

# The Mediating Role of Parental Expectations in Culture and Well-Being

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**ABSTRACT** In two studies, we examined the role of perceived fulfillment of parental expectations in the subjective well-being of college students. In Study 1, we found that American college students reported having higher levels of life satisfaction and self-esteem than did Japanese college students. American college students also reported having fulfilled parental expectations to a greater degree than did Japanese college students. Most importantly, the cultural difference in well-being was mediated by perceived fulfillment of parental expectations. In Study 2, we replicated the mediational finding with Asian American and European American college students. Asian American participants also perceived their parents' expectations about their academic performance to be more specific than did European Americans, which was associated with the cultural difference in perceived fulfillment of parental expectations. In short, perceived parental expectations play an important role in the cultural difference in the well-being of Asians and European Americans.

Differences in well-being between cultures are well documented (see Diener, Oishi, & Lucas, 2003, for a review). Whereas an extensive effort has been made to identify moderators in well-being, relatively little at-

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*Journal of Personality* 73:5, October 2005

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DOI: 10.1111/j.1467-6494.2005.00349.x

tention has been paid to the potential mediators that explain the mean differences across cultures. The main purpose of our article is to examine directly one potential mediator, parental expectations. We propose that there may be cultural differences in perceived fulfillment of parental expectations and that these differences may account for the finding that Asians have lower well-being than do European Americans.

### *Culture as a Moderator in Well-Being*

With the publication of seminal papers on culture and the self (e.g., Markus & Kitayama, 1991; Triandis, 1989), researchers have started a serious endeavor of documenting cultural differences in correlates of well-being over the last 10 years. Diener and Diener (1995), for instance, found that self-esteem was a stronger predictor of life satisfaction in individualist nations than in collectivist nations. Kwan, Bond, and Singelis (1997) showed that relationship harmony was a unique predictor of life satisfaction, above and beyond self-esteem among Hong Kong participants, but not among American participants. Suh, Diener, Oishi, and Triandis (1998) demonstrated that the frequency of emotional experiences was a stronger predictor of life satisfaction among people in individualist nations than among people in collectivist nations. Kitayama, Markus, and Kurokawa (2000) found that interpersonally engaging positive emotions (e.g., *fureai* [a sense of interpersonal connection]) were strongly associated with general positive emotions (e.g., happy) among Japanese, whereas interpersonally disengaging positive emotions (e.g., pride) were strongly associated with general positive emotions among Americans. Elliot, Chirkov, Kim, and Sheldon (2001) also showed that the number of avoidance goals that individuals were pursuing was a negative predictor of life satisfaction in the United States, but not in Korea or Russia. There are many other articles that documented different correlates of well-being across cultures, such as identity consistency (Suh, 2002), relationship quality (Kang, Shaver, Sue, Min, & Jing, 2003), goal motive and attainment (e.g., Asakawa & Csikszentmihalyi, 2000; Oishi & Diener, 2001), and situations (Oishi, Diener, Scollon, & Biswas-Diener, 2004). Influenced by cultural psychological perspectives (e.g., Markus & Kitayama, 1991), this line of research has often been motivated to delineate different ways in which people with different cultural backgrounds attain and maintain well-being.

Although there are various ways in which cultures differ in the conception and correlates of well-being, there are several predictors of well-being found to be comparable across diverse cultures as well. For example, the internal perceived locus of causality in daily behaviors (Chirkov, Ryan, Kim, & Kaplan, 2003) and goal pursuit (Sheldon et al., 2004), the satisfaction of basic psychological needs, such as self-esteem, relatedness, and competence (Sheldon, Elliot, Kim, & Kasser, 2001), and extraversion (Lucas, Diener, Grob, Suh, & Shao, 2000), were found to be significant predictors of well-being in various cultures. What is common to research identifying cultural differences and similarities is that both types of research investigated the role of culture as a moderator, namely, whether predictors of well-being vary across cultures.

There is another line of cross-cultural studies that has explored mediators of well-being. Schimmack, Radhakrishnan, Oishi, Dzokoto, and Ahadi (2003) examined the mediating role of emotion in the relation between two affective traits (Extraversion and Neuroticism) and life satisfaction across nations and showed that the link between Extraversion and life satisfaction was fully mediated by emotion among German and American participants, whereas it was not among Japanese, Mexicans, and Ghanaians. In other words, these researchers found cultural differences in the mediating processes in well-being. Similarly, Uchida, Kitayama, Mesquita, and Reyes (2004) found that the direct link between social support and well-being was fully mediated by self-esteem among Americans, whereas there was an unmediated effect of social support on well-being among Japanese. Chang, Sanna, and Yang (2003) demonstrated cross-cultural similarities of the mediating processes, in which the relation between outcome expectancies (i.e., optimism and pessimism) and psychological adjustment (i.e., life satisfaction and depression) was mediated, at least partially, by positive and negative affect both in Korea and the United States (see also Chang, 2002, for a similar result with Asian Americans and European American comparisons). Likewise, Benet-Martinez and Karakitapoglu-Ayguen (2003) found that the mediational processes linking the Big Five personality traits to self-esteem, family satisfaction, and friend satisfaction to life satisfaction were comparable between European and Asian Americans. In short, although the focus of these cross-cultural studies centered on mediator variables, these studies tested whether mediational processes were *moderated* by culture.

Finally, there is another line of research that attempts to understand the factors associated with cross-national differences in the mean levels of well-being at the level of nation. Diener, Diener, and Diener (1995), for example, showed that the mean life satisfaction of nations was strongly correlated with the economic performance (e.g., GDP) of and the individualism of the nation. Poor nations, on average, reported lower levels of life satisfaction than did richer nations. Similarly, individualist nations, on average, reported higher levels of life satisfaction than did collectivist nations.

Although economic indicators and individualism can be considered mediators of well-being at the national level, neither economic indicators nor individualism has been demonstrated to be a mediator at the individual level. It is well known that economy and individualism-collectivism show very different patterns of relations at the individual and national levels (e.g., Diener & Biswas-Diener, 2002). For instance, the correlation between individuals' income and well-being is often less than .15, whereas the correlation between GDP and well-being typically exceeds .50 (see Diener & Biswas-Diener, 2002, for a review). This means that economic indicators and individualism are not well equipped to explain individuals' well-being. In other words, previous research can provide an answer to the following question: "Which nation is happy?" (Answer: "A rich, individualist nation"). However, the previous research cannot provide an answer to the next question: "Why are people in nation A happier than people in nation B?" (because rich people are not necessarily happier than poor people). Equally important, the nation-level variables do not explain individual differences within each nation. It is therefore important to identify an individual-level mediator variable that could explain within-nation individual differences as well as between-nation differences in well-being.

### *Mediators of Cultural Differences in Mean Levels of Well-Being*

There are several potential mediators at the individual level. Elliot et al. (2001), for example, proposed that motivational dispositions (avoidance vs. approach) and personality traits (e.g., Neuroticism) might be mediators of mean differences in well-being across cultures. They are reasonable candidates because both avoidance and Neuroticism were found to be higher among East Asians than among European Americans in the past (e.g., Elliot et al., 2001; Chang,

2002). Namely, the second criterion in Baron and Kenny (1986), the association between an independent variable and a mediator has to be significant, is met in these cases. Avoidance goals were, however, not related to well-being in Korea or in Russia (Elliot et al., 2001). This suggests that the proposed mediator (i.e., avoidance goals) is not associated with the dependent variable, and therefore, the third criterion in Baron and Kenny (1986) is not met with avoidance goals as a mediator. Likewise, Schimmack et al. (2003) found that the relation between Neuroticism and life satisfaction was significantly weaker among Japanese, Mexicans, and Ghanaians than among Germans and Americans. Thus, Neuroticism is also not likely to account for the mean differences in well-being across these cultures. It should be noted, however, that the number of published articles in this area is very small, and, therefore, definitive conclusions concerning avoidance goals and Neuroticism cannot be made at this point.

Among many potential mediators (e.g., Neuroticism, avoidance), we focused on parental expectations for two reasons. First, cross-cultural developmental psychology has documented notable differences between the East and West in child-parent relationships (DeLoache & Gottlieb, 2000; Rothbaum, Pott, Azuma, Miyake, & Weisz, 2000). Because cultural differences are sizable in the parent-child relationship in young adulthood (see Rothbaum et al., 2000, for a review), parental expectations might explain the difference in well-being between East Asian and North American college students. Second, although a similar construct has been examined in the past in the context of ill-being (e.g., perfectionism in Chang, 1998), researchers have not directly examined the mediating role of parental expectations in the context of well-being. Thus, the examination of parental expectations is likely to add novel knowledge to the extant culture and well-being literature.

### *Culture and Parental Expectations*

Since the publication of Caudill and Plath (1966), the difference between Japanese and American parenting style has received much research attention (Rothbaum et al., 2000). One of the most representative findings is that American parents encourage their children to develop social skills and self-expression, whereas Japanese parents emphasize emotional control (constraint), conformity, and politeness (Azuma, Kashiwagi, & Hess, 1981). More recently,

researchers found a similar contrast between Asian American parents and European American parents (e.g., Huntsinger, Jose, Larson, & Shari, 1998). Following Confucian teaching, Chinese American parents tend to prefer an approach that emphasizes the view of the teacher as a repository of knowledge and children as vessels to be filled, whereas European American parents tend to prefer an approach that emphasizes the teacher as a facilitator who attempts to engage children through questioning and directing their attention. Jose, Huntsinger, Huntsinger, and Liaw (2000) also observed that Chinese American parents were more likely than European American parents to direct their children while teaching them a counting game. Similarly, Steinberg, Dornbusch, and Brown (1992) found that Asian American parents were less autonomy granting than were European American parents.

Cultures also differ in the extent to which parents focus children on their failures or their successes. Research suggests that, relative to Asian parents, European American parents are more likely to focus children on successes rather than failures (e.g., Dennis, Zahn-Waxler, & Mizuta, 2002; Miller, Wiley, Fung, & Chung-Hui, 1997). Dennis and her colleagues (2002) found that American mothers showed more positive emotion and gave their children more praise and encouragement than did Japanese mothers.

Children from different cultural heritages, therefore, may be faced with different kinds of parental expectations in their adolescence and young adulthood. Because of the hierarchical relationship emphasized in Confucian cultures (Rothbaum et al., 2000; Triandis, 1995), parents in these cultures directly communicate their expectations to their children and continue to do so even when children become young adults. In middle-class North American culture, a more equal relationship between children and parents is typically preferred when children become adolescents. Once children are viewed as independent individuals, parental expectations are less strongly imposed upon children than before.

Consistent with the literature on culture and parenting, Chang (1998) found that Asian American college students perceived their parents to be more critical than did European Americans and felt fearful of not fulfilling their parents' expectations to a greater degree than did European Americans. Steinberg et al. (1992) also cited an example that demonstrates that Asian Americans perceive their parents' expectations to be specific: "Asian American students . . . re-

port that their parents would be angry if they came home with less than an A-” (p. 726). Chang also found that Asian Americans reported higher levels of depression and hopelessness than did European Americans and that these differences were in part due to Asian Americans’ higher levels of perfectionism (parental criticism and concerns for parental expectations are subscales of the perfectionism scale used in Chang’s study). Thus, it is possible that lower levels of well-being reported in past research by East Asians and Asian Americans relative to Americans and European Americans (Chang, 2002; Suh, 2002; Twenge & Crocker, 2002) were in part due to their lower levels of perceived fulfillment of parental expectations. Specifically, Asians and Asian Americans might not feel very satisfied with their lives or with themselves because they feel that they have not attained the standards imposed by their parents. Two studies were conducted to explore the mediating role of perceived parental fulfillment in cultural differences in well-being.

## STUDY 1

In Study 1, we examined whether the Japan-U.S. difference in well-being could be explained by the difference in perceived fulfillment of parental expectations.

### Method

#### *Participants*

Seventy-eight Japanese college students (33 males, 44 females, 1 did not indicate sex) and 114 American college students (51 males, 57 females, 6 did not indicate sex) participated in this study. Forty-six of the Japanese participants were recruited at Meisei University (a private university located in a Western suburb of Tokyo), and 32 participants were recruited at the International Christian University (a private university located in a Western suburb of Tokyo). All American participants were recruited at the University of Illinois at Urbana-Champaign (82 self-identified European Americans, 16 self-identified Asians, five self-identified Hispanics, four self-identified African Americans, two chose the category “other” and five did not provide this information). Because excluding non-European Americans did not change any results in the following analyses, we used the full U.S. sample for all the analyses. Japanese students’ participation was purely voluntary. American students received one research credit toward an introduction to psychology course. Both Japanese and

American participants were students enrolled in a psychology course. There was no difference in the sex composition between Japanese and American samples,  $\chi^2 = 0.35$ , *ns*. The average age of the U.S. sample ( $M = 19.39$ ;  $SD = 1.06$ ) was younger than that of the Japanese sample ( $M = 20.87$ ,  $SD = 2.08$ ),  $t(187) = 6.17$ ,  $p < .01$ . However, age was unrelated to any of the key variables. Specifically, the correlations between age and each of the key variables, life satisfaction, self-esteem, and parental expectations were as follows: .04,  $-.05$ ,  $-.02$  in Japan;  $-.05$ ,  $-.09$ ,  $-.15$  in the United States. The inclusion of age in the analyses did not change any findings; therefore, we did not include it in the analyses reported below.

### *Procedure and Materials*

Participants completed a questionnaire in groups of 10 to 30. Life satisfaction was assessed with the Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), which consists of five items such as "I am satisfied with my life." Participants completed the SWLS on a 7-point scale (1 = *strongly disagree*, 4 = *neither agree nor disagree*, 7 = *strongly agree*). The responses to the five items were summed to yield the SWLS score, which ranged from 5 to 35. Cronbach's alpha was .91 for the U.S. sample and .78 for the Japanese sample. Self-esteem was assessed with the Rosenberg Self-Esteem scale (Rosenberg, 1965), which consists of 10-items such as "On the whole, I am satisfied with myself." Participants completed this measure on a 4-point scale (1 = *strongly disagree* to 4 = *strongly agree*). The self-esteem score, which ranged from 1 to 4, was computed by taking the average of 10 items after recoding the reversed items. Cronbach's alpha was .91 for the U.S. sample and .82 for the Japanese sample. To assess perceived fulfillment of parental expectations, we asked participants to indicate the degree to which they thought they had fulfilled their parents' expectations in four important life domains: high school and college overall, grades, academic major, and romantic relationships. Participants completed this measure on a 7-point scale (1 = *not at all*, 4 = *about half*, 7 = *completely*). The perceived fulfillment of parental expectations score, which ranged from 1 to 7, was computed by taking the average of the four responses. Cronbach's alpha was .67 for the U.S. sample and .63 for the Japanese sample.

We used the Japanese version of the SWLS, which was originally translated and back-translated and has been used in past research in Japan (e.g., Suh et al., 1998). The first author reviewed the widely used Japanese version of the Rosenberg Self-Esteem Scale (Yamamoto, Matsui, & Yamanari, 1982), and modified it slightly to make the wording consistent with the rest of the scales. The perceived fulfillment of parental

expectations scale was translated by the first author, and then a Japanese graduate student in psychology at the International Christian University back-translated the scale from Japanese to English. The first author and the Japanese graduate student made final adjustments.

### Results and Discussion

Because national differences in the reliability coefficient alpha was the largest in the SWLS, we first examined the measurement equivalence of the SWLS using multigroup confirmatory factor analysis (CFA). The fully constrained model, in which all factor loadings were set equal in two samples, yielded  $\chi^2$  ( $df = 14$ ) = 32.77,  $p < .01$ , suggesting an imperfect fit. However, the fit indices of the fully constrained model were reasonable,  $CFI = .964$ ,  $NFI$   $delta$   $1 = .939$ ,  $RMSEA = .084$ . We next fit a series of partially constrained models, in which one item was constrained and the rest were allowed to differ between the two samples. The  $\chi^2$  difference tests indicated that the factor loadings of items 1, 3, and 4 could be set equal. When we constrained all three items to be equal and items 2 and 5 to differ between samples, the model fit was good with  $\chi^2$  ( $df = 12$ ) = 15.22,  $p = .23$ ,  $CFI = .994$ ,  $NFI$   $delta$   $1 = .972$ ,  $RMSEA = .038$ . Most important, we conducted all the analyses with or without the two items that were different between the samples. There were no differences between the two versions of the SWLS. Thus, the rest of the analyses involving the SWLS are based on responses to all five items.

Similarly, we conducted multigroup CFA on the self-esteem scale. The overall fit of the baseline one-factor model, in which all 10 factor loadings were allowed to vary across two samples, was not very good,  $\chi^2$  ( $df = 70$ ) = 216.00,  $p < .01$ ,  $CFI = .846$ ,  $NFI$   $delta$   $1 = .792$ ,  $RMSEA = .105$ . However, the fully constrained model, in which all 10 factor loadings were set equal between Japanese and American samples, was not different from the baseline model,  $\chi^2$  ( $df = 79$ ) = 232.9,  $p < .01$ ,  $CFI = .834$ ,  $NFI$   $delta$   $1 = .778$ ,  $RMSEA = .102$ ,  $\Delta\chi^2$  ( $df = 9$ ) = 16.9,  $p = .05$ . The  $\chi^2$  difference test suggests that the one-factor structure of the self-esteem scale was equivalent between Japanese and American samples. Finally, multigroup CFA of the parental expectation scale showed that the baseline model fit the data fairly well,  $\chi^2$  ( $df = 4$ ) = 12.05,  $p = .01$ ,  $CFI = .929$ ,  $NFI$   $delta$   $1 = .904$ ,  $RMSEA = .103$ . Furthermore, the fully constrained model was not significantly different from the baseline model,  $\chi^2$  ( $df = 7$ ) = 16.58,  $p = .02$ ,  $CFI = .916$ ,  $NFI$   $delta$

$I = .868$ ,  $RMSEA = .085$ ,  $\Delta\chi^2 (df = 3) = 4.53$ ,  $ns$ , indicating the acceptable level of measurement equivalence across the two samples.

We next examined sex differences in life satisfaction, self-esteem, and perceived fulfillment of parental expectations. We found no sex difference,  $F_s (1, 181) < 2.53$ ,  $ps > .10$ , and no nation by sex interaction in life satisfaction or self-esteem  $F_s (1, 181) < 0.10$ ,  $ps > .80$ . There was a marginally significant sex difference in perceived fulfillment of parental expectations such that female participants ( $M = 4.74$ ,  $SD = 1.25$ ) reported slightly higher perceived fulfillment of parental expectations than did male participants ( $M = 4.56$ ,  $SD = 1.22$ ),  $F (1, 181) = 3.71$ ,  $p < .06$ ,  $d = 0.29$ . However, there was no nation by sex interaction,  $F (1, 181) = 1.97$ ,  $ns$ . Thus, we did not include sex in the following analyses. Table 1 shows the descriptive statistics, and Table 2 shows the correlations between each variable by group.

Consistent with previous research (e.g., Diener et al., 1995), American participants were more satisfied with their lives than were Japanese participants,  $t(190) = 3.57$ ,  $p < .01$ ,  $d = 0.53$ . Also consistent with previous research (e.g., Heine, Lehman, Markus, & Kitayama, 1999), American participants had higher self-esteem than did Japanese participants,  $t(186) = 8.57$ ,  $p < .01$ ,  $d = 1.27$ . Finally, as predicted, American participants felt that they had fulfilled their parents' expectations to a greater degree than did Japanese participants,  $t(187) = 9.04$ ,  $p < .01$ ,  $d = 1.35$ .

### *The Role of Perceived Fulfillment of Parental Expectations*

To test our hypothesis that perceived fulfillment of parental expectations mediates the cultural difference in life satisfaction, we conducted the following mediational analysis using multiple regression.

**Table 1**  
Mean (*SD*) of the Satisfaction With Life Scale (SWLS), Rosenberg Self-Esteem Scale, and Perceived Fulfillment of Parental Expectations in Study 1

	United States	Japan
SWLS	24.25 (6.63)	21.00 (5.52)
Self-Esteem	3.28 (0.51)	2.62 (0.54)
Parental Expectations	5.23 (0.98)	3.86 (1.09)

**Table 2**

Study 1 Correlations between Satisfaction With Life Scale, Rosenberg Self-Esteem Scale, and Perceived Fulfillment of Parental Expectations

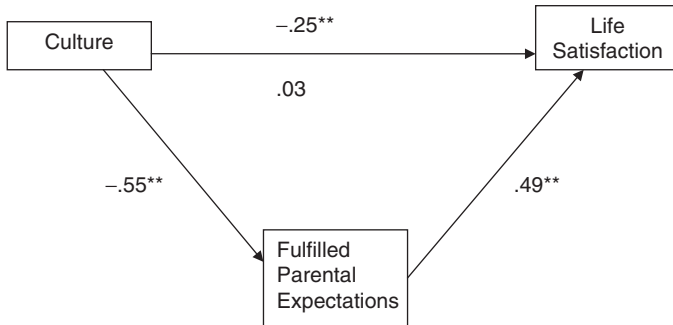
	Life Satisfaction	Self-Esteem	Parental Expectations
Life Satisfaction	1	.58***	.42***
Self-Esteem	.62***	1	.32**
Parental Expectations	.43***	.40***	1

*Note.* Correlations above the diagonal are for Japanese and correlations below the diagonal are for European Americans.

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

Nation was coded as follows: U.S. = 1, Japan = 2. Following Baron and Kenny (1986), we examined four criteria. First, the direct link from nation to life satisfaction was significant,  $\beta = -.25$ ,  $p < .01$ . Second, the link from nation to perceived fulfillment of parental expectations (i.e., the mediator) was significant,  $\beta = -.55$ ,  $p < .01$ , such that American participants had higher perceived fulfillment of parental expectations than did Japanese participants. Third, the link between the mediator and life satisfaction was significant when controlling for nation,  $\beta = .49$ ,  $p < .01$ , such that higher perceived fulfillment of parental expectations was associated with higher life satisfaction. Finally, as seen in Figure 1, when the mediator was included in the equation, the direct link from nation to life satisfaction became nonsignificant,  $\beta = .03$ , *ns*; Sobel =  $-5.15$ ,  $p < .01$  (all the Sobel values were computed based on the adjustment recommended by Baron & Kenny, 1986).

We repeated the above analysis with self-esteem as the dependent variable. First, the direct link from nation to self-esteem was significant,  $\beta = -.53$ ,  $p < .01$ . Second, the link from nation to perceived fulfillment of parental expectations (i.e., the mediator) was significant,  $\beta = -.55$ ,  $p < .01$ . Third, the link between the mediator and self-esteem was significant when controlling for nation,  $\beta = .37$ ,  $p < .01$ , such that higher perceived fulfillment of parental expectations was associated with higher self-esteem. Unlike the analysis for life satisfaction, when the mediator was included in the equation, the direct link remained significant,  $\beta = -.32$ ,  $p < .01$ ; however, there was evidence of partial mediation, Sobel =  $-4.54$ ,  $p < .01$  (see Figure 2). Finally, all mediational analyses held when perceived ful-



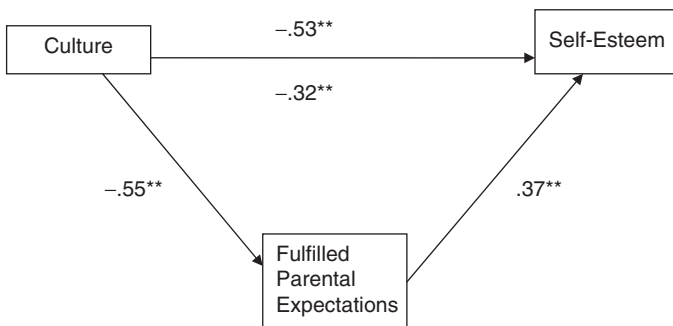
**Figure 1**

A mediational analysis in Study 1 predicting life satisfaction. The standardized coefficient above the arrow was the direct link, whereas the coefficient below the arrow was the link when the mediator was included.

\*\* $p < .01$

fillment of academic and nonacademic parental expectations were considered separately.

In short, we found support for our hypothesis that the difference between Japanese and Americans in life satisfaction was mediated by the differential level of perceived fulfillment of parental expectations.



**Figure 2**

A mediational analysis in Study 1 predicting self-esteem. The standardized coefficient above the arrow was the direct link, whereas the coefficient below the arrow was the link when the mediator was included.

\*\* $p < .01$

The difference between Japanese and Americans in self-esteem was partially mediated by perceived fulfillment of parental expectations. Interestingly, even after controlling for parental expectations, Japanese still had a lower level of self-esteem than Americans, suggesting that there are other reasons why Japanese are lower than Americans in self-esteem.

As in any mediational analysis, there is the possibility that the present mediational findings are caused by unmeasured third variables that are associated with the mediator (Kenny, Kashy, & Bolger, 1998). For example, perceived fulfillment of parental expectations might be highly correlated with Neuroticism. To the extent that Neuroticism is also associated with life satisfaction (McRae & Costa, 1991) and self-esteem (Kling, Ryff, Love, & Essex, 2003), the present mediational findings could be due to Neuroticism.

In addition, it is possible that our findings could be due to national differences in response sets. If Japanese are less likely to use extreme response scales than are Americans (Chen, Lee, & Stevenson, 1995), the lower levels of life satisfaction, self-esteem, and perceived levels of parental expectations might be due to response sets rather than substance. To explore this possibility, as in Chen et al. (1995), we converted 1, 2, and 3 responses in the SWLS to 1, 4 to 2, and 5, 6, and 7 to 3 and examined the mean difference. The result was almost identical to the original analysis,  $t = 3.62$ , as opposed to 3.57. Thus, it is far from certain that the present findings were due to national differences in response sets.

More important, even if mean differences were due to differences in response sets, the mediational findings are difficult to explain by the response set account. This is because national differences in response sets do not guarantee significant associations between the mediator and the dependent variable, a critical requirement for mediation. For instance, we (Seol & Oishi, 2004) found that Americans were more satisfied with their lives than were Koreans and viewed Jesus to be happier than did Koreans. However, the perceived happiness of Jesus did not account for the mean difference in self-reported life satisfaction, as this variable was not associated with the self-reported life satisfaction. This finding does not, obviously, eliminate the response set account in the current context. However, it does sufficiently illuminate the point that mean differences in two variables in the same direction do not automatically guarantee mediation.

## STUDY 2

We conducted Study 2 with three goals. First, in order to replicate the findings from Study 1, we examined whether the Asian American-European American difference in well-being could be explained by the difference in perceived fulfillment of parental expectations. Second, we examined whether the lower level of perceived fulfillment of parental expectations and subsequent lower well-being among Asian Americans might be due to their perception that their parents' expectations were specific. Essentially, our logic was that when people perceive that their parents' expectations are general (e.g., get good grades), they can interpret these expectations in a more idiosyncratic fashion (Dunning, Meyerowitz, & Holzberg, 1989) than when they perceive that their parents' expectations are specific (e.g., get an A). Namely, we hypothesized that there would be a cultural difference in specificity of perceived parental expectations, which in turn would lead to a cultural difference in perceived fulfillment of parental expectations, which in turn would lead to a cultural difference in subjective well-being. Finally, one major alternative explanation to Study 1 is that the Japanese participants might have been more neurotic than the American participants were. This might have led them to feel less satisfied with themselves and their lives and to perceive that they had not fulfilled their parents' expectations. In order to test this hypothesis, we assessed the Neuroticism of participants in Study 2.

## Method

### *Participants*

Participants were 37 self-identified European Americans (18 males, 19 females) and 37 self-identified Asian Americans (18 males, 18 females, 1 did not indicate sex) who were enrolled in an introductory psychology course at the University of Illinois at Urbana-Champaign. Participants received one research credit toward an introduction to psychology course.

### *Procedure and Materials*

Participants completed a questionnaire in groups of 5 to 10 persons. Life satisfaction was assessed by the SWLS (Diener et al., 1985), and self-esteem was assessed with the Rosenberg Self-Esteem scale (Rosenberg, 1965) on a 7-point scale (1 = *strongly disagree*, 4 = *neither agree nor*

*disagree*, 7 = *strongly agree*). Cronbach's alpha for the SWLS was .83 for European American participants and .86 for Asian American participants. Cronbach's alpha for the self-esteem scale was .90 for the European American participants and .84 for the Asian American participants. Perceived fulfillment of parental expectations was assessed for seven domains (i.e., your life in general, grades in high school, grades in college, classes, academic major, friends, and romantic partner). Cronbach's alpha was .75 for European American participants and .71 for Asian American participants. In addition, we assessed specificity of parental expectations for the five expectations about current domains (i.e., grades in college, classes, academic major, friends, and romantic partner). Participants indicated how specific their parents' expectations were for each domain on a 7-point scale (1 = *not at all specific*, 4 = *somewhat specific*, 7 = *extremely specific*). Cronbach's alpha was .74 for European American participants and .69 for Asian American participants. Finally, they completed a 10-item Neuroticism scale created by Goldberg (1997) on a 7-point scale (1 = *absolutely untrue of me*, 4 = *somewhat true of me*, 7 = *absolutely true of me*). Sample items include "I often feel blue" and "I panic easily." Cronbach's alpha for this scale was .89 for European American participants and .92 for Asian American participants.

### Results and Discussion

We first performed analyses of the main effects of culture and sex and the interaction between culture and sex on each of the four key variables. Consistent with our hypothesis, European American participants reported a higher level of life satisfaction than did Asian Americans,  $F(1, 69) = 9.09, p < .01, d = 0.71$ . There was no sex difference,  $F(1, 69) = .06, ns$ ; however, there was a marginally significant interaction between sex and culture,  $F(1, 69) = 3.52, p = .07$ . As can be seen in Table 3, the cultural difference in life satisfaction tended to be larger among male participants ( $F(1, 35) = 11.68, p < .01, d = 1.16$ ) than among female participants ( $F(1, 36) = 0.67, ns, d = 0.27$ ). Consistent with previous research (Twenge & Crocker, 2002), European American participants reported marginally higher self-esteem than did Asian American participants,  $F(1, 69) = 3.11, p = .08, d = 0.41$ . There was a sex difference: female participants reported significantly higher self-esteem than did male participants,  $F(1, 69) = 4.40, p < .05, d = 0.49$ . However, there was no sex by culture interaction,  $F(1, 69) = .82, ns$ . As predicted, European American participants felt that they had fulfilled parental expectations to a

**Table 3**

Mean (*SD*) of the Satisfaction With Life Scale (SWLS), Rosenberg Self-Esteem Scale, Perceived Fulfillment of Parental Expectations, and Specificity of Parental Expectations in Study 2

	European American		Asian American	
	Female	Male	Female	Male
SWLS	21.68 (4.84)	24.17 (6.32)	19.94 (7.86)	16.69 (6.79)
Self-Esteem	5.28 (1.05)	4.98 (1.12)	5.07 (0.88)	4.32 (1.16)
Parental Expectations	5.19 (0.92)	5.53 (1.00)	4.85 (0.86)	4.54 (1.10)
Specificity	3.31 (1.08)	3.30 (1.10)	3.39 (1.18)	4.43 (1.25)

greater degree than did Asian American participants,  $F(1, 69) = 8.44$ ,  $p < .01$ ,  $d = 0.69$ . There was no sex difference,  $F(1, 69) = .01$ , *ns*, or interaction between sex and culture,  $F(1, 69) = 2.04$ , *ns*. Finally, consistent with our hypothesis, Asian American participants felt that their parents' expectations were more specific than did their European American counterparts,  $F(1, 69) = 4.95$ ,  $p < .05$ ,  $d = 0.52$ . On average, male participants felt that their parents' expectations were marginally more specific than did female participants,  $F(1, 69) = 3.61$ ,  $p = .06$ ,  $d = 0.45$ . There was also a marginally significant interaction between sex and culture,  $F(1, 69) = 3.72$ ,  $p = .06$ . Again, the cultural difference was larger among male participants,  $F(1, 35) = 8.02$ ,  $p < .01$ ,  $d = 0.96$ , than among female participants,  $F(1, 36) = 0.05$ , *ns*,  $d = 0.07$  (see Table 3 for means and standard deviations and Table 4 for correlations between variables from these and following analyses by group).

#### *The Role of Perceived Fulfillment of Parental Expectations*

To test our hypothesis that perceived fulfillment of parental expectations mediates the cultural difference in life satisfaction, we conducted the following mediational analysis using multiple regression. Culture was coded as follows: European American = 1, Asian American = 2. We examined four criteria. First, the direct link from culture to life satisfaction was significant,  $\beta = -.33$ ,  $p < .01$ , such that European American participants reported higher life satisfaction than did Asian American participants. Second, the link from culture

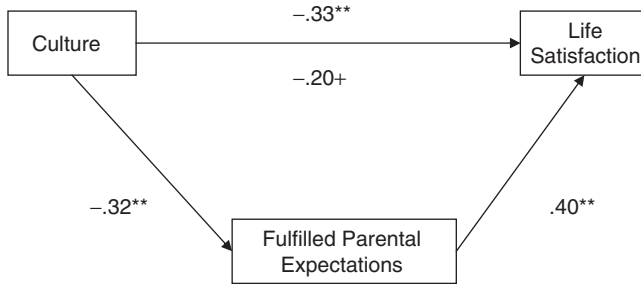
**Table 4**

Study 2 Correlations between Satisfaction With Life Scale (SWLS), Rosenberg Self-Esteem Scale, Perceived Fulfillment of Parental Expectations, Perceived Fulfillment of Parental Expectations for Grades in College, Specificity of Parental Expectations for Grades in College, and Neuroticism.

	Life Satisfaction	Self-Esteem	Parental Expectations	Grade Expectations	Grade Specificity	Neuroticism
Life Satisfaction	1					
Self-Esteem	.57***	1	.31 <sup>†</sup>	.21	-.23	-.70***
Parental Expectations	.54***	.40*	.54**	.56***	-.23	-.79***
Grade Expectations	.35*	.36*	.55***	.71***	-.03	-.53**
Grade Specificity	-.20	-.47**	.03	1	-.35*	-.37*
Neuroticism	-.54***	-.65***	-.18	-.06	1	.08
				-.18	.45**	1

Note. Correlations above the diagonal are for Asian Americans and correlations below the diagonal are for European Americans.

<sup>†</sup>  $p < .10$ , \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



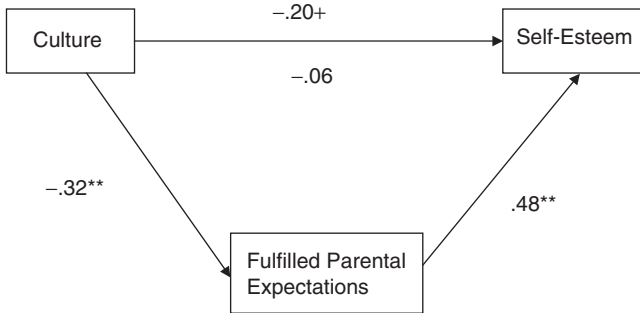
**Figure 3**

A mediational analysis in Study 2 predicting life satisfaction. The standardized coefficient above the arrow was the direct link, whereas the coefficient below the arrow was the link when the mediator was included.

\*\* $p < .01$

to perceived fulfillment of parental expectations (i.e., the mediator) was significant,  $\beta = -.32$ ,  $p < .01$ , such that European Americans had higher perceived fulfillment of parental expectations than did Asian Americans. Third, the link between the mediator and life satisfaction was significant when controlling for culture,  $\beta = .40$ ,  $p < .01$ , such that higher perceived fulfillment of parental expectations was associated with higher life satisfaction. Finally, as seen in Figure 3, when the mediator was included in the equation, the direct link from culture to life satisfaction became nonsignificant,  $\beta = -.20$ ,  $p < .10$ ; Sobel =  $-2.22$ ,  $p < .05$ .

We repeated the above analysis with self-esteem as the dependent variable. First, the direct link from culture to self-esteem was marginally significant,  $\beta = -.20$ ,  $p < .10$ . Second, the link from culture to perceived fulfillment of parental expectations (i.e., the mediator) was significant,  $\beta = -.32$ ,  $p < .01$ . Third, the link between the mediator and self-esteem was significant when controlling for culture,  $\beta = .48$ ,  $p < .01$ , such that higher perceived fulfillment of parental expectations was associated with higher self-esteem. As seen in Figure 4, when the mediator was included in the equation, the direct link from culture to self-esteem was significantly reduced,  $\beta = -.06$ , *ns*; Sobel =  $-2.36$ ,  $p < .01$ . Finally, all mediational analyses held when perceived fulfillment of academic and nonacademic parental expectations were considered separately.



**Figure 4**

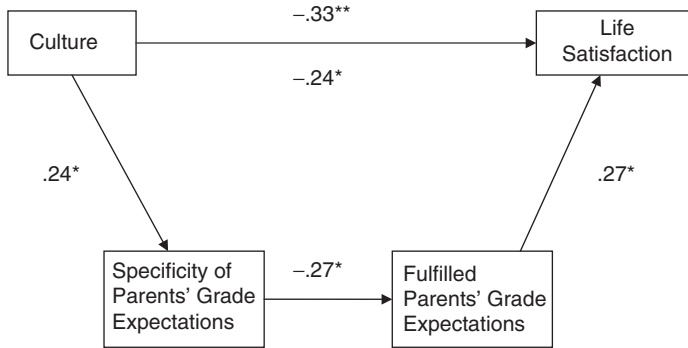
A mediational analysis in Study 2 predicting self-esteem. The standardized coefficient above the arrow was the direct link, whereas the coefficient below the arrow was the link when the mediator was included.

\*\* $p < .01$

### *The Role of Specificity of Parental Expectations*

First, we were interested in whether the specificity of parental expectations was related to perceived fulfillment of those expectations. The correlation between specificity of parental expectations and perceived fulfillment of parental expectations overall was nonsignificant,  $r = -.13$ , *ns*. Examination of the correlations between specificity of parental expectations and perceived fulfillment of parental expectations for each of the five domains revealed that, although this correlation was significantly negative for grades,  $r = -.27$ ,  $p < .05$ , and nonsignificantly negative for friends,  $r = -.19$ , romantic partner,  $r = -.12$ , and classes,  $r = -.13$ , the correlation between specificity and fulfillment for academic major was positive,  $r = .10$ , *ns*. This might be due to the fact that 90.5% of the participants (67 out of 74) were freshmen and sophomores and did not know what their major was going to be at that time. In further analyses, therefore, we focused on specificity of and perceived fulfillment of parental expectations for grades.

Next, we conducted multiple regressions to explore the role of specificity of and perceived fulfillment of parental expectations for grades in the cultural difference in life satisfaction. We ran a model in which culture predicted specificity of parental expectations for grades, which in turn predicted perceived fulfillment of parental

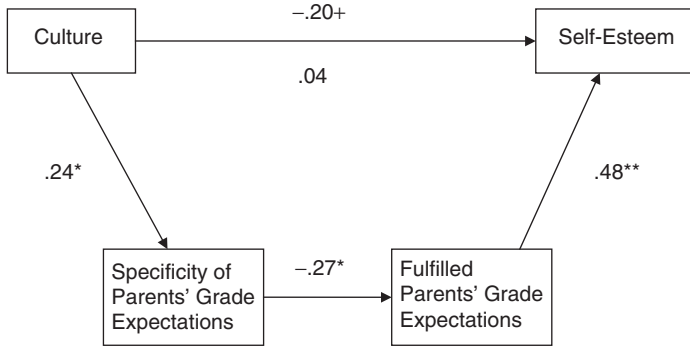


**Figure 5**

A mediational analysis in Study 2 predicting life satisfaction with two mediators. The standardized coefficient above the arrow was the direct link, whereas the coefficient below the arrow was the link when fulfillment of parental expectations for grades was included.

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

expectations for grades, which in turn predicted life satisfaction (see Figure 5). The model also included the direct link from culture to life satisfaction. The link from culture to specificity of parental expectations was significant,  $\beta = .24$ ,  $p < .05$ , such that Asian Americans thought their parents' expectations were more specific than did European Americans. The link from specificity of parental expectations to perceived fulfillment of parental expectations was also significant,  $\beta = -.27$ ,  $p < .05$ , such that the more specific the parental expectations were, the less likely they were perceived to be fulfilled. The link from perceived fulfillment of parental expectations to life satisfaction was significant,  $\beta = .27$ ,  $p < .05$ , such that higher perceived fulfillment of parental expectations was associated with higher life satisfaction. Finally, the direct link from culture to life satisfaction was attenuated in this model from  $\beta = -.33$ ,  $p < .01$  to  $\beta = -.24$ ,  $p < .05$ . A Sobel test is not available for mediational models with two inter-related mediators. Kenny et al. (1998) stated, "If Step 2 (the test of a) and Step 3 (the test of b) are met, it follows that there necessarily is a reduction in the effect of X on Y" (p. 260). In other words, "the essential steps in establishing mediation are Steps 2 and 3" (p. 260), in which Step 2 is establishing the link between the independent variable and the mediator and Step 3 is establishing the link between the mediator and the dependent variable. Because the initial variable (cultural group) is significantly correlated with mediator 1 (specifi-



**Figure 6**

A mediational analysis in Study 2 predicting self-esteem with two mediators. The standardized coefficient above the arrow was the direct link, whereas the coefficient below the arrow was the link when fulfillment of parental expectations for grades was included.

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

city of parental expectation), mediator 1 is significantly associated with mediator 2 (perceived fulfillment of parental expectations), and mediator 2 is significantly correlated with the outcome variable, the present mediation could be considered established.

We repeated the above analyses with self-esteem as the dependent variable (see Figure 6). Again, the link from culture to specificity of parental expectations,  $\beta = .24$ ,  $p < .05$ , and the link from specificity of parental expectations to perceived fulfillment of parental expectations,  $\beta = -.27$ ,  $p < .05$ , were significant. The link from perceived fulfillment of parental expectations to self-esteem was significant,  $\beta = .48$ ,  $p < .01$ , such that higher perceived fulfillment of parental expectations was associated with higher self-esteem. Finally, the direct link from culture to life satisfaction was attenuated in this model from  $\beta = -.20$ ,  $p < .10$ , to  $\beta = .04$ , *ns*. Again, because all the mediational links were significant and the direct link became nonsignificant, the present model suggests significant mediation.

*Alternative Explanation*

One of the major alternative explanations to cultural differences in specificity, and perceived fulfillment of parental expectations is the possible cultural difference in Neuroticism. After all, if Asian Americans were more neurotic than European Americans, they might feel

less worthy and less satisfied with themselves and their lives. They might also feel that their parental expectations were specific and that they had not fulfilled their parents' expectations. There was no cultural difference in Neuroticism, however,  $t(72) = -1.34$ , *ns*,  $d = .32$ . Thus, Baron and Kenny's (1986) first criterion for mediation was not met.

In order to assess the degree of independence from Neuroticism in our mediational models, we reran our mediational analyses controlling for Neuroticism. First, we reran the mediational analyses testing whether cultural differences in life satisfaction can be accounted for by perceived fulfillment of parental expectations while controlling for Neuroticism. Controlling for Neuroticism did not affect the previously reported results. The direct link from culture to life satisfaction was significant,  $\beta = -.23$ ,  $p < .01$ , the link from culture to perceived fulfillment of parental expectations (i.e., the mediator) was significant,  $\beta = -.26$ ,  $p < .05$ , and the link between the mediator and life satisfaction was significant,  $\beta = .20$ ,  $p < .05$ . Finally, when the mediator was included in the equation, the direct link from culture to life satisfaction became nonsignificant,  $\beta = -.18$ ,  $p < .10$ , indicating mediation.

Next, we reran the mediational analyses testing whether cultural differences in self-esteem can be accounted for by perceived fulfillment of parental expectations while controlling for Neuroticism. Although the link from culture to perceived fulfillment of parental expectations,  $\beta = -.26$ ,  $p < .05$ , and the link from perceived fulfillment of parental expectations to self-esteem,  $\beta = .24$ ,  $p < .01$ , were still significant, the link from culture to self-esteem was not,  $\beta = -.09$ , *ns*. When the mediator was included in the analysis, however, the link between culture and self-esteem dropped further,  $\beta = -.02$ , *ns*.

To explore how Neuroticism affected the role of specificity of and perceived fulfillment of parental expectations for grades in the cultural difference in life satisfaction, we reran the multiple regressions reported above while controlling for Neuroticism. The link from culture to specificity of parental expectations and the link from specificity to perceived fulfillment of parental expectations were marginally significant,  $\beta = .20$ ,  $p < .10$  and  $\beta = -.20$ ,  $p < .10$ , respectively. However, the link from perceived fulfillment of parental expectations to life satisfaction was not significant,  $\beta = .10$ , *ns*, and the direct link from culture to life satisfaction was not attenuated in this model from  $\beta = -.23$ ,  $p < .01$  to  $\beta = -.21$ ,  $p < .05$ . This indicates that once Neuroticism was included, the mediational effects of specificity and perceived fulfillment of parental expectations disap-

peared. It is also interesting to note that this analysis indicates that Neuroticism did not help explain cultural differences in life satisfaction either.

To explore how Neuroticism affected the role of specificity of and perceived fulfillment of parental expectations for grades in the cultural difference in self-esteem, we reran the multiple regressions reported above while controlling for Neuroticism. Again, the link from culture to specificity of parental expectations and the link from specificity to perceived fulfillment of parental expectations were marginally significant,  $\beta = .20, p < .10$  and  $\beta = -.20, p < .10$ , respectively. In addition, the link from perceived fulfillment of parental expectations to self-esteem was significant,  $\beta = .29, p < .01$ . Finally, the direct link from culture to self-esteem was attenuated in this model from  $\beta = -.20, p < .10$  to  $\beta = -.003, ns$ . This means that even when Neuroticism was included, specificity and perceived fulfillment of parental expectations fully mediated the direct link between culture and self-esteem.

## GENERAL DISCUSSION

We began this investigation with two main goals in mind. First, we wanted to demonstrate that there are cultural differences in perceived parental expectations and specificity of parental expectations. Second, we sought to demonstrate that these cultural differences account for the finding that Asians have lower well-being than do European Americans. In Study 1, we found that Japanese participants had lower well-being and felt that they had fulfilled their parents' expectations to a lesser degree than did American participants. Furthermore, perceived parental expectations mediated the cultural difference in well-being, suggesting that Japanese participants had lower well-being than did American participants because they were less likely to think they had fulfilled their parents' expectations. Study 2 replicated these findings with Asian American and European American participants. In addition, Study 2 demonstrated that Asian American participants thought their parent's expectations were more specific than did European American participants, which in turn was negatively associated with perceived fulfillment of parental expectations for grades, which in turn was negatively associated with well-being.

In Study 2, we also examined whether our mediational findings were due to a third variable, Neuroticism. The mediational effects of specificity and perceived fulfillment of parental expectations on life satisfaction disappeared when Neuroticism was included. This means that covariance among specificity, perceived fulfillment of parental expectations, and life satisfaction had substantial shared variance with Neuroticism. In contrast, the same mediational model with self-esteem indicated that the mediational effects of specificity and perceived fulfillment of parental expectations were significant, above and beyond the effect of Neuroticism. In addition, two mediational models with perceived fulfillment of parental expectations as a mediator were largely unchanged when Neuroticism was included. Taken together, the present mediational findings cannot be fully accounted for by Neuroticism.

The main contribution of the present research is that we identified a mediator of cultural differences in mean levels of well-being that simultaneously explains within-culture individual differences. Namely, our studies found that one reason why East Asians report lower levels of well-being relative to European Americans is that they perceive that they have not fulfilled their parents' expectations as much as European Americans do. At the same time, the present findings indicate that East Asians and European Americans who feel that they have fulfilled their parents' expectations are more satisfied with themselves and their lives in general than are individuals who feel otherwise. Thus, perceived fulfillment of parental expectations describes individual *and* cultural differences. In the past, culture and personality research has been criticized on the ground that it paid little attention to within-culture variation (e.g., Linton, 1945; Oishi, 2004). Our studies illustrate that the identification of an individual-level mediator can address individual differences within each culture, while explaining between-culture variation.

### *Limitations and Future Directions*

We have argued that the cultural differences we found in specificity of parental expectations and perceived fulfillment of parental expectations were due to cultural differences in parenting styles. However, both specificity of and perceived fulfillment of parental expectations were self-reported by the participants. Although the most likely alternative explanation, cultural differences in Neuroticism, could not

account for the results of Study 2, it is possible that it was not cultural differences in parenting style that led to our findings, but rather some other factor that influenced the participants' self-reporting of parental expectations. For this reason, it would be beneficial to examine whether the participants' perceptions of their parents' expectations for them are an accurate reflection of their parents' actual expectations. Second, in examining the role of specificity of parental expectations, we only found a relation between specificity of parental expectations and perceived fulfillment of parental expectations for one domain: grades. This may be due to the fact that most of our participants were freshmen and sophomores in college and therefore had not yet attempted to fulfill their parents' expectations in other domains, such as selecting a major or choosing a romantic partner. Studying an older sample may illuminate the role of specificity of parental expectations across domains. Studying an older sample would also allow us to determine if parental expectations continue to account for cultural differences in well-being throughout the lifespan. Third, the sample size of the present studies was modest. Thus, generalizability of the present findings is somewhat limited. Obviously, replications with larger sample sizes would be desirable. Finally, in Study 2, we did not assess specific ethnicity of participants. It is therefore important to examine ethnic differences as well as racial differences in parental expectations and well-being.

### *Conclusion*

The results of the current studies suggest that one explanation for the Asian-American difference in well-being is that Asian college students perceive their parents' expectations to be more specific and thus harder to fulfill than Americans do. Equally important, individuals of any cultural background who perceive their parental expectations to be fulfilled are more satisfied with themselves and their lives than are others who perceive their parental expectations to be specific and unfulfilled. These findings highlight the importance of identifying an individual-level mediator that delineates within-culture individual differences, as well as between-culture differences. Such a discovery will advance personality research, or the science of individual differences and individuality, from broader, cross-cultural perspectives.

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