

Cultural Equivalence of Adult Attachment Across Four Ethnic Groups: Factor Structure, Structured Means, and Associations With Negative Mood

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This study examined factorial invariance, structured means, and association with negative mood of adult attachment across 4 ethnic groups. Online survey data ($N = 831$) were collected from African American, Asian American, Hispanic American, and Caucasian college students. Results indicated that the factor structure of the Experiences in Close Relationship Scale did not vary across the 4 groups. Asian Americans and perhaps also ($p = .051$) Hispanic Americans reported greater attachment anxiety, whereas African Americans and Asian Americans reported greater attachment avoidance than did their Caucasian peers. Attachment anxiety was significantly associated with negative mood in every group, although Asian Americans reported a stronger association than their African American and Caucasian peers. The magnitude of the association between attachment avoidance and negative mood was invariant across the groups.

In recent years, two sharply differing positions have emerged in a vigorous debate about the cultural universality of attachment theory constructs. Claims for the cultural universality of attachment theory have been made since its early beginnings. Ainsworth conducted her first groundbreaking observational studies of infant–caregiver attachment in Baltimore and rural Uganda (Ainsworth, 1967, 1989; Ainsworth, Blehar, Waters, & Wall, 1978). Similar patterns she observed in both settings became the basis for the claim that attachment theory constructs are culturally universal. Proponents of the cultural universality position emphasize Bowlby's (1969) assertion that for millions of years, the caregiver–infant attachment system has been crucial for the survival of relatively helpless human offspring, and therefore the attachment system is part of the biological makeup of every member of the human species. Although culture no doubt influences the way this biological heritage is manifested as observable behavior, some attachment theorists maintain that at its foundation, culturally universal forces are at work (Cassidy & Shaver, 1999; Main, 1990; van IJzendoorn & Sagi, 1999).

In contrast, critics of the universality position (Rothbaum, Weisz, Pott, Miyake, & Morelli, 2000, 2001) point out that research supporting attachment theory has been conducted primarily in Western cultures, and basic attachment theory concepts such as

the caregiver serving as a “secure base” for exploration, the importance of a caregiver's sensitivity to an infant's communication, or the notion that secure attachment promotes greater social competence are deeply rooted in Western cultural values. According to critics, these values are not applicable to other cultures. For example, Japanese parents seek to foster in their children dependence on others, self-restraint in emotional expression, and collectivist values of social harmony. This is in contrast to the emphasis of Western parents on self-expression and individualism. Thus, critics argue that core concepts of attachment theory are not universally applicable (LeVine & Miller, 1990; Rothbaum et al., 2000, 2001; Takahashi, 1990).

Some studies have found that the distribution of infants across the three attachment types originally identified by Ainsworth et al. (1978) are different in the United States than in other countries such as Germany (Grossman, Grossman, Spangler, Suess, & Unzner, 1985) and Japan (Miyake, Chen, & Campos, 1985). These differences have been attributed to differences in cultural values about appropriate parenting and suggest that assessment systems based on Western norms of “secure” attachment behavior may be inappropriate if applied to parents and children of other cultures (Miyake et al., 1985; Trnavsky, 1998). The debate about cultural universality of attachment theory applied to young children shows little sign of resolution, in part because researchers have different interpretations of the same data (Rothbaum et al., 2000, 2001; van IJzendoorn & Sagi, 1999).

Over the past two decades, attachment theory has also been applied to adults (Cassidy & Shaver, 1999). The theory has been used to understand concepts as diverse as the development of a healthy and effective self (Lopez & Brennan, 2000), psychotherapy processes (Mallinckrodt, 2000), and even career choice (Blustein, Prezioso, & Schultheiss, 1995). The earlier method of de-

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scribing adult attachment in terms of four qualitatively different categories (Bartholomew & Horowitz, 1991) has now largely been replaced by the model developed by Brennan, Clark, and Shaver (1998) from a factor analysis, using data from over 1,000 college students and all the self-report measures of adult attachment available at that time (14 measures, 60 subscales, 323 items). These analyses identified two relatively orthogonal dimensions labeled *Anxiety* and *Avoidance*. Brennan et al. (1998) developed the Experiences in Close Relationship Scale (ECRS) on the basis of these findings. This instrument has since become one of the most widely used self-report measures of adult attachment. The Anxiety subscale taps an excessive need for approval from others and fear of interpersonal rejection or abandonment. The Avoidance subscale assesses an excessive need for self-reliance and fear of interpersonal closeness. People with high levels of either dimension alone or both dimensions in combination are assumed to have an insecure adult attachment orientation. By contrast, people with low levels of attachment anxiety and avoidance have the capacity for secure adult attachment, a positive sense of personal competence, and the ability to maintain supportive relationships.

Although the debate has been underway for some time over the cultural universality of infant-caregiver attachment constructs, these questions are just beginning to be addressed in adult attachment research. Wang and Mallinckrodt (2003) introduced their cross-cultural study of adult attachment with a reminder about the unfortunate history of harmful consequences when a theory based on research with one gender (usually men) or one culture (usually the dominant culture in the United States) has been uncritically overgeneralized to women and members of other cultures. The likelihood of harm is especially great when the constructs are assumed to represent an ideal of healthy development or optimal adjustment. Wang and Mallinckrodt argued that the concept of secure attachment may now be in danger of such uncritical overgeneralization. Their study surveyed approximately 300 U.S. college students who completed the ECRS (Brennan et al., 1998) as well as 300 students from Taiwan who completed a Chinese translation of the ECRS. The equivalence of the translation to the original was rigorously evaluated with new quantitative methods developed specifically for this study (Mallinckrodt & Wang, 2004). Members of each group completed their version of the ECRS, not as they would rate themselves but instead as they believed a healthy and well-adjusted person of their gender and culture would respond. Results suggested significant differences between cultures as well as between genders in each culture. Compared with Western beliefs about ideal attachment, the standard for ideal attachment in Taiwan for both men and women involved significantly more anxiety and avoidance. Wang and Mallinckrodt (2003) concluded that the construct of adult attachment security is different in Taiwan relative to the dominant U.S. culture.

Very little research has been conducted thus far to compare attachment across racial or ethnic groups within the United States. Among the few available studies, Rice, Cunningham, and Young (1997) found that, in general, African American and White American college students reported no differences in emotional bonds with their parents. The only exception was that African American college students reported lower scores than did Caucasian college students on ratings of their father's emotional expressiveness. Lopez, Melendez, and Rice (2000) examined parental bonds re-

ported by African American, Hispanic American, and Caucasian college students. In general, they found no differences across the three ethnic groups, except that African Americans reported significantly greater overprotection from their mother relative to their White peers. In another study, Greenberger and Chen (1996) found that Asian American college students reported significantly lower levels of parental warmth and acceptance than did their Caucasian peers. Thus, there is some evidence suggesting differences between African American and Caucasian college students and between Asian American and Caucasian college students. Even fewer studies have examined racial or ethnic differences in adult attachment (in contrast to memories of parental bonds). Lopez et al. found that Hispanic/Latino American and African American college students reported greater adult attachment avoidance relative to their Caucasian peers. However, there were no differences in adult attachment anxiety among Hispanic/Latino Americans, African Americans, and Caucasian students.

After a sharp increase in adult attachment research over the past decade, significant associations between insecure adult attachment and various forms of psychological distress have been well documented (for a review, see Lopez & Brennan, 2000). In general, relative to their secure counterparts, people with insecure attachment reported greater distress and hostility during a laboratory problem-centered discussion (Simpson, Rholes, & Phillips, 1996); greater affective intensity and emotionality (Pietromonaco & Barrett, 1997); more depressive symptoms (Roberts, Gotlib, & Kassel, 1996; Wei, Mallinckrodt, Russell, & Abraham, 2004); more depression, anxiety, and interpersonal problems (Wei, Heppner, & Mallinckrodt, 2003); and more emotional distress (Collins, 1996). However, these links between adult attachment and psychological distress have been established in studies that used predominantly Caucasian samples. We could locate no study that specifically compared the relationship between adult attachment and distress across members of different racial-ethnic minority groups. A few studies have examined memories of parental bonds (in contrast to adult attachment) in connection with psychological distress. For example, Dewitt-Parker (2000) found that the recalled quality of parental bonds was associated with academic adjustment for African American college students of both genders and with personal-emotional adjustment for female African American college students.

Thus, the model of secure adult attachment (i.e., low avoidance and low anxiety) has been promoted as optimal for healthy emotional adjustment (Lopez & Brennan, 2000; Mallinckrodt, 2000). In addition, various mediators of the links between anxious or avoidant attachment and distress have been identified and suggested as possible intervention targets (Mallinckrodt & Wei, in press; Wei et al., 2003, 2004). However, these studies of predominantly Caucasian samples have not been paralleled by similar studies of ethnic-racial minority samples. The need for this research is underscored because the only international cross-cultural comparison (Wang & Mallinckrodt, 2003) and the only comparison of U.S. racial-ethnic minority groups (Lopez et al., 2000) that we could locate suggested there may be important cultural differences in adult attachment.

Therefore, the purpose of the present study was to compare adult attachment in four U.S. ethnic-racial groups that, to our knowledge, have never been specifically included in the same adult attachment study before, namely, African Americans, Asian Amer-

icans, Hispanic Americans, and Caucasians. More specifically, we used structural equation modeling (SEM) techniques to examine whether the latent variables of adult attachment anxiety and avoidance are represented by indicator variables in equivalent ways across the four groups. This analysis may be considered a comparison of the “empirical definition” of attachment anxiety and avoidance across the four groups. Next, we compared means on the latent attachment variables (i.e., structured means) across the groups to determine whether there were significant ethnic–racial differences in the levels of anxiety or avoidance. Finally, the third research question examined whether associations between negative mood and adult attachment avoidance or anxiety varied across the four groups. It should be noted that the potentially biasing effects of random measurement error on the tests for mean differences or differences in the relationships among variables is eliminated by using latent-variable estimation in these analyses.

Method

Participants

Potential participants ($N = 2,452$) were identified through the Registrar’s database at a large midwestern state university. E-mail contact information was obtained for 656 students who identified themselves as African American, 633 who identified themselves as Asian American, and 463 who identified themselves as Hispanic. These students represented the total number of each ethnic group in the database. Together with this combined sample of 1,752 students, a sample of 700 Caucasian students was selected at random from the database so that the same relative proportions of men and women from each academic year (freshman, sophomore, etc.) were represented in the Caucasian sample as in the ethnic–racial minority sample.

From this total of 2,452 students initially contacted, 1,065 students (43%) responded to the Internet online survey. However, data from 142 students were incomplete, and an additional 41 participants answered at least one of two validity check items in a way suggesting they were responding to the survey randomly or inattentively. Thus, usable data were obtained from 882 (36%) of the students originally solicited. Of this group, 51 students indicated a multiple ethnic–racial identification in response to an item included in our survey. These students were also not included in subsequent analyses.

The final group of 831 students retained for analysis included 377 (45%) men and 452 (54%) women (2 persons did not indicate their gender), with a mean age of 22 years ($SD = 5.73$; range = 18–59). The survey contained an item that asked, “Choose one ethnic group that best describes you.” The sample comprised 296 (36%) students who chose “Caucasian” in response to this item, 176 (21%) students who chose “African American,” 196 (24%) students who chose “Asian American,” and 163 (20%) students who chose “Hispanic American.” Regarding year in school, 190 (23%) were freshmen, 173 (21%) were sophomores, 170 (21%) were juniors, 188 (23%) were seniors, and 102 (12%) were graduate students. We also assessed relationship status of the students; 417 (50.2%) were single, 322 (38.7%) were in a committed relationship, 59 (7.1%) were married, 9 (1.1%) were divorced, 3 (0.4%) were separated, 2 (0.2%) were widowed, and 19 (2.3%) indicated a relationship status of “other.”

Measures

Attachment. The ECRS (Brennan et al., 1998) is a 36-item self-report measure of adult attachment. Each item uses a 7-point Likert-type scale response format ranging from 1 (*disagree strongly*) to 7 (*agree strongly*). Participants rated how well each statement described their typical feelings in romantic relationships. The Anxiety subscale (18 items) taps fears of

abandonment and rejection, whereas the Avoidance subscale (18 items) assesses discomfort with dependence and intimate self-disclosure. Brennan et al. reported coefficient alphas of .91 and .94 for the Anxiety and Avoidance subscales, respectively. Brennan et al. also provided evidence of validity on the basis of the positive correlation with scores on self-report measures of touch aversion and sexual feelings. Individual items were used as 18 observed variables for the attachment anxiety latent variable and 18 observed variables for the attachment avoidance latent variable in the present study.

Negative mood. Negative mood was measured with the Depression and Anxiety subscales of the Depression Anxiety and Stress Scale-Short Form (DASS; Lovibond & Lovibond, 1995). The DASS-Short Form consists of 21 items assessing depression, anxiety, and stress. Only the Depression and Anxiety subscales were used in the present study because these two forms of distress have been previously associated with adult attachment (e.g., Wei et al., 2003). The Depression subscale (7 items) is based on primary symptoms of depression such as feeling sad and depressed. The Anxiety subscale (7 items) is based on primary symptoms of anxiety such as a feeling of “shakiness.” The participant is asked to rate each symptom on the basis of its severity during the previous week. Each item uses a 4-point response scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much or most of the time*). Scores for each subscale can range from 0 to 21, with higher scores indicating greater depression or anxiety. Lovibond and Lovibond (1995) reported coefficient alphas for the Depression and Anxiety subscales of .96 and .89, respectively. Antony, Bieling, Cox, Enns, and Swinson (1998) provided validity evidence through the positive association between scores on the Depression subscale and the Beck Depression Inventory ($r = .79$) and the Anxiety subscale and the Beck Anxiety Inventory ($r = .85$). Scores on these two subscales were used as two observed indicators for the latent variable of negative mood.

Procedure

The 2,452 students identified from the registration database were sent an e-mail to invite their participation in an Internet online survey through the university’s Academic Information Technology (AIT) center. Each student was assigned a randomly generated unique identifier (e.g., ZXKFKFPH) in the individual e-mail message they were sent. This identifier was used to ensure that each participant would only respond once to the survey. This unique identifier was not coded with the survey data. This procedure also ensured that only participants who were selected in our subject pool were able to participate in this study. The e-mail message informed students that this study was about “the meaning of close relationships among different ethnic groups” and that it would require 5 to 10 min to complete the online survey. In return for the participants’ help, they could register for a drawing to receive one of two prizes (a \$50 bookstore certificate or a digital camera). The survey data were kept separately from the incentive entry list. The survey data and incentive entry list were returned to the researchers from the university’s AIT center in a random order.

Results

Descriptive Statistics

We first examined whether our sample was comparable to the sample of students invited to participate in this study in terms of the proportions of the four ethnic groups and gender. A chi-square test indicated that there were overall differences between the characteristics of the obtained sample and sample of students invited to participate, $\chi^2(7, N = 831) = 61.79, p < .001$. When each combination of ethnicity and gender was examined, the results indicated that Caucasian females (20%) were overrepresented in our final sample relative to the proportion of Caucasian females we invited to participate (13%). By contrast, African

American (9% vs. 14%) and Asian American (11% vs. 15%) males were underrepresented in our sample. The representation of the other groups of participants defined by ethnic group and gender did not vary significantly from the expected proportion of participants.

Means, standard deviations, coefficient alphas, and intercorrelations of the measures of attachment anxiety, attachment avoidance, depression, and anxiety for the Caucasian, African American, Asian American, and Hispanic American groups are presented in Table 1. Results indicated that attachment anxiety was significantly associated with depression and anxiety for all four ethnic groups; attachment avoidance was significantly associated with depression and anxiety for all groups except for the African American students.

Invariance of the Factor Loadings for the Attachment Measures

The first set of SEM analyses tested the invariance of the factor loadings of the ECRS (Brennan et al., 1998) items on the two attachment latent variables for the four ethnic groups. We conducted this analysis to ensure that the attachment anxiety and attachment avoidance latent-variable items were measuring the same latent constructs across the four ethnic groups. We conducted a multiple group analysis using the maximum likelihood method in LISREL Version 8.54 (Jöreskog & Sörbom, 2003) to examine

whether the factor loadings for the attachment Avoidance and Anxiety items on their respective latent variables were invariant across the four ethnic groups. As suggested by Hu and Bentler (1999) and Quintana and Maxwell (1999), we used three indices to assess the goodness of fit of the models: the comparative fit index (CFI; values of .95 or greater suggest the model adequately fits the data), the root-mean-square error of approximation (RMSEA; a value of .06 or less indicates that the model adequately fits the data), and the standardized root-mean-square residual (SRMR; values of .08 or less suggest that the model adequately fits the data).

In the multiple group analysis, we tested two models: (a) a model in which the factor loadings were constrained to be equal across the four groups and (b) a model in which the factor loadings were allowed to vary across the four groups. Finding that the model with factor loadings constrained to be equal (i.e., the "equal" model) fit the data as well as the model in which the loadings were allowed to vary across the groups (i.e., the "free" model) would indicate that we cannot reject the hypothesis that the loadings of the items on the factors do not vary across the four groups. The results for the equal model were as follows: $\chi^2(2480, N = 831) = 6538.80, p < .001$; RMSEA = .10 (confidence interval [CI]: .10, .11); CFI = .91; SRMR = .11, whereas the results for the free model were as follows: $\chi^2(2372, N = 831) = 6405.73, p < .001$; RMSEA = .11 (CI: .10, .11); CFI = .92;

Table 1
Means, Standard Deviations, Coefficient Alphas, and Intercorrelations of Attachment Anxiety, Attachment Avoidance, Depression, and Anxiety for the Four Ethnic Groups

Measure	<i>M</i>	<i>SD</i>	α	1	2	3	4
Caucasian (<i>n</i> = 296)							
1. Attachment Anxiety	65.78	19.86	.93	—	.24***	.39***	.34***
2. Attachment Avoidance	47.26	18.91	.94		—	.33***	.17**
3. Depression	10.33	3.58	.83			—	.43***
4. Anxiety	9.40	2.57	.63				—
African American (<i>n</i> = 176)							
1. Attachment Anxiety	64.36	19.96	.90	—	.16*	.37***	.23**
2. Attachment Avoidance	51.86	17.83	.90		—	.15*	.09
3. Depression	10.42	3.79	.81			—	.54***
4. Anxiety	9.34	2.74	.62				—
Asian American (<i>n</i> = 196)							
1. Attachment Anxiety	69.02	18.58	.89	—	.21**	.49**	.51**
2. Attachment Avoidance	51.89	19.25	.93		—	.24**	.20**
3. Depression	11.38	4.63	.88			—	.66**
4. Anxiety	10.65	3.89	.79				—
Hispanic American (<i>n</i> = 163)							
1. Attachment Anxiety	69.25	20.71	.92	—	.28***	.45***	.40***
2. Attachment Avoidance	49.84	19.56	.93		—	.27***	.26***
3. Depression	11.05	4.45	.88			—	.65***
4. Anxiety	9.81	3.52	.79				—

Note. Attachment Anxiety = the Anxiety subscale of the Experiences in Close Relationships Scale (ECRS); Avoidance = the Avoidance subscale of the ECRS; Depression = the Depression subscale from the Depression, Anxiety, and Stress Scale-Short Form (DASS); Anxiety = the Anxiety subscale from the DASS.

* $p < .05$. ** $p < .01$. *** $p < .001$.

SRMR = .097. A nonsignificant chi-square difference, $\Delta\chi^2(108, N = 831) = 133.07, p > .05$, indicated that the equal and free models fit the data equally well.¹ These results indicate that the more parsimonious equal model fits the data as well as the free model that involves 108 more parameters. Therefore, we accept the null hypothesis that the factor loadings of the items on the two factors are equal across the four groups of students. Furthermore, given that the loadings of the measured variables on the two latent attachment variables are equivalent for the four groups of participants, these results indicate that the meaning of these two latent variables does not vary by ethnic group. The factor loadings for the attachment anxiety and attachment avoidance latent variables from the equal model are shown in Table 2.

Comparison of Structured Means

The invariance of the factor loadings for the attachment anxiety and attachment avoidance latent variables indicates that these two measures assess the same underlying constructs across the four

ethnic groups. The next set of analyses was designed to compare the four groups in terms of means on these two latent variables (i.e., structured means). The fit of the two models to the data were compared in order to test whether these structured means were different across the groups. The first model specified that the latent-variable means were equal across the four groups, whereas the second model allowed the structured means to vary across the four groups. The results for the attachment anxiety latent variable in which the structured means were constrained to be equal across the four groups were, $\chi^2(645, N = 831) = 2178.64, p < .001$; RMSEA = .12 (CI: .11, .12); CFI = .91; SRMR = .092, whereas the results for the model in which the structured means were allowed to vary across the four groups were, $\chi^2(642, N = 831) = 2169.07, p < .001$; RMSEA = .12 (CI: .11, .12); CFI = .91; SRMR = .093. A significant chi-square difference, $\Delta\chi^2(3, N = 831) = 9.57, p < .05$, indicates that the means on the attachment anxiety latent variable were significantly different for the four ethnic groups. As can be seen in Table 3, the attachment anxiety latent-variable mean for Asian American students was significantly higher than the mean for the Caucasian students, with the mean for Hispanic American students approaching statistical significance ($p = .051$). Given that it appears there are differences among the means, the attachment anxiety latent-variable means were compared with one another for the three minority groups through three additional post hoc analyses. Because of the number of analyses, we used a Bonferroni correction for the Type I error rate for these analyses (i.e., $p < .05/3 = .017$). The results indicated that the attachment anxiety latent-variable means did not differ significantly across the three ethnic groups.

We used the same procedure to examine whether the attachment avoidance latent-variable means were the same across the four ethnic groups, designating the Caucasian students as a reference group (see Table 3). The results for the attachment avoidance latent variable in which the structured means were constrained to be equal across the four groups were, $\chi^2(645, N = 831) = 2249.20, p < .001$; RMSEA = .13 (CI: .13, .14); CFI = .94; SRMR = .07, whereas the results when the structured means were allowed to vary across the four groups were, $\chi^2(642, N = 831) = 2240.31, p < .001$; RMSEA = .13 (CI: .13, .14); CFI = .94; SRMR = .07. A significant chi-square difference, $\Delta\chi^2(3, N = 831) = 8.89, p < .05$, indicated that the means on the attachment avoidance latent variable were significantly different for the four ethnic groups. In Table 3, the results for the attachment avoidance latent-variable means comparisons indicated that the attachment avoidance latent-variable means for African American and Asian American students were significantly higher than the mean for

Table 2
Factor Loadings for the Attachment Anxiety and Attachment Avoidance Items

Item	Anxiety	Avoidance
1	.00	.57
2	.72	.00
3	.00	.57
4	.69	.00
5	.00	.66
6	.67	.00
7	.00	.66
8	.73	.00
9	.00	.78
10	.68	.00
11	.00	.70
12	.54	.00
13	.00	.68
14	.70	.00
15	.00	.55
16	.61	.00
17	.00	.69
18	.65	.00
19	.00	.67
20	.59	.00
21	.00	.59
22	.66	.00
23	.00	.68
24	.51	.00
25	.00	.71
26	.60	.00
27	.00	.70
28	.52	.00
29	.00	.55
30	.51	.00
31	.00	.72
32	.55	.00
33	.00	.76
34	.49	.00
35	.00	.60
36	.55	.00

Note. Item 1–Item 36 = the 36 items from the Experiences in Close Relationship Scale. All factor loadings are statistically significant at $p < .001$.

¹ Because of the lack of overall fit for either the “free” or the “equal” models, we added correlated error terms until the CFI was equal to .95. We then tested whether the factor loadings were invariant or not by comparing the fit of the free and equal models with these correlated error terms included. The results for the equal model were, $\chi^2(2445, N = 831) = 5043.95, p < .001$; RMSEA = .08 (CI: .07, .08); CFI = .95; SRMR = .10, whereas the results for the free model were, $\chi^2(2337, N = 831) = 4908.301, p < .001$; RMSEA = .08 (CI: .075, .081); CFI = .95; SRMR = .093. The chi-square difference for these two models, $\Delta\chi^2(108, N = 831) = 135.65, p = .04$, was barely significant, indicating that there was little difference in the factor loadings across the four groups with the inclusion of these correlated error terms in the model.

Table 3
The Means on the Attachment Anxiety and Attachment Avoidance Latent Variables for the Four Ethnic Groups

Latent variable	African American (<i>n</i> = 176)	Asian American (<i>n</i> = 196)	Hispanic American (<i>n</i> = 163)
Attachment anxiety			
<i>M</i>	-0.08	0.26*	0.28†
<i>SE</i>	.14	.13	.14
<i>t</i>	-0.62	2.07	1.95
Attachment avoidance			
<i>M</i>	0.22*	0.26**	0.14
<i>SE</i>	.10	.10	.10
<i>t</i>	2.30	2.63	1.34

Note. All the means were compared with a mean of zero for Caucasian students.

† $p < .10$. * $p < .05$. ** $p < .01$.

Caucasian students. However, when the attachment avoidance latent-variable means were compared with one another for the three minority groups, the results showed that the attachment avoidance latent-variable means did not vary significantly across the three minority groups.

Attachment Predicting Negative Mood

The final set of analyses examined whether attachment anxiety and avoidance were significantly associated with negative mood (see Figure 1) and whether the magnitude of the association varied across the four ethnic groups. Before conducting these analyses, the factor loadings were constrained to be equal in the structural model to ensure that the same latent construct was being assessed across the four ethnic groups. We tested two models to evaluate whether these relationships varied across the four groups. In the first ("equal") model, the causal paths from the two latent attachment variables to negative mood were constrained to be equal across the four groups. In the second ("free") model, the causal paths from the two latent attachment variables to negative mood were allowed to vary across the four groups. The results for the equal model were, $\chi^2(2759, N = 831) = 6908.68, p < .001$; RMSEA = .10 (CI: .097, .10); CFI = .92; SRMR = .10, whereas the results for the free model were, $\chi^2(2753, N = 831) = 6892.01,$

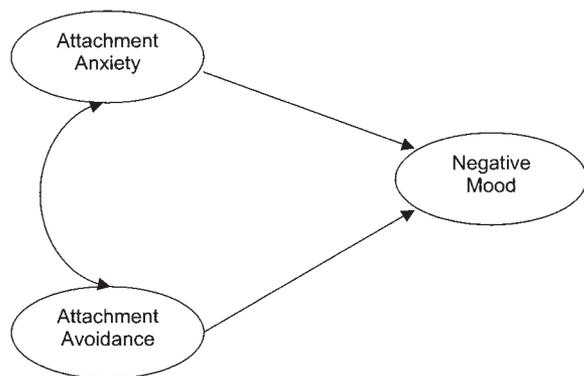


Figure 1. The structural model.

$p < .001$; RMSEA = .10 (CI: .097, .10); CFI = .92; SRMR = .099. A significant chi-square difference in the fit of these two models, $\Delta\chi^2(6, N = 831) = 16.67, p < .05$, indicated that the structural paths from attachment anxiety and attachment avoidance to negative mood were not equivalent for the four ethnic groups (see Table 4).

We next examined which structural path(s) contributed to the significant differences across the four ethnic groups. The path from attachment anxiety to negative mood was first constrained to be equal for the four ethnic groups and then compared with the freely estimated model. A significant chi-square difference, $\Delta\chi^2(3, N = 831) = 14.33, p < .05$, indicated that the paths from attachment anxiety to negative mood were not equivalent for the four ethnic groups. This finding indicates that the strength of the association between attachment anxiety and negative mood were different for the four ethnic groups. Follow-up analyses explored which ethnic groups were different in terms of the structural path from attachment anxiety to negative mood. We conducted six multiple group analyses to constrain the path to be equal for each possible pair of groups, comparing the results with the freely estimated model. The results indicated that the magnitude of the path coefficients for the Asian American group ($\beta = .78$) was significantly stronger than for Caucasian students ($\beta = .37$) and African American students ($\beta = .37$) (see Table 4). We used the same procedure to constrain the other structural path from attachment avoidance to negative mood to be equal for the four ethnic groups, with the results compared with the freely estimated model. A nonsignificant chi-square difference test, $\Delta\chi^2(3, N = 831) = 1.13, p > .05$, indicated that the structural paths from attachment avoidance to negative mood were invariant across the four ethnic groups.

Discussion

Three major sets of findings emerged from this study. First, the factor loadings of the ECRS (Brennan et al., 1998) items on the attachment anxiety and avoidance latent variables were invariant across the four ethnic groups. This finding suggests that the measures of adult attachment are equivalent across the four groups we examined. Next, in comparisons of latent-variable means, Asian Americans and Hispanic Americans (by a margin very close to

Table 4
The Structural Paths From Attachment Anxiety or Attachment Avoidance to Negative Mood for the Four Ethnic Groups

Ethnic group	<i>B</i>	<i>SE</i>	<i>t</i>	β
From attachment anxiety to negative mood				
Caucasian (<i>n</i> = 296)	0.90	.13	6.71	.37***
African American (<i>n</i> = 176)	0.91	.20	4.56	.37***
Asian American (<i>n</i> = 196)	1.89	.25	7.59	.78***
Hispanic American (<i>n</i> = 163)	1.30	.23	5.55	.54***
From attachment avoidance to negative mood				
Caucasian (<i>n</i> = 296)	0.62	.17	3.63	.19***
African American (<i>n</i> = 176)	0.30	.27	1.11	.09
Asian American (<i>n</i> = 196)	0.50	.28	1.76	.15
Hispanic American (<i>n</i> = 163)	0.65	.31	2.41	.20*

* $p < .05$. *** $p < .001$.

statistical significance, $p = .051$) reported greater attachment anxiety than did their Caucasian peers, whereas both African Americans and Asian Americans reported greater attachment avoidance than did their Caucasian peers. In addition, attachment anxiety was associated with negative mood for all four ethnic groups, but the strength of the association was significantly greater for Asian Americans than for African American or Caucasian students. In contrast, attachment avoidance was significantly associated with negative mood only for the Hispanic American and Caucasian students, although the magnitude of the association between these two variables did not vary significantly across the four groups of students.

These results provide empirical data to support the contention that the construct of adult attachment is equivalent for college students across the four ethnic groups. One possible interpretation for these findings involves the acculturation process. All the minority participants in the present study identified themselves as African American, Asian American, or Hispanic American. This implies that they were either born in or grew up in America. The acculturation process may have led them to have similar definitions or perceptions of adult attachment anxiety and adult attachment avoidance. Another possible interpretation is that the factor structures of the measures of adult attachment are universal. Even though Rothbaum et al. (2000) challenged the universality of attachment theory constructs for infants, these authors still expected that some abstract principles (e.g., proximity-seeking and protection) in attachment theory would be culturally universal. Rothbaum et al. argued that the different cultural expectations of competences and secure attachment between cultures might lead individuals to experience different socializations (i.e., individualism and collectivism). However, the present study provided empirical support for the contention that the factor structures of the measures of adult attachment are equivalent, at least across the four ethnic groups we compared.

Findings of this study also indicate that both Asian Americans and Hispanic Americans reported greater attachment anxiety than did their Caucasian peers. It should be noted that the magnitude of these differences corresponds to a Cohen's (1992) d of .20, which reflects a small effect size based on Cohen's analysis of effect sizes. In the mainstream American culture, Caucasian adults with secure attachment tend to be less dependent. They are less likely to be clingy, less likely to rely on others to meet their needs, and less anxious about gaining acceptance from others (e.g., Bartholomew & Shaver, 1998). However, Asian and Hispanic cultures value interdependence and family orientation (D. W. Sue & Sue, 2003). It is common practice for these adults to depend on others as a way of meeting one's needs, to coordinate one's needs with others' needs, and to seek others' acceptance in order to maintain social harmony (Gloria & Segura-Herrera, 2004; Rothbaum et al., 2000). This common pattern of behavior (e.g., depending on others and being anxious about acceptance from others) in Asian and Hispanic cultures reflects the characteristics of attachment anxiety in the Western mainstream culture. Therefore, it makes sense that these students would score higher on attachment anxiety than did Caucasian students. Our findings for Asian Americans is congruent with those of Wang and Mallinckrodt (2003), who found that undergraduate students in Taiwan report significantly more anxiety (and also more avoidance) in their beliefs about ideal attachment than U.S. undergraduates. Conversely, our finding for Hispanic Americans is inconsistent with Lopez et al.'s (2000) finding

that there was no difference in adult attachment anxiety between Hispanic/Latino Americans and Caucasian college students.

Results of this study also indicate that African Americans and Asian Americans report greater attachment avoidance than their Caucasian peers. It should be noted that the magnitude of these differences ($d = .23$ and $.25$ for African Americans and Asian Americans, respectively) are slightly larger than the values of $.20$, which reflects a small effect size based on Cohen's (1992) analysis of effect sizes. This result is consistent with the Lopez et al. (2000) finding that African Americans reported greater attachment avoidance than did their Caucasian peers. Lopez et al. argued this result may be related to adjustment issues for African American college students in a midwestern, predominantly White university. African American college students may have a sense of cultural mistrust (Terrell & Terrell, 1981; Thompson, Neville, Weathers, Poston, & Atkinson, 1990) that leads them to avoid close relationships with their peers. This tentative interpretation requires future studies to examine whether cultural mistrust or other cultural factors (e.g., racial identity development) might be contributing to adult attachment avoidance.

Asian Americans were also found to report significantly greater attachment avoidance than their Caucasian peers. This result may be related to the role of emotional self-control or emotion inhibition in Asian culture. Kim, Atkinson, and Yang (1999) indicated that emotional self-control is one of the cultural values that differentiates Asian American students from Caucasian students. Empirical research has found that Chinese American college students tend to control their emotions more than their Caucasian counterparts in a laboratory setting (Tsai & Levenson, 1997). However, emotional inhibition or emotional cutoff was significantly associated with attachment avoidance in a predominately Caucasian sample (Wei, Vogel, Ku, & Zakalik, in press). Thus, it may be a culturally appropriate practice for Asian Americans to restrain emotion in order to maintain social harmony, a tendency that may appear to resemble the characteristics of attachment avoidance from a Western perspective. Therefore, it is not surprising that Asian Americans scored higher on attachment avoidance relative to the scores of their Caucasian peers.

We also found that adult attachment anxiety was significantly associated with negative mood (i.e., depression and anxiety) across the four ethnic groups (see Table 4). This result is consistent with the previous attachment literature in which adult attachment anxiety has been found to be associated with psychological distress (e.g., depression and anxiety) in predominantly Caucasian samples (e.g., Lopez & Brennan, 2000; Wei et al., 2003, 2004). The strength of the association between attachment anxiety and negative mood was greater for Asian American students than for their African American and Caucasian peers. In the literature on mental health and ethnicity, Asian Americans tend to score higher on commonly used measures of depression and anxiety when compared with their Caucasian peers (e.g., Aldwin & Greenberger, 1987; Chang, 1996; Okazaki, 2000; D. Sue, Ino, & Sue, 1983; Uba, 1994). This result is not only opposite to the stereotype regarding Asian Americans as a model minority who are well-adjusted and well-functioning but also indicates that Asian Americans with attachment anxiety are particularly vulnerable to negative mood.

One possible explanation for this result may be that Asian American college students are at a critical transition in several aspects of their daily functioning. On the one hand, many Asian

American students are raised and educated at home, following Asian cultural values and lifestyles. On the other hand, many of these students are also educated in schools, following Western cultural values and lifestyles. Leaving their hometown for college may expose them to a vulnerable situation for their mental health in terms of their adult attachment. The valued practice of adult attachment in their ethnic group (e.g., depending on others) is quite different from the norm they observe to be valued in the mainstream culture (e.g., independence and autonomy). This difference may lead to difficulties in adjustment and vulnerabilities to negative mood.

It is interesting to note that even though African American and Asian American students reported higher average scores on the attachment avoidance latent variable relative to their Caucasian peers, attachment avoidance was not significantly associated with negative mood for these two ethnic groups (see Table 4). By contrast, Caucasians and Hispanic Americans reported lower means on the attachment avoidance latent variable, yet for them, attachment avoidance was significantly associated with negative mood. For African Americans, this result may be related to their relative lack of adjustment in the predominant White university and to their possible cultural mistrust. Avoiding close relationships with their peers may represent a way for African American students to adjust to life at the majority White university. For Asian Americans, this result may be related to the Asian cultural value of emotional self-control or inhibition. It is a culturally appropriate practice to restrain emotions in order to maintain social harmony among Asian Americans. In turn, Asian Americans with greater emotional restraint may score higher on attachment avoidance based on the norm in the Western mainstream culture. It is also possible that Asian Americans who are high in attachment avoidance tend to deny their negative mood. These interpretations must remain tentative, given that the multiple group comparisons did not indicate any differences among the four ethnic groups regarding the strength of the association between attachment avoidance and negative mood.

There are several important limitations to the present study that should be noted. First, the present research was conducted at a predominantly White midwestern state university. Generalization of our findings to other regions of the country with more ethnically diverse settings must be tentative. To determine whether the present findings can be generalized outside of the context of a midwestern state university will require replication of this investigation in a more culturally diverse setting. Similarly, these analyses were done with minority students who were sampled in this country. Our results may have been very different had we conducted these analyses using data from college students from these three ethnic groups who resided in their native countries. Therefore, we must be cautious in generalizing our findings to members of these ethnic groups who do not reside in the United States. Second, these results may only generalize to college students. Data from noncollege student samples should be examined in future studies. Third, although participants in this study were generally representative of the population that was sampled, the low return rate for the survey is another potential source of bias. The fourth limitation is that the present study only examined differences between four broadly defined ethnic groups. Further research is needed to examine important subgroups within each of these broad categories; for example, within a given ethnic-racial identity

group, the attachment configuration of members may vary according to acculturation or racial identity development.

Racial minorities who are in earlier stages of racial identity development (e.g., conformity stage; see D. W. Sue & Sue, 2003) may try to fit in with Western mainstream culture. Because they are highly concerned about fitting in and being accepted by people in the mainstream culture, it can be expected that those individuals might score higher on attachment anxiety. Conversely, racial minorities who are in the middle stage of racial identity development (e.g., resistance and immersion stage; see D. W. Sue & Sue, 2003) may be less worried about fitting into the mainstream culture and thereby increase their self-reliance as a survival tool in the White dominant culture. Therefore, it can be expected that a higher level of attachment avoidance (excessive self-reliance) may exist for minorities in the resistance and immersion stage. In addition, among the four ethnic groups, it appears that most of the between-group differences involved Asian American and Caucasian students. Okazaki (1997) noted the independent and interdependent self-construal of adults as a culture-specific explanation for differences between Asian Americans and Caucasians in depression and social anxiety. She found that ethnicity and self-construal variables predicted social anxiety but not depression. This implies that cultural-specific factors (e.g., interdependent self-construal) may be related to the present findings of a stronger association between attachment anxiety and negative mood for Asian Americans. Future studies should examine whether the impact of adult attachment on negative mood for Asian Americans is mediated by the interdependent self-construal that characterizes members of this culture. In addition, several variables have been found to predict negative mood (e.g., depression or anxiety) for minorities such as self-construal (Okazaki, 1997), perceived discrimination (e.g., Fischer & Shaw, 1999), acculturation (e.g., Farver, Narang, & Bhadha, 2002), and racial identity (e.g., Sellers & Shelton, 2003). Future studies should examine whether these variables may account for the association of adult attachment to negative mood among minority groups.

References

- Ainsworth, M. (1967). *Infancy in Uganda: Infant care and the growth of love*. Baltimore: Johns Hopkins University Press.
- Ainsworth, M. (1989). Attachment beyond infancy. *American Psychologist*, *44*, 709–716.
- Ainsworth, M. S., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of attachment*. Hillsdale, NJ: Erlbaum.
- Aldwin, C., & Greenberger, E. (1987). Cultural differences in the predictors of depression. *American Journal of Community Psychology*, *15*, 789–813.
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item version of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, *10*, 176–181.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology*, *61*, 226–244.
- Bartholomew, K., & Shaver, P. R. (1998). Methods of assessing adult attachment. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 25–45). New York: Guilford Press.
- Blustein, D. L., Prezioso, M. S., & Schultheiss, D. P. (1995). Attachment theory and career development: Current status and future directions. *The Counseling Psychologist*, *23*, 416–432.
- Bowlby, J. (1969). *Attachment and loss*. New York: Basic Books.

- Brennan, K. A., Clark, C. L., & Shaver, P. R. (1998). Self-report measurement of adult attachment: An integrative overview. In J. A. Simpson & W. S. Rholes (Eds.), *Attachment theory and close relationships* (pp. 46–76). New York: Guilford Press.
- Cassidy, J., & Shaver, P. R. (1999). *Handbook of attachment: Theory, research, and clinical applications*. New York: Guilford Press.
- Chang, E. C. (1996). Cultural differences in optimism, pessimism, and coping: Predictors of subsequent adjustment in Asian American and Caucasian American college students. *Journal of Counseling Psychology, 43*, 113–123.
- Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*, 155–159.
- Collins, N. L. (1996). Working models of attachment: Implications for explanation, emotion, and behavior. *Journal of Personality and Social Psychology, 71*, 810–832.
- Dewitt-Parker, J. (2000). *Predicting the successful adjustment of Black freshmen to a predominantly White university: The contribution of parental attachment and cultural traditionality*. Unpublished doctoral dissertation, University at Albany, State University of New York.
- Farver, J. M., Narang, S. K., & Bhadha, B. R. (2002). East meets West: Ethnic identity, acculturation, and conflict in Asian Indian families. *Journal of Family Psychology, 16*, 338–350.
- Fischer, A. R., & Shaw, C. M. (1999). African Americans' mental health and perceptions of racist discrimination: The moderating effects of racial socialization experiences and self-esteem. *Journal of Counseling Psychology, 46*, 395–407.
- Gloria, A. M., & Segura-Herrera, T. A. (2004). Somo! Latinas and Latinos in the United States. In D. R. Atkinson (Ed.), *Counseling American minority* (6th ed., pp. 279–299). Boston: McGraw-Hill.
- Greenberger, E., & Chen, C. (1996). Perceived family relationships and depressed mood in early and late adolescence: A comparison of European and Asian Americans. *Developmental Psychology, 32*, 707–716.
- Grossman, K., Grossman, K. E., Spangler, G., Suess, G., & Unzner, L. (1985). Maternal sensitivity and newborns' orientation responses as related to quality of attachment in northern Germany. *Monographs of the Society for Research in Child Development, 50*(1–2), 233–256.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.
- Jöreskog, K. G., & Sörbom, D. (2003). LISREL (Version 8.54) [Computer software]. Lincolnwood, IL: Scientific Software International.
- Kim, B., Atkinson, D. R., & Yang, P. H. (1999). The Asian Values Scale: Development, factor analysis, validation, and reliability. *Journal of Counseling Psychology, 46*, 342–352.
- LeVine, R. A., & Miller, P. M. (1990). Commentary. *Human Development, 33*, 73–80.
- Lopez, F. G., & Brennan, K. A. (2000). Dynamic processes underlying adult attachment organization: Toward an attachment theoretical perspective on the healthy and effective self. *Journal of Counseling Psychology, 47*, 283–300.
- Lopez, F. G., Melendez, M. C., & Rice, K. G. (2000). Parental divorce, parent-child bonds, and adult attachment orientations among college students: A comparison of three racial/ethnic groups. *Journal of Counseling Psychology, 47*, 177–186.
- Lovibond, S. H., & Lovibond, P. H. (1995). *Manual for the Depression Anxiety and Stress Scale*. Sydney: Psychological Foundation of Australia.
- Main, M. (1990). Cross-cultural studies of attachment organization: Recent studies, changing methodologies, and the concept of conditional strategies. *Human Development, 33*, 48–61.
- Mallinckrodt, B. (2000). Attachment, social competencies, social support, and interpersonal process in psychotherapy. *Psychotherapy Research, 10*, 239–266.
- Mallinckrodt, B., & Wang, C.-C. (2004). Quantitative methods for verifying semantic equivalence of translated research instruments: A Chinese version of the Experiences in Close Relationships Scale. *Journal of Counseling Psychology, 51*, 368–379.
- Mallinckrodt, B., & Wei, M. (in press). Attachment, social competencies, social support, and psychological distress. *Journal of Counseling Psychology*.
- Miyake, K., Chen, S., & Campos, J. J. (1985). Infant temperament, mother's mode of interaction, and attachment in Japan: An interim report. *Monographs of the Society for Research in Child Development, 50*(1–2), 276–297.
- Okazaki, S. (1997). Sources of ethnic differences between Asian American and White American college students on measures of depression and social anxiety. *Journal of Abnormal Psychology, 106*, 52–60.
- Okazaki, S. (2000). Asian Americans and White American differences on affective distress symptoms: Do symptom reports differ across reporting methods? *Journal of Cross-Cultural Psychology, 31*, 603–625.
- Pietromonaco, P. R., & Barrett, F. L. (1997). Working models of attachment and daily social interactions. *Journal of Personality and Social Psychology, 73*, 1409–1423.
- Quintana, S. M., & Maxwell, S. E. (1999). Implications of recent development in structural equation modeling for counseling psychology. *The Counseling Psychologist, 27*, 485–527.
- Rice, K. G., Cunningham, T. J., & Young, M. B. (1997). Attachment to parents, social competence, and emotional well-being: A comparison of Black and White adolescents. *Journal of Counseling Psychology, 44*, 89–101.
- Roberts, J. E., Gotlib, I. H., & Kassel, J. D. (1996). Adult attachment security and symptoms of depression: The mediating roles of dysfunctional attitudes and low self-esteem. *Journal of Personality and Social Psychology, 70*, 310–320.
- Rothbaum, F., Weisz, J., Pott, M., Miyake, K., & Morelli, G. (2000). Attachment and culture security in the United States and Japan. *American Psychologist, 55*, 1093–1104.
- Rothbaum, F., Weisz, J., Pott, M., Miyake, K., & Morelli, G. (2001). Deeper into attachment and culture. *American Psychologist, 56*, 827–828.
- Sellers, R. M., & Shelton, J. N. (2003). The role of racial identity in perceived racial discrimination. *Journal of Personality and Social Psychology, 84*, 1079–1092.
- Simpson, J. A., Rholes, W. A., & Phillips, D. (1996). Conflict in close relationships: An attachment perspective. *Journal of Personality and Social Psychology, 71*, 899–914.
- Sue, D., Ino, S., & Sue, D. M. (1983). Nonassertiveness of Asian Americans: An inaccurate assumption? *Journal of Counseling Psychology, 30*, 581–588.
- Sue, D. W., & Sue, D. (2003). *Counseling the culturally diverse: Theory and practice* (4th ed.). New York: Wiley.
- Takahashi, K. (1990). Are the key assumptions of the "Strange Situation" procedure universal? A view from Japanese research. *Human Development, 33*, 23–30.
- Terrell, F., & Terrell, S. L. (1981). An inventory to measure cultural mistrust among Blacks. *Western Journal of Black Studies, 5*, 180–184.
- Thompson, C. E., Neville, H., Weathers, P. L., Poston, W. C., & Atkinson, D. R. (1990). Cultural mistrust and racism reaction among African-American students. *Journal of College Student Development, 31*, 162–168.
- Trnavsky, P. (1998). Strange situation behaviors in Chinese infants. *Child Study Journal, 28*, 69–88.
- Tsai, J. L., & Levenson, R. W. (1997). Cultural influences of emotional responding: Chinese Americans and European American dating couples during interpersonal conflict. *Journal of Cross-Cultural Psychology, 28*, 600–625.
- Uba, L. (1994). *Asian Americans: Personality patterns, identity, and mental health*. New York: Guilford Press.
- van IJzendoorn, M. H., & Sagi, A. (1999). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy & P. R.

- Shaver (Eds.), *Handbook of attachment: Theory research and clinical application* (pp. 713–734). New York: Guilford Press.
- Wang, C.-C., & Mallinckrodt, B. (2003). *Differences between Taiwanese and U. S. cultural beliefs about ideal adult attachment*. Manuscript submitted for publication.
- Wei, M., Heppner, P. P., & Mallinckrodt, B. (2003). Perceived coping as a mediator between attachment and psychological distress: A structural equation modeling approach. *Journal of Counseling Psychology, 50*, 438–447.
- Wei, M., Mallinckrodt, B., Russell, D. W., & Abraham, W. T. (2004). Maladaptive perfectionism as a mediator and moderator between adult attachment and depressive mood. *Journal of Counseling Psychology, 51*, 201–212.
- Wei, M., Vogel, D. L., Ku, T.-Y., & Zakalik, R. A. (in press). Adult attachment, affect regulation, negative mood, and interpersonal problems: The mediating role of emotional reactivity and emotional cutoff. *Journal of Counseling Psychology*.

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New Editors Appointed, 2006–2011

The Publications and Communications Board of the American Psychological Association announces the appointment of seven new editors for 6-year terms beginning in 2006. As of January 1, 2005, manuscripts should be directed as follows:

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- *Journal of Abnormal Psychology* (www.apa.org/journals/abn.html), **David Watson, PhD**, Department of Psychology, University of Iowa, Iowa City, IA 52242-1407.
- *Journal of Comparative Psychology* (www.apa.org/journals/com.html), **Gordon M. Burghardt, PhD**, Department of Psychology or Department of Ecology & Evolutionary Biology, University of Tennessee, Knoxville, TN 37996.
- *Journal of Counseling Psychology* (www.apa.org/journals/cou.html), **Brent S. Mallinckrodt, PhD**, Department of Educational, School, and Counseling Psychology, 16 Hill Hall, University of Missouri, Columbia, MO 65211.
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Manuscript submission patterns make the precise date of completion of the 2005 volumes uncertain. Current editors, Warren K. Bickel, PhD, Timothy B. Baker, PhD, Meredith J. West, PhD, Jo-Ida C. Hansen, PhD, David A. Rosenbaum, PhD, Patricia G. Devine, PhD, and Bruce Caplan, PhD, respectively, will receive and consider manuscripts through December 31, 2004. Should 2005 volumes be completed before that date, manuscripts will be redirected to the new editors for consideration in 2006 volumes.