Multicultural Families and Creative Children

Jen-Ho Chang, Chin-Chun Hsu, Nai-Hua Shih, and Hsueh-Chih Chen

Abstract
The link between multicultural experience and creativity is consistently supported by many empirical studies. However, most of these results are limited to adult participants with foreign living experience. The present study extended previous studies and investigated the positive relationship between multicultural experience and creativity in Taiwan young adolescents living in binational families. With more than 700 young adolescents, the results showed that young adolescents from binational families had parents with lower socioeconomic status than monocultural families. However, young adolescents from binational families performed better on creativity tests (fluency, flexibility, and originality) than those from monocultural families. In addition, when variables of family background and young adolescents’ personalities were controlled for, the effect of binational families on creativity remained. The implications for research on multicultural families and young adolescents’ creative performance are discussed.

Keywords
multiculturalism, binational families, creativity

Introduction
Current studies have revealed that multicultural experience can enhance creative performance (for reviews, see Crisp & Turner, 2011; Leung, Maddux, Galinsky, & Chiu, 2008). For example, compared with monocultural individuals, bicultural individuals performed better in multiple creative dimensions, including fluency, flexibility, and novelty (Maddux, Adam, & Galinsky, 2010; Tadmor, Galinsky, & Maddux, 2012). In addition, Maddux and Galinsky (2009) observed that living abroad was positively correlated with creativity and even controlled personality traits. Moreover, students who studied abroad also performed better on creativity tasks (Lee, Therriault, & Linderholm, 2012), and this effect was also replicated in expatriates compared with non-expatriates (Fee & Gray, 2012). On the other hand, by using experimental manipulation, Leung and Chiu’s (2010) research showed that primed individuals with dual cultural icons spontaneously (e.g., Chinese and American pictures, music, and videos) had better creative performances than those primed with single cultural icons or an unprimed group. These results consistently support the idea that multicultural experiences directly influence creative performance.

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However, most of these results were shown in adult participants who had personal foreign living experience, therefore, ignoring the possibility that the relationship between multicultural experience and creative performance could appear in young individuals, such as children and young adolescents. In addition, based on the original definition of multicultural experience, the definition of multicultural experience was not only restricted to foreign living experience but also included connections to any type of multicultural information. Leung et al. (2008) use the term *multicultural experience* “to refer to all direct and indirect experiences of encountering or interacting with the elements and/or members of foreign cultures” (p. 169). Therefore, living abroad is not necessary to absorb and interact with multicultural experiences. To resolve the two main limitations discussed above, the current study aimed to investigate the positive relationship between multicultural experience and creativity in young adolescents. In addition, the benefit of focusing on young adolescents could provide more information to know whether the link between multicultural experiences to creativity could be appeared or not in the early stage of human development, as compared with focusing on adult participants. Specifically, we focused on the multicultural home environment as a source for multicultural experience rather than an individual’s personal experience living abroad. We assumed that young adolescents from multicultural families (parents from different nations) would have better creative performances than those from monocultural families (parents from the same nation).

Because of globalization, multicultural experience not only occurs on an individual level through multicultural information but also on a dyadic level by encountering other individuals, which increases the possibility of “intermarriages.” This intermarriage refers to the term *binational family*, which indicates family partners born and raised in different nations. Cross and Gilly (2013) supposed that children from binational families would be raised with multicultural information and therefore enhance their creativity; however, they did not provide direct evidence to confirm their perspective. To address the underline psychological processes that multicultural family enhance child creative performance, we take Crisp and Turner’s (2011) perspective, they proposed that individuals immersed in cultural diverse stimulus can provide many opportunities to challenge their mindset (e.g., stereotypes). With repeated exposure to diverse stimuli, individuals could engage in the process to solve this inconsistent information, therefore bringing out the process that integrated different ideas within themselves. This integrating process could be indicated by individuals’ cognitive complexity, that is, individuals can hold opposing or different elements within themselves. Corresponding with Crisp and Turner’s (2011) perspective, research conducted by Benet-Martinez, Lee, and Leu (2006) showed that bicultural individuals had higher cognitive complexities than monocultural individuals for interpreting different cultural information. Therefore, bicultural individuals can enhance their creative performance through interaction with different cultural information to broaden their integrative complexity (Tadmor et al., 2012; Tadmor & Tetlock, 2006).

If there is a positive link between multicultural experience and creativity in young adolescents of binational families, then this result not only enlarges the scope of previous studies restricted by adult participants with foreign living experience but also provides empirical evidence to confirm Cross and Gilly’s (2013) perspective, namely, that children of binational families have a direct creative advantage. Moreover, most of these studies were conducted in Western countries (e.g., America), ignoring the possibility the link between multiculturalism and creativity could reveal in other non-Western countries. Therefore, in the current study, we recruited our participants in an Eastern country, namely Taiwan, which has an increasing rate of intercultural marriage. A recent survey showed that in 2012, the intercultural marriage in Taiwan was 14% of the total newly married population (Ministry of Interior in Taiwan, 2013b), and the children born in binational families from 2002 to 2012 were close to 10% of the total child population (Ministry of Interior in Taiwan, 2013a). In addition, recent survey in Taiwan also showed that binational families lived in relatively poor socioeconomic environments, and their children also had worse
academic performance and psychological adjustments compared with monocultural families (Ministry of Education in Taiwan, 2005). Therefore, our study also tried to provide a bright side for young adolescents living in binational families in Taiwan, and even if they might have potential disadvantage with lower socioeconomic status of their growth environment as compared with monocultural families, their multicultural home environment could provide more fruitful and diverse information and therefore enhance their creative performance.

To address the idea that young adolescents living in binational families are more creative than those living in monocultural families in Taiwan, we used a standardized creativity measurement and then controlled several possible influential variables. In addition, we controlled both intrapersonal and background factors that might influence creativity. For the intrapersonal level, openness to experience and conscientiousness that is based on the big five personality perspective could be influential factors affecting creativity (Feist, 1998; McCrae & John, 1992). Previous studies showed that openness to experience and extraversion positively correlated with creative performance, whereas conscientiousness and agreeableness were negatively correlated (Feist, 1998; George & Zhou, 2001; McCrae, 1987). To rule out the effect of big five personality on creativity, we would compare the mean level of big five personality in young adolescents from monocultural and binational families, and then control the effect on creativity. With regard to young adolescent home background factors that might influence creativity, Dai et al. (2012) observed that teenagers who had richer families or parents with higher educational levels had higher creative performance levels than teenagers who had poorer families or parents with lower education levels. In addition, the number of siblings (Baer, Oldham, Hollingshead, & Jacobsohn, 2005) in child’s birth order (Eisenman & Schussel, 1970) and gender (Lin, Hsu, Chen, & Wang, 2012) could also influence their creative performance. To investigate the relationship between young adolescents of binational families and creativity, to be more convinced, the present study would measure young adolescents’ personalities and their family background variables as mentioned above to control their effects on creative performance. We hypothesized that young adolescents from binational families would perform better on creativity tests than those from monocultural families, and the effect remained even when controlling for the adolescents’ personalities and their family background factors.

**Method**

**Participants**

Through the Child and Family Study of the National Science Council and the Ministry of Education in Taiwan, 710 young adolescents were recruited from 15 junior high schools based on the geographical distribution in Taiwan, ranging from seventh to ninth grade. Two hundred ninety young adolescents were from binational families, and 420 young adolescents were from monocultural families. The adolescents from binational families were paired with adolescents from monocultural families in the identical class to reduce sampling bias. Binational families were defined as parents who came from different countries. The adolescents from binational families were paired with adolescents from monocultural families in the identical class to reduce sampling bias. Binational families were defined as parents who came from different countries. With regard to binational family’s parents, most of these families had a Taiwanese father (88.4%). In addition, most of the foreign mother or father was born in Southeast Asian (included Philippines, Myanmar, Thailand, Vietnam, Malaysia, Kampuchea, and Indonesia, n = 218), East Asian (include Japan, Korean, and Mainland China, n = 67), and the others (included some Westerner countries, n = 5). With regard to binational family, the parents’ born countries and the non-Chinese parent is father or mother did not influence their child’s creativity in the present study, $F_{s} < .19$, $p_{s} > .14$. Therefore, we omitted these variables in further analysis. All the adolescents from binational and monocultural families lived with their parents. Each adolescent completed his or her demographic information, included numbers of siblings, birth order (1 = born first, 2 = second, 3 = third, . . . , etc.),
parents’ educational level, and socioeconomic status, and then completed their personality inventory and creativity test. The participants rated their parents’ educational level on a 5-point scale ranging from 1 = primary school, 2 = junior high school, 3 = high school, 4 = college or university, 5 = graduate school. The socioeconomic status of the young adolescent’s family was a standardized index based on their parents’ occupation level of Taiwan social context and was then transformed into five levels, ranging from 1 = lowest to 5 = highest (Huang, 2003). The two groups differed in socioeconomic status, in which monocultural families had a significantly higher socioeconomic status than binational families, as determined by a Levene’s test with equal variances not assumed, *t*(652.22) = −2.94, *p* = .003, *d* = .23, and birth order, *t*(708) = 3.58, *p* < .003, *d* = .28, in which monocultural families had a significantly higher birth order than binational families, and the other demographic variables were not significantly different, *ps* > .10, as reported in Table 1.

### Measurements

**New version of the Chinese Creative Thinking Test.** Wu et al. (1999) modified Torrance’s (1974) Test of Creative Thinking into Chinese version that participants were shown many differently sized versions of the Chinese character “人,” which indicates human, and were provided 10 min to draw as many creative figures with “人” as a part of the figure. Three indices were assessed: (a) fluency (the number of responses), (b) flexibility (the number of response categories), and (c) originality (unusual responses). The scores of the new version of the Chinese creative thinking test were derived by the standardized grading norms by Wu et al. (1999) and showed high inter-rater reliability (*rs* > .94, *ps* < .001) and test–retest reliability (*rs* = .42–.60, *ps* < .001). In addition, these subscales positively correlated with Torrance Test of Creative Thinking–Figural version (*rs* = .57–.75, *ps* < .001) in a large sample composed of more than 2,000 participants, including children and adults (Wu et al., 1999). In the present study, two independent trained raters, blind to the participant’s background information, revealed high consistency in all indices, *rs* = .91–.99, *ps* < .001.

### Table 1. The Demographics of the Two Groups.

<table>
<thead>
<tr>
<th></th>
<th>Binational families</th>
<th>Monocultural families</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (female %)</td>
<td>50.0</td>
<td>49.8</td>
</tr>
<tr>
<td>Age</td>
<td>13.22 (0.91)</td>
<td>13.19 (0.91)</td>
</tr>
<tr>
<td>Siblings</td>
<td>1.89 (1.18)</td>
<td>1.98 (1.09)</td>
</tr>
<tr>
<td>Birth order</td>
<td>1.78 (0.83)</td>
<td>1.54 (0.93)</td>
</tr>
<tr>
<td>Father ethnicity</td>
<td>88.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Mother ethnicity</td>
<td>11.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td>2.62 (1.28)</td>
<td>2.91 (1.39)</td>
</tr>
<tr>
<td>Father educational level</td>
<td>3.08 (0.96)</td>
<td>3.19 (0.88)</td>
</tr>
<tr>
<td>Mother educational level</td>
<td>2.97 (0.93)</td>
<td>3.01 (0.91)</td>
</tr>
<tr>
<td>Openness to experience</td>
<td>4.47 (0.97)</td>
<td>4.38 (0.91)</td>
</tr>
<tr>
<td>Extraversion</td>
<td>4.61 (1.13)</td>
<td>4.69 (1.14)</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>5.08 (0.83)</td>
<td>5.05 (0.88)</td>
</tr>
<tr>
<td>Emotional stability</td>
<td>4.24 (0.93)</td>
<td>4.16 (0.96)</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3.78 (0.93)</td>
<td>3.83 (0.91)</td>
</tr>
</tbody>
</table>

Note. The standard deviations are provided in parentheses. Within a row, means with different superscripts are significantly different (*p* < .05).
Chinese Mini-Marker Scale. We used the Mini-Marker Scale (Saucier, 1994) to measure young adolescent’s personality. This scale had great reliability and validity to capture the big five personality traits: extroversion, contentiousness, agreeableness, openness to experience, and emotional stability. The participants rated how well each adjective described them on a 7-point Likert-type scale (from 1 = not at all to 7 = very well) for 40 items (8 items for each subscale). The Chinese version of the Mini-Marker scale showed acceptable internal and test–retest reliability and revealed the identical factor structure as the English version (Shih & Chuang, 2012; Teng, Tseng, Li, & Yu, 2011). Cronbach’s alphas in the present study were .76 for extroversion, .73 for contentiousness, .70 for agreeableness, .60 for openness to experience, and .78 for emotional stability.

Results

The intercorrelations were high among fluency, flexibility, and originality, $r_s = .59 \sim .81, ps < .001$. Therefore, we used a MANOVA to control for variance and revealed that young adolescents from binational families had higher creative performances in fluency, $F(1, 708) = 11.36, p = .001, \eta^2_p = .02$; flexibility, $F(1, 708) = 4.60, p = .03, \eta^2_p = .01$; and originality, $F(1, 708) = 6.01, p = .02, \eta^2_p = .01$, compared with young adolescents from monocultural families, as illustrated in Figure 1.

However, the big five personality traits did not differ in young adolescents from binational and monocultural families, $ps > .10$, as shown in Table 1. Corresponding with previous results, openness to experience and extraversion were positively correlated with all creative indices, whereas conscientiousness was negatively correlated with all creative indices. In addition, socioeconomic status of an adolescent’s family was positively correlated with originality, and the mother’s educational level was positively correlated with fluency, as shown in Table 2. Therefore, we conducted a MANOVA with young adolescents’ age, gender, siblings, birth order, socioeconomic status of the family, parents’ educational levels, and all five personality traits as covariates. The results showed that young adolescents from binational families performed better in fluency (mean adjusted: binational families = 13.31 vs. monocultural families = 11.93), $F(1, 696) = 10.49, p = .001, \eta^2_p = .02$, flexibility (mean adjusted: binational families = 8.95 vs. monocultural families = 8.38), $F(1, 696) = 4.27, p = .04, \eta^2_p = .01$, and originality (mean adjusted: binational families = 9.69 vs. monocultural families = 8.52), $F(1, 696) = 6.68, p = .01, \eta^2_p = .01$, than young adolescents in monocultural families. This analysis provided further support for our central
hypothesis, namely, young adolescents raised in binational families had better creative performances than those from monocultural families.

**Discussion**

The present study with a large and representative sample provided initial support that young adolescents from multicultural families were more creative than those from monocultural families. Moreover, this effect remained when controlling for the adolescents’ family background factors and their personality traits. To increase the application of recent perspectives and results (Leung et al., 2008; Tadmor & Tetlock, 2006), our study observed that the effect of multicultural experiences on creativity could not only occur in adulthood but also during childhood and adolescence. Most importantly, this effect was not restricted to individuals who lived abroad, and could occur on a family level in the home environment, namely, binational parents influence their child’s creativity using multicultural information.

Recent studies and surveys showed that multicultural families live in relatively poor socioeconomic environments, and their children also had worse psychological adjustments compared with monocultural families. These effects were consistently revealed across the United States and Taiwan (Ministry of Education in Taiwan, 2005; Pearce-Morris & King, 2012). Consistent with these results, our results also revealed that binational families had relatively low socioeconomic statuses than monocultural families. However, young adolescents from binational families had better creative performances than monocultural families, and this advantage remained prominent when controlling for personality, socioeconomic status, and parental educational level. Along similar lines, Engel de Abreu, Cruz-Santos, Tourinho, Martin, and Bialystok (2012) observed a stable cognitive control benefit in bilingual children living in poorer home environments compared with monolingual children living with richer families. Compared with Engel de Abreu et
al. (2012), our study had a relatively large sample size of young adolescents and echoed their results that young adolescents from relatively low socioeconomic binational families benefit creatively from their multicultural environment.

Despite the general result that adolescents from binational families had better creative performance than those from monocultural families, some limitations emphasize the importance of future investigations. It was mentioned above that bilingualism enhances cognitive flexibility and creativity. Previous studies have shown that bilingual individuals were more creative than monolinguals (Cushen & Wiley, 2011). Other studies have also indicated that bilinguals creatively outperform monolinguals, which can be explained by bilinguals’ superior attention abilities (Kharkhurin, 2011). Because our study did not measure adolescents’ bilingual mastery of their parents’ native languages, further studies are necessary to differentiate or integrate the relationship between bicultural experience and bilingual ability. In addition, the percentage of Taiwanese fathers is 88.4% in the bicultural sample; within this unequal distribution, our results cannot be completely generalized to bicultural families with Taiwanese mothers. Further studies are needed to include more young adolescents from bicultural families with Taiwanese mothers. However, with regard to the effect of macro level, further studies could also examine the effect on environmental and contextual factors, for instance, ratio of binational versus monocultural individuals in each school, and profiles (e.g., regular program vs. academic oriented) of target schools. Combining all the variables in the further studies can provide a global picture of their relationships and underlying mechanisms of the link between multiculturalism and creativity at both the micro and the macro levels.

**Conclusion**

The study of multicultural experience and creativity is new, particularly in children and young adolescents. Our results suggest many opportunities for further investigation. Although the present study observed a reliably beneficial effect of binational parents on adolescents’ creative performance, the mechanism underlying this benefit remains unclear. Future studies are necessary to further understand the relationship between multicultural experience and creativity.

**Declaration of Conflicting Interests**

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