteristics.—Among parents participating in the assessment, 178 (84.8%) were mothers, and 32 (15.2%) were fathers. All participating parents identified as their child's biological parents. On average, parents were 39.21 years old ($SD = 5.06$) at the time of initial assessment.

At Time 1, all participating parents identified as either Chinese or Chinese-American. The majority of the participating parents (97.6%) were born outside of the United States, with 75.7% born in Mainland China, 10.0% born in Hong Kong, 5.7% born in Vietnam, 3.3% born in Taiwan, 1.9% born in Burma, 1% born in Singapore, and 0.5% born in Cambodia. Parents' reasons for immigrating to the United States included: joining family members ($n=99$, 47.1%), seeking better education/opportunities for their children ($n=64$, 30.5%), being brought by family members ($n=62$, 29.5%), marriage ($n=38$, 18.1%), seeking a better job or income ($n=34$, 16.2%), and educational opportunities for themselves ($n=32$, 15.2%). A small number of participating parents ($n=5$, 2.4%) reported immigrating to the United States to leave political or personal problems. At the time of initial assessment, parents had spent an average of 13.5 years ($SD=7.62$), or 29.65% of their lives in the United States ($SD=18.42$).

At both Time 1 and Time 2, parents had a mean level of 13.3 years of education ($SDs = 2.4$ and 2.9, respectively). At Time 1, the majority of participating parents (60.8%) were employed full-time. An additional 13.3% were employed part-time, unemployed and not looking for work (24.4%) or unemployed and looking for work (8.3%). At Time 2, 82.0% of parents were employed full time, 4.6% were employed part time, 5.6% were unemployed and not looking for work, and 4.1% were unemployed and looking for work.

Attrition analyses.—Of the families who had participated in Time 1 assessments, 230 also had data on Time 2 assessments of the main variables included in this study. Attrition analyses were conducted to compare families who completed both waves of assessment ($n = 230$) to those who completed only Time 1 assessments ($n = 28$). These two groups of parents did not differ significantly on either demographic variables (i.e., child gender, child grade, child age, participating parent gender, parent education or family income) or on the main variables used in the present study (i.e., parent and child cultural orientation and parent expressivity). Of these 230 families, 210 had the same parent participating at both Time 1 and Time 2 and were included in the analyses.

Child characteristics.—Children (51% boys) were between 5.8 years and 9.1 years old at Time 1 ($M = 7.4$ years, $SD = .72$). At Time 1, most children were in either first (44.8%) or second (54.3%) grade, while two children were in third grade (1%). The majority of children in the present sample (75%) were second-generation Chinese American immigrants (i.e., born in the United States). The remaining children were born in mainland China (21.6%), Hong Kong (1.9%), Macau (0.5%), Vietnam (0.5%), and England (0.5%).

Family characteristics.—At Time 1, each household had an average of 1.97 children ($SD = .64$), including the child assessed in the present study, and 2.51 adults ($SD = 1.17$), including the adult assessed in the present study. At Time 2, each household had an average of 2.07 children ($SD = .69$), including the child assessed in the present study, and 2.36 adults

($SD = 1.03$), including the adult assessed in the present study. Ten families had two children (i.e., sibling pairs) participating in the present study. Because these families only represented a small portion of families in the sample ($< 10\%$) had more than one children participating (and maximum 2 kids per family), single-level rather than multi-level analysis was used to test study hypotheses.

The average number of household members (i.e., adult and child relatives who lived with the family and had no other home) was 4.48 at Time 1 and 4.44 at Time 2 ($SDs = 1.32$ and 1.24 , respectively). Estimated per capita income ranged from \$625 to over \$50,000 at Time 1 ($M = \$11,432.74$, $SD = \$8,237.97$), and ranged from \$1,000-\$33,333.33 at Time 2 ($M = \$11,653.57$, $SD = \$8035.46$). Based on parents' reports, 58.1% of children at Time 1 and 60.8% at Time 2 were eligible for free or reduced lunch at their schools, a commonly used index of family socioeconomic status (Sirin, 2005).

At Time 1, most participating parents ($n = 130$, 61.9%) reported speaking only Chinese to their children in the home. A smaller percentage ($n = 71$, 33.4%) reported speaking both Chinese and English to their children, while only 6 parents (2.9%) reported speaking only English to their parents in the home. In contrast, based on parents' reports, a majority of children ($n = 107$) spoke both Chinese and English to the participating parent, 36.2% ($n = 76$) spoke exclusively Chinese, and 10.5% ($n = 22$) spoke exclusively English.

Procedure

All research procedures at both time points were approved by the Institutional Review Board at the University of California, Berkeley (CPHS Protocol Number 2010-11-2570; "The Risk and Protective Factors for Mental Health Adjustment in 1st and 2nd generation Chinese American Immigrant Children).

Time 1.—The participating parent and child participated in a 2.5-hour laboratory assessment. After obtaining parental consent and child's assent to participate, two bilingual interviewers led parent and child into separate rooms to administer a series of structured interviews and questionnaires. The interviewers were undergraduate students who had received intensive training before conducting the assessment. Interviewers followed a scripted manual in administering the batteries. All the questionnaires and tests were administered in the parent's or child's preferred language (English, Mandarin, or Cantonese) indicated at the beginning of the visit. All written materials (including consent and assent forms and questionnaires) were available in English, simplified Chinese, or traditional Chinese.

At both Time 1 and Time 2, the majority of parents (79.5% and 83.8%) completed the questionnaires in Chinese. At the end of the laboratory visit, parents were paid \$50 and reimbursed for transportation, and children were given a small prize. At the end of data collection, a brief written feedback report summarizing the child's performance on the academic test and his/her overall emotional and behavioral adjustment (based on parent's and teacher's ratings on standardized instruments) was mailed to the parent.

Because the majority of our parent participants were non-native English speakers, the parent questionnaires were available in both English and Chinese (Mandarin or Cantonese). The majority of our child participants were comfortable with speaking and understanding English and thus were administered the child assessment in English. During study preparation, the following procedures were used to translate the scripted verbal instructions for each measure into Chinese. First, the original instructions were translated into Chinese by a bilingual researcher. Next, another bilingual researcher back-translated the instructions into English. Next, the two translators and the principal investigator (who is fluent in both languages) met to review and resolve the discrepancies between the two English versions.

Time 2.—Contact with participating families was maintained following Time 1 assessments via newsletters and phone calls. Mean time between assessments for the present sample was 1.91 years ($SD \pm .26$ years, range = .66 to 3.24 years). In two cases, families were scheduled for Time 2 assessments within one year of Time 1 assessments due to their availability and the timeframe of data collection constrained by funding.

Measures

Parent Expressivity (T1 & T2).—At both Time 1 and Time 2, participating parents completed a 34-item version of the Self-Expressiveness in the Family Questionnaire (SEFQ; Halberstadt et al., 1995), a measure assessing parent's patterns of emotional expressivity in various situations, interactions, and relationships among family members. As multi-generational households (i.e., two or more adult generations living under the same roof) account for 28% of Asian American households in the United States (Taylor et al., 2012), items on the SEFQ can be applicable to parents' expressivity with all family members in the household. Items are grouped into three subscales: a) positive expressivity (15 items, e.g., "Praising someone for good work"); b) negative-dominant expressivity (10 items, e.g., "Showing contempt for another's action"); and c) negative-submissive expressivity (9 items, e.g., "Going to pieces when tension builds up"). Parents provided ratings on scales of 1 ("I rarely express these feelings") to 9 ("I frequently express these feelings") for each item. The Chinese version of the SEFQ has been used previously with Chinese and Chinese American immigrant parents, and has demonstrated good internal consistency, validity, and support for the three-factor structure (Chen, Zhou, Eisenberg, Valiente, & Wang, 2011; Chen, Zhou, Main, & Lee, 2015). In the present study, at Time 1 and Time 2, alpha reliabilities of the SEFQ in the full sample were as follows: .90 and .88 for Negative-Dominant Expressivity; .81 and .78 for Negative-Submissive Expressivity; and .91 and .94 for Positive Expressivity.

Parents' and children's cultural orientations (T1 & T2).—At Time 1 and Time 2, participating parents reported on their own and their child's behavioral orientation using the Cultural and Social Acculturation Scale (CSAS, Chen & Lee, 1996), a 32-item bidimensional measure of both American and Chinese cultural orientations in domains of media, language, and social relationships. Four composite scales were calculated in the present sample: parents' American and Chinese orientations (α s = .87 and .73), and children's American and Chinese orientations (α s = .82 and .77).

Results

The descriptive statistics of study variables are presented in Table 1. Variables were first screened for normality. Using the cutoffs of two and seven for skewness and kurtosis, respectively (West, Finch, & Curran, 1995), all of the main variables were normally distributed.

Correlations among Main and Demographic Variables

Zero-order correlations examined the relations between family demographic characteristics and main study variables (Table 2) and among main study variables (Table 3). Family socioeconomic status at both waves was positively associated with American cultural orientation, and negatively associated with Chinese cultural orientation. Higher SES was associated with parents and children's American orientations ($r_s = .63$ at both waves for parents, and ranged from $.39$ -. $.52$ for children). For children, family SES at Wave 1 was also negatively associated with their Chinese orientation ($r = -.15$, $p < .05$). Examination of individual indices of American orientation indicated that parents' SES was positively and significantly associated with their number of White friends and the frequency with which they were invited to the homes of their White friends ($r_s = .27$ and $.31$, respectively; $p_s = .000$). Parents' SES was also positively associated with their ability to speak and understand English ($r_s = .55$ and $.59$, respectively; $p_s = .000$). Finally, lower-SES parents were more likely to live in neighborhoods with higher concentrations of Asian residents ($r = -.29$), foreign-born residents ($r = -.38$) and non-English speakers ($r = -.36$) (all $p_s = .000$). Time 1 and Time 2 family SES were positively associated with parents' positive, negative-submissive, and negative-dominant expressivity, at both Time 1 and Time 2 (r_s between $.26$ and $.38$, p_s between $< .01$ and $< .001$).

Mothers and parents of younger children also reported expressing more emotions in the family context. Specifically, with the exception of Time 2 negative dominant expressivity, parent gender was negatively associated with all dimensions of parent expressivity at both waves, (r_s between $-.16$ and $-.31$, p_s between $< .01$ and $< .001$). Similarly, child age was negatively associated with all dimensions of parent expressivity at both waves (r_s between $-.13$ and $-.20$, $p_s < .10$ and $< .01$).

To examine potential effects of assessment time intervals, a variable was created for the time interval between Time 1 and Time 2 assessments, and zero-order correlations were examined between assessment interval time and all main variables. A significant association was found only between assessment interval time and parents' Chinese orientation at Time 2 ($r = -.19$, $p = .01$). As such, interval time was not included as a covariate in main analyses.

Main Analyses

Hypothesis 1.—Our first hypothesis predicted that parents' American orientation would be positively and prospectively associated with their positive and negative expressivity in the family context, with the opposite relations expected for their Chinese orientation. A longitudinal path analysis model was specified (see Figure 1). In this model, parents' Chinese and American cultural orientations at Time 1 were hypothesized to predict their

emotional expressivity (positive, negative dominant, and negative submissive) at Time 2, controlling for parents' emotional expressivity at Time 1. Based on the correlation analyses on the relations of demographic characteristics to cultural orientations, family SES, child age, and generation status were included as covariates and their effects on parental expressivity at Time 2 were controlled in the model. The model was estimated with Mplus 7.3 (Muthén & Muthén, 1998–2014) using full information maximum likelihood to handle missing data and the Maximum Likelihood Robust (MLR) estimator for adjustment to correct standard errors for non-normality. The raw data were analyzed. Hu and Bentler (1999) recommended the cutoffs of comparative fit index (*CFI*) $\geq .95$, standardized root-mean-square residual (*SRMR*) $\leq .08$, and root mean square error of approximation (*RMSEA*) $\leq .06$ as the criteria for a relatively good fit with the data and hypothesized model. Based on these criteria, the model (Figure 1) fit the data well, $\chi^2 (df=6, N= 210) = 9.69, p = .14, CFI = .99, RMSEA = .05, SRMR = .017$. Partially consistent with our hypothesis, parents' Chinese cultural engagement at Time 1 negatively predicted their negative dominant and negative submissive emotion at Time 2 ($\beta_s = -.20$ and $-.12, p_s < .001$ and $< .05$, respectively; Bonferroni corrected alpha = .003).

Hypotheses 2 and 3.—To test hypothesis 2 (child cultural orientation predicting parental expressivity) and hypothesis 3 (parent-child cultural orientation gap predicts parental expressivity), we added the main effects of children's cultural orientations and the interactive effects of parent and child cultural orientations at Time 1 as additional predictors of parental expressivity at Time 2 (Figure 2). The four main effect predictors (child Chinese orientation, child American orientation, parent Chinese orientation, and parent American orientation) and two interaction effect predictors (child Chinese orientation \times parent Chinese orientation, and child American orientation \times parent American orientation) were hypothesized to simultaneously predict parent emotional expressivity at Time 2 controlling for covariates and Time 1 levels of parent emotional expressivity. To reduce multicollinearity and aid interpretation, the main effect predictors were mean centered prior to computing the interaction terms (Aiken & West, 1991). The model (Figure 2) fit the data well, $\chi^2 (df= 29, N= 210) = 44.24, p = .035, CFI = .99, RMSEA = .05, SRMR = .03$. Results from this model indicated strong cross-time consistency for parents' American and Chinese cultural orientations ($\beta_s = .76$ and $.55, p_s < .001$, respectively), as well as for positive and negative submissive expressivity ($\beta_s = .68$ and $.62, p_s < .001$, respectively). In partial support of our second hypothesis, children's orientation to American culture at both waves was positively associated with both positive and negative dimensions of parents' emotional expressivity in the family (r_s between $.17$ and $.41, p_s$ between $< .01$ and $< .001$; Bonferroni corrected alpha = .003)

In support of our third hypothesis, a number of interactions between parents' and children's cultural orientations were found to prospectively predict parents' patterns of emotional expression at Time 2, beyond the main effects of parents' and children's cultural orientations. Specifically, in predicting parents' negative submissive expressivity at Time 2, there was a significant interaction effect of parents' \times children's Chinese orientations ($\beta = .17, p < .001$), and a significant main effect of children's generation status ($\beta = .16, p < .05$). In predicting parents' positive expressivity at Time 2, there was a significant interaction

effect of parents' \times children's Chinese Orientation ($\beta = .12, p < .01$), and a significant main effect of family SES at Time 1 ($\beta = .21, p < .01$) (Bonferroni corrected alpha for this model = .003).

Procedures outlined by Aiken and West (1991) were used to probe the significant interactions found in the model. Simple slopes analyses were conducted to probe the three significant or marginally interactions in the model. In the simple slope analysis, the relations between parent's American and Chinese orientations and their emotional expressivity at Time 2 were probed at three levels of children's American and Chinese orientations: mean level, one standard deviation above the mean ("high"), and one standard deviation below the mean ("low"), controlling for other predictors in the model. As shown in Figure 3, at low levels of children's Chinese orientation, parent's higher Chinese orientation was associated with lower levels of negative submissive expressivity. This relation was nonsignificant at mean and high levels of children's Chinese orientation. A similar pattern was found with the interaction effect on parents' positive expressivity (Figure 4). At low levels of children's Chinese orientation, parents' higher Chinese orientation was associated with lower levels of positive expressivity. This relation was nonsignificant at mean and high levels of children's Chinese orientation.

Discussion

Through a longitudinal investigation of immigrant families, the present study sought to identify sociocultural and familial factors contributing to immigrant parents' emotional development. In contrast to cross-cultural, cross-sectional investigations, this study tested both bidimensional and prospective relations of culture and emotion, and examined how immigrant adults' orientations to both their heritage and host cultures uniquely and prospectively predicted their emotional expressivity in the family context. By focusing on the associations between cultural orientations and immigrant parents' emotional expressivity, the present study contributes a cultural perspective to theoretical frameworks of developmental functionalism and models of emotional development in adulthood. Finally, by identifying ways in which children's cultural orientations are uniquely and interactively associated with immigrant parents' expressivity, the present study provided empirical support for bioecological models of development.

Sociocultural Influences on Emotional Expressivity in Adulthood

Overall, findings from the present study supported the hypothesis that cultural orientation is associated with immigrant parents' patterns of emotional expressivity in the family context. These patterns were most consistent for parents' orientations to their heritage culture. Parents' use of Chinese media, engagement with Chinese friends, and proficiency in Chinese language at Time 1 were uniquely predictive of lower emotional expressivity in the family at Time 2. These cross-time associations were observed above and beyond effects of orientation to American culture, and were observed even after controlling for demographic variables and initial levels of emotional expressivity. In contrast, although parents' American orientation was positively correlated with all dimensions of emotional expressivity, these associations were non-significant in the full models. Thus, contrary to our hypotheses,

parents' orientation to American culture was not uniquely predictive of their emotional expressivity at Time 2.

These non-significant effects of American orientation may be understood in light of the composition of the present sample. On average, parents in the present sample had spent an average of 13.5 years in the United States. Applied to a developmental functionalist framework, the task of adapting to new cultural norms of emotional expression (i.e., increased expressivity) is likely to be more effortful and slower than the process of maintaining existing patterns of emotional expression (i.e., consistent, or decreased emotional expressivity). Thus, while the effect of Chinese orientation was observed within the timeframe of the present study, the unique effects of orientation to American culture may follow a slower trajectory. An alternative, but complementary interpretation of these results, is that the capacities for acquiring new patterns of emotional expression may decrease over the course of adulthood. As such, it may be the case that the effects of American orientation on emotional expressivity may be evidenced in a sample of younger immigrants.

We had also hypothesized that the effects of cultural orientation would be seen across both positive and negative dimensions of emotional expressivity. These effects were observed only in the relations between parents' Chinese orientation and dimensions of negative emotional expressivity (i.e., expression of negative dominant and negative submissive emotions). Indeed, across models, the only unique predictors of parents' positive emotional expressivity at Time 2 were demographic indices (i.e., family SES and children's generation status). One explanation for these unexpected findings comes from previous research suggesting that the emotional behaviors associated with positive expressivity- e.g., praising a family member or demonstrating physical affection – are arguably uncharacteristic, or less characteristic, of Chinese parents (Camras et al., 2008; Ng, Pomerantz, & Lam, 2007). Thus, it is possible that the acquisition of these new, unfamiliar patterns of emotional expression occurs less readily than the maintenance or amplification of existing patterns (i.e., decreases in negative expressivity). Alternatively, it is possible that the variance contributed by demographic factors to parents' positive expressivity – namely, parent SES – outweighed the variance contributed by cultural orientation. We expand more on this alternative mechanism in the sections below.

Child Influences on Parents' Emotional Expressivity

A key tenet of the bioecological model is an emphasis on bidirectional, interactive processes between systems. As such, the present study also tested a theoretical model in which parents' patterns of emotional expressivity could be shaped directly by their children's engagement with elements of Chinese and American culture, as well as interactively through intergenerational differences in cultural orientations.

In partial support of these hypotheses, our results provided support for the interaction effects on parents' patterns of expressivity. In our sample, the relations between parents' Chinese orientation and their expressivity were moderated by children's Chinese orientation. Specifically, among families with children lower in orientation to Chinese culture, parents' Chinese orientation was negatively associated with their positive and negative submissive expressivity. In contrast, for families in which children were at mean or high levels of

orientation to Chinese culture, parents' orientation to Chinese culture was unrelated to their emotional expressivity.

Previous research with immigrant families has suggested that intergenerational gaps in cultural orientation may contribute to difficulties in communication and incongruent cultural values (Hwang, 2006), which in turn hinder parents' expressions of warmth, support, and other positive emotions (Chen, Hua, et al., 2014; Ying & Han, 2007). Indeed, our results suggest that parents will express more positive emotion in the family if both they and their children are lower in their orientation to Chinese culture. The implication is that when both parents and children have less exposure to Chinese models, values, and expectations of emotional expressivity, parents are more likely to exhibit American patterns of positive emotional expressivity.

To our knowledge, no research to-date has linked gaps in cultural orientation to parents' expressions of negative submissive emotions. However, theories of acculturative family distancing (Hwang, 2006; Hwang, Wood, & Fujimoto, 2010) suggest that Asian American families in particular may respond to intergenerational gaps in cultural orientation with silence or emotional withdrawal. Applied to the present study, parents who perceive discrepancies between their own and their child's orientations to Chinese culture may be less comfortable expressing their hurt, sadness, or other negative-submissive emotions within the family context.

Limitations and Future Directions

Some limitations of the study merit mention and highlight directions for future research. First, as mothers comprised the majority of participating parents in our sample, the study may be limited in its generalizability to immigrant fathers. Of note, though parent gender was not associated with cultural orientations, the associations between parent gender and self-reported expressivity at both Time 1 and Time 2 suggest that gender expectations may play a role in immigrant parents' patterns of expressivity.

Second, our analytical model was necessarily limited in its selection of main variables and covariates relevant to acculturation and emotional expressivity. Given its frequent use as a broad proxy for acculturation (Alegría, 2009; Cruz, Marshall, Bowling, & Villaveces, 2008), and its close associations with other measures of acculturation in research with Asian American immigrants (Ryder, Alden, & Paulhus, 2000), the duration of immigrants' time in the United States was not included as a covariate in the current study. Moreover, although the potential effects of socioeconomic factors on emotional development in adulthood were not specified in our original hypotheses, family SES at Wave 1 uniquely and positively predicted parents' positive expressivity at Wave 2. Moreover, these effects of family SES outweighed those of cultural orientation, none of which significantly predicted parents' positive expressivity in the full model. One interpretation of these relations is that higher education and income facilitates parents' integration into American culture. As indicated by the zero-order associations between parents' SES and their engagement with elements of American culture, higher SES may increase the availability and comprehensibility of English-language media, increase parents' opportunities for social and professional interactions with non-Chinese American friends (e.g., by living and

working outside of ethnic enclaves), and increase parents' use and proficiency with the English language. Each of these interactions may, in turn, provide parents with new cultural norms of how parents should express positive emotion in the family context.

Socioeconomic status may also shape emotional development in adulthood through proximal psychological processes and behaviors, including prosocial behavior, attributional styles, and empathic accuracy (Grossman & Huynh, 2013; Kraus, Cote, & Keltner, 2010; Kraus, Piff, & Keltner, 2011). Researchers have proposed that the resources available to individuals of higher socioeconomic status minimize their dependency on others (Kraus & Keltner, 2009). This independence, in turn, is reflected in individually-oriented emotional processes and behaviors, such as poorer accuracy in identifying emotions of others, greater attention to emotional expressions of central, rather than peripheral figures, and more frequent expressions of social disengagement with others (Kraus et al., 2010; Kraus & Keltner, 2009). As such, socioeconomic status may exert effects on immigrant parents' emotional expression above and beyond those of cultural orientation, with parents of higher socioeconomic status reporting more frequent expressions of emotion in the family context.

Third, in examining potential influences on immigrant parents' emotional development, the present study focused exclusively on parents' self-reports of emotional expressivity. Based on existing theories of culture and emotion (Levenson et al., 2007; Potter, 1988), we reasoned that self-reported expressions of emotion are most susceptible to cultural influence and would show the most consistent associations with parents' cultural orientations. Beyond the present study, however, future research can examine how parents' cultural orientation influences their observed components of emotional expression. In particular, future research can examine effects of parents' cultural engagement on their "online" emotional responding - i.e., "the changes in physiological responding, subjective experience, and expressive behavior that occur during an emotional event" (Tsai, Chentsova-Dutton, Friere-Bebeau, et al., 2002, p. 380). Though we have examined these associations in a cross-sectional investigation of the present sample (Chen et al., 2015), to our knowledge, no research has examined effects of cultural orientation on the development of observed emotional response over time.

Even within self-reported components of emotional expression, future research on emotional development in adulthood can examine whether cultural orientation exerts different effects on verbal vs. non-verbal emotional expression. For example, as they increase in their English proficiency, is it possible that immigrant parents may become more expressive in verbal components of positive emotion (e.g., statements of affection or praise), but not in their expressions of non-verbal positive emotion (e.g., physical affection)? We have previously suggested that language plays a key role in how multilingual parents express emotion in the family context (Chen, Kennedy, & Zhou, 2012). Specifically, we proposed that multilingual parents may use language to adapt culture-specific expectations toward emotional expression: emotions that are perceived as being unacceptable in one culture may be expressed using the language of another culture. Applied to the present study, it is possible that a Chinese-American parent's increased orientation to American culture may indeed contribute to increased positive expressivity, but only in verbal domains of emotional

expression. Thus, future investigations can examine the unique associations between cultural orientation and domains of self-reported emotional expression.

Finally, future research is necessary to replicate the patterns of associations found in the present study. Given the large number of models and parameters tested in the present study, findings in the present study should be tempered in light of potentially inflated Type I error rates. As such, future research is necessary to replicate the general associations indicated across models.

Broader Implications

Although the current investigation focused primarily on emotional development in adulthood, our findings also hold broader implications for research in culture and emotion, and suggest that the family context may be a point of origin for cross-cultural differences and similarities in emotional expression. Camras and colleagues (2006) found that Chinese American mothers and mainland Chinese mothers differed in their positive expressivity in the family; these cross-national differences, in turn, were mirrored in their children's facial expressions. By examining Chinese-American immigrant parents at varying levels of cultural orientation, the present study provides a bridge between the two cross-national samples studied by Camras and colleagues. Moreover, our results provide a window on the acquisition and transmission of cultural display rules: by engaging in domains of the host culture, immigrant parents acquire its display rules, then model and transmit these patterns of emotional expression within the family context. Indeed, our results point to the immigrant family as a rich context for examining the interactions between culture and emotion. If culture is indeed "a unique meaning and information system, shared by a group and transmitted across generations." (Matsumoto & Juang, 2008, *p.* 15), the study of emotion in the immigrant family provides a unique window through which to observe this process of intergenerational transmission.

By focusing on the family context, our results offer a window into the process by which members of different cultural groups become more similar or more disparate in their patterns of emotional expression. While the present study did not assess children's own emotional expression, previous cross-cultural investigations (Camras et al., 2006), in addition to a wealth of developmental research, indicate that children's own patterns of expressivity are influenced by those of their parents (Eisenberg et al., 1998). Thus, within the current sample, children whose parents have modeled American patterns of affection and praise in the family will likely go on to display similar patterns of emotional expression. Conversely, children whose parents have remained chiefly engaged in Chinese cultural domains and remained restrained in his affections will likely demonstrate greater emotional restraint in their own relationships. Thus, consistent with existing theory (Chasiotis, 2011), our results indicate that the family context may play a key role in contributing to cross-cultural differences in developmental outcomes.

By focusing on an adult-aged sample, our findings also provide support for the plasticity of emotional processes throughout early to middle adulthood. To-date, the existing research on the socialization and expression of emotion has largely neglected this stage of development, and has focused instead on younger (e.g., infancy through adolescence) and older

populations (e.g., older adults). In examining this population, our findings fall squarely in line with bio-constructivist models, which suggest that emotional processes would be most susceptible to cultural, rather than biological influences during this stage of development (Li, 2003). Indeed, our results suggest that the stage of early-to-middle adulthood is a rich area for examining the effects of culture on emotional processes.

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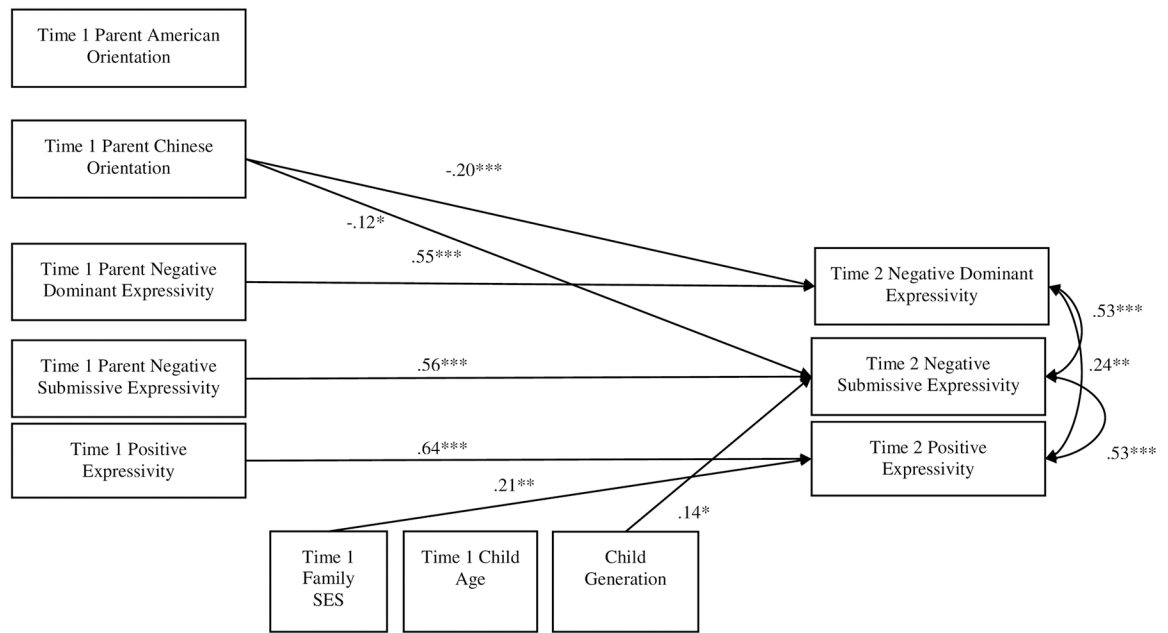


Figure 1. The model testing direct relations between T1 parent cultural orientations and T2 parent emotion expression. Numbers are standardized loadings or path coefficients. * $p < .05$; ** $p < .01$; *** $p < .001$

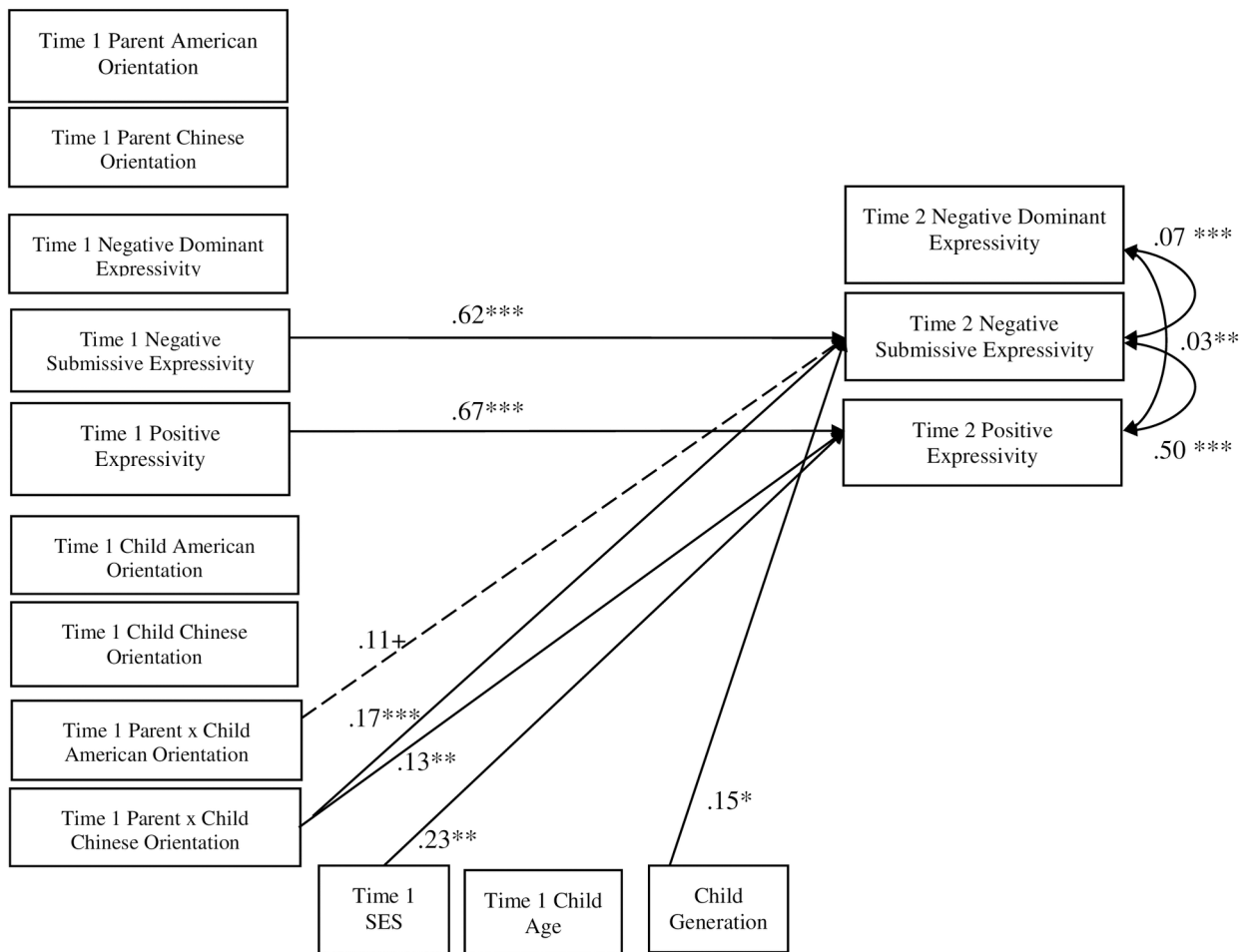


Figure 2. Significant paths contributing to Time 2 parent expressivity. Numbers are standardized loadings or path coefficients. Dotted lines indicate marginally significant paths. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

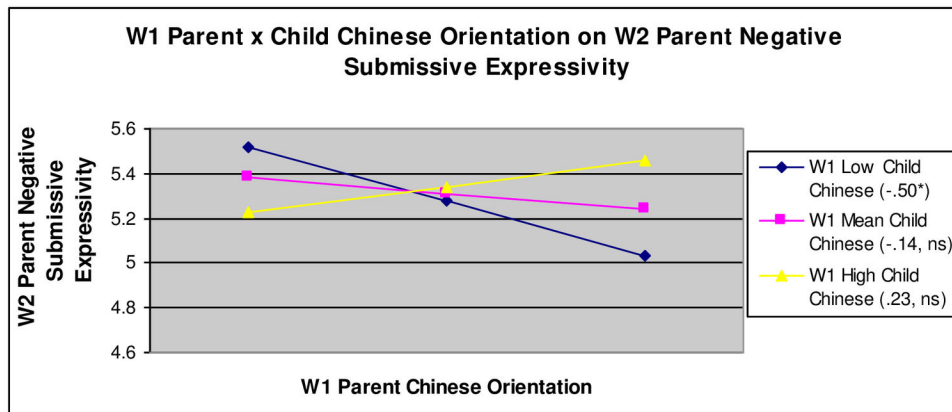


Figure 3.

The interaction effects of Time 1 parent × child cultural orientation on Time 2 parent emotional expressivity

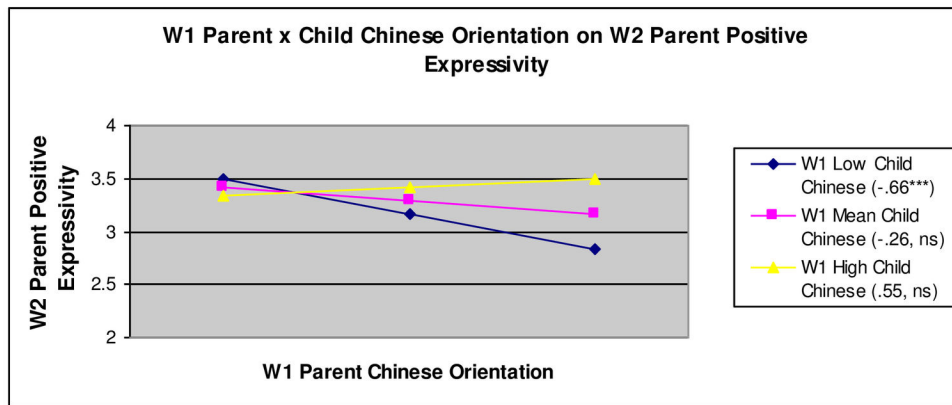


Figure 4. The interaction effects of Time 1 parent \times child cultural orientation on Time 2 parent emotional expressivity

Table 1.

Descriptive Statistics of Main Study Variables

	N	Min	Max	Mean	SD	Skew	Kurtosis	Cronbach's α (items)
Time 1 Parent American Orientation	203	-1.16	2.09	.01	.62	.57	.05	.87 (14)
Time 1 Parent Chinese Orientation	208	-1.98	1.09	.01	.49	-.85	2.18	.73 (12)
Time 1 Child American Orientation	209	-1.23	1.55	-.01	.55	.54	.04	.82 (14)
Time 1 Child Chinese Orientation	208	-1.14	1.41	.01	.53	.09	-.09	.77 (12)
Time 2 Parent American Orientation	168	-1.27	2.06	.001	.62	.53	.16	.88 (14)
Time 2 Parent Chinese Orientation	172	-1.91	.97	-.01	.48	-1.03	2.18	.71 (12)
Time 2 Child American Orientation	173	-1.09	1.54	-.02	.52	.40	-.22	.79 (14)
Time 2 Child Chinese Orientation	174	-1.13	1.80	-.01	.52	.24	-.01	.75 (12)
Time 1 Negative Dominant Expressivity	207	1.00	6.90	2.45	1.25	1.10	.92	.90 (10)
Time 1 Negative Submissive Expressivity	208	1.00	7.33	3.74	1.46	.05	-.56	.81 (9)
Time 1 Positive Expressivity	208	1.00	9.00	5.92	1.89	-.67	-.13	.94 (15)
Time 2 Negative Dominant Expressivity	171	1.00	6.00	2.58	1.28	.78	-.13	.88 (10)
Time 2 Negative Submissive Expressivity	172	1.00	7.11	3.88	1.45	.01	-.70	.78 (9)
Time 2 Positive Expressivity	172	1.00	8.93	5.72	1.82	-.60	-.26	.94 (15)

Table 2.

Zero-Order Correlations between Demographics and Main Variables

	Family SES (T1)	Child age (T1)	Parent Gender (0=mother; 1 = dad)
Positive Expressivity (T1)	.30 ***	-.13 ⁺	-.29 ***
Negative-Dominant Expressivity (T1)	.29 ***	-.13 ⁺	-.16 *
Negative-Submissive Expressivity (T1)	.33 ***	-.14 *	-.31 ***
Positive Expressivity (T2)	.38 ***	-.15 *	-.25 **
Negative-Dominant Expressivity (T2)	.33 ***	-.18 *	-.05
Negative-Submissive Expressivity (T2)	.26 **	-.20 *	-.19 *
Parent American Orientation (T1)	.63 ***	-.15 *	.03
Parent Chinese Orientation (T1)	-.06	-.02	-.03
Child American Orientation (T1)	.48 ***	.06	-.11
Child Chinese Orientation (T1)	-.15 *	.03	.10
Parent American Orientation (T2)	.63 ***	-.19 *	.06
Parent Chinese Orientation (T2)	-.05	.02	-.03
Child American Orientation (T2)	.52 ***	-.10	-.04
Child Chinese Orientation (T2)	-.08	.07	-.01

(T1) = Time 1; (T2) = Time 2

⁺ $p < .10$;* $p < .05$;** $p < .01$;*** $p < .001$

Table 3.

Zero-Order Correlations between Cultural Orientation and Expressivity Variables

	Negative Dominant Expressivity (T1)	Negative Submissive Expressivity (T1)	Positive Expressivity (T1)	Negative Dominant Expressivity (T2)	Negative Submissive Expressivity (T2)	Positive Expressivity (T2)
Parent American Orientation (T1)	.23***	.38***	.38***	.24**	.27***	.29***
Parent Chinese Orientation (T1)	-.15*	-.07	.10	-.29***	-.15*	.004
Child American Orientation (T1)	.17*	.28***	.31***	.10	.19*	.23**
Child Chinese Orientation (T1)	-.17*	-.18*	-.03	-.15 ⁺	-.08	-.05
Parent American Orientation (T2)	.33***	.42***	.36***	.31***	.26**	.33***
Parent Chinese Orientation (T2)	.03	-.01	.20*	-.14 ⁺	-.07	.03
Child American Orientation (T2)	.33***	.37***	.41***	.34***	.32***	.37***
Child Chinese Orientation (T2)	-.03	-.04	.12	-.06	.04	.08

(T1) = Time 1; (T2) = Time 2

⁺ $p < .10$;* $p < .05$;** $p < .01$;*** $p < .001$