

Sources of Ethnic Differences Between Asian American and White American College Students on Measures of Depression and Social Anxiety

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This study tested an affect-specific explanation for the Asian and White American differences in depression and social anxiety. Construal of the self as independent or interdependent in relation to others (H. R. Markus & S. Kitayama, 1991) was hypothesized to be 1 possible way in which culture may be expressed in individuals' psychological functioning, which in turn was hypothesized to be linked specifically to social anxiety. College students ($N = 348$; 183 White Americans and 165 Asian Americans) completed self-report measures of depression, social anxiety, and self-construals. Asian Americans scored significantly higher than White Americans on measures of depression and social anxiety. When the covariance between depression and social anxiety was statistically controlled, ethnicity and self-construal variables were found, as predicted, to be associated with measures of social anxiety but not depression. These findings suggest a more differentiated perspective on the relations between culture, ethnicity, and emotional distress.

One of the most striking findings in ethnic minority mental health is the consistency with which Asian American-White American ethnic differences have been found on self-report measures of distress. Contrary to the lay public's view of Asian Americans as a well-adjusted and well-functioning group, past research using measures of depression, social anxiety, and other forms of distress has indicated that Asian Americans report higher levels of distress than White Americans (Uba, 1994), with foreign-born, recently immigrated Asian Americans reporting the highest level of distress (e.g., Abe & Zane, 1990; S. Sue & Zane, 1985). This pattern of higher levels of depressive symptoms among Asian Americans has been noted in both college samples (e.g., Aldwin & Greenberger, 1987) and community samples (e.g., Ying, 1988).

What might account for this pervasive pattern of ethnic differ-

ences in self-report measures of distress? One possibility is that the differences indicate a higher level of generalized distress among Asian Americans. Such a generalized distress explanation would posit that whatever factors are associated with being Asian American (e.g., cultural values, being a visible minority group member, acculturative stress) would affect all areas of an individual's psychological functioning. Alternatively, the ethnic differences may reflect specific forms of distress among Asian Americans, but a high degree of co-occurrence of common distress experiences such as depression and anxiety may be masking a more specific cultural effect on the expression of distress among Asian Americans. This affect-specific explanation would hypothesize that certain cultural values characteristic of Asian Americans may predispose them to express their emotional distress in specific ways. The present study investigated the second explanation by examining scores on self-report measures of depression and social anxiety among Asian American and White American college students.

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Distress Among Asian Americans

Various measures of emotional distress and personality have been used to suggest that Asian Americans are more distressed than White Americans. Notably, most studies of distress among Asian Americans have focused on depression. For example, a large-scale study assessing the prevalence of depressive symptoms among 499 Asian American community residents in Seattle (Kuo, 1984) was conducted using the Center for Epidemiologic Studies Depression (CES-D; Radloff, 1977) Scale. The results showed that the mean CES-D Scale score for these Asian American community residents was higher than the previously published mean score for White American samples and that foreign-born Asian Americans reported more depressive symptoms than U.S.-born Asian Americans. Other community studies reported

similarly high mean scores on the CES-D among immigrant Korean American women (Kim & Rew, 1994; Shin, 1993), immigrant Chinese Canadian and Vietnamese Canadian women (Franks & Faux, 1990), and predominantly foreign-born Chinese American adults (Ying, 1988). It should be noted that none of these community studies using the CES-D scale collected comparison samples of White Americans from the same community.

Ethnic differences between Asian Americans and White Americans on depressive symptoms have also been documented among college students. In one study (Kinzie, Ryals, Cottingham, & McDermott, 1973), female Asian American students of Chinese and Japanese ancestry scored as being more depressed than female White American students on the Zung Self-Rating Depression Scale (Zung, 1965). A related study (Marsella, Kinzie, & Gordon, 1973) showed that a factor analysis of the responses to the Zung Self-Rating Depression Scale yielded some ethnic and cultural differences in the factor structure of depressive symptoms. Existential symptoms were dominant among Japanese and White individuals, whereas Chinese individuals expressed depression through more somatic symptoms. In another study examining the effects of various psychosocial factors contributing to depression among Korean American and White American college students (Aldwin & Greenberger, 1987), Korean American students reported significantly more depressive symptoms than did their White counterparts.

Moreover, the pattern of ethnic differences on depression measures appears to extend to social anxiety measures, although only one previous study specifically used social anxiety measures. In a study of nonassertiveness, D. Sue, Ino, and Sue (1983) found that Chinese American male college students reported significantly greater social anxiety and greater apprehension, as measured by the Social Avoidance and Distress (Watson & Friend, 1969) Scale and the Fear of Negative Evaluation (Watson & Friend, 1969) Scale, respectively, compared with their White counterparts. A review of studies of Asian Americans on related constructs such as assertion, social introversion, and social deference and abasement revealed that Asian Americans tended to appear more emotionally withdrawn, socially isolated, verbally inhibited, and socially introverted compared with White Americans (Leong, 1986). Notably, when Zane, Sue, Hu, and Kwon (1991) examined cultural differences between Asian Americans and White Americans on assertiveness across a number of different situations that required assertiveness, Asian Americans tended to report greater anxiety and guilt regardless of whether they reported less assertiveness. Though social anxiety and related constructs are studied less extensively than depression, there appears to be cumulative findings suggesting that Asian Americans and White Americans differ on some psychological dimension related to social anxiety.

Previous studies, however, leave it unclear what specific psychological variables underlying ethnicity may be associated with distress. It has also not been determined whether the impact of ethnicity is specifically on depression and social anxiety or globally on general emotional distress. Two features of past studies prevent them from addressing this issue. First, they examined each type of distress separately. Second, they did not identify or measure specific psychological variables that theoretically represent putative cultural differences between Asian

Americans and White Americans. These two points were both addressed in the present study.

Toward a Specific Model of Culture and Distress

To address the first point, multiple self-report measures of depression and social anxiety were administered in the present study to a large number of Asian American and White American college students. There were several advantages to studying depression and social anxiety simultaneously. Evidence suggests that depression, social anxiety, and other forms of emotional distress (at least at subclinical levels) are prevalent among Asian American college students (e.g., Aldwin & Greenberger, 1987) as well as among White American college students (Gotlib, 1984). In examining relations of self-report measures on four types of negative affect (i.e., fear, sadness, hostility, and guilt), Watson and Clark (1992) documented a considerable covariance among the four types of negative affect as well as an affect-specific content for each affect. Confirmatory and exploratory factor analytic studies of measures of depression, social anxiety, shyness, and loneliness also revealed moderate interrelatedness among the measures (Anderson & Harvey, 1988). Furthermore, Ingram (1989) demonstrated that not controlling for affective confound between depression and social anxiety can substantially alter findings of social cognition research. By including measures of depression and social anxiety, the present study's design allowed for testing specific relations between cultural factors and specific type of emotional distress.

To address the second point, ethnic differences needed to be construed in psychologically meaningful terms. Cross-cultural and ethnic psychologists have pointed to the important role that the construct of the self may play in theoretically linking culture and psychopathology (Landrine, 1992; Marsella, 1985; Marsella, Sartorius, Jablensky, & Fenton, 1985). Markus and Kitayama's (1991) model of independent and interdependent self-construals has recently received much attention in psychology as a useful set of constructs to explain many cross-cultural differences in cognition, affect, and motivation. In their model, Markus and Kitayama distinguished between independent self-construal, held primarily by those in Western European and American cultures, and interdependent self-construal, held primarily by non-Western European (e.g., Asian, African, Latin American, and southern European) cultures. In a Western culture, the developmental goal of an individual is to become independent and autonomous. Accordingly, for people holding an independent construal of the self, internal aspects of the self (e.g., desires, preferences, attributes, or abilities) are considered to be the most significant factors regulating behavior and are assumed to be relatively stable and invariant. On the other hand, those with interdependent construal of the self recognize that one's behavior is governed by what one perceives to be the thoughts, feelings, and actions of others in the relationship. Accordingly, relationships with other people are used to define the self, and people with interdependent self-construal derive their self-worth through their abilities to adjust themselves to the social climate, to restrain expressions of their individual wishes or feelings, and to maintain harmony with others.

The constructs of independent and interdependent self-construals (Markus & Kitayama, 1991) provide a useful framework

for deriving and testing culture-specific hypotheses concerning ethnic differences in emotional distress as they serve to elaborate psychological mechanisms that may be strongly linked to culture. That is, self-construals may be one of many avenues through which culture may be expressed psychologically in an individual. Such conception allows for a derivation of specific hypotheses about emotional distress. For example, Asian cultural influences may socialize Asian American individuals to hold highly interdependent self-construals. Individuals who are highly interdependent are likely to be acutely attuned to social cues and may be more prone to the experiences of social anxiety than individuals low in interdependent self-construal.

The present study involved three empirical tasks and corresponding hypotheses. The first task involved testing for ethnic differences on the measure of independent and interdependent self-construals. This step was necessary to determine whether these self-construal variables may be systematically related to two ethnic groups from different cultural backgrounds. Asian Americans were hypothesized to report higher interdependent self-construal and lower independent self-construal compared with White Americans. The second task concerned replications of previously found ethnic differences between Asian American and White American students on commonly used measures of depression and social anxiety. It was hypothesized that Asian Americans would score in the more distressed direction than White Americans on each measure of distress. The final task was to examine affect-specific predictors for each distress measure using hierarchical multiple regression analyses. This set of analyses examined the effects of ethnicity and self-construal variables while controlling for the covariance among the distress measures. Given that *social anxiety*, by definition, is an expression of discomfort in, or about, interpersonal situations, it was hypothesized that independent and interdependent self-construals may account for a larger portion of Asian-White differences on social anxiety than that of depression. If the expected cultural differences in self-construals exist such that Asian Americans are more attuned to relational aspects of the self, then it follows that social anxiety may be a more culturally consistent means of expression distress among Asian Americans. Such findings would support the affect-specific hypothesis of ethnic differences in emotional distress.

Method

Participants

The sample for this study consisted of 348 university students enrolled in introductory psychology courses at the University of California, Los Angeles. There were 183 self-identified non-Hispanic White American participants (84 men, 99 women). Those White participants who were not born in the United States were excluded from the study to maintain cultural homogeneity in the group.

Of the 165 self-identified Asian American participants (76 men, 89 women), 100 were Chinese American, 52 were Korean American, and 13 were Japanese American. The Asian American group was predominantly foreign-born, with approximately two-thirds ($n = 110$, 67%) listing their place of birth in Asia. This high percentage of foreign-born Asian Americans in the sample is consistent with the 1990 Census data, which listed 64% of Asians/Pacific Islanders as foreign-born (Ong & Hee, 1993). Of the remaining U.S.-born Asian Americans, most ($n = 49$, 31% of Asian group) were second generation (i.e., one or both parents

Table 1
Intercorrelations Among Self-Construal and Distress Measures

Measure	1	2	3	4	5
1. Independent self	(.86)	—			
2. Interdependent self	-.15*	(.68)	—		
3. BDI	-.27***	.20***	(.86)	—	
4. FNE	-.48***	.53***	.43***	(.92)	—
5. SAD	-.37***	.24***	.45***	.46***	(.94)

Note. $n = 348$. Scale reliability estimates (coefficient alphas) are shown in parentheses. BDI = Beck Depression Inventory (Beck, Rush, Shaw, & Emery, 1979); FNE = Fear of Negative Evaluation (Watson & Friend, 1969); SAD = Social Avoidance and Distress (Watson & Friend, 1969).

* $p < .005$. *** $p < .0001$.

born in Asia), with a very small number of Asian Americans being third generation ($n = 3$, 2% of Asian group) and fourth generation ($n = 3$, 2% of Asian group). Among the foreign-born Asian Americans, the mean age of entry into the United States was 8.2 years old ($SD = 5.0$), and the mean number of years spent in the United States was 13.8 years ($SD = 4.9$).

One-way analysis of variances (ANOVAs) were conducted on the demographic, self-construal, and distress variables for the three Asian ethnic groups (i.e., Chinese, Korean, Japanese). There were no significant differences across the Asian groups on any of the variables, thus individuals from the three groups were combined into one Asian American group. The grouping of all Asian American individuals into one group may also be conceptually supported because various Asian cultures share common cultural values and practices such as filial piety, concern with face, emphasis on group harmony, and so forth (Ho, 1982).

Materials

Data presented in this study were collected as a part of a larger study of cultural differences in the self and emotional distress. The present analyses involved the following self-report measures. Reliability estimates of the scales are reported in Table 1.

Beck Depression Inventory (BDI). The revised version of the BDI (Beck, Rush, Shaw, & Emery, 1979) is a widely used, 21-item measure designed to assess intensity of depression. Items cover affective, cognitive, somatic, and behavioral aspects of depression. The range of scores is from 0 to 63, with a suggested guideline of rating scores less than 4 for no or minimal depression, scores between 5 and 13 for mild depression, between 14 and 20 for moderate depression, and scores 21 and above for severe depression (Steer, Beck, & Garrison, 1986). A meta-analysis of the BDI's reliability estimates reported a mean alpha coefficient of .86 for psychiatric samples and a mean of .81 for nonpsychiatric samples (Beck, Steer, & Garbin, 1988).

Social Avoidance and Distress Scale (SAD). The SAD Scale (Watson & Friend, 1969) is a widely used measure of social anxiety. It contains 28 items, 14 of which assess social avoidance and 14 of which assess social anxiety. Although a factor analytic study verified the subscale structure for avoidance and distress (Patterson & Strauss, 1972), the validity and reliability of the subscales have not been systematically examined, and most research using this scale has used the full-scale version (Leary, 1991). The response format in the original version was true-false, but because the distribution was quite skewed (the modal score was 0), many researchers have used a 5-point Likert format instead of the true-false format. A Cronbach's alpha coefficient of close to .90 has been reported for the 5-point scale version of this scale (Leary, 1991). The present study used the 5-point scale version.

Fear of Negative Evaluation Scale (FNE). The original FNE Scale (Watson & Friend, 1969) consists of 30 true-false items, approximately balanced between positively and negatively scored items. The revised, brief version of the scale (Leary, 1983) contains 12 of the original items, scored on five-point scales, with Cronbach's alpha of .90. The revised scale was reported to correlate .96 with the original scale (Leary, 1983). The scores on this brief version range from 12 to 60. The brief version of the scale was used in the present study because the continuous scale format was more suited for correlational analysis than the original version's dichotomous (true-false) format.

The two measures of social anxiety, the SAD and the FNE Scales, were developed in tandem to assess two aspects of social anxiety (Watson & Friend, 1969). Social avoidance and distress measured by the SAD Scale refer to individuals' tendency to avoid social situations and to feel anxious while in such situations. This scale, then, focuses on the affective (i.e., subjective distress) and behavioral (i.e., avoidance) components of social anxiety (Leary, 1991). Fear of negative evaluation assessed by the FNE Scale was defined by the scale's authors as "apprehension about other's evaluation, distress over their negative evaluation, and the expectation that others would evaluate one negatively" (Watson & Friend, 1969, p. 449). The focus is primarily on people's worries and concerns with interpersonal evaluation rather than on their subjective experience of anxiety in social situations *per se*.

Independent and interdependent self-construal. A scale of interdependent self-construal and a scale of independent self-construal were constructed from the items in a measure developed by Takata (1993). The scale, originally constructed in Japanese and validated with Japanese participants, contained 40 items designed to assess beliefs and attitudes associated with holding independent or interdependent self-construals. Each item is rated on a 7-point Likert scale on the extent to which the respondent agrees with the characteristic. This scale was constructed in another language and culture with the present study's American sample, so cross-cultural methods were used to ensure translation and factor structure equivalence. First, in translating the items into English for use in the present study, careful steps were taken to assure translation equivalence. Following the recommended method in cross-cultural psychology of back translation (Brislin, 1993), the measure was first translated from Japanese to English by one bilingual translator, and then the resulting English version was translated back to Japanese by another bilingual translator. The original and the back-translated Japanese versions were compared to see if any item meanings were lost in translation. For each item where a notable discrepancy in meaning between the Japanese versions was noted, the corresponding item in the English version was reworded to clarify the conceptual thrust.

In the present study, the English-version items for the entire sample were factor analyzed by principal components followed by a varimax rotation. Two factors were retained in the present analysis according to the "scree" criterion proposed by Cattell (1966). The two factors accounted for 30% of the variance in the measure. Only those items with factor loading coefficients of at least .30 that were not split equally between the two factors were retained. Thirty-four items met these criteria. The first factor contained 19 items and was composed of items such as, "For the most part, I make judgments or decisions on my own" and "It doesn't bother me if my idea or behavior differs from that of others around me," reflecting independent self-construal. The second factor initially contained 15 items, and this factor was represented by items such as, "How I feel about things depends on who I am with or the situation I am in," and "In making decisions, I always consider how my decision will affect others before I consider how it will affect me," reflecting interdependent self-construal. However, inspection of the content of the items in this second factor revealed that 5 of the items appeared to have face validity as measures of fear of negative evaluation. Examples of such items are, "I am often sensitive to how others see me because they may be evaluating me," and "I am concerned with

what others think of me." Thus, to avoid problems of redundancy with one of the outcome measures, these 5 items were omitted from the interdependent factor. The factor analysis was repeated using the remaining items, and the analysis again yielded two factors that could be interpreted as reflecting independent self-construal (19 items) and interdependent self-construal (10 items).

In a factor analysis of the original 40-item Japanese version of this measure administered to 202 Japanese college students, Takata (1993) reported an eight-factor solution (i.e., four independent self factors and four interdependent self factors) extracted by a principal components analysis. Inspection of the items revealed that all but two items from Takata's four specific independent factors mapped onto the present study's general independent factor, and all but two items from Takata's four specific interdependent factors mapped onto the present study's interdependent factor. These results suggest that the Japanese and the English versions of the measure have factor structure equivalence at a general level.¹ This two-factor model of self-construal is also consistent with another independently constructed measure of self-construals that found two distinctly measurable general dimensions of independence and interdependence (Singelis, 1994).

Finally, because the present sample (for which these factor analyses were conducted) contained both White American and Asian American participants, the factor analytic procedures were also conducted separately for each ethnic group to make certain that these two factors were meaningful to participants from both ethnic groups. The two-factor structure, with the same sets of items loading on each factor, was replicated for each ethnic group. Each participant's scores for the independent and interdependent self-construal variables, used in all subsequent analyses, were computed as the mean ratings of the items constituting each factor.

Demographics. Demographic information such as age, gender, ethnic background, place of birth, and parents' occupations were collected. In the present study, a single socioeconomic status (SES) index for the participant's family was derived by taking the higher of either the mother's or the father's SES score, using the Nam-Powers Socioeconomic Status Scores (Nam & Terrie, 1988). In cases in which one parent was absent, the score of the present parent was used as the participant's family SES score. For Asian American participants, acculturation was measured on a continuum using the Suinn-Lew Asian Self-Identity Scale (SL-ASIA; Suinn, Ahuna, & Khoo, 1992; Suinn, Rickard-Figueroa, Lew, & Virgil, 1987) so that the construct of acculturation could be treated as a continuous variable whose effect could be measured. The SL-ASIA is a 21-item measure that assesses four content areas of acculturation: language familiarity, usage, and preference; ethnic identity; cultural behaviors; and ethnic interactions. Participants rated each item on a scale ranging from 1 (*low degree of acculturation*) to 5 (*high*

¹ As suggested by Ben-Porath (1990), a replicatory factor analysis was conducted to examine factor structure equivalence of a measure across cultures. In the English version, American sample data were factor analyzed using the same principal components method used in the original Japanese study. A comparison of the eigenvalues computed using the principal components method for the Japanese sample and those in the present sample revealed comparable values. The first ten eigenvalues from Takata's factor analysis were as follows: 7.44, 3.58, 2.53, 1.78, 1.68, 1.58, 1.35, 1.33, 1.28, and 1.19, followed by a varimax rotation (Takata, personal communication, August 3, 1992). The first ten eigenvalues in the present study were as follows: 8.26, 3.77, 2.09, 1.69, 1.55, 1.35, 1.26, 1.21, 1.12, and 1.04. However, an attempt to obtain an eight-factor solution with the present sample did not produce the same set of items loading onto eight factors as the Japanese eight-factor solution. In fact, the eight-factor solution in the present study was uninterpretable. In the present study, the two-factor solution with two general dimensions was used.

degree of acculturation). Cronbach's alpha coefficient for the Asian American sample in this study was .88, which was consistent with the previously reported reliability estimates that ranged from .88 (Suinn et al., 1987) to .91 (Suinn et al., 1992). In addition to SL-ASIA, two other rough indexes of acculturation (the number of years spent in the United States and age of immigration to the United States) were collected for the foreign-born Asian American participants.

Procedure

Participants were tested in groups of 2 to 10 people. The measures were presented in a randomized order to control for possible order effects. Asian American participants also completed the SL-ASIA. On completion, participants were debriefed on the purpose of the study and received 1-hr credit toward their research participation requirement for an introductory psychology course.

Results

Demographics

Preliminary analyses indicated that there was no significant difference in the average age ($M = 19.2$, $SD = 2.0$) between Asian American and White American participants. Overall, the participants in the present study tended to come from families with fairly high SES. There was no significant gender difference between men and women on their families' SES. However, there was a significant ethnic difference between White participants ($M = 84.51$, $SD = 13.61$) and Asian American participants ($M = 80.52$, $SD = 17.98$) on their families' SES, $t(264) = 2.22$, $p < .05$. Although this ethnic difference between Asian and White participants on SES is not consistent with the 1990 U.S. Census data on overall income and employment status (Asians in America, 1991), the high proportion of immigrant Asian American individuals in the present sample must be acknowledged. Recent immigrant parents, whose English fluency may be low, often work in semiskilled jobs (U.S. General Accounting Office, 1990) that are categorized into lower SES indexes.

Ethnic Group Comparisons

It was hypothesized that significant ethnic differences exist between White Americans and Asian Americans on levels of independent and interdependent self-construals. Two sample t -tests were conducted, in which ethnicity (Asian American or White American) was used as the quasi-independent variable. As expected, Asian Americans endorsed a significantly lower level of independent self-construal and higher level of interdependent self-construal than did White Americans, $t_s(347) = 3.58$ and 5.33 , $p_s = .0004$ and $.0001$, respectively (see Table 2).

As shown in Table 2, significant ethnic differences in the expected direction emerged for each measure of emotional distress. Asian Americans tended to score in the more depressed direction than did White Americans on the measure of depression, $t(347) = 3.59$, $p = .0001$. The mean BDI score for the White American participants in the present study was comparable to the previously found mean score for an undergraduate population of 7.28 ($SD = 6.89$; Lightfoot & Oliver, 1985; cited in Beck et al., 1988). In contrast, the mean score of 10.67 ($SD = 7.60$) for Asian Americans in this sample was significantly higher. Also as predicted,

Table 2
Descriptive Statistics for Self-Construal and Distress Measures in Two Ethnic Groups

Measure	Whites		Asians		p^a
	M	SD	M	SD	
Self-construal					
Independent	4.77	0.78	4.47	0.77	.0004
Interdependent	4.28	0.82	4.73	0.73	.0001
Distress					
BDI	7.89	6.75	10.67	7.60	.0004
FNE	37.23	10.88	39.95	9.25	.01
SAD	60.27	17.68	72.98	18.76	.0001

Note. Numbers of participants were 183 and 165 for Whites and Asians, respectively. BDI = Beck Depression Inventory (Beck, Rush, Shaw, & Emery, 1979); FNE = Fear of Negative Evaluation (Watson & Friend, 1969); SAD = Social Avoidance and Distress (Watson & Friend, 1969).

^a Group means were compared using two-tailed t tests.

there were significant ethnic differences on the two measures of social anxiety. Asian Americans scored in the more socially avoidant and distressed direction on the SAD Scale than White Americans, $t(347) = 6.49$, $p = .0001$. Asian Americans also scored higher than White Americans on the FNE Scale, $t(347) = 2.50$, $p = .01$. Taken together, there was a pattern of ethnic differences in the way participants responded to self-report measures of self-construals and emotional distress, even when the alpha level was adjusted to a lower level to correct for simultaneous tests of statistical significance ($p = .05$ divided by 5). Asian Americans consistently scored in the more distressed direction on the depression and social anxiety scales compared with White Americans. These results clearly replicate previously documented ethnic differences between Asian Americans and White Americans on emotional distress measures.

Predictors of Distress

The next set of analyses addressed how ethnicity and self-construal variables are related to emotional distress. As shown in Table 1, zero-order correlational analysis indicated that independent self-construal was negatively correlated with all three distress measures, although it was more closely associated with the two social anxiety scales (i.e., FNE Scale and the SAD Scale) and only minimally with the depression scale (the BDI). Interdependent self-construal was positively associated with the FNE Scale but minimally with the SAD Scale and the BDI. Consistent with previously reported data (e.g., Gotlib, 1984; Ingram, 1989), the measures of depression and social anxiety were significantly intercorrelated.

To examine whether ethnicity and self-construal variables contribute differentially to the various forms of distress, hierarchical multiple regression analyses were conducted. For each of the three distress measures, the other two distress measures were entered as a set of covariates in the first step. This was done to control for the moderate intercorrelations among the three distress measures. In the second step, ethnicity (White American vs. Asian American; White American as the baseline) was entered to exam-

ine whether ethnic differences remained for each type of distress while controlling for the effects of other forms of distress. In the final step, independent and interdependent self-construal variables were entered as a set to test for their effects over and above the effects of other types of distress and ethnicity.²

Hierarchical multiple regression analysis of the BDI score indicated that the *F* change statistics for change in *R*² for both ethnicity (entered in Step 2) and self-construal variables (entered in Step 3) were statistically nonsignificant (the *F*s were 1.17 and 0.10, respectively) when the variance due to social anxiety scales was controlled for in the analysis. That is, Asian Americans were no more likely than White Americans to report depressive symptoms when levels of social anxiety were controlled for, and the addition of self-construal variables failed to explain further variance in the depression scale scores.

As shown in Table 3, ethnicity also failed to emerge as a significant predictor of fear of negative evaluation after controlling for the variance due to other forms of emotional distress, as indicated by nonsignificant *F* statistics for change in *R*². Asian Americans were no more likely than White Americans to report fear of negative or critical evaluations in social situations when levels of depression and social avoidance and distress were controlled for. The addition of independent and interdependent self-construal variables explained further variance in the FNE scale score, as indicated by significant increment in *R*². Those who held higher interdependent self-construals and those who held lower independent self-construals were more likely to report fearing negative evaluations.

Finally, the results of regression analysis for the SAD Scale are shown in Table 4. For social avoidance and distress, ethnicity remained a significant predictor after controlling for levels of depression and fear of negative evaluation. Asian Americans were still more likely than White Americans to report higher levels of distress in social situations and avoidance of such situations. The self-construal variables entered in Step 3 produced a small but statistically significant change in the *R*². Specifically, independent self-construal emerged as a significant predictor of the SAD Scale score. To test whether the ethnic difference on the SAD Scale scores may be accounted for by the self-construal variables, the hierarchical regression analysis was repeated, forcing in the self-construal variables into the

Table 3
Results of Hierarchical Multiple Regression Predicting the Fear of Negative Evaluations Scale Score

Variable	β	Increment <i>R</i> ²	<i>F</i> change	<i>p</i>
Step 1				
SAD	.30**			
BDI	.27**	.27	63.89	.0001
Step 2				
Ethnicity	.03	.00	0.46	<i>ns</i>
Step 3				
Independent self	-.30**			
Interdependent self	.41**	.24	86.89	.0001

Note. SAD = Social Avoidance and Distress (Watson & Friend, 1969); BDI = Beck Depression Inventory (Beck, Rush, Shaw, & Emery, 1979). ** *p* < .001.

Table 4
Results of Hierarchical Multiple Regressions Predicting the Social Avoidance and Distress Scale Score

Variable	β	Increment <i>R</i> ²	<i>F</i> change	<i>p</i>
Initial model				
Step 1				
FNE	.33**			
BDI	.31**	.29	70.11	.0001
Step 2				
Ethnicity	.24**	.05	28.22	.0001
Step 3				
Independent self	-.15*			
Interdependent self	.04	.02	5.50	.01
Alternative model				
Step 1				
FNE	.33**			
BDI	.31**	.29	70.11	.0001
Step 2				
Independent self	-.19*			
Interdependent self	.03	.03	7.29	.005
Step 3				
Ethnicity	.23**	.04	24.40	.0001

Note. FNE = Fear of Negative Evaluation (Watson & Friend, 1969); BDI = Beck Depression Inventory (Beck, Rush, Shaw & Emery, 1979). * *p* < .005. ** *p* < .001.

equation prior to the entry of ethnicity variable (shown in Table 4). When the self-construal variables were entered in Step 2 after controlling for the distress covariates, the change in *R*² was small but statistically significant. In the next step, when ethnicity was added to the regression equation, ethnicity still emerged as a significant predictor of SAD, as again indicated by the significant *F* statistic for the change in *R*². The results of the hierarchical multiple regression analyses indicated that the self-construal variables did not account for all of the variance in the SAD that was due to ethnicity.

Discussion

The present data are among the first to suggest that ethnicity and self-construal variables are associated with emotional distress in specific ways. These findings suggest a new perspective on the often reported ethnic difference between Asian Americans and White Americans on various measures of emotional distress. In this study, Asian Americans reported higher levels of distress than White Americans on three separate measures of emotional distress. Although this pattern is consistent with previously reported ethnic differences on the measures of depression (e.g., Kinzie, Ryals, Cottingham, & McDermott, 1973; Kuo, 1984; Ying, 1988) and social anxiety (D Sue, Ino, and Sue, 1983), these simple ethnic comparisons in and of themselves do not elucidate the relations between ethnicity and specific forms of psychopathology. In the next analytic step, hierarchical multiple

² Interaction effects of ethnicity and self-construal variables were also tested, but their effects on the distress measures were not statistically significant and thereby were not included in the final regression models.

regression analyses were performed for the three distress measures to determine whether ethnicity and the self-construal variables were associated with each specific form of distress, above and beyond the effects of other forms of distress. Ethnic differences between Asian Americans and White Americans previously seen on the BDI and the FNE Scales were no longer evident when the effects of other types of distress were covaried out, but the ethnic differences persisted on the SAD Scale.

The present findings also indicated that the self-construal variables and ethnicity play some roles in the levels of reported social anxiety but not depression. Although there were no ethnic differences on the FNE Scale scores after controlling for the covariates, the self-construal variables were found to be significantly related to the fear of negative or critical evaluations. Indeed for both scales of social anxiety, lower independent self-construal was significantly related to higher reports of social anxiety. In other words, those who were more concerned with asserting one's own judgment and emphasizing autonomy from others were less likely to be socially avoidant, distressed in social situations, and fearful of social evaluations.

Moreover, even with the effects of self-construals and with other forms of distress controlled, ethnicity still remained a significant predictor of the SAD Scale scores such that Asian Americans were more likely to be socially avoidant and distressed than White Americans. One possible explanation for this finding may be provided by a cultural analysis of interpersonal styles of second-generation Japanese Americans (*Nisei*). Miyamoto (1986-1987) suggested that *Nisei* had developed a unique interpersonal style that was manifested in "a high degree of sensitivity to the attitudes of others toward him (sic), and a tendency to constrain his (sic) behavior in order to minimize the risk of criticism" (p. 32). Miyamoto argued that because such interpersonal style was not functional in a larger American society, which values direct and explicit communication and spontaneity over reserved styles, *Nisei* became avoidant of interactions with non-Japanese Americans. It is possible that Asian Americans in the present study, consisting largely of first-generation immigrants, have not gained the social ease or the language fluency that would functionally decrease social anxiety particularly in new or unfamiliar situations. To examine support for this hypothesis, a post-hoc analysis using the acculturation variable (SL-ASIA) among Asian Americans was conducted. Zero-order correlation between the SL-ASIA Score and the SAD Scale score was $-.40$ ($p < .001$), suggesting that those Asian Americans who are less acculturated to the social norms of American culture were more likely to report higher avoidance of, and distress in, social situations.

These findings, which suggest that self-construals and ethnicity are linked to social anxiety measures but not to a depression measure, support the affect-specific hypothesis of culture and emotional distress. Social anxiety, by definition, involves interpersonal difficulties, whereas the interpersonal components of depression are located in the stressors or the consequences of depressive symptoms. The present findings indicate that social anxiety and related disorders may constitute forms of distress that are particularly sensitive to cultural and ethnic variations in psychopathology among Asian Americans, although the question remains as to whether the Western-constructed measures of social anxiety adequately capture the distress experiences of Asian

Americans. Comparisons of the third revised *Diagnostic and Statistical Manual of Mental Disorders (DSM-III-R*; American Psychiatric Association, 1987) conceptualization of social phobia and a culture-bound syndrome called *Taijin Kyofusho* (TKS) reported in Japan and other Asian countries have sparked an interest in examining specific ethnic and cultural factors associated with particular expressions of social anxiety (Kleinknecht, Dinnel, Tanouye-Wilson, & Lonner, 1994). The syndrome of TKS is similar to social phobia in its manifest symptoms of excessive fear and avoidance of social situations. However, the central fear underlying TKS is the fear of offending or embarrassing others, which is considered to reflect the strong cultural emphasis on maintaining interpersonal harmony in the Japanese society. Culture-bound syndromes such as TKS suggest that an ethnographic approach to examining the nature of social anxiety among Asian Americans may prove to be a fruitful area of future investigations. For example, rather than merely assessing the extent of avoidance and distress, a more ethnographic measure of social anxiety for Asian Americans may also assess the nature of feared situations that lead to their social avoidance and distress.

In contrast to social anxiety, the regression analysis for the depression scale score showed that neither ethnicity nor levels of independent and interdependent self-construals were significantly related to higher levels of depression, after controlling for its covariance with social anxiety measures. The present findings support the prediction that self-construal variables would be associated more strongly with social anxiety than with depression. Notably, past studies that specifically examined the relations between cultural variables and depression among immigrant Asian Americans, such as between acculturative stress and depression (Shin, 1993) or between ethnic identification and depression (Kim & Rew, 1994), have failed to find support for a predictive use of such putative cultural variables. This is not to suggest that there are no cultural factors involved in depression. It is possible that psychosocial variables not measured in the present study (e.g., life events and stressors, social support, psychosocial resources, personal and family psychiatric history) are more predictive of depressive symptomatology. Past cross-cultural research on depression that focused on the differences in the mode of expressing distress (e.g., Kleinman, 1980; Marsella, 1985) has suggested that culture affects expression of depression in subtle ways (Kleinman, 1980; Marsella et al., 1985). Perhaps cultural factors influence the frequency, duration, and types of depressive symptoms but not the overall severity of depression that was examined in the present study. The present findings call into question previous interpretations of Asian American-White American differences on levels of reported depression as globally attributable to cultural differences.

Conclusions from the present results must be tempered by several considerations. First, the Asian American sample in the present study comprised members of various Asian ethnic groups in varying sizes. Although it would have been desirable to have a more homogenous sample with regard to ethnic heritage (e.g., all Chinese Americans), or to have collected large enough samples of each Asian ethnic group (that would have made comparisons among various Asian ethnic groups possible), the present study's ethnic composition of the sample group was dictated by both practical and theoretical considerations. For practical reasons, it was difficult to locate equally large

samples of each Asian group. Theoretically, the main interests of this study were in the common Asian values shared by various Asian groups and in the individual differences in self-construals above and beyond ethnicity. Although some intra-ethnic (within-Asian) variations in emotional distress have been previously noted (e.g., Kuo, 1984), preliminary analyses in the present sample showed that such intra-ethnic differences were negligible. To that end, the fact that this sample included members from various Asian ethnic groups may be regarded as a strength in terms of increased generalizability.

Second, the measurement of all constructs in this study relied on self-report questionnaires. All emotional distress measures, though widely used, were thus vulnerable to possible distortions and response biases. It is also possible that ethnic differences in self-reported distress may be a function of ethnic differences in willingness to report depression and social anxiety symptoms in anonymous self-report, although results from a past study (Abe & Zane, 1990) indicate that this may not have been the case. In their study, Abe and Zane (1990) examined this exact question of whether controlling for Asian-White ethnic difference in socioeconomic status, social desirability, and self-consciousness would account for the Asian-White differences in self-reports of psychological maladjustment. They found that elevated reports of maladjustment on a subscale of the Omnibus Personality Inventory (OPI; Heist & Yonge, 1968) among foreign-born Asian Americans persisted after statistically controlling for the ethnic differences in social desirability and self-presentational concerns. Future studies of ethnic differences in emotional distress may incorporate non-self-report indicators of distress to rule out the possibility of a measurement artifact.

Third, it is difficult to evaluate the generalizability of the findings from the present sample of college students to psychopathology in either the general population or psychiatric population. The appropriateness of using a college sample in the study of depression is a debated but not rigorously researched issue (Coyne, 1994; Vredenburg, Flett, & Krames, 1993), and even less work has been conducted on the generalizability of studies of social anxiety with college students to other populations. Moreover, Sears (1986) has pointed to many systematic differences between college students tested in academic-like situations and the general population in everyday life. Additional studies using non-college student samples are needed to address these limitations. However, with these caveats in mind, the findings have important theoretical implications.

The present study points to the complexity of the relationship between ethnicity and various forms of emotional distress. Independent and interdependent self-construals were conceptualized as one possible avenue through which ethnic and cultural differences in emotional distress may be understood. The results suggest that the self-construal variables and ethnicity are particularly implicated in the symptoms of social anxiety but not in depressive symptoms. These findings support a more differentiated perspective on the links between culture and psychological distress and suggest a need for a more culturally specific assessment of emotional distress in Asian Americans.

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