

Attachment styles, shame, guilt, and collaborative problem-solving orientations

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Abstract

The present study explored relations among adult attachment styles, shame- and guilt-proneness, and several measures of relationship problem-solving attitudes and behaviors. Participants were 142 undergraduates (32 males, 110 females) who completed both categorical and continuous measures of adult attachment, as well as self-report measures of the other constructs under investigation. Most participants (93%) were currently involved in either exclusive or casual dating relationships at the time of the study. Controlling for respondents' dating status, results indicated that participants' attachment styles were significantly related to both shame-proneness and collaborative problem-solving. Preoccupied and fearful students were more shame-prone than were their secure and dismissive peers, and secure participants reported significantly higher collaboration scores relative to their fearful counterparts. As expected, shame and guilt scores were differentially related to collaborative problem-solving, and participants' attachment security significantly moderated observed shame-guilt correlations. Finally, respondents' guilt and shame scores partly mediated observed relations between adult attachment styles and collaborative problem-solving orientations.

In recent years, attachment theory (Bowlby, 1969/1982) has been fruitfully extended to the study of adult love relationships. Attachment theory proposes that, as a consequence of their early developmental experiences with primary caregivers, individuals form cognitive schemas (internal working models) pertaining both to their own competence and lovability (self-model) and to the accessibility and responsiveness of significant others in their social worlds (other model).

Bartholomew and Horowitz (1991) have proposed that, as a function of these schemas, individuals will typically exhibit one of four distinct attachment styles in their adult relationships. "Secure" adults are presumed to have internalized positive models of both self and other, allowing them to be comfortable with both closeness and separateness in their intimate relationships. "Preoccupied" adults have incorporated a negative model of self while concurrently embracing a positive model of others. These individuals, while doubtful of their own intrinsic lovability, seek to maintain proximity with desired others and become emotionally distressed when such closeness is either threatened or unachieved. "Dismissive" adults, on the other hand, are presumed to have developed a positive model of self and a negative model of others, leading them to prefer greater independence and lower levels of intimacy in their personal relationships. Finally, "fearful" adults are assumed to have internalized negative

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models of both self and other. As a result, their relationship behavior is marked both by feelings of low self-worth and by high levels of social avoidance.

The emergent literature extending attachment theory to the study of adult love relationships, largely stimulated by Hazan and Shaver's (1987) pioneering study, has produced several consistent findings (Bartholomew & Horowitz, 1991; Collins & Read, 1990; Fecney & Noller, 1990, 1991; Kobak & Sceery, 1988; Levy & Davis, 1988; Pistole, 1989, 1995; Shaver & Hazan, 1993; Simpson, 1990; Simpson, Rholes, & Nelligan, 1992). For example, relative to their insecurely attached peers, secure individuals report higher levels of trust and relationship satisfaction, more frequent positive emotions and less frequent negative emotions, better affect-regulation capabilities, and more constructive approaches to conflict resolution. When more specific features of relationship functioning have been explored, investigators have found that secure adults make more appropriate use of self-disclosure, reflective and empathic listening, perspective-taking, and cooperative problem-solving strategies (Kirkpatrick & Davis, 1994; Kobak & Hazan, 1991; Mikulincer & Nachson, 1991; Pistole, 1989; Rothbard, Roberts, Leonard, & Eiden, 1993; Senchak & Leonard, 1992). By contrast, individuals with insecure attachment styles exhibit more manipulative and coercive strategies and report higher levels of conflict and distrust in their intimate relationships (Levy & Davis, 1988; Pistole, 1995).

Taken together, these findings underscore important relationships among adult attachment styles, general (i.e., positive vs. negative) affective states, and overall relationship problem-solving. However, comparatively less attention has been focused on (a) the relation of adult attachment styles to specific relationally based affects and problem-solving orientations, and (b) explorations of particular pathways that may interconnect these constructs. Some other logical considerations also support these extensions of research.

First, it is axiomatic that securely attached adults are not immune to negative affective states in their close relationships. It is also likely that not all negative affects are detrimental to the course of relationship adjustment. Indeed, common sense would suggest that some forms of affective discomfort may be necessary to trigger appropriate orientations to relationship problem-solving. These possibilities suggest a need for more differentiated inquiry of the interrelationships among adult attachment styles, distinct relationally based affects, and specific problem-solving orientations.

Attachment Styles, Shame, Guilt, and Problem-Solving Orientations

Two affects that may have particular significance for attachment-related dynamics and problem-solving processes in close relationships are shame and guilt. Shame refers to the phenomenological experience of sudden and unexpected exposure, one that renders the self diminished or defective in some essential way (Lewis, 1971; Lynd, 1958; Miller, 1985; Piers & Singer, 1953). Pointing to the "quintessentially" social nature of shame, Lewis proposed that "shame involves the failure of the central attachment bond" whereas Kaufman (1989, 1992) relates shame to the experience of being emotionally and psychologically cut off from one's significant attachments. Elsewhere, Cook (1992) contends that shame involves "a deep sense of inferiority, worthlessness, and unlovability" that is "linked . . . to the experiences of attachment and abandonment." From an attachment perspective, it would thus seem that individuals with negative self-models (i.e., those with preoccupied and fearful attachment styles) may be especially disposed toward shame-proneness, given their intrinsic doubts about their own competence and lovability.

Although the terms shame and guilt have often been used interchangeably, current psychological theories tend to differentiate these affects in terms of the role of self and the types of attributions that

accompany them (Tangney, 1990). Guilt was originally conceptualized as the product of a private, intrapsychic conflict (Ausubel, 1955; Benedict, 1946), yet more recent conceptualizations of guilt underscore its interpersonal antecedents, correlates, and consequences (Baumeister, Stillwell, & Heatherton, 1994). Whereas shame involves a negative evaluation of the whole self that emphasizes internal, global, and uncontrollability attributions as well as social withdrawal and feelings of powerlessness, guilt is associated with specific behaviors or social transgressions that are inconsistent with the person's internalized standards of conduct. These transgressions presumably prompt internal, specific, and controllability attributions that orient the person toward reparative action (Tangney, 1990, 1991). Given its links with empathic distress and the desire to maintain proximity with others during periods of relationship stress, individuals holding positive working models of the "other" (i.e., those with secure and preoccupied attachment styles) may be especially disposed toward guilt-proneness.

It is important to keep in mind that, while both shame and guilt represent unpleasant emotional states characterized by an intense focus on the self or extreme self-consciousness, they are expected to be differentially related to how the distressed person addresses relationship tensions and conflicts. Shame-proneness should be associated negatively with cooperative relationship problem-solving and positively with orientations toward either hostility (Tangney, Wagner, Fletcher, & Gramzow, 1992) or conflict avoidance. Unlike shame, guilt should be positively related to cooperative and collaborative problem-solving orientations.

In the foregoing analysis, we propose that differences in adult attachment styles may differentially dispose people toward shame and guilt affects and that these affective dispositions may, in turn, orient people either toward or away from cooperative problem-solving in their close relationships. In other words, it is plausible that prominent relationally based affects such as guilt and

shame effectively mediate previously observed relations between adult attachment styles and problem-solving. While we expected that measures of shame- and guilt-proneness would be positively correlated (given that they both refer to unpleasant self-conscious affects), we were curious about whether the enhanced affect regulation of securely attached adults observed in prior research in part reflected their abilities to more clearly differentiate shame and guilt feelings. There is reason to suspect that one advantage of possessing a secure working model is the capacity to make more coherent, modulated, and differentiated self-assessments of one's affective states (Kobak & Sceery, 1988; Kobak, Cole, Ferenz-Gillies, & Fleming, 1993). We therefore sought to explore whether attachment security significantly moderated shame-guilt associations. More specifically, we anticipated that, relative to their securely attached peers, insecurely attached individuals should demonstrate more strongly correlated (i.e., less differentiated) shame-guilt associations. Finally, we explored whether participants' guilt and shame scores mediated important relationships between attachment styles and problem-solving orientations.

Summary and Research Hypotheses

Much of the contemporary research on adult attachment styles has employed global measures of affect and relationship adjustment. Consideration of the influences of attachment style differences on more discrete relationally based affects and problem-solving orientations has received less attention. To the best of our knowledge, the relations of adult attachment styles to indices of shame- and guilt-proneness have not been empirically studied, although these constructs have been theoretically linked. In light of both theory and research linking shame and guilt, respectively, to problem avoidance and approach behaviors, more differentiated inquiry into the interrelationships of attachment styles, shame and guilt, and problem-solving orientations is clearly warranted.

In pursuit of this general objective, the present study examined the relations of adult attachment styles to measures of shame- and guilt-proneness, as well as to several measures of relationship problem-solving attitudes and behaviors. The latter set of measures was factor-analyzed in an effort to identify discrete problem-solving orientations, and the following hypotheses were advanced:

- H1: *Adult attachment styles should be significantly related to shame- and guilt-proneness levels. More specifically, (a) preoccupied and fearful persons should be significantly more shame-prone than their secure and dismissive peers, and (b) secure and preoccupied persons should be more guilt-prone than their dismissive and fearful counterparts.*
- H2: *Adult attachment styles should be significantly related to collaborative problem-solving orientations, with secure respondents demonstrating significantly higher scores on this dimension.*
- H3: *Shame- and guilt-proneness scores should be differentially related to collaborative problem-solving orientations. Shame-proneness should be negatively related to collaborative orientations, while guilt-proneness should be positively related to such orientations.*
- H4: *Attachment security should moderate the relationship of shame- and guilt-proneness. More specifically, relative to their secure peers, insecure respondents should evidence significantly higher shame-guilt correlations.*
- H5: *Shame- and guilt-proneness scores should largely mediate observed relations between adult attachment styles and collaborative problem-solving orientations.*

Method

Participants and procedure

One hundred and forty-two participants (32 men, 110 women; mean age = 21.63 years) were recruited from undergraduate education courses at a large Midwestern

university to take part in a "study of the relationship experiences of college students." The sample consisted primarily of seniors (49%) and juniors (26%); participants were also predominantly Caucasian (70%) and never married (94%). Almost all students in the sample (97%) reported prior involvement in a romantic relationship. All participants were scheduled for group testing sessions outside of regular class meetings during which time they completed a survey packet containing the measures described below. In exchange for their participation, students received some extra course credit.

Measures

Personal demographic form. This questionnaire solicited background demographic (e.g., age, sex, ethnicity, year in college, etc.) and relationship information (e.g., current dating status).

Relationship Questionnaire (Bartholomew & Horowitz, 1991). This self-classification measure of adult attachment style asks respondents to indicate which one of four descriptive paragraphs best represents their feelings about closeness and intimacy in romantic relationships. The four paragraphs, respectively, identify secure, dismissive, preoccupied, and fearful attachment styles. Bartholomew and Horowitz (1991) demonstrated that the four attachment styles were related in theoretically consistent ways with both self-reports and friend-reports of respondents' self-esteem and sociability in a college sample. Adult attachment styles, as measured by the Relationship Questionnaire (RQ), have also been found to correspond to different types of interpersonal problems (Horowitz, Rosenberg, & Bartholomew, 1993) and to differential recollections of childhood punishment and abuse experiences (Clark, Shaver, & Calverley, 1994). Scharfe and Bartholomew (1994) found moderate stabilities over an 8-month period for adult attachment style self-classifications derived from this measure.

Adult Attachment Style Inventory (Simpson, 1990; Simpson et al., 1992). This 13-item measure provides continuous scores on two factor-analytically derived subscales related to adult attachment. The *avoidance/security* subscale assesses respondents' comfort with interpersonal closeness and dependency, while the *anxiety* subscale assesses the level of tension or worry that respondents typically experience in close relationships. Higher scores on these subscales, respectively, measure greater avoidance and anxiety. Simpson et al. (1992) reported Cronbach alpha reliability coefficients of .81 for the avoidance/security for both college men and women, and Cronbach alphas of .58 and .61 for the anxiety subscale for men and women, respectively. Because of their continuous nature, these two attachment indexes were used (in place of RQ classifications) in relevant correlational and regression analyses. Obtained alpha coefficients in the present sample for the avoidance/security and anxiety scores were .83 and .70, respectively, for our mixed-sex sample.

Test of Self-Conscious Affect (TOSCA; Tagney, Wagner, & Gramzow, 1989). This measure consists of 15 brief scenarios (10 negative and 5 positive) depicting commonplace life situations that respondents are asked to rate, on a 5-point rating scale ranging from "not likely" (1) to "very likely" (5), a series of associated responses, including descriptions of affective, cognitive, and behavioral features associated with shame and guilt. The TOSCA yields scores on six subscales: shame-proneness, guilt-proneness, externalization, detachment/unconcern, alpha pride, and beta pride. For the purposes of this study, however, only participants' shame- and guilt-proneness scores were analyzed. Tangney et al. (1992) reported Cronbach alpha coefficients of .76 and .66 for the shame and guilt scales, respectively, within a college sample. These authors also found shame scores to be positively related with measures of trait anger, irritability, and suspicion; guilt scores were less prominently associated with the same

indexes, and when covariation with shame scores was controlled, guilt residuals were either unrelated or negatively related to these same measures. In the present study, obtained Cronbach alphas were .75 and .71 for the shame and guilt scales, respectively.

Relationship problem-solving orientations.

In an effort to identify underlying dimensions of relationship problem-solving, students' responses to the following self-report measures of relationship attitudes and behaviors were gathered and subsequently entered into an exploratory factor analysis:

1. *Relationship Self-Efficacy Scale (RSE; Lopez & Lent, 1991)*. This 25-item measure was designed to assess respondents' confidence in their abilities to engage in various relationship maintenance tasks, such as comforting a distressed partner, expressing affection, and openly communicating personal wishes and needs. Items are rated on a 10-point scale ranging from "not at all sure" (0) to "completely sure" (9), and ratings are summed to produce a total efficacy score. Lopez and Lent (1991) obtained Cronbach alpha coefficients of .87 and .90 for the RSE scale within a college sample; they also reported that RSE scores were significantly correlated with participants' ratings of relationship satisfaction, expected persistence, and overall dyadic adjustment. In the present study, the obtained Cronbach alpha for the RSE scale was .90.
2. *Conflict Style Inventory (CSI; Levinger & Pietromonaco, 1989)*. This 25-item self-report scale assesses how individuals typically handle conflict in their close relationships. The CSI yields five subscales that, respectively, measure avoiding (e.g., "I put off talking about an issue about which we disagree"), collaborating (e.g., "I seek my partner's help in working out a mutually satisfying solution"), compromising (e.g., "I propose a middle ground between us"), accommodating (e.g., "I conform to my partner's

desires when there is a difference between us”), and contending (e.g., “I make an effort to get my own way”) styles of conflict resolution. Items are rated on a 5-point scale ranging from “not at all descriptive” (1) to “extremely descriptive” (5) and summed to produce subscale scores. Carnelley, Pietromonaco, and Jaffe (1994) found that “more constructive” CSI scores (i.e., more compromising and collaborating and less contending) were linked with more positive childhood experiences and less avoidant attachment orientations within samples of undergraduate and adult women. In the present study, the following Cronbach alpha coefficients were obtained: avoiding (.72), compromising (.78), collaborating (.79), contending (.81), and accommodating (.84).

3. *Conflict Tactics Scale* (CT; Straus, 1979). This 18-item measure consists of a list of actions that a family member or relationship partner might take in a conflict with another member or partner. Because the CT scale was employed as a behaviorally specific assessment of the frequency of coercion and hostility in our respondents’ dating relationships, only scores on the CT verbal aggression and physical aggression subscales were included in the analysis. Items on these subscales, respectively, identify verbally coercive responses (e.g., “Yelled at and/or insulted my partner”) and aggressive and violent acts (e.g., “Hit or tried to hit my partner with something”). Respondents are asked to rate the frequency with which they have engaged in such responses over the past year on a 6-point scale ranging from never (0) to more than once a month (5). For the purposes of this study, participants were asked to consider their current dating relationship (or if they were not presently dating, their most recent dating relationship) when completing this measure. Students with no dating experience ($N = 4$) did not complete the CT scale. Straus (1979) reported that Cronbach alpha coefficients for the verbal aggression

scale ranged from .77 to .88, and that coefficients for the physical aggression scale ranged from .62 to .88. Straus also demonstrated that these two CT subscales were significantly correlated with spouse reports of their partner’s verbal aggression and violence. In the current study, obtained Cronbach alphas for the verbal and physical aggression subscales were .79 and .87, respectively.

Relationship problem-solving orientation scores. A second-order exploratory (principal components with varimax rotation) factor analysis of RSE, CSI, and CT subscales extracted three factors with eigenvalues over 1.0 that collectively accounted for 70% of the shared variance among these eight subscales (see Table 1). No other factors were extracted, and each subscale loaded on only one of the three factors. The Relationship Self-Efficacy measure (RSE), along with the CSI subscales measuring collaborating and compromising conflict resolution styles, loaded highly on the first factor, which accounted for 34.6% of the shared variance; the CT scales assessing verbal and physical aggression along with the CSI contending subscale loaded highly on the second factor, which accounted for 20% of the variance in the interscale matrix; finally, the CSI scales measuring avoiding and accommodating styles loaded highly on the third factor, which accounted for approximately 16% of the shared variance. Given the pattern of subscale loadings, the three factors were labeled, respectively, “Collaboration,” “Conflict,” and “Conflict Avoidance,” and factor scores for each participant were computed and used in the subsequent analyses.

Results

Sample descriptives

Obtained N s and frequencies of attachment style self-classifications were as follows: secure ($N = 60$; 42%), dismissive ($N = 20$; 14%), preoccupied ($N = 18$; 13%), and fearful ($N = 44$; 31%). These frequencies were generally comparable to those observed by other investigators using the Relationship

Table 1. Rotated factor matrix and factor loadings of relationship problem-solving measures

Measure	Factor		
	I	II	III
COLLAB	.90		
RSE	.78		
COMPROM	.77		
VERBAGG		.79	
PHYSAGG		.75	
CONTEND		.74	
AVOID			.87
ACCOMMD			.84
Eigenvalues	2.77	1.60	1.26
% Variance	34.60	20.00	15.80

Note: Factor I = Collaboration; Factor II = Conflict; Factor III = Conflict Avoidance; COLLAB = CSI Collaborating Scale; RSE = Relationship Self-Efficacy Scale; COMPROM = CSI Compromising Scale; VERBAGG = CT Verbal Aggression Scale; PHYSAGG = CT Physical Aggression Scale; CONTEND = CSI Contending Scale; AVOID = CSI Avoiding Scale; ACCOMMD = CSI Accommodating Scale.

Questionnaire with college samples (Duggan & Brennan, 1994; Kuncze & Shaver, 1994; Pistole, 1995), although the frequency of fearful participants in our sample was somewhat higher than those previously reported. A chi-square analysis did not reveal any significant differences in self-classification frequencies attributable to respondents' sex.

A majority of our sample ($N = 86$; 61%) indicated that they were currently involved in an exclusive dating relationship with their partners. Within this group, the average length of this relationship was 25.6 months ($SD = 20.7$). Forty-six respondents (32%) reported that they were currently involved in either casual dating relationships or not presently dating. The remainder ($N = 10$) either acknowledged having no prior dating experience or failed to respond to this demographic item. A chi-square analysis revealed significant differences in attachment self-classification frequencies between respondents in casual and exclusive dating relationships, $\chi^2(3, N = 132) = 11.66, p < .001$, with secure participants overrepresented among students in exclusive relationships. As a result of this finding, students' relationship status was included in all subsequent analyses.

Interrelationships among key measures

Table 2 shows the intercorrelations of respondents' sex and relationship status with their scores on the two continuously scaled indices of adult attachment (avoidance/security and anxiety), the measures of shame and guilt-proneness, and the three relationship problem-solving orientation factor scores. As expected, shame- and guilt-proneness scores were significantly related, yet these scales demonstrated rather distinct associations with our other measures. For example, only guilt scores were significantly related to more secure orientations on the attachment dimension of avoidance/security and to respondents' sex in a direction indicating higher guilt-proneness scores among women.¹ Shame scores, on the other hand, were significantly correlated with attachment-related anxiety.

1. We also computed a partial correlation matrix of our key measures that controlled for respondents' sex. These intercorrelations were consistent with the bivariate coefficients reported in Table 2, with one exception. When sex was controlled, the intercorrelation of guilt and conflict-avoidance-factor scores became more prominent and reached statistical significance (partial $r = .22, p < .01$).

Table 2. Intercorrelation matrix

Variable	2	3	4	5	6	7	8	9
1. SEX	-.00	-.11	-.15	.22**	.16	.07	-.05	-.27**
2. RELSTAT		-.21*	-.20*	.14	-.01	.20*	.03	-.12
3. AVDSEC			.05	-.22**	.03	-.25**	-.01	.07
4. ANXIETY				-.08	.24**	-.28**	.16	.16
5. GUILT					.46**	.20*	-.12	.12
6. SHAME						-.19*	-.02	.19*
7. COLLABF							—	—
8. CONFLICTF								—
9. AVOIDF								

Note: SEX (1 = male; 2 = female); RELSTAT = Relationship status (1 = casual; 2 = exclusive); AVDSEC = avoidance/security; COLLABF = Collaboration-factor score; CONFLICTF = Conflict-factor score; AVOIDF = Conflict-avoidance-factor score.

* $p < .05$; ** $p < .01$.

Also as expected, shame and guilt scores were significantly and differentially related to scores on the relationship collaboration factor. In addition to having a negative association with collaboration, shame scores were positively related to scores on the conflict-avoidance factor. Relationship status was significantly correlated with both attachment indexes, as well as with collaboration scores, with participants in exclusive dating relationships being more secure, less anxious, and endorsing more collaborative problem-solving attitudes.

Relationship conflict and conflict-avoidance-factor scores were less consistently associated with our key predictors. Only respondents' sex and shame scores were significantly related to conflict-avoidance scores, with men and high shame-prone participants indicating higher conflict avoidance. Furthermore, none of our key predictors were significantly related to conflict-factor scores. Given the latter findings, only respondents' scores on the relationship collaboration factor were subjected to additional analyses.

Relations of adult attachment styles to shame- and guilt-proneness and to collaborative problem-solving orientations

To determine whether participants' self-reported adult attachment style classification was uniquely related to their shame- and

guilt-proneness scores, we conducted two 2×4 (Relationship status \times Attachment style) analyses of covariance (ANCOVAs). In the first ANCOVA, attachment style effects on shame scores were examined, controlling first for guilt; in the second, attachment style effects on guilt scores were examined with shame scores as the covariate. Given the observed intercorrelation of shame and guilt scores, these analyses permitted a more powerful test of attachment style effects on each distinct affective disposition. Results yielded a significant attachment style effect on shame scores, $F(3,131) = 3.42, p < .02$, but not on guilt scores. Participants' relationship status was not significantly related to either shame- or guilt-proneness scores, nor did it significantly interact with attachment style classification to affect scores on these measures. A between-group comparison of means (see Table 3) indicated that preoccupied and fearful students were significantly more shame-prone than were their secure and dismissive peers.

We next conducted a 2×4 ANOVA of respondents' scores on the relationship collaboration factor, which also yielded a significant effect for attachment style classification, $F(3, 129) = 3.79, p < .02$, but not for relationship status or its interaction with attachment styles. A between-group comparison of group means indicated that secure students scored significantly higher on

this factor than did their fearful counterparts (see Table 3).

To explore whether the strength of shame–guilt relationships varied as a function of students' attachment security, we computed shame–guilt intercorrelations within our secure ($N = 60$) and combined insecure ($N = 82$) subgroups. Shame–guilt correlations were modest and nonsignificant within the secure group ($r = .24$) but more substantial and significant among insecure respondents ($r = .58, p < .01$). Following their transformation into z scores, a Fisher Exact Test confirmed that these between-group differences were significant ($z = -2.40, p < .05$).

To determine whether participants' guilt and shame scores mediated the observed relation between their attachment styles and collaborative problem-solving factor scores, we conducted the following series of regressions as recommended by Baron and Kenny (1986). In the first equation (see Table 4), we simultaneously regressed the two Simpson attachment indexes (avoidance/security, anxiety) on participants' guilt scores, controlling first for shame scores. We conducted a similar regression predicting shame scores from the attachment indexes. These results indicated that the attachment measures significantly predicted guilt (R^2 change = $.09, p < .001$) and shame (R^2 change = $.09, p < .001$) beyond the variance explained by the corresponding self-affect measure. Inspection of the re-

gression beta weights of our attachment measures indicated that (a) lower scores on both the avoidance and anxiety indexes were predictive of guilt-proneness scores, and (b) higher anxiety scores were largely predictive of shame-proneness scores.

Next, we regressed the attachment indexes on collaboration factor scores, controlling first for respondents' relationship status (a covariate of collaboration scores in our sample). This analysis similarly demonstrated that the attachment measures explained significant incremental variance in collaboration scores (R^2 change = $.09, p < .002$), and that less avoidant and less anxious attachment scores were comparably related to this criterion.

Finally, we regressed our participants' guilt and shame scores (entered as a block) on their collaboration scores, after first controlling for their relationship status. This regression analysis demonstrated that, together, guilt and shame scores also significantly predicted collaboration factor scores (R^2 change = $.10, p < .001$), and that these self-affect measures were comparably, though differentially, related to criterion prediction. Moreover, when the attachment measures were entered at the final step, they no longer explained significant variation in the dependent variable, thus demonstrating that the observed relation between adult attachment styles and collaborative problem-solving orientations was partly mediated by the guilt and shame measures.

Table 3. Attachment style group means and standard deviations on guilt- and shame-proneness measures and collaboration-factor scores

Measure	Attachment Style								<i>F</i>
	Secure (<i>N</i> =55)		Dismissive (<i>N</i> =18)		Preoccupied (<i>N</i> =17)		Fearful (<i>N</i> =42)		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
GUILT	3.87	.37	3.75	.62	3.91	.67	3.86	.43	<1
SHAME	2.55	.51	2.49	.63	2.84	.56	2.84	.56	3.42*
COLLABF	.33	.83	-0.02	1.00	-0.10	1.26	-0.42	.97	3.79*

Note: COLLABF = Collaboration-factor score.

* $p < .05$.

Table 4. Regression models testing the role of guilt- and shame-proneness scores in mediating the relation of attachment indexes and collaborative problem-solving orientations

Step	R	R ² change	F change	p	B**
<i>Model 1a. Attachment index effects on mediator (guilt-proneness)</i>					
1. SHAME	.46	.21	36.87	.001	.51
2. AVDSEC*					-.22
ANXIETY	.55	.09	8.42	.001	-.19
<i>Model 1b. Attachment index effects on mediator (shame-proneness)</i>					
1. GUILT*	.46	.21	36.87	.001	.51
2. AVDSEC*					.12
ANXIETY	.55	.09	9.14	.001	.28
<i>Model 2. Attachment index effects on dependent variable (collaborative problem-solving)</i>					
1. RELSTAT	.20	.04	5.46	.02	.11
2. AVDSEC*					-.20
ANXIETY	.36	.09	6.33	.002	-.22
<i>Model 3. Mediator (guilt- and shame-proneness) effects on dependent variable (collaborative problem-solving)</i>					
1. RELSTAT	.20	.04	5.46	.02	.10
2. GUILT*					.24
SHAME	.38	.10	7.32	.001	-.24
3. AVDSEC*					-.14
ANXIETY	.42	.04	2.88	.06	-.16

Note: AVDSEC = avoidance/security; RELSTAT = relationship status.

* Variables at this step entered as a block.

** Beta values are for all variables in the model.

Discussion

The purpose of this study was to clarify relations among adult attachment styles, two prominent relationally based affects (i.e., shame- and guilt-proneness), and respondents' problem-solving orientations in their dating relationships. Results confirmed our expectation that participants with preoccupied and fearful attachment styles would be more shame-prone than would individuals with secure and dismissive styles. However, our hypothesis that secure and preoccupied respondents would be more guilt-prone than their dismissive and fearful peers was not supported, despite the fact that guilt scores were negatively related to our continuous measure of attachment-related avoidance, and that a subsequent regression of guilt scores on our continuous measures of attachment style did demonstrate a

significant, though modest, effect for our attachment measures.

The substantial number of respondents who were in exclusive dating relationships and the disproportionate representation of women in our study (who, as a group, scored higher than their male peers on guilt-proneness) may have resulted in an interpersonally sensitive sample that minimized expected attachment style-related differences in guilt-proneness. Unfortunately, the modest number of men in our sample precluded a thorough analysis of sex-related effects and interactions.

Our expectation that shame and guilt scores, despite their intercorrelation, would be differentially related to collaborative problem-solving orientations was largely supported. Guilt-proneness was positively related to collaboration scores, whereas shame-proneness was negatively correlated

with these scores and positively correlated with conflict avoidance. Contrary to expectation, shame was unrelated to conflict. With regard to this finding, it is noteworthy that, while Tangney et al. (1992) found modest to substantial correlations between shame and indexes of resentment, irritability, and *indirect* hostility, they also reported that shame scores were uncorrelated with self-reports of verbal hostility and assaultive behavior. Given the CT scale's greater correspondence with the latter measures, our finding that shame was unrelated to conflict was, in retrospect, not that surprising. In general, then, our results support the theoretical distinction of shame and guilt affects (Tangney, 1990) and are in line with findings demonstrating that shame and guilt are differentially related to indexes of empathic responsiveness (Tangney, 1991).

Also as expected, shame-guilt correlations were significantly higher among our insecure participants than they were among securely attached respondents, indicating that participants' attachment security significantly moderated the relationship of shame and guilt. These findings suggest that, among adults with insecure attachment styles, shame and guilt affects may be less well differentiated. A possible consequence of this pattern is that insecurely attached persons may have more difficulty arriving at appropriate attributions of causality and responsibility for stressful relationship events and in executing reparative problem-solving efforts.

Elsewhere, Kobak and Sceery (1988) observed that, when compared with their insecurely attached peers, college students with a secure attachment pattern were more able "to constructively modulate negative feelings in problem-solving and social contexts" (p. 143). Our findings are in line with this observation and suggest that the securely attached person's capacity to make finer-grained distinctions among distressing relationally based affects such as guilt and shame may be an aspect of such enhanced affect regulation competence.

Finally, our results demonstrated that participants' guilt- and shame-proneness

partly mediated the observed relation between adult attachment indexes and collaborative problem-solving orientations. This finding is consistent with the view that the internal working models of individuals indirectly promote or impede adaptive dyadic problem-solving via their more direct impacts on relationally based self-affects. Future research should consider the influence of other prominent affects, as well as potential cognitive mediators (e.g., attributional biases), which together may further explain the positive relationship between attachment security and collaborative problem-solving.

Our results indicate that college students with fearful attachment styles may be the least capable of collaborative problem-solving in their intimate relationships and thereby most "at risk" for dissatisfying and distressing dating experiences. Bartholomew and Horowitz (1991) contend that fearfully avoidant young adults are especially conflicted by both a heightened fear of rejection and a concomitant fear of intimacy. Perhaps the dual operation of these opposing sensitivities contributes to inconsistent and unpredictable strategies for managing closeness and distance during relationship conflicts, which, in turn, interfere with effective problem-solving (Lopez, 1995).

This interpretation is tentative, however, considering that our investigation relied exclusively on self-report information, gathered from only one member of a dating couple. It is possible, for instance, that our findings reflect consistencies in self-reported social judgments, but not in actual social behavior. It is also likely that one's orientation toward collaborative problem-solving is significantly affected by the direct and/or moderating influence of one's relationship partner. For example, the *partners* of fearfully attached individuals may display cues or behaviors that elicit or reinforce the fearful person's noncollaborative participation.

The correlational, cross-sectional nature of the present study also does not permit us to draw firm cause-effect linkages between

and among our key constructs. Future research should pursue the course set by recent investigations examining the conjoint and interactive effects of couples' attachment style pairings on their relationship behavior and satisfaction (Feeney, 1994; Kirkpatrick & Davis, 1994; Simpson et al., 1992).

In addition, use of experimental designs involving standardized, in vivo problem-solving tasks should help illuminate the ways participants' attachment styles are causally related to their affective experiences and observed problem-solving communications and behaviors.

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