

Explaining Elevated Social Anxiety Among Asian Americans: Emotional Attunement and a Cultural Double Bind

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Previous research has documented elevated levels of social anxiety in Asian American college students when compared with their European American peers. The authors hypothesized that higher symptoms among Asians could be explained by cultural differences in attunement to the emotional states of others. Socialization within interdependent cultures may cultivate concerns about accurately perceiving other's emotional responses, yet at the same time, norms governing emotional control may limit competencies in emotion recognition. A sample of 264 Asian American and European American college students completed measures of social anxiety, attunement concerns (shame socialization and loss of face), and attunement competencies (self-reported sensitivity and performance on emotion recognition tasks). Results confirmed that ethnic differences in social anxiety symptoms were mediated by differences in attunement concerns and competencies in emotion recognition. Asian American college students may find themselves in a double bind that leads to social unease because of a cultural emphasis on sensitivity to others' emotions in the midst of barriers to developing this attunement skill set.

Keywords: social anxiety, ethnic differences, interdependence, emotion recognition, attunement

Social anxiety involves the fear of being scrutinized or evaluated by other people, with the belief that such evaluations will be negative or humiliating (American Psychiatric Association, 1994). A growing literature suggests that there are ethnic differences in the experience of social anxiety, with replicated findings of Asian American (AA) college students reporting higher levels of symptoms than European American (EA) students (e.g., Okazaki, 1997, 2002; Okazaki, Liu, Longworth, & Minn, 2002). These ethnic differences in social anxiety emerge across methods of ascertainment (i.e., self-report questionnaires, daily diary reports, emotion ratings during social performance tasks, and structured diagnostic interviews) (Hsu & Alden, 2007; Lee, Okazaki, & Yoo, 2006). Some cross-national data suggests that shyness or social anxiety may be viewed as normative, consistent with socialization goals, and distinct from other adjustment difficulties in Asian cultures (e.g., Chen, Rubin, & Li, 1995). However, research on AAs suggests that their experience of social anxiety is associated with both subjective distress and functional impairment (Hsu & Alden, 2007).

Scholars have examined a variety of explanations for these group differences in social anxiety, with studies highlighting the

mediating role of concepts of the self (Hong & Woody, 2007). Okazaki (1997) first hypothesized that ethnic differences in social anxiety may be rooted in cultural differences in self-construal. She reasoned that socialization toward an interdependent self-construal in Eastern cultures may orient AAs "to be acutely attuned to social cues," rendering a vulnerability to experiences of social anxiety. Individuals who regard themselves as interdependent derive a sense of worth through their ability to fit in and maintain harmony with others. The interdependent motivation to adjust one's behavior to promote acceptance by others is thought to lead to restraint over the expression of one's own desires and feelings, and sensitivity to the emotional responses of others (Markus & Kitayama, 1991). As such, interdependence may have implications for the experience and display of emotions, as well as the recognition of other people's emotional states. Research has indeed documented cultural differences in the experience and display of emotion, with greater restraint apparent in individuals from more interdependent cultures (e.g., Camras, Chen, Bakeman, Norris, & Cain, 2006; Matsumoto, Takeuchi, Andayani, Kouznetsova, & Krupp, 1998). However, an understanding of ethnic differences in social anxiety may be better informed by an examination of cultural influences in attunement to the emotions of others.

Interpersonal harmony is perhaps best accomplished with a heightened sensitivity to others' feelings, opinions, and negative evaluations during social interactions. Some socialization practices in interdependent Asian cultures may function to cultivate attunement to the feelings of others. For example, Chinese and other Confucian based cultures have been described as "shame-socialized," wherein individuals are expected to acquire a sensitivity to shame that focuses attention on other people's affective responses (Fung, 1999). Consequences for failing to acquire this sensitivity include social sanctions that affect not just the individual, but the group or family. Fung (1999) described shaming as a routine disciplinary practice among Taiwanese parents involving

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emphatic reprimands of children for misdeeds involving explicit induction of shame, reference to the relational consequences of the child's transgression, threats of ostracism, or upward social comparison against "well-behaved" children.

Cross-national studies suggest that Asian parents rely on love withdrawal, shaming, and guilt induction more so than European American parents (Wu et al., 2002). These practices heighten the child's concern and vigilance for the emotional reactions of their parents, and their use is thought to contribute to the development of relational sensitivity, self-discipline, and social awareness and responsibility (Lieber, Fung, & Leung, 2006). However in Western contexts shame has been linked to the development of social anxiety (Chorpita & Barlow, 1998). While there is some evidence that the parenting correlates of child anxiety may differ in Asian versus North American families (e.g., Chen et al., 1998), studies examining emotional control using shame, guilt induction, and love withdrawal indicate robust associations with social anxiety in Asia (Nelson et al., 2006) and the United States (Masia & Morris, 1998).

Thus, patterns of socialization in families of Asian descent may contribute to concerns about interpersonal attunement and sensitivity to negative evaluation by others. These specific concerns are manifested in value orientations that are more strongly endorsed by AAs than by EAs. In particular, Zane and Yeh (2002) found that AA college students report stronger motivation to avoid loss of face than European Americans. They describe face as a person's set of socially sanctioned claims concerning their character that is "largely defined by certain prescribed roles that one carries out as a member and representative of a group" (p. 126). Face-saving behaviors protect both individual esteem and the integrity of social groups. Face loss concerns involve awareness of one's own social status in relation to others, attention to the expectations of others, and motivation to prevent negative evaluations by others. As such, protecting face requires the ability to anticipate and recognize the evaluative and affective reactions of others to the self.

Given the cultural priority on interpersonal attunement inherent in face concerns, one might speculate that there would be a corresponding advantage in reading social cues and perceiving others' feelings states accurately. Yet despite these attunement priorities, evidence suggests that individuals of Asian descent may be at a disadvantage in emotion recognition compared to individuals of European descent (Beaupré & Hess, 2005; Biehl et al., 1997; Elfenbein & Ambady, 2003; Matsumoto, 1992). In these studies, facial expression stimuli are posed to be equivalent in facial muscular components and intensity of expression to minimize the influence of cultural display rules on recognition accuracy (Ekman, 1972). Balanced designs are the standard, with race of the encoder (facial expression stimuli) fully crossed with race of the decoder (subject). Studies indicate that EAs are more accurate than Asians and AAs in identifying negative emotions (e.g., anger, sadness, fear) with few differences in identification of positive emotions, such as happiness and surprise (Beaupré & Hess, 2005; Matsumoto, 1992).

Theorists suggest that due to their disruptive influence on group harmony, both the display and the perception of negative emotions may be discouraged in Japan and other collectivistic societies (Matsumoto, 1992). Lower recognition accuracy by members of interdependent Asian cultures may thus be attributable to cultural rules against displaying and acknowledging potentially disruptive

negative emotions in others (Cole, Bruschi, & Tamang, 2002). Data on overall cultural differences in emotion recognition is often obscured due to a more developed scholarly focus on in-group advantage in emotional judgments, whereby recognition accuracy is higher when individuals are judging the expressions of members of their same cultural group (Elfenbein & Ambady, 2002). However, findings also suggest that broad cultural differences in emotion recognition accuracy may indeed be a function of differences in exposure to emotional displays. The in-group advantage in emotion recognition is attenuated when there is increased contact with the out-group culture, presumably due to increased practice with decoding the expressions of out-group members (Elfenbein & Ambady, 2003). Perhaps the interdependent cultural practices governing harmonious social interactions give rise to fewer practice opportunities for learning to decode expressions due to the dampening of displays of affect (Matsumoto et al., 1998).

Thus, individuals of Asian descent may experience a disconnect between the valuation of skills that help one decode emotional cues emitted by others and actual levels of competence in these skills. Perhaps heightened valuation of interpersonal sensitivity coupled with limited acquired skills for emotion perception may together explain ethnic differences in social anxiety. As such, the current study explored the relationships between ethnicity, emotion recognition, concerns about interpersonal attunement, and symptoms of social anxiety in EA and AA college students. We examined whether emotion recognition and attunement concerns mediate ethnic differences in college student reports of social anxiety. Our assessment of emotion recognition included both self-reported interpersonal sensitivity and performance on emotion recognition tasks. We considered loss of face concerns and a reported history of emotionally controlling parenting as contributors to heightened attunement concerns.

Method

Sample

Participants for the present study were drawn from a study of 319 undergraduate students enrolled in introductory psychology courses at two large public universities in California who volunteered participation in exchange for course credit. Criteria for participation in the larger study included spoken and written proficiency in English, and self-identification as Caucasian/European American or Asian/Asian American. In the present analysis ($N = 264$), we included 116 AA students of East- and Southeast Asian ancestry and 148 EA students. The sample included 183 (69.3%) women and 81 men. The AA sample was 66.4% female and the EA sample was 71.6% female. Among the 116 self-identified AA participants, 76 (65.5%) were U.S.-born and 40 were foreign-born; 83 (71.6%) were East Asian (i.e., Chinese, Korean, Japanese), and 33 were Southeast Asian (i.e., Vietnamese, Cambodian, Laotian). The decision to aggregate across East and Southeast Asian ethnic groups was informed by scholarly observations of common heritage cultural roots in Confucian traditions that shape expectations about social and interpersonal relations (Slote & DeVos, 1998). Participants from the larger study who were excluded in the present analysis included self-identified AA participants who were of South Asian, Pacific Islander, and Filipino/a descent ($n = 30$), foreign-born EA participants ($n = 23$), and participants older than

25 years of age ($n = 2$). The institutional review boards (IRBs) at both universities approved the protocol, and all participants provided written informed consent prior to enrollment in the study.

Procedures

Participants were introduced to the study and were asked to first complete a 20-min computer task on emotion recognition, followed by a paper and pencil questionnaire packet. The Emotion Recognition Task (ERT) consisted of three tasks that required participants to attend carefully to stimuli and to identify the expressed emotion by selecting from a series of choices.

Measures

Social anxiety. The 18-item Social Anxiety Scale for Adolescents (SAS-A; La Greca, 1998) was used to measure levels of social anxiety across three dimensions: Fear of Negative Evaluation ($\alpha = .90$ for AAs; $\alpha = .92$ for EAs), Distress in New Situations ($\alpha = .85$ for AAs; $\alpha = .87$ for EAs), and General Social Inhibition ($\alpha = .72$ for AAs; $\alpha = .81$ for EAs). The scale can also be summed to arrive at a total score for overall social anxiety ($\alpha = .92$ for AAs; $\alpha = .93$ for EAs). Participants were asked to rate the extent to which the items characterized them on a 5-point scale (1 = *Not at all*; 5 = *Very well*). Items included "I worry about what others think of me." Evidence for the concurrent validity of the SAS-A for young adults is provided by associations with measures of social anxiety developed for college aged students including the Fear of Negative Evaluation Scale (FNES, Watson & Friend, 1969), the Social Avoidance and Distress Scale (SADS, Watson & Friend, 1969), and the Social Phobia and Anxiety Inventory (SPAI, Turner, Beidel, Dancu, & Stanley, 1989). Garcia-Lopez, Olivares, Hidalgo, Beidel, and Turner (2001) report that total SAS-A scores converge well with the FNES ($r = .71$), the SADS ($r = .67$), and the social phobia scale of the SPAI ($r = .73$).

Attunement Concerns

Parental emotional control. The modified Parenting Styles and Dimensions Questionnaire (PSDQ; Wu et al., 2002) was administered as a measure of socialization history. This version of the PSDQ is comprised of 15-items designed to assess four major dimensions of parenting practices common in China, including Encouragement of Modesty, Protection, Shame/Love Withdrawal, and Maternal Involvement. Participants were asked to indicate how often their parents exhibited the behaviors described in the questionnaire items on a 5-point scale (1 = *Never*; 5 = *Always*). Because of our substantive interest in parental emotional control, we selected the 4-item Shame/Love Withdrawal scale since its content (e.g., "They were less friendly with me if I did not see things their way") is related to promotion of attention to the emotional reactions of others. Thus, a mean score on the Shame/Love Withdrawal scale ($\alpha = .83$ for AAs; $\alpha = .77$ for EAs) was used to measure socialization promoting concerns about interpersonal attunement.

Loss of face. The Loss of Face scale (LOF; Zane & Yeh, 2002) is comprised of 21 items designed to reflect face loss concerns in common face-threatening situations involving social status, per-

ceptions of ethical behavior, social propriety, or self-discipline. Participants indicated the extent to which they agreed with items (e.g., "Before I make comments in the presence of other people, I qualify my remarks") on a 7-point scale (1 = *Strongly disagree*; 7 = *Strongly agree*). A mean score of overall loss of face concern was used as another variable of cultural concern about interpersonal attunement. The internal consistency of the scale was adequate in the present sample, at $\alpha = .83$ for AAs and $\alpha = .88$ for EAs. Zane & Yeh (2002) supported the concurrent validity of the LOF with other self-report measures tapping the awareness of oneself as a social object being evaluated by others. In a sample of AA and White college students, they found expected associations between the LOF and scores on the Public subscale of the Self-Consciousness Scale ($r = .42$) (Fenigstein, 1975) and the Other-Directedness subscale of the Self-Monitoring Scale ($r = .44$) (Snyder, 1974).

Attunement Competence

Sensitivity to others. The Revised Self-Monitoring Scale (RSMS; Lennox & Wolfe, 1984) is composed of 13 items designed to assess two dimensions of self-monitoring: the ability to Modify Self-Presentation and Sensitivity to Others' Expressive Behavior. Participants were asked to indicate to what extent the items were characteristic of themselves on a 6-point scale (1 = *Not at all characteristic*; 6 = *Extremely characteristic*). We used the mean score on the Sensitivity to Others scale ($\alpha = .74$ for AAs; $\alpha = .78$ for EAs) as a self-report measure of competence in interpersonal attunement to others' emotional cues (e.g., "I am often able to read people's true emotions correctly through their eyes"). The concurrent validity of the RSMS has been demonstrated by a significant correlation ($r = .25$) with performance on the Interpersonal Perception Task, a video-based test of accuracy in social perception (Costanzo & Archer, 1989).

Emotion Recognition Task (ERT) performance. The ERTs were assembled to assess emotion recognition ability via a computer administered program designed by the fourth author using Visual Basic. The ERT consists of three subtests: Static Face condition, Audio condition, and Video condition. The Static Face condition consists of purely visual stimuli, the Audio condition consists of purely auditory stimuli, and the Video condition consists of visual and auditory stimuli together. While these three test conditions provide specificity in terms of sensory stimuli, they also represent differing levels of ecological validity, with the Video condition designed to be the most ecologically valid approach to measuring emotion perception in day-to-day interactions. Higher scores on the test conditions represent greater accuracy on emotion recognition.

The ERT *Static Face* condition consisted of 42 still photographs of individual posed facial expressions (21 European American and 21 Asian photographs) displayed on a computer screen. The stimuli faces were selected from a previously developed repertoire of 48 posed photographs developed by Matsumoto and Ekman (1989) to reliably portray the six universal emotions of anger, disgust, fear, happiness, sadness, and surprise. A balanced design was used in the current study fully crossing the race of the encoder and the decoder. The stimuli were shown on screen in random order for one second each with a 4-s fixed interval between faces. After the exposure to each face, participants used a mouse to click on one of

six buttons labeled “angry,” “disgusted,” “fearful,” “happy,” “sad,” and “surprised” to identify the emotion being expressed. Scores could range from 0 to 42 indicating the total number of emotions correctly identified irrespective of race of the encoder.

The *ERT Audio* used auditory stimuli from the Diagnostic Analysis of Nonverbal Accuracy (DANVA; Nowicki & Duke, 1994). To develop the stimuli, Baum and Nowicki (1998) had two professional actors say a neutral sentence (e.g., “I am going out of the room now and I’ll be back later”) to reflect one of four emotions at two different levels of intensity. The DANVA consists of 24 auditory trials with equal numbers of male and female voices speaking with either high- or low-emotional intensity. Participants were asked to click on one of four buttons labeled “angry,” “fearful,” “happy,” and “sad” to identify the emotion being expressed. Scores could range from 0 to 24 indicating the number of emotions correctly identified. Nowicki and Duke (1994) report strong internal consistency and test–retest reliability estimates, and good concurrent validity with strong convergence with the Profile of Nonverbal Sensitivity (PONS; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979). Evidence for criterion validity is provided by significant associations with peer sociometric ratings ($r = .30$ with “like” ratings and $r = -.27$ with “dislike” ratings).

The *ERT Video* stimuli were developed using the procedure described by Ickes, Bissonnette, Garcia, and Stinson (1990). Twenty-six EA and 25 AA college student volunteers were videotaped discussing a meaningful life experience in a free-format interview. Interviewees reviewed their videotapes and, at intermittent moments of the interview, recorded the emotion they were feeling at that time in the interview. From these interviews, 14 discrete video clips, each lasting from 15 to 41 seconds, were extracted from recordings of 7 AA interviewees and 7 EA interviewees. Participants in the current study were asked to click on one of six buttons labeled “angry,” “anxious,” “frustrated,” “happy,” “sad,” and “surprised” to identify the emotion being

expressed by each interviewee. Scores could range from 0 to 14 indicating the number of emotions correctly identified.

The validity of the ERT Video task was evaluated in an ethnically diverse sample of 54 female undergraduates who participated in a semester-long study of emotion perception and social skills (Kang, Foley, & Nunez, in review). Evidence for the concurrent validity of the ERT Video was provided by significant associations with self-reported emotional sensitivity on the Social Skills Inventory (Riggio, 1986), and scores on the Mayer-Salovey-Caruso Emotional Intelligence Test (Mayer, Salovey, Caruso, & Sitarnios, 2003). Of the 6 indices of emotional sensitivity administered in the validation study, the ERT Video task had the strongest correlation ($r = .32$) with peer ratings of social skills after 14 weeks of peer interaction.

Performance on the ERT Video and Audio conditions rely in part on English receptive language ability. Although our inclusion criterion stipulated proficiency in written and spoken English, we wanted to ensure that differences in participants’ performance were not explained by language variables. In a series of *t* test comparisons, we found no association between primary language spoken in the home (English or an Asian language) and ERT scores (Static Face, Audio, Video, Total) within the AA sample.

Results

Preliminary Analyses

Ethnic differences. Table 1 displays means and standard deviations for study measures for AAs and EAs. As hypothesized, significant ethnic group differences emerged for measures of self-reported symptoms of social anxiety, attunement competence, and attunement concerns. AAs reported greater total Social Anxiety, $F(1, 262) = 4.19, p = .042$ and Distress in New Situations, $F(1, 262) = 4.91, p = .028$ than did EAs. There was no significant difference in General Inhibition and Fear of Negative Evaluation.

Table 1
Descriptive Statistics and Ethnic Differences for Main Study Variables

Variable	Asian Americans ($n = 116$)			Caucasian Americans ($n = 148$)			$F(1, 317)$	Effect size (d)
	M (SD)	Min	Max	M (SD)	Min	Max		
Social anxiety								
Fear of negative evaluation	20.34 (7.39)	8	39	18.67 (7.73)	8	39	3.14 [†]	.22
Distress in new situations	17.65 (5.72)	6	30	16.07 (5.76)	6	30	4.91*	.28
General inhibition	8.03 (3.33)	4	18	7.57 (3.62)	4	17	ns	.13
Total	46.02 (14.41)	18	87	42.31 (14.75)	18	83	4.19*	.25
Emotion recognition task								
Static face	34.79 (3.73)	24	41	36.32 (4.01)	13	42	9.96**	-.40
Audio	17.69 (2.97)	3	23	18.41 (2.72)	8	23	4.24*	-.25
Video	8.85 (2.04)	2	12	9.55 (1.51)	5	13	10.09**	-.39
Total	61.34 (6.31)	41	74	64.28 (5.64)	43	74	15.92**	-.49
Parental emotional control								
Encourage modesty	2.17 (.96)	1	5	1.73 (.68)	1	4.3	19.16**	.53
Shaming/love withdrawal	2.66 (1.13)	1	5	2.07 (.92)	1	5	21.75**	.57
Loss of face	4.46 (.82)	2.1	6	4.11 (.97)	1.1	6.7	9.98**	.39
Self monitoring								
Sensitivity to others	3.90 (.86)	1.3	5.7	4.26 (.83)	2.1	6	12.12**	-.43
Modification of self	3.56 (.64)	1.9	5.6	3.61 (.64)	1.4	4.9	ns	-.08
Total	3.72 (.63)	1.9	5.2	3.91 (.60)	2.3	5.2	6.20*	-.31

[†] $p < .10$, * $p < .05$, ** $p < .01$.

On the ERTs, AAs consistently obtained lower scores than EAs across the three conditions: Static Face, $F(1, 262) = 9.96, p = .002$, Audio, $F(1, 262) = 4.24, p = .041$, and Video, $F(1, 262) = 10.09, p = .002$. Further analyses were conducted to ascertain whether these ethnic differences were pervasive across valence of the emotional stimuli. Results suggested that the ethnic differences were more robust for the negative emotion stimuli than for the positive emotion stimuli. AA participants made significantly more errors in correctly identifying negative emotions than EAs on the Static Face, $F(1, 262) = 11.70, p = .001$ and Video, $F(1, 262) = 8.88, p = .003$ conditions, and marginally more errors on the Audio condition, $F(1, 262) = 2.866, p = .09$. When judging positive emotional stimuli, AAs did not differ from EAs in errors on the Static Face and Video conditions, but made significantly more errors in the Audio condition, $F(1, 262) = 4.87, p = .03$.

Ethnic differences also emerged in terms of self-assessed competence in emotion perception on the RSMS, where AAs scored significantly lower than EAs on the Sensitivity to Others scale, $F(1, 262) = 12.12, p = .001$ but not on the Self-Presentation scale. As predicted, there were significant ethnic differences on self-reported concerns about attunement. AAs scored significantly higher than EAs on the Shame/Love Withdrawal scale of the PSDQ, $F(1, 262) = 21.75, p < .0001$ and on the Loss of Face scale, $F(1, 262) = 9.98, p = .002$.

Mediation Analyses

Variable selection. Empirical and conceptual considerations guided selection of an attunement competence variable for the mediation analyses. Table 2 displays bivariate correlations between the study variables of interest for the total sample. We noted that both the Static Face and Video conditions were related to measures of social anxiety; however only ERT Video performance was associated with all three social anxiety subscales: Fear of Negative Evaluation ($r = -.15, p = .015$), Distress in New Situations ($r = -.21, p = .001$), and General Inhibition ($r = -.18, p = .003$). We also considered the ERT Video condition the most ecologically valid in terms of the task demand. Thus, we selected ERT Video as our performance measure in the mediation analyses.

Hierarchical regression models. In a set of multiple regression analyses, indices of attunement concerns and competence were tested as potential mediators of ethnic differences in total social anxiety symptom scores. Results of these analyses are shown in Table 3. After controlling for participants' age and gender, Ethnicity remained a significant predictor of Social Anxiety ($B = -3.61, p = .048$). In the second step of each model, Ethnicity was simultaneously regressed on Social Anxiety along with the targeted mediator. The Sobel test was employed to determine whether the inclusion of the mediator significantly attenuated the contribution of Ethnicity in the prediction of Social Anxiety (Sobel, 1982).

The regression coefficients for Ethnicity decreased and were no longer significant after inclusion of Loss of Face ($B = -.11, p = .94$), Shaming/Love Withdrawal ($B = -2.53, p = .18$), and ERT Video performance ($B = -2.61, p = .15$). The mediated effect was significant for Loss of Face ($z = -3.06, p = .002$), Shaming/Love Withdrawal ($z = -2.00, p = .048$), and ERT Video performance ($z = -2.17, p = .003$). However, the effect of Ethnicity was not attenuated when Sensitivity to Others was simultaneously regressed on Social Anxiety.

Path analysis. A path analytic model was employed to allow for a test of the combined mediational model with all four potential mediators included simultaneously. Path analysis models were fit using the Mplus statistical program, version 4.0 (Muthen & Muthen, 2001). The hypothesized path model was specified with the dichotomous Ethnicity variable as the single exogenous variable with direct effects specified on each of the four potential mediators. In turn, we included direct paths from each mediator to the endogenous variable of Social Anxiety. The initial model also included a direct path from Ethnicity to Social Anxiety.

The model estimated in Figure 1 showed that when all four mediators were considered simultaneously, Ethnicity was significantly related to Loss of Face ($z = -3.907, p < .0001$), self-reported Sensitivity to Others ($z = 3.549, p = .0004$), ERT Video performance ($z = 2.716, p = .007$), and Shaming/Love Withdrawal ($z = -4.684, p < .0001$). When the effects of all mediators were examined together, only Loss of Face ($z = 14.18, p < .0001$), and ERT Video performance ($z = -3.326, p = .0009$) were

Table 2
Bivariate Correlations for Main Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Fear of negative evaluation														
2. Distress in new situations	.61**													
3. General inhibition	.57**	.70**												
4. Social anxiety–Total	.89**	.88**	.81**											
5. ERT–Static face	-.07	-.15*	-.15*	-.13*										
6. ERT –Audio	.09	.08	.04	.09	.23**									
7. ERT–Video	-.15*	-.21**	-.18**	-.20**	.25**	.15*								
8. ERT–Total	-.05	-.13*	-.13*	-.10	.83**	.66**	.53**							
9. Encourage modesty	.24**	.14*	.11	.21**	-.14*	-.06	-.08	-.14*						
10. Shaming/love withdrawal	.20**	.09	.11	.17**	-.07	-.08	-.04	-.09	.37**					
11. Loss of face	.59**	.58**	.44**	.64**	-.17**	.09	-.06	-.09	.28**	.19**				
12. Self-monitoring–Total	.02	-.05	-.00	-.01	-.04	.00	.02	-.02	-.10	-.04	.13*			
13. Sensitivity to others	-.02	-.05	-.02	-.04	.02	.07	.06	.06	-.14*	-.09	.06	.86**		
14. Modification of self	.06	-.02	.02	.03	-.09	-.08	-.03	-.10	-.02	-.03	.17**	.81**	.40**	

Note. ERT = Emotion Recognition Task.
* $p < .05$. ** $p < .01$.

Table 3
Summary of Four Hierarchical Regression Analyses Evaluating Attunement Concerns and Competence Measures as Mediators of Ethnic Differences in Social Anxiety (N = 264)

Variables in model	B	SE B	β	ΔR^2	Sobel test
Step 1					
Ethnicity	-3.61	1.81	-.12*	.02	
Step 2					
Ethnicity	-.11	1.44	-.00		
Loss of face	10.11	.77	.64**	.39**	-3.06**
Step 2					
Ethnicity	-2.53	1.88	-.09		
Shaming/love Withdrawal	1.92	.88	.14*	.02*	-2.00*
Step 2					
Ethnicity	-2.61	1.82	-.09		
Video ERT	-1.51	.51	-.19**	.03**	-2.17**
Step 2					
Ethnicity	-3.51	1.86	-.12†		
Sensitivity to others	-.26	1.08	-.02	.00	

Note. ERT = Emotion Recognition Task.
† $p < .10$. * $p < .05$. ** $p < .01$.

significantly related to Social Anxiety. The direct path from Ethnicity to Social Anxiety was not significant ($z = 1.166, p = .24$), suggesting the effect of Ethnicity on Social Anxiety was fully mediated by these three variables. According to standard conventions, the model provided a good fit to the data, with a nonsignificant value for the chi square likelihood ratio test, $\chi^2(6) = 9.10, p = .17$, the Comparative Fit Index (CFI) was .985, the Root Mean Square Error of Approximation (RMSEA) was .044, and the

Standardized Root Mean Square Residual (SRMR) was .039. The model explained 44.3% of the variance in Social Anxiety. The total indirect effect of Ethnicity on Social Anxiety was significant ($z = -4.090, p < .0001$), as were the specific indirect effects mediated by Loss of Face ($z = -3.086, p = .002$) and ERT Video ($z = -2.416, p = .016$). However, there were no significant indirect effects of Ethnicity on Social Anxiety through self-reported Sensitivity or Shaming/Love Withdrawal.

Discussion

Findings from the current study corroborate those of previous investigations noting an elevated level of social anxiety among AA college students relative to EA college students. Although the ethnic difference was significant in the current sample, it corresponded to a small effect size. This compares to medium and large sized effects found in previous comparisons of North American college students of European and Asian descent (Hong & Woody, 2007; Hsu & Alden, 2007; Okazaki et al., 2002). Nonetheless consistent with our predictions, differences in certain interpersonal attunement concerns and competencies appeared to fully explain the observed ethnic difference in social anxiety symptoms.

In terms of attunement concerns, AA students were more likely than EAs to endorse face loss concerns, comprised of heightened sensitivity to negative interactions and concerted efforts to detect, deflect, and prevent negative attention from others. Compared to EA participants, AAs also reported more shame socialization experiences wherein parents used more induction of guilt and love withdrawal to motivate compliance. Results of separate regression models indicated that attunement concerns owing to loss of face and shame socialization each significantly mediated the ethnic

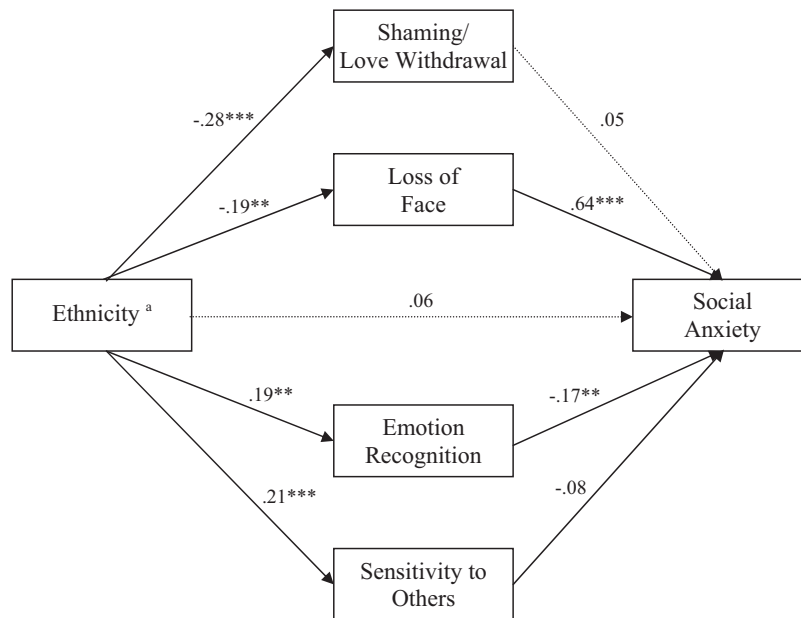


Figure 1. Summary of path analysis with multiple mediators of the association between ethnicity and social anxiety. * $p < .05$, ** $p < .01$, *** $p < .001$. ^a 1 = Asian American, 2 = European American. Hypothesized model: $\chi^2(6) = 9.10, p = .168$; Comparative Fit Index (CFI) = .985; TLI = .962; Root Mean Square Error of Approximation (RMSEA) = .044, 90% confidence interval = .00-.099; Standardized Root Mean Square Residual (SRMR) = .039.

difference in social anxiety. However, when considered simultaneously in our multiple mediator path analysis, only face concerns, not shame socialization, significantly mediated the relationship between ethnicity and social anxiety.

Alongside the finding that AAs reported more concern about anticipating and avoiding negative social evaluation than did EAs, self-report and performance measures of emotion recognition were also lower among AAs. In particular, AA college students made more errors in classification of negative emotional stimuli. Results of the path analysis suggest that the lowered ability to recognize emotions displayed in videotaped emotional disclosures significantly mediated the ethnic difference in social anxiety. Self-reported sensitivity to others' emotions was higher among EAs compared to AAs, but did not mediate the ethnic difference in social anxiety. Together, attunement concerns involving loss of face and competence in emotion recognition explained 44% of the variance in social anxiety in the total sample. AA college students appeared to be more vulnerable to social anxiety because of elevated face concerns and lowered ability to decode the emotions of others.

Thus, in our study only one of the two measures of attunement concerns appeared to explain the ethnic difference in social anxiety. Loss of face mediated the ethnic difference in social anxiety, but a reported history of parenting practices that cultivate the need to attend to parental emotional reactions did not. Two measurement issues are central here. In terms of construct validity, there may be concerns about divergent validity between the loss of face measure and social anxiety symptoms. While loss of face is a central cultural concept in Asian culture thought to profoundly organize social behavior, the items of the scale measure many of the same preoccupations noted among socially anxious individuals across cultures. The correlation between the measures indicated that they share 41% of their variance. On the other hand, our parenting measure while relevant to attunement concerns is far more distal to current experiences of social unease. Participants' retrospective reports of parents' use of shaming and love withdrawal practices represent a narrow slice of socialization experience, restricted to the family context, and is at least one step removed from a current preoccupation with attunement. Thus, it may not be surprising that face concerns were a significant mediator while shame socialization was not. To arrive at more definitive conclusions about the role of cultural attunement concerns in the ontogeny of social anxiety, we need measures that show discriminant validity from social anxiety inventories and measures that assess a range of familial and nonfamilial socialization influences relevant to attunement concerns.

Likewise, only one measure of attunement competencies significantly mediated the effect of ethnicity on social anxiety symptoms. Beliefs in one's own ability to read the emotions of others did not explain ethnic differences in social anxiety; only demonstrated accuracy in interpreting emotional communications in video recordings mediated the ethnicity effect. Thus, differences in self-assurance in interpersonal sensitivity were not central in explaining why AAs were more socially anxious than EAs. So it was not merely the idea that one was unskilled in interpreting the emotions of others that lead to social unease. Instead, actual differences in performance accuracy held the explanatory role. This suggests the possibility that a change in self-concept may be

less instrumental in changing socially anxious symptoms than a fundamental change in attunement skills.

One interpretation of our data is that AAs are raised within an interdependent cultural script that engenders concern about the reactions of others to the self. One socialization pathway might involve parenting styles that leverage emotional control. Having internalized a strong regard for the emotional responses of others to one's behavior, AAs may become particularly attuned to social evaluation and become invested in protecting face. At the same time, related cultural socialization forces may shape emotional display rules which discourage the open or intense expression of emotion (e.g., Tsai, Louie, Chen, & Uchida, 2007). As such, individuals of Asian descent may be less practiced at recognizing and interpreting open displays of affect, whether expressed by members of the ingroup or the outgroup. An awareness of one's inaccuracies in perceiving emotions of others may exacerbate fears of social situations, especially when attunement to others and the avoidance of loss of face are valued. As a result, AAs may find themselves in a double bind that leads to social unease—prioritizing attunement to others' emotions, yet falling short of this standard given the limitations in their learning opportunities.

Previous literature has documented a corresponding cultural disadvantage in recognition of one's own emotions. Compared to EA college students, AAs and Asian nationals report higher levels of alexithymia, which is characterized by difficulties identifying one's own emotions and communicating them to others (Le, Berenbaum, & Raghavan, 2002). AAs also reported that their parents were less likely to verbalize positive emotion and were more likely to avoid direct expression of negative emotion. Differences in reported parent behavior mediated the relationships between ethnicity and alexithymia. These data suggest that limited competence in emotion recognition among AAs may indeed be attributable to limited exposure to affective display in families of origin. Thus, certain parenting styles may sensitize AA young adults to attunement concerns, while restraint in parental emotional expression may limit opportunities for development of emotion recognition skills.

A second possibility that cannot be ruled out given the current research design is that the higher levels of social anxiety experienced by AAs significantly interfere with their abilities in emotion recognition. This is consistent with the notion that an excessive self-focus in individuals with social anxiety can reduce the attention paid to social partners, directing attentional resources instead to monitoring one's performance and arousal and anticipating the consequences of being evaluated (Woody, 1996). These activities divert information processing resources away from functions such as active listening, and attending to emotionally relevant information such as facial expression or voice tone. As a result, patients with social anxiety disorder require more information (i.e., greater intensity of expression) than matched controls to correctly identify expressions of anger and disgust (Montagne et al., 2006). As such, decrements in emotion recognition in AAs may be epiphenomena of higher levels of social anxiety. It would be important to learn whether culturally socialized face concerns play a causal role in deficient emotion recognition, and whether emotion recognition deficits actually elevate social anxiety. Experimental and longitudinal research may help sort out competing causal interpretations.

The findings of this study have moved beyond measures of global value orientations and self-concepts in explaining ethnic

differences in social anxiety between college students of Asian and European descent. Of note, face concerns may be a specific cultural variable that has notable explanatory value within the broad cultural dimension of interdependence. In addition, we found that our performance measure of emotion recognition also significantly and independently mediated the association between ethnicity and social anxiety. Further still, actual performance in emotion recognition rather than self-assessed competence in sensitivity explained the ethnic difference in social anxiety. These results suggest that evidence-based interventions for social anxiety may fit particularly well for AA college students because of their emphasis on skills training in emotion perception, with the goal of reducing self-focused attention and diverting attention toward the accurate decoding of the social emotional cues of others. A culturally sensitive intervention might also include psycho-education about a potential cultural double-bind whereby interpersonal attunement is highly valued in the context of limited mastery opportunities. This framework could serve the dual functions of de-stigmatization and engagement, akin to previous culturally informed treatment adaptations that have been shown to enhance the effects of exposure therapy for phobic AA college students (Huey & Pan, 2006).

However, the limitations of the current study warrant attention. First, as previously noted, the cross-sectional design of the current study precludes inferences about causal direction of influences. Socialization within a tradition that prioritizes face concerns and regulation of emotion may result in limited emotion recognition capacity and social anxiety. But, it is also possible that face concerns and emotion recognition deficits are epiphenomena of a basic dispositional vulnerability to social anxiety. Further investigation is needed to test these competing models. Second, the degree to which these findings are generalizable is unknown. A focus on college students is warranted given the ample evidence for ethnic differences in social anxiety symptom reports in this population. It is possible that these differences do not extend beyond college students and may not reflect differences in rates of clinical diagnosis.

The limitations of particular study measures require attention. First, the measure of social anxiety was developed for use with adolescents, and while it has been shown to converge well with adult measures of social anxiety, it may ultimately not be developmentally appropriate for young adults. This may relate to the lower observed effect size associated with the ethnic difference in social anxiety in this study compared to previous investigations. Second, although the pilot validation results for the ERT Video measure have shown promise, extended psychometric evaluation is warranted. This measure may represent an improvement in ecological validity over previous measures as it requires respondents to decode naturalistic, often subtle expressions of emotions when provided with verbal and nonverbal channels of communication simulating everyday accounts of people's meaningful experiences. Nonetheless, conclusions about deficits in attunement competencies among AAs must be tempered by the notion that the ERT tasks may not assess sensitive perception of emotion in real interactions with familiar others. It is possible that AAs may be able to make important but less well understood discriminations and judgments about more covert or complex emotional communications that occur in daily interpersonal encounters that are not assessed by our tasks.

Nonetheless, our findings do suggest the importance of considering the distinct contributions of attunement concerns versus competencies in explaining ethnic differences in social anxiety. However, it is also important to recognize that elevated levels of social anxiety and poorer emotion recognition in AA college students are not completely determined by cultural factors. Given that rates of social anxiety are lower among Asian nationals than among AAs (Hsu & Alden, 2007), it stands to reason that the experience of being a minority in the American cultural environment may place strains on AAs which tax their capacity for intercultural social interactions and emotion recognition. Future investigations should elucidate how these social contextual conditions contribute to social anxiety and related adjustment difficulties observed among AA young adults.

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