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## The Relation of Attachment Security to Adolescents' Paternal and Peer Relationships, Depression, and Externalizing Behavior

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### Abstract

The relation of attachment security to multiple domains of psychosocial functioning was examined in a community sample of 167 early adolescents. Security of attachment organization, assessed using the Adult Attachment Interview, was linked to success in establishing autonomy while maintaining a sense of relatedness both with fathers and with peers, even after accounting for predictions from qualities of the mother-teen relationship. Growth curve analyses revealed links of insecurity to increasing patterns of externalizing behavior and higher and stable patterns of depressive symptoms across adolescence. Implications for a developing theory of the connections of the attachment system to multiple domains of functioning in adolescence are discussed.

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While there is a large and growing body of research on the role of attachment in childhood, our understanding of the meaning of attachment security in adolescence remains perched upon a precariously thin base of findings. Unlike infancy and childhood, attachment security in adolescence is formally assessed as a characteristic of an internal state of mind rather than as a feature of a particular attachment relationship (Main & Goldwyn, 1998). Notwithstanding how it is assessed, the construct of attachment security in adolescence seems best viewed not as being either an intrapsychic or a relationship construct, but rather as an organizational construct, capturing multiple facets of behavior and cognition, that is likely to have implications both for intrapsychic development and for multiple aspects of ongoing relationships (Sroufe & Waters, 1977; Thompson, 1997). Thus, one aspect of understanding attachment as an organizational construct in adolescence requires examining its connections to both intrapsychic and relational functioning (Allen & Land, 1999). We have a small, but growing body of research on the relation of adolescent attachment security to maternal relationship qualities (Allen et al., 2003; Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993), yet we know extremely little about how security is linked to interactions with the other two major relationship figures in most adolescents' lives: their fathers and their close friends. Similarly, while attachment security in infancy and childhood has often been linked to the long-term development of maladaptive behavior, virtually no research has examined connections of attachment security assessed in adolescence to actual longitudinal patterns of development of maladaptive behaviors across adolescence.

This study sought to broaden our understanding of the role of a secure state of mind regarding attachment in adolescent development by establishing the nature of its links to a wider range

of markers of psychosocial development in adolescence. Security in adolescence has been conceptualized as integrally tied to capacities to maintain a sense of relatedness while pursuing autonomy negotiations with important others and to developing emotion regulation capabilities to support this process (Allen et al., 2003). The formal title for the secure classification in the Adult Attachment Classification System—Autonomous, Yet Valuing of Attachment—reflects a balance of exploration and secure-base behavior analogous to that found in securely attached infants (Main & Goldwyn, 1998). While in infancy exploration focuses on the physical environment, in adolescence exploration is far more likely to focus on the adolescent's emotional and cognitive independence from parents (Allen, Hauser, Bell, & O'Connor, 1994). A secure-base for an adolescent should thus be seen in a strong relationship with parents that nevertheless permits and encourages adolescents' strivings for cognitive and emotional autonomy. Given the theoretical connections between security and adolescent processes of establishing autonomy and relatedness with parents, we would also expect to find empirical connections between observed autonomy and relatedness with parents and attachment security assessed as an internal state of mind of the adolescent.

Thus far, research has shown that qualities of individuals' thinking about other relationships is linked to attachment security (Furman & Simon, 2004; Furman, Simon, Shaffer, & Bouchee, 2002). Security has also been linked to qualities of adolescents' interactions with their mothers (Allen et al., 2003; Kobak et al., 1993) but has not yet been well-examined with respect to behavior in other important social relationships of the adolescent. Also, security can be viewed as supporting adolescents' capacities to monitor and regulate their own emotional reactions and behaviors in challenging situations, a skill that appears to be learned in part via observation of similar behavior from mothers (Kobak & Cole, 1994; Kobak, Ferenz-Gillies, Everhart, & Seabrook, 1994). A linkage between security and emotion regulation abilities would suggest longer-term connections between security and indices of psychopathology across adolescence, but these potential connections are only just beginning to be explored empirically.

Unfortunately, our understanding of the reach of these preliminary theoretical formulations regarding the role of attachment security in adolescent development has not yet even been extended to adolescents' usual other major attachment figure within the family—their fathers. Extrapolations from childhood research suggest that paternal relationship qualities would be linked to adolescent attachment security, though less strongly so than qualities of the maternal relationship (Braungart-Rieker, Garwood, Powers, & Wang, 2001; Volling & Belsky, 1992). The changing nature of fathers' and mothers' roles in adolescence, as physical caretaking declines in prominence, leaves open the possibility, however, that fathers' roles might actually grow in salience during this period (Phares & Compas, 1992).

Based on research with mothers, we would predict that a secure state of mind regarding attachment in adolescence would be associated with father-adolescent interactions in which a sense of relatedness could be maintained even in the midst of autonomy negotiations (Allen, McElhaney, Kuperminc, & Jodl, 2004; Allen et al., 2003; Kobak et al., 1993). In adolescence, however, fathers frequently have major roles as disciplinarians for their adolescents, which may add an extra challenge in managing autonomy negotiations that may be substantially more intense than in childhood. The task of maintaining relatedness during conflicts in adolescence may thus be linked not only to behaviors positively displaying connection but also to avoidance of harsher conflict tactics that may actively undermine a sense of connection. Maternal harsh punishment and harsh conflict tactics have been clearly linked to less secure attachment in childhood (Lyons-Ruth, Connell, Zoll, & Stahl, 1987). One might expect attachment insecurity to be linked to both maternal and paternal use of harsh conflict tactics with their adolescents as well—as these tactics would serve to undermine the adolescent's sense of being able to maintain relatedness with the punitive parent—though this link has not yet been empirically assessed.

Beyond the family, attachment security, as assessed via the strange situation, has been linked to social competence with peers in a number of studies up through middle childhood (Elicker, Englund, & Sroufe, 1992; Shulman, Elicker, & Sroufe, 1994; Sroufe, Egeland, & Carlson, 1999; Suess, Grossmann, & Sroufe, 1992). A secure attachment organization, which is characterized in adolescence and adulthood by coherence in talking about attachment-related experiences and affect, should permit similar experiences and affect in peer relationships to be processed more accurately. In contrast, insecure attachment organizations are characterized by the defensive exclusion of information or inability to integrate different types of information about attachment experiences, which may lead to distorted communications, negative expectations about others, and problems in social functioning (Cassidy, Kirsch, Scolton, & Parke, 1994; Dodge, 1993; Slough & Greenberg, 1990). In adolescence, broad links of attachment security to general peer competence and working models of peer relationships have been established in two studies (Allen, Moore, Kuperminc, & Bell, 1998; Furman et al., 2002). Research has also linked adolescent functioning to security observed many years earlier in infancy (Carlson, Sroufe, & Egeland, 2004; Warren, Huston, Egeland, & Sroufe, 1997; Weinfield, Ogawa, & Sroufe, 1997). No research, however, has taken the next step to examine the specific qualities of individual peer relationships, as opposed to more general patterns of social functioning in adolescence, that are linked to security in adolescent's internal working models of attachment relationships (Berlin & Cassidy, 1999).

This study tests a framework that posits that security will be linked to adolescents' developing capacities for establishing autonomy while maintaining relatedness in interactions not just with mothers and fathers, but with peers as well. Within close friendships, calls for emotional support are quintessential attachment behaviors that are beginning to appear by early adolescence. Establishing a best friendship characterized by sufficient relatedness and confidence in one's own autonomy to allow one to issue such calls would seem likely to be a hallmark of adolescent security. Conversely, in both close friendships and more casual peer relationships, handling peer pressure is one of the strongest challenges to adolescents' burgeoning capacity for autonomy in social interactions. A framework linking security to developing autonomy and relatedness would predict that adolescents who have established security in their working models of parental attachment relationships would be most likely to form and maintain peer relationships characterized by relatively low levels of autonomy-threatening peer pressure.

In terms of broader social relationships, mixed evidence exists as to whether attachment security is likely to be linked to patterns of general social acceptance. Although attaining broader acceptance by peers is less intuitively linked to attachment security than is managing the intensity of close peer relationships, security may nevertheless influence one's capacity to relate to a broad range of peers. To date, one study, using self-report assessments of attachment security in a community sample, has failed to find links of security to broader success with peers; while another study of at-risk adolescents, using interview-based procedures for assessing attachment, did find such links (Allen et al., 1998; Lieberman, Doyle, & Markiewicz, 1999). Neither study, however, utilized the gold standard in assessing broader peer acceptance—actual sociometric ratings of the extent to which a teen was liked by his or her peers. The present study examined the hypothesis that security would predict actual popularity (i.e., capacity to establish relatedness with peers) as assessed by sociometric ratings from a broad cohort of a teen's peers within a diverse community sample. Such ratings are not of course the only relevant marker of competence with peers (e.g., other sociometric ratings focus on a youth's perceived *status* with peers rather than their likeability, or on typologies assessing combinations of liked and disliked nominations [Coie, Dodge, & Kupersmidt, 1990; Prinstein, in press]). These simple sociometric ratings of likeability do, however, capture one of the most direct markers of ability to relate in a positive fashion to a broader peer group (Prinstein, in press).

Beyond social relationships, a long history of attachment theory and research in childhood suggests links between insecurity and difficulties in psychosocial functioning (Urban, Carlson, Egeland, & Sroufe, 1991; Waters, Posada, Crowell, & Keng-ling, 1993). Even in childhood, however, links to pathology are not always direct or clear (Greenberg, Speltz, & DeKlyen, 1993). In adolescence, insecurity has thus far demonstrated a modest cross-sectional relationship to delinquent behavior (Allen et al., 1998), and complex interactions have linked specific combinations of insecure preoccupation and certain types of parenting to increasing delinquency over time (Allen et al., 2002). Similarly, adolescents' expression of symptoms of depression have been cross-sectionally linked to attachment insecurity in at-risk and in already depressed samples, and different types of insecurity have been linked to different types of psychopathology among psychiatrically hospitalized adolescents (Allen et al., 1998; Kobak, Sudler, & Gamble, 1991; Rosenstein & Horowitz, 1996).

One of the key features of symptoms of both depression and delinquency during adolescence, however, is their tendency to develop and increase as adolescence progresses (Lewinsohn, Hops, Roberts, & Seeley, 1993; Moffitt, 1993). Several theorists have suggested that psychosocial dysfunction related to attachment insecurity may be most likely to emerge not cross-sectionally but rather as development progresses, and adolescence would seem a natural place to test this notion (Cicchetti & Toth, 1998; Greenberg et al., 1993; Sroufe, Duggal, Weinfield, & Carlson, 2000). In early adolescence, for example, minor delinquency may be largely normative and not particularly linked to developmental disturbance. As adolescence progresses, however, increasing levels of deviant behavior may reflect increasingly significant developmental dysfunction, as the effects of problematic relationship patterns and patterns of emotion regulation accumulate over time (Caspi, Bem, & Elder, 1989). Hence, insecurity may be linked more strongly to the development of deviance over time more than to deviance at the outset of adolescence. This is not to claim that insecurity would be directly causing this development—but rather to say that insecurity might reflect a pattern of cognition and affect around social relationships that is likely to be associated with increasing levels of deviance across adolescence.

Similarly, finding links between security and contemporaneously assessed depression is not the same as finding links to depression that are stable over longer periods of time in adolescence. Given the episodic nature of depressive symptoms and their capacity to distort cognitive and affective processing, it is even quite possible that concurrent depressive symptoms might confound contemporaneous assessments of attachment security by distorting the recall of attachment-related memories. Only longitudinal research on the relationship between attachment and depressive symptoms, in which the assessments of these two phenomena are assessed at different time points, can begin to disentangle such confounds.

The questions raised above all share a common focus in the consideration of whether and how attachment security is tied to some of the major developmental challenges of adolescence beyond the maternal relationship. Understanding these broader ties is critical to understanding the mechanisms by which attachment security may display long term and even intergenerational linkages to critical aspects of psychosocial functioning.

This study utilized longitudinal, observational, and multisource data from a large community sample of adolescents to extend the reach of our knowledge about the relation of attachment security to adolescent psychosocial functioning. Attachment security was assessed in the middle year of a 3-year window of psychosocial assessments and examined in terms of how it related to three major domains of psychosocial functioning. These included: the father-adolescent relationship; interactions with both close peers and the broader peer group; and the development of depressive symptoms and delinquent behavior over the course of adolescence. Finally, analyses considered how findings in each of these domains dovetail with previously

observed areas of connection between attachment security and maternal relationship qualities. Given that the assessment of attachment security sometimes preceded and at other times followed assessments of other markers of functioning, the intent of the study was not to establish the causal operation of adolescent security, nor even particularly to demonstrate that security was a predictor or sequelae of a given risk factor. Rather this study was designed to establish the range and nature of connections of security to other indices of function. This approach was utilized to broaden the base of findings contributing to understanding the relation of attachment security to the broader processes of adolescent social development.

## Method

### Participants

This report is drawn from a larger longitudinal investigation of adolescent social development in familial and peer contexts. Participants included 167 seventh and eighth graders (80 male and 87 female) assessed repeatedly over a three-year period (adolescents were age 13.36 ( $SD = .62$ ) at Wave 1; 14.29 ( $SD = .75$ ) at Wave 2; and 15.22 ( $SD = .80$ ) at Wave 3). Teen reports regarding parent behavior were available for 165 mothers and 150 fathers. In addition, observations of parent-teen interactions were obtained with 147 mothers and 78 fathers (primarily those fathers who resided with their teens). Observations of interactions with a close friend were also obtained for 155 teens, along with reports from that friend about the teen. Finally, peer sociometric data were obtained for 166 of the teens in the sample.

The sample was racially/ethnically and socioeconomically diverse: 103 adolescents identified themselves as Caucasian (52%), 45 as African American (27%), and 19 as being from other and/or mixed ethnic groups (21%). Adolescents' parents reported a median family income in the \$40,000 – \$59,999 range ( $M = 43,900$ ,  $SD = \$22,500$ ). At each wave, adolescents' nominated their closest, same-gendered friend to be included in the study as well as an additional two peers from within their extended circle of friends and acquaintances. Close friends reported that they had known the adolescents for an average of 4.15 years ( $SD = 3.20$ ) at the first wave of data collection, 4.39 years ( $SD = 3.24$ ) at the second wave of data collection, and an average of 5.26 years ( $SD = 3.45$ ) at the third wave.

Adolescents were recruited from the seventh and eighth grades of a public middle school drawing from suburban and urban populations in the Southeastern United States. Students were recruited via an initial mailing to all parents of students in the school along with follow-up contact efforts at school lunches. Families of adolescents who indicated they were interested in the study were contacted by telephone. Of all students eligible for participation, 63% agreed to participate either as target participants or as peers providing collateral information. All participants provided informed assent before each interview session, and parents provided informed consent. Interviews took place in private offices within a university academic building.

### Procedure

In the initial introduction and throughout all sessions, confidentiality was assured to all study participants, and adolescents were told that their parents would not be informed of any of the answers they provided. Participants' data were protected by a Confidentiality Certificate issued by the U.S. Department of Health and Human Services, which protected information from subpoena by federal, state, and local courts. Transportation and childcare were provided if necessary. In Wave 1, adolescents came in separate sessions for interviews, first with their parents and then with their named closest peer. All parent-teen interactional/observational data were obtained during this Wave. In Waves 2 and 3 adolescents came in separate sessions, first alone and then with their current closest peer (who was not necessarily the same person with



whom they came in for Wave 1). Attachment data were obtained between Waves 2 and 3. All other data were obtained at the Wave 2 data collection (with the exception of the repeated measures of depression and externalizing behavior obtained at all three Waves). Adolescents, their parents, and their peers were all paid for participation. Payment amounts increased over the course of the study but ranged from \$20 to \$40 per person for a two-hour visit.

The 167 adolescents in the study comprised a subset of adolescents with valid attachment interviews from among a larger group of 185 adolescents who participated at some point in the larger study. The 18 nonincluded adolescents either did not receive codable interviews, due to equipment difficulties, or were unavailable to come in during the one wave of the study during which attachment interview data were collected (even though many participated in later waves of the study). Of the 167 adolescents with attachment data who participated in Wave 1 of the study, 160 participated in Wave 2, and 160 in Wave 3. Attrition analyses examined various combinations of missing data in the study. For the longitudinal aspect of the study (involving prediction of changing levels of depressive symptoms and externalizing behaviors), analyses indicated that adolescents not followed from Wave 1 to Wave 2 had higher levels of baseline externalizing behavior at Wave 1. Those not followed from Wave 2 to Wave 3 had higher levels of depressive symptoms at Wave 2. Other than these two differences, adolescents not followed beyond Wave 1 did not differ on any other measures used in the study. Additional analyses indicated that the only differences at baseline between the sample of 167 for whom attachment data were available and the full study sample of 185 adolescents was that the latter included a higher proportion of adolescents from racial/ethnic minority groups.

To best address any potential biases due to attrition in longitudinal analyses, full imputation maximum likelihood (FIML) methods were used with analyses, including all variables that were linked to future missing data (i.e., where data were not missing completely at random). Because these procedures have been found to yield the least biased estimates when all available data are used for longitudinal analyses (vs. listwise deletion of missing data), the entire original sample of 185 for the larger study was utilized for these analyses. This larger sample thus provides the best possible estimates of growth and change in externalizing behavior and depressive symptoms and was least likely to be biased by missing data. Alternative longitudinal analyses using just those adolescents without missing data (i.e., listwise deletion) yielded results that were substantially identical to those reported below. In sum, analyses suggest that attrition was modest overall and not likely to have distorted any of the findings reported. Analyses also indicated that participants for whom interaction data with fathers were available had higher family incomes, were less likely to be members of a racial/ethnic minority group, and were more likely to be securely attached than participants for whom father interaction data were not available.

## Measures

**Adult attachment interview (AAI) and Q-set (George, Kaplan, & Main, 1996; Kobak et al., 1993)**—This structured interview probes individuals' descriptions of their childhood relationships with parents in both abstract terms and with requests for specific supporting memories. For example, subjects were asked to list five words describing their early childhood relationships with each parent and then to describe specific episodes that reflected those words. Other questions focused upon specific instances of upset, separation, loss, trauma, and rejection. Finally, the interviewer asked participants to provide more integrative descriptions of changes in relationships with parents and the current state of those relationships. The interview consisted of 18 questions and lasted one hour on average. Slight adaptations to the adult version were made to make the questions more natural and easily understood for an adolescent population (Ward & Carlson, 1995). Interviews were audiotaped and transcribed for coding.

The AAI Q-set (Kobak et al., 1993) was designed to closely parallel the Adult Attachment Interview Classification System (Main & Goldwyn, 1998) but to yield continuous measures of qualities of attachment organization. Each rater read a transcript and provided a Q-sort description by assigning 100 items into nine categories ranging from most to least characteristic of the interview, using a forced distribution. All interviews were blindly rated by at least two raters with extensive training in both the Q-sort and the Adult Attachment Interview Classification System.

These Q-sorts were then compared with a dimensional prototype sort for *secure versus anxious interview strategies*, reflecting the overall degree of coherence of discourse, the integration of episodic and semantic attachment memories, and a clear objective valuing of attachment. The individual correlation of the 100 items of an individual's Q-sort with a prototype sort for a maximally secure transcript was then used as that participant's scale security score (ranging from  $-1.00$  to  $1.00$ ). The Spearman-Brown interrater reliability for the final security scale score was .82. This system was designed to yield continuous measures of qualities of attachment organization rather than to replicate classifications from the Main and Goldwyn (1998) system. Prior work has compared the scores obtained within this lab to a subsample ( $N = 76$ ) of adolescent AAIs that were classified by an independent coder with well-established reliability in classifying AAIs (U. Wartner). We did this by converting the Q-sort scales described above into classifications using an algorithm described by Kobak et al. (1993). Using this approach, we obtained an 84% match for security versus insecurity between the Q-sort method and the classification method ( $K = .68$ ). Prior research in adolescent samples has also indicated that security is highly stable over a two-year period (i.e.,  $r = .61$ ) (Allen, McElhaney, Kuperminc, & Jodl, 2004). We also considered employing a category available for coding adolescents' use of hyperactivating versus deactivating strategies in the interview, but given that its high inverse correlation with attachment security ( $r = .78, p < .0001$ ) suggested it would be supplying largely redundant information, it was not analyzed further.

**Observed autonomy and relatedness with parent**—Adolescents and their parents participated in a revealed differences task in which they discussed a family issue that they had separately identified as an area of disagreement. Adolescents and their parents were then brought together, and the discussion began with the adolescent playing an audiotape that he or she had previously recorded with an interviewer in which he or she stated the problem, his or her perspective on it, and what the adolescent thought his or her parent's perspective was. Typical topics of discussion included money, grades, household rules, friends, and sibling issues. Adolescents participated in separate sessions with their mothers and with their fathers. These interactions lasted eight minutes and were videotaped and then transcribed.

The coding system employed (Allen et al., 2000; Allen, Hauser, Bell, & O'Connor, 1994) yields a rating for the adolescent's overall behavior toward his or her parents in the interaction. Ratings are molar in nature, yielding overall scores for adolescents' behaviors across the entire interaction; however, these molar scores are derived from an anchored coding system that considers both the frequency and intensity of each speech relevant to that behavior during the interaction in assigning the overall molar score. Specific interactive behaviors were coded then summed together on a priori grounds into primary scales for (a) *promoting relatedness*, which captures validating statements and displays of engagement and empathy with the other party and their statements; (b) *undermining relatedness*, which sums ratings of behaviors undermining relatedness by overtly expressing hostility toward another member or by rudely interrupting/ignoring a family member; (c) *promoting autonomy*, which captures use of statements of the reasons behind a position and a calm, confident tone in the discussion; and (d) *undermining autonomy*, which captures behaviors that make it more difficult for individuals to express autonomy in a discussion, such as by overpersonalizing a disagreement, recanting a position without appearing to have been persuaded the position is wrong (thus ending the

discussion), or pressuring another person to agree other than by making rational arguments. Each interaction was reliably coded as the average of scores obtained by two trained raters blind to other data from the study. Each partner's behavior in the dyad was then summed to yield a single dyadic score for each scale. Interrater reliability was calculated using intraclass correlation coefficients and was in what is considered "excellent" range for mothers (intraclass  $r$ 's ranging from .76 to .82 and the "good" to "excellent" range for fathers (intraclass  $r$ 's range from .67 to .91 across scales) (Cicchetti & Sparrow, 1981).

**Harsh conflict tactics**—*Use of harsh conflict tactics* was assessed with a modified version of the Conflict Tactics Scale (Straus, 1979). This study used the 11-item physical aggression scale of the Conflict Tactics Scale, with several small modifications. First, participants were asked to report how often each behavior had occurred over their lifetime, instead of in the past year. Second, in place of raw frequencies, a 4-point scale (1 = *never*, 2 = *once or twice*, 3 = *several times*, 4 = *many times*) was used. Then the scores for the first two years of assessments in the project were average together ( $\alpha$ 's were .78 and .85 for years 1 and 2, respectively) to create a final score for parental use of harsh conflict tactics over the prior two years. Separate scores were obtained regarding harsh conflict tactics by mothers and by fathers. Reports were obtained for both residential and nonresidential fathers (provided the adolescent had sufficient contact with a nonresidential father to make it possible to complete the measure).

**Call for emotional support from closest friend**—Adolescents participated in an 8-minute interaction task with their closest friend, during which they asked that peer for help with a "problem they were having that they could use some advice or support about." Typical topics included dating, problems with peers or siblings, raising money, or deciding about joining sports teams. These interactions were coded using the Supportive Behavior Coding System (Allen et al., 2001a), which was based on several related systems developed by Crowell and colleagues (Crowell et al., 1998; Haynes & Fainsilber Katz, 1998; Julien et al., 1997). The degree of the adolescent's *call for emotional support from their peer* was coded in terms of the intensity and pervasiveness of emotional distress displayed by the adolescent in the interaction. Each interaction was reliably coded as an average of the scores obtained by two trained raters blind to other data from the study with excellent reliability (Intraclass correlation = .85).

**Observed adolescent autonomy and relatedness with peers**—Each adolescent-close friend dyad participated in an 8-minute videotaped task in which they were presented with a hypothetical dilemma that involved deciding which 7 out of a possible 12 fictional patients with a rare disease should be selected for a limited amount of antidote, which was based on the sinking-ship dilemma (Pfeiffer & Jones, 1974). After making their decisions separately, adolescents and their close friends were then brought together in a revealed differences paradigm in which they could compare their answers (Strodbeck, 1951). They were then asked to try to come up with a consensus list of 7 patients. The Autonomy-Relatedness Coding System for Peer Interactions was used to code these interactions (Allen, Porter, & McFarland, 2001b). This coding system is an adaptation of the Autonomy and Relatedness Coding System (Allen et al., 2000). As with that system (described above), it also captures behaviors *promoting autonomy*, *undermining autonomy*, *promoting relatedness*, and *undermining relatedness with peers*. Each interaction was coded as an average of the scores obtained by two trained raters blind to other data from the study with good to excellent reliability (intraclass  $r$ 's range from .65 to .86).

**Popularity**—Adolescent popularity was assessed using a limited nomination sociometric procedure. Each adolescent, their closest friend, and two other target peers named by the adolescent were asked to nominate up to 10 peers in their grade with whom they would "most like to spend time on a Saturday night" and an additional 10 peers in their grade with whom



they would “least like to spend time on a Saturday night.” This study used grade-based nominations (e.g., students could nominate anyone in their grade at school) rather than classroom-based nominations due to the age and classroom structure of the school that all participants attended. As a result, instead of friendship nominations being done by 15 to 30 children in a given classroom, each teen’s nominations were culled from among 72 to 146 teens from their grade in school (depending on the teen’s grade level). The large number of raters for each teen (in essence, each teen received a yes/no nomination from each nominator in his/her grade), makes this large subsample of nominators likely to yield fairly reliable estimates of popularity for each teen (Prinstein, in press). The raw number of like nominations each teen received was standardized within grade level before being added to the main data set as the primary measure of *popularity* following the procedure described in Coie, Dodge, and Coppotelli (1982). The number of *dislike ratings* for each teen was collected and calculated in similar fashion.

**Negative peer pressure**—A 7-item questionnaire was used to assess the extent to which each close friend reported trying to influence the target adolescent to engage in negative behaviors, including to pick fights, smoke, get bad grades and cut class, and make fun of other kids. Each question was rated on a 4-point scale, for example, “I try to influence whether my friend makes fun of other kids” rated from *A Lot* to *Not At All*. Cronbach’s  $\alpha$  for this measure was 0.74.

**Overall quality of relationships with peers**—The Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987) was used to assess adolescents’ perceptions of the overall quality of their relationships with peers in terms of the degree of trust, communication, and alienation in those relationships, each of which was assessed with eight 5-point Likert items. The overall scale was obtained by summing responses to the 3 scales. Internal consistency for this scale was high (Cronbach’s  $\alpha = .93$ ).

**Depressive symptoms**—Adolescents reported the degree of their depressive symptoms using the 27-item Child Depression Inventory (Kovacs & Beck, 1977). It has been well-validated as a measure of depressive symptomatology linked to poor self-esteem, hopelessness, and negative cognitive attributions (Kazdin, 1990). This measure uses a continuum/severity approach to assessing depressive symptoms that recognizes that levels of depressive symptoms below diagnostic thresholds may nevertheless be important predictors of significant dysfunction (Lewinsohn, Solomon, Seeley, & Zeiss, 2000). Internal consistency for this scale was high (Cronbach’s  $\alpha$  ranged from .84 to .87 across the three waves of assessment).

**Externalizing behavior**—Close peers of adolescents reported on the externalizing behavior of our target adolescents using a shortened form of the Child Behavior Checklist (Achenbach & Edelbrock, 1991) designed to tap externalizing behavior (Lizotte, Chard-Wierschem, Loeber, & Stern, 1992). This form, originally designed for teacher or parent report, but useable for peers without modification, employs 45-items that capture aspects of aggressive, delinquent, hostile, hyperactive, and immature behavior (as does the longer version). On this measure, adolescents indicated how often a series of behavioral descriptions applied to target teens, on a scale of 0 = *not true* to 2 = *very or often true*. These items were summed together to yield a score for total level of externalizing behavior. Internal consistency for this scale was high (Cronbach’s  $\alpha$  ranged from .81 to .87 across the three waves of assessment).

## Results

### Preliminary Analyses

Means and standard deviations for all substantive variables are presented in Table 1. Initial analyses examined the relation of gender, racial/ethnic minority status, and family income to attachment security and the behavioral outcomes examined in the study. Numerous main effects were found for racial/ethnic minority status, and family income, but effects were found for adolescent gender only for growth curve analyses of adolescent depressive symptoms. As a result, racial/ethnic minority status and family income are included in all primary analyses below, and gender is included in analyses of depressive symptoms. We also examined possible moderating effects of these demographic factors on each of the relationships described in the primary analyses below. No such moderating effects were found with the exception of a moderating effect of gender on adolescent depressive symptoms, which is described below.

**Correlational analyses**—For descriptive purposes, Table 2 presents the results of simple univariate correlations among the key variables of interest in the study. Notably, there are numerous univariate correlations with adolescent attachment security among maternal, paternal, and peer relationship measures.

### Primary Analyses

**Relation of attachment security to father-adolescent interactions**—Analyses first examined two different classes of father-adolescent relationship markers as predictors of adolescent attachment security. In a hierarchical regression model, family income, and a dummy variable reflecting membership in a racial/ethnic minority group membership were entered first, followed by other measures, with priority for entry given to measures that had previously been linked to attachment security in studies with mothers (i.e., behaviors displaying relatedness) and to measures that were least dependent on adolescent self-report. Thus, observational assessments of father-adolescent relatedness in interactions were entered next, followed by information on autonomy in interactions, then by adolescent reports of past harsh conflict tactics experienced from their fathers. Given that this is only one possible order of entry of variables, the second column of this and all following tables also provides  $\beta$  weights from final models in which all variables are entered and given equal priority. Results, presented in Table 3, indicated that both adolescent behavior promoting relatedness with their fathers and adolescent reports of paternal harsh conflict tactics (an inverse predictor) uniquely contributed to predictions of attachment security. No effects were found, either at entry or in final models, for behaviors promoting or undermining autonomy with fathers.

**Relation of attachment security to peer-adolescent interactions**—Analyses next examined peer-adolescent predictors of attachment security. As before, hierarchical regression analyses were used, and variables were entered in blocks, with priority for entry given to measures that were methodologically most objective in nature or least dependent on adolescent report. Thus, after demographic factors, independently coded observations of adolescents' calls for emotional support were entered and behaviors displaying autonomy and relatedness with peers, followed by sociometric ratings of popularity, peer reports about peer pressure experienced by our target adolescent, followed finally by adolescents' own ratings of the overall quality of their relationships with peers. Results, presented in Table 4, indicate that each of these classes of variables independently contributed variance to explaining adolescent attachment security, and that together, these peer interaction factors accounted for 19% of the variance in security, even after first accounting for effects of demographic factors (Total  $R^2 = .33$ , Multiple  $R = .57$ ). In the final combined model, security was best predicted by a combination of adolescents' calls for emotional support from peers, popularity with peers, overall quality of peer relationships, and (inversely) from amount of peer pressure experienced.

**Uniqueness versus redundancy of different classes of predictors of attachment security**—Analyses next sought to assess whether markers of qualities of different adolescent relationships were redundant with one another versus unique contributors to explaining variance in adolescent attachment security. In particular, analyses examined whether markers of non-maternal relationship factors could explain variance in security over and above that explained by maternal relationship qualities that have been previously related to attachment security in adolescence. Results are presented in Table 5. In selecting variables to be examined in larger predictive models, several criteria were used. First, given their previously identified role as markers of adolescent security, markers of mother-adolescent interactions were considered first for entry into analyses so that analyses with subsequently entered variables could assess whether those variables add any additional information to explaining security beyond what is already known from research on mother-adolescent interactions. A preliminary regression equation indicated that only one of the four autonomy and relatedness variables—undermining relatedness—had significant unique relations to security; hence this variable was entered first into regression analyses after entry of demographic factors.

Paternal relationship variables were entered next. However, given that the much smaller sample size available for the observational measure of behavior undermining relatedness with fathers would have dramatically limited the sample for the entire larger model, only the measure of adolescent-reported paternal harsh physical conflict tactics was entered. (Exploration of models in which behavior undermining relatedness was also entered revealed little change in effect sizes for other variables in the model, although given the much smaller sample, levels of statistical significance of these effects decreased as would be expected given the reduced power). Finally, peer relationship markers were entered last into the predictive model.

Results indicate that behavior undermining relatedness with mothers accounted for an additional 8% of the variance in security, after demographic effects. Paternal harsh physical conflict tactics accounted for an additional 6% after demographic effects and maternal relationship markers. And, after accounting for all of these other effects, peer relationship markers accounted for yet an additional 18% of the variance in adolescent attachment security. All told, the paternal and peer factors being examined for the first time in this study accounted for 23.5% of the incremental variance in attachment security, after accounting for demographic effects and previously explored behaviors with mothers. All relationship markers combined, including maternal relationship markers, accounted for 31.8% of the incremental variance in security after accounting for demographic factors (Multiple  $R = .56$ ). Notably, although both demographic factors had strong univariate relations to security, both dropped to nonsignificance after accounting for these relationship markers.

**Relation of attachment security to development of depressive symptoms**—

Analyses next examined how attachment security assessed at approximately age 14 was related to growth trajectories of depressive symptoms from ages 13 to 15. Standardized predictor variables were used in these analyses to maximize ease of comparison of effects of different predictors and general interpretability of the model (Biesanz et al., 2004). In the first step of analysis, unconditional growth curve models were examined, using MPLUS, for adolescents' depressive symptoms. These models indicated no overall pattern of increase over the course of the assessments in depressive symptoms. This means there was no net growth or decline in depressive symptoms for the sample as a whole. However, the unconditional model also indicated that there was significant within-sample variation both in the intercept and in the slope of adolescent depressive symptoms. That is, while there was no overall change in depressive symptoms over time for the sample as a whole, there was significant individual variability in levels of change within the sample that warranted further exploration. Therefore, it was reasonable to expect that a between-subjects variable (e.g., attachment security) could

potentially predict either intercepts or trajectories of the development of depressive symptoms that differed from the overall pattern in the sample.

In conditional models that followed for depressive symptoms (depicted in the first three numeric columns of Table 6), results indicated that attachment security was significantly related to the overall level (intercept) of depressive symptoms but not to trajectories of change in depressive symptoms. Analyses also explored whether any demographic factors might interact with security in predicting either the level or slope of the depressive symptoms trajectory. A significant interaction was found only for gender  $\times$  security in predicting the intercept for depressive symptoms, and this interaction term is included in Table 6, and depicted in Figure 1. Compared to a baseline model with no predictors ( $\chi^2 = 56.65$ ,  $df = 18$ ,  $p < .001$ ), adding the ten predictors shown in Table 6 led to a significant improvement in model fit ( $\Delta\chi^2/\Delta df = 6.26$ ,  $p < .05$ ; RMSEA = .09,  $P$  (close fit) = .10; AIC = 5541; BIC = 5657;  $\chi^2$  final model = 19.09;  $df = 8$ ,  $p < .02$ ). The slope and intercept were correlated at  $r = -.11$ ,  $p > .70$ . The results shown in Table 6 indicated that more secure adolescents displayed consistently lower levels of depressive symptoms at baseline that were maintained across the three-year time window of the study, but that this was particularly true for females, as shown in Figure 1.

#### **Relation of attachment security to development of externalizing behavior—**

Analyses next examined how attachment security was related to growth trajectories of externalizing symptoms (as assessed by peers) from ages 13 to 15. In the first step of analysis, unconditional growth curve models were examined for adolescents' externalizing behavior. These models indicated a significant overall pattern of increase in externalizing behavior. The unconditional model also indicated that there was significant variation to be accounted for both in the intercept and in the slope of adolescent externalizing behavior. Therefore, it was reasonable to expect that a between-subjects variable (e.g., attachment security) could predict either intercepts or trajectories of individuals' behavioral development that differed from the overall pattern of the sample.

In conditional models for externalizing behavior, presented in the second three numeric columns in Table 6, security was not related to the intercept but was inversely related to the slope of externalizing behaviors across the three-year period of the study. Compared to a baseline model with no predictors ( $\chi^2 = 41.30$ ,  $df = 12$ ,  $p < .001$ ), adding the six predictors shown in Table 6 led to a significant improvement in model fit ( $\Delta\chi^2/\Delta df = 3.99$ ,  $p < .05$ ; RMSEA = .10,  $P$  (close fit) = .06; AIC = 4217; BIC = 4284;  $\chi^2$  (final model) = 17.35;  $df = 6$ ,  $p < .01$ ). The slope and intercept were correlated at  $r = .28$ ,  $p > .60$ ). More secure adolescents in the sample displayed significantly lower overall trajectories of growth in externalizing behaviors across the three-year window of the study. Figure 2 depicts the overall level and patterns of growth in externalizing behaviors in the sample for individuals who are  $\pm 1 SD$  from the mean in attachment security (labeled as "secure" and "insecure").

## **Discussion**

This study found that attachment in adolescence had broad and substantial connections to adolescents' functioning in several major social relationships beyond the mother-teen relationship and to the development of symptoms of psychosocial dysfunction across early adolescence in a community sample. Results relating security to behavior with fathers, with peers, and to patterns of change in psychosocial functioning are each considered in turn below, followed by discussion of implications and limitations of the overall pattern of findings for our understanding of the meaning of attachment security in adolescence. Given the very high stability of security assessed via the AAI over a two-year period in adolescence (Allen et al., 2004), we focus primarily upon *associations* between security and markers of functioning,

giving relatively little weight to the temporal ordering of such associations (i.e., whether measures were assessed before versus after the AAI).

The degree to which adolescents and their fathers made efforts to maintain a positive tone in their relationship in the midst of discussing disagreements and (inversely) fathers' use of harsh methods of conflict tactics were both significantly linked to adolescent attachment security. These findings replicate and extend previously reported findings with mothers and suggest that adolescent/adult security, defined by Main and Goldwyn as a state of being autonomous yet valuing of attachment, in *discourse* is indeed linked to the ability to maintain a sense of relatedness in the midst of autonomy negotiations in critical social relationships (Allen et al., 2003; Main & Goldwyn, 1998). Notably, the discourse involved in the AAI is not around a disagreement, and the autonomy being coded reflects capacity to *think* autonomously about attachment relationships. As in prior studies with mothers, it was behavior that maintained a relationship while disagreeing (or behavior that avoided undermining this relationship) rather than direct expressions of disagreement (i.e., direct autonomy behaviors) that predicted this attachment security (Allen et al., 2003).

The link between adolescent insecurity and paternal use of harsh conflict tactics is also consistent with findings with early school-age children linking extremes of harsh conflict management tactics (i.e., abusive behavior) to evidence of attachment insecurity (Aber & Allen, 1987). This study is one of the first to examine the implications of such harsh physical conflict tactics for attachment in adolescence. One possible explanation of these findings is that these tactics, and the fear and intimidation they create, may inhibit the adolescents' capacity for reflecting autonomously upon the nature of their attachment experiences, lest this reflection lead to conclusions that create conflict with their fathers. Alternatively, it may be that adolescent insecurity itself creates conditions leading to highly charged conflicts, or that other factors (i.e., paternal immaturity) may lead both to use of harsh and physical methods of conflict tactics and to adolescent insecurity over time. It should also be noted that given that reports of harsh conflict tactics are based upon adolescent recall, it is also possible that the findings obtained reflect insecure adolescents remembering or choosing to report more harsh physical punishment than securely attached youths. Further research is now warranted to begin to sort among these possibilities. After accounting for demographic factors, father-adolescent interactions accounted for over 18% of the variance in adolescent attachment security, suggesting substantial connections between qualities of this relationship and adolescent attachment organization. Further, father-adolescent relationship characteristics continued to add to explained variance in attachment security even after accounting for mother-adolescent relationship characteristics. The most straightforward model of the development of the attachment system in adolescence would presume that as individuals mature, what had been discrete experiences in individual attachment relationships (i.e., with mothers and with fathers) in childhood now join in contributing to a more general overall working model of oneself in attachment relationships (Main, Kaplan, & Cassidy, 1985). Although the cross-sectional nature of these data is not logically sufficient to establish the validity of such direct causal interpretations, these data are at least consistent with this model in suggesting that qualities of relationships with both mothers and fathers contribute to explaining unique variance in adolescent attachment security.

Alternatively, it should also be noted that while the AAI assesses a general overall working model of attachment relationships, this assessment utilizes interview material relating to both maternal and paternal relationships. Thus, while the AAI yields a single overall characterization of attachment organization, it remains quite possible that the security in the AAI is simply characterizing and to some extent summarizing cognitions regarding multiple ongoing attachment *relationships*. In this vein, it would not be at all surprising that qualities of both maternal and paternal relationships would contribute to an overall security score from the AAI.



The Q-sort system for coding the AAI, while relying primarily upon assessments of the quality of the discourse in this interview, also incorporates, albeit with less priority, the content of adolescent's actual recall regarding childhood attachment relationships with mothers and fathers. Thus, the nature of this particular coding system might also tend to enhance observed relations between maternal and paternal relationship qualities and security on the AAI (to the extent that security scores are influenced by adolescents' reflections about their ongoing relationships with their parents). This likelihood is somewhat reduced, however, by evidence of strong correspondence between the Q-sort system and the AAI classification system, which does not rely at all upon qualities of childhood experiences in assessing security.

This study also identified specific qualities of best friend interactions, as well as markers of popularity, with a broader peer group that each demonstrated as unique, additive links to security (Allen et al., 1998; Roisman, Madsen, Hennighausen, K Sroufe, & Collins, 2001). Security was associated both with behaviors that are conceptually closely linked to attachment processes (i.e., calls for emotional support from a best friend), as well as with behaviors that reflect the ability to get along well within the broader peer group (i.e., sociometric measures of popularity). Further, attachment security was linked to lower levels of peer pressure experienced by target adolescents, as reported by their best friends. This suggests that the previously identified links between security and autonomy processes in parent-adolescent interactions (Allen & Hauser, 1996; Allen et al., 1998) may extend to peer interactions as well—interactions in which managing peer pressure appears as a major autonomy challenge and key developmental task. It may be that secure adolescents convey to their peers that they are not likely to be particularly susceptible to pressuring tactics, and hence they receive fewer direct threats to their autonomy in the form of peer pressure to engage in negative behavior. If borne out in future research, this explanation would suggest one mechanism by which secure adolescents establish their capacity for autonomous thought and behavior, as they form new relationships by establishing such relationships in ways that leave them less likely to experience pressuring behavior.

Notably, peer-relationship qualities were predictive of attachment security even after accounting for qualities of mother-adolescent relationships *and* father-adolescent relationships. Although it seems less plausible that at age 14, these peer-relationship qualities were directly contributing to security in adolescent attachment organization, these results do indicate that security is multifaceted in its connections to adolescent social relationships, with different relationships tying in to different facets of adolescents' attachment security. These findings also provide provocative evidence that the adolescent's working model of attachment relationships is linked to social behaviors far beyond the mother-child relationship in early adolescence. Even after accounting for the ways in which qualities of attachment models simply reflect ongoing qualities of parent-adolescent relationships, robust links to peer relationship qualities still appear.

So what does it mean to say that we can see the signs of attachment security almost as clearly (and in similar ways) in a teen's relationship with his or her peers, as in that teen's relationship with his or her mother or father? Although the correlational nature of the findings precludes causal conclusions, one possible explanation is that the secure adolescent *tends to create relationships* characterized by a balance of autonomy and relatedness—to create their own secure bases from which to explore—and to do this across relationships (Crowell et al., 2002). Combined with data from other research suggesting that maternal attachment security is not particularly strongly related to teen security (Allen et al., 2003), these findings suggest that in adolescence, it may be as likely that qualities of a teen's primary social relationships are driven by the teen's security as that those relationships are producing a teen's security.

Turning beyond relationships, attachment security in adolescence was also found to be linked to higher levels of depressive symptoms across adolescence, to a trend toward higher externalizing symptoms at age 13, and to a significant pattern of *increasing* levels of externalizing symptoms over the course of early adolescence. Although insecurity has shown some tenuous links to each of these behaviors in prior studies of at-risk samples of adolescents (Allen et al., 2002; Marsh, McFarland, Allen, McElhaney, & Land, 2003), this study is the first to demonstrate direct links of attachment insecurity to multiple patterns of dysfunction over a sustained period of time in a community sample. With respect to depressive symptoms, links to insecurity appeared primarily for females. Notably, security was related only to the intercept but not to the slope of the trajectory of depressive symptoms. This indicates that females' attachment insecurity was linked to a steady pattern of heightened depressive symptoms beginning before and extending after the attachment assessment though not to changing patterns of symptoms across this period. This indicates that links between depressive symptoms and insecurity are not simply due to confounds when both phenomena are assessed contemporaneously (i.e., to transiently depressed individuals displaying less coherence in contemporaneous attachment interviews). These findings appear quite consistent with notions that attachment security reflects the individual's fundamental orientation toward the cognitive and affective processing of highly emotionally charged situations and toward emotion regulation capacities in general (Cummings & Davies, 1996).

Findings regarding externalizing behavior suggest new and disturbing relations with attachment insecurity. In this study, attachment insecurity displayed a trend toward association with higher levels of externalizing behavior at age 13. In growth curve models, insecurity also displayed a clear and significant relation to a pattern of *increasing* externalizing behavior across three annual assessments. Given that attachment security was assessed in the middle of the 3-year window of this study, these findings do not show security is a predictor (nor necessarily a causal agent) leading to externalizing behavior. They do, however, show, that security is linked not only to concurrent levels of development, but also to critical patterns of developmental change over time during this period, in short strongly suggesting that the organization of the adolescent's thinking about attachment is closely connected to critical and unfolding developmental processes during this period. One explanation for these findings is that insecurity may be an important risk factor for increasing levels of delinquency as development progresses and as delinquency typically becomes a more serious issue for more disturbed adolescents. However, future research is now needed to explore this and other potential causal mechanisms that might account for these links.

Together, these behavioral findings suggest that attachment security *in adolescence* is linked not simply to relational markers but also to long-term patterns of psychological function and dysfunction. It is notable that these findings stand somewhat in contrast to attachment research in childhood, and even to some adolescence research, where links of attachment insecurity to markers of dysfunction have typically been more tenuous and narrow (Allen et al., 2002; Greenberg et al., 1993; Marsh et al., 2003). One possibility is that this study differed from prior studies in using growth curve modeling techniques to assess dysfunction—which allowed for far more stable assessments that were not dependent upon observations at a single data point. Alternatively, it may be that by adolescence, insecurity has sufficiently distorted an increasing number of critical relationships so that clear links to psychopathology begin to emerge (Sroufe et al., 2000). It should also be noted, however, that the relationships observed were not so strong as to suggest a one-to-one correspondence between insecurity and psychopathology, and further research examining the conditions under which such links are more versus less likely to exist are clearly warranted.

Overall, these findings suggest a broad array of connections of adolescent attachment security to multiple domains of functioning and development. It is notable that some of these findings

occurred with respect to the adolescents' behavior, whereas others (particularly those related to autonomy processes) were observed to complex interactions involving both the adolescent's behavior and that of their parents. It thus appears that relations of security to ongoing patterns of social interaction that the adolescent and his/her fathers and peers have established can be observed from the vantage point of either individual in the interaction. Said most simply, in adolescence, just as in infancy, it still makes sense to consider the attachment system in dyadic terms at least for some purposes.

Several limitations of this research also bear consideration. First, as noted above, even longitudinal change studies employing growth curve methods cannot overcome the inherent limits of nonexperimental research; hence causal conclusions may be disproved but cannot be directly demonstrated by these findings. It is entirely possible, for example, that unmeasured third variables, such as adolescent temperament or parental divorce/father absence, may have contributed both to insecurity and to difficulties in psychosocial functioning. Second, the single assessment of attachment security used in this study, obtained in the midpoint of several other assessments, combined with the known high degree of stability of attachment security in adolescence, does not allow the temporal precedence of observed relations to be clearly established. Third, this study did not consider subtypes of insecurity, for example, the unresolved state of mind that has been most strongly linked with psychopathology in prior research. This decision was made deliberately, in part to focus on the single overall marker of attachment organization that has received the greatest attention and in part because the q-sort coding methodology does not readily yield classification data. Future research, however, might begin to explore subclassifications of attachment, as well as other means of beginning to assess and decompose this clearly powerful marker of adolescent functional capacity. Finally, it should be noted that the data provided should not be used to compare the relative strengths of predictions of behavior with fathers versus with mothers versus with peers, as the sample sizes differed somewhat across these comparisons and in all cases were small enough to preclude a focus on the reliability of the *differences* in correlations across relationships. Rather, these findings provide evidence suggesting that attachment models in adolescence have broad general relevance for understanding qualities of social behaviors across multiple types of relationships and across multiple behavioral domains.

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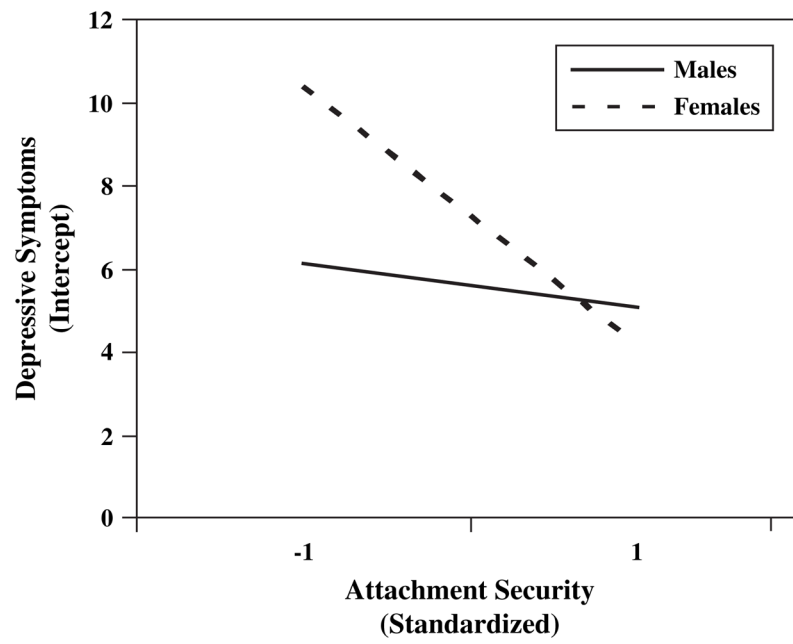
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**Figure 1.**  
Moderating effect of gender on attachment security in predicting depressive symptoms.

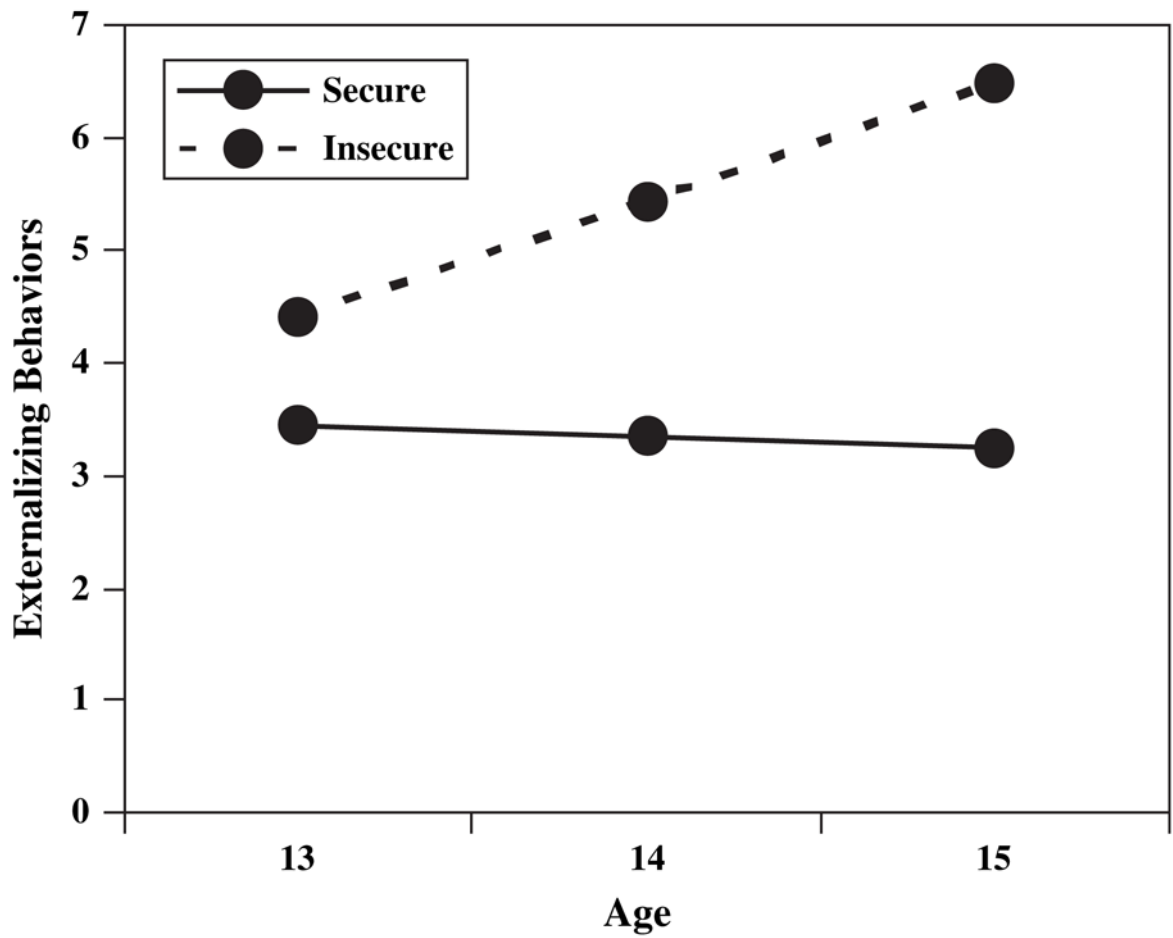


Figure 2.  
Growth in externalizing behaviors as related to attachment security.

**Table 1**

Means and Standard Deviations of Primary Measures and Demographic Variables

	<i>M</i>	<i>SD</i>
Attachment Security (t)	0.26	.42
Promoting Relatedness with Father (o) (13)	1.97	.56
Negative Relatedness with Father (o) (13)	0.37	.28
Promoting Autonomy with Father (o) (13)	2.66	.51
Undermining Autonomy with Father (o) (13)	0.90	.66
Paternal Harsh Conflict Tactics (a)	.22	.52
Call for Emotional Support from Peer (o)	1.17	1.15
Popularity (soc.)	1.00	1.22
Promoting Relatedness with Peer (o)	2.37	.79
Negative Relatedness with Peer (o)	0.43	.68
Promoting Autonomy with Peer (o)	2.34	.94
Undermining Autonomy with Peer (o)	1.16	.57
Negative Peer Pressure (cp)	5.49	1.04
Overall Quality of Peer Relationships (a)	103.10	13.12
Promoting Relatedness with Mother (o) (13)	1.70	.53
Undermining Relatedness with Mother (o) (13)	0.53	.37
Promoting Autonomy with Mother (o) (13)	2.60	.46
Undermining Autonomy with Mother (o) (13)	1.37	.73
Maternal Harsh Conflict Tactics (a)	0.26	0.54
Depressive Symptoms (age 13) (a)	6.58	5.61
Depressive Symptoms (age 15) (a)	6.66	6.32
Externalizing Behavior (age 13) (cp)	3.47	3.33
Externalizing Behavior (age 14) (cp)	4.79	4.58
Externalizing Behavior (age 15) (cp)	4.44	4.80

*Note.* Age of Assessment is in parentheses for assessments other than at age 14. Soc = sociometric assessment; cp = close-peer-report about target teen; t = test/coded interview; o = observed; a - target adolescent report. Popularity mean reflects scores that were standardized within grade level prior to being combined across the sample.

**Table 2**

Correlations of Attachment Security with Other Primary Constructs

	Attachment Security
Promoting Relatedness with Father (13)	.38***
Undermining Relatedness with Father (13)	.12
Promoting Autonomy with Father (13)	.14
Undermining Autonomy with Father (13)	-.03
Paternal Harsh Conflict Tactics (14)	-.28***
Call for Emotional support from Peer (14)	.26***
Popularity (14)	.34***
Promoting Relatedness with Peer (14)	.11
Undermining Relatedness with Peer (14)	-.07
Promoting Autonomy with Peer (14)	.19*
Undermining Autonomy with Peer (14)	.02
Negative Peer Pressure (14)	-.31***
Overall Quality of Peer Relationships (14)	.33***
Promoting Relatedness with Mother (14)	.16
Undermining Relatedness with Mother (14)	-.23***
Promoting Autonomy with Mother (14)	.09
Undermining Autonomy with Mother (14)	-.16*
Maternal Harsh Conflict Tactics (14)	-.22***
Depressive Symptoms (13)	-.26***
Depressive Symptoms (14)	-.23**
Depressive Symptoms (15)	-.26***
Externalizing Behavior (13)	-.14
Externalizing Behavior (14)	-.25**
Externalizing Behavior (15)	-.24*

Note. Assessment age is in parentheses.

†  
 $p \leq .10$ ,

\*  
 $p \leq .05$ ,

\*\*  
 $p \leq .01$ ,

\*\*\*  
 $p \leq .001$ .



**Table 3**  
Father-Adolescent Markers of Adolescent Attachment Security

	$\beta$ entry	$\beta$ final	$\Delta R^2$	Total $R^2$
Step I.				
Family Income	.08	-.03		
Minority Group Membership (0 = No; 1 = Yes)	-.33**	-.21 <sup>†</sup>		
<i>Summary Statistics for Step</i>			.139**	.139**
Step II.				
Promoting Relatedness while Disagreeing	.31**	.26*		
Undermining Relatedness while Disagreeing	.11	.19 <sup>†</sup>		
<i>Summary Statistics for Step</i>			.098**	.237***
Step III.				
Promoting Autonomy while Disagreeing	-.06	-.04		
Undermining Autonomy while Disagreeing	-.01	-.03		
<i>Summary Statistics for Step</i>			.002	.239***
Step IV.				
Paternal Harsh Conflict Tactics	-.32**	-.32**	.084**	.323***

<sup>†</sup>Note.  $p \leq .10$ .

\*  $p \leq .05$ .

\*\*  $p \leq .01$ .

\*\*\*  $p \leq .001$ .

**Table 4**  
Peer Relationship Markers of Adolescent Attachment Security

	$\beta$ entry	$\beta$ final	$\Delta R^2$	Total $R^2$
Step I.				
Family Income	.14	.09		
Minority Group Membership (0 = No; 1 = Yes)	-.28**	-.14		
<i>Summary Statistics for Step</i>			.139***	.139***
Step II.				
Call for Emotional Support	.24**	.19**		
Promoting Autonomy while Disagreeing	.13	.11		
Promoting Relatedness while Disagreeing	.14 <sup>†</sup>	.09		
Undermining Autonomy while Disagreeing	-.00	-.03		
Undermining Relatedness while Disagreeing	-.05	-.08		
<i>Summary Statistics for Step</i>			.111**	.250***
Step III.				
Popularity	.18**	.16*	.034**	.284***
Step IV.				
Peer Pressure Experienced	-.23**	-.19**	.048**	.332***
Step V.				
Overall Quality of Peer Relationships	.22**	.22**	.042**	.374***

<sup>†</sup>Note.  $p \leq .10$ ,

\*  $p \leq .05$ .

\*\*  $p \leq .01$ ,

\*\*\*  $p \leq .001$ .

**Table 5**  
Maternal, Paternal, and Peer Relationship Markers of Adolescent Attachment Security

	$\beta$ entry	$\beta$ final	$\Delta R^2$	Total $R^2$
Step I.				
Family Income	.09	.12		
Minority Group Membership (0 = No; 1 = Yes)	-.21 <sup>†</sup>	-.04		
<i>Summary Statistics for Step</i>			.071**	.071**
Step II.				
Undermining Relatedness with Mother	-.29***	-.26***		
Maternal Harsh Conflict Tactics	-.13	-.02		
<i>Summary Statistics for Step</i>			.098**	.169***
Step III.				
Paternal Harsh Conflict Tactics	-.23**	-.19*		
<i>Summary Statistics for Step</i>			.057**	.216***
Step IV.				
Call for Emotional Support	.24**	.24**		
Popularity	.15 <sup>†</sup>	.15 <sup>†</sup>		
Peer Pressure Experienced	-.19**	-.19*		
Overall Quality of Peer Relationships	.18*	.18*		
<i>Summary Statistics for Step</i>			.173***	.389***

<sup>†</sup>Note.  $p \leq .10$ ,

\*  $p \leq .05$ ,

\*\*  $p \leq .01$ ,

\*\*\*  $p \leq .001$ .

Table 6  
Growth Curve Models for Externalizing Behaviors and Depressive Symptoms

Level of Model	Unconditional Growth Curve Models					
	Depressive Symptoms			Externalizing Behavior		
	Coefficient	SE	t	Coefficient	SE	t
Intercept	6.31 <sup>***</sup>	.36	17.48 <sup>***</sup>	3.92 <sup>***</sup>	.26	14.88 <sup>***</sup>
Linear growth rate	.08	.22	.38	0.47 <sup>*</sup>	.23	2.06 <sup>*</sup>
Conditional Growth Curve Models						
Intercept	.10	.45	.23	-.67 <sup>*</sup>	.33	-2.01 <sup>*</sup>
Family Income	-.06	.46	-.13	-.06	.34	-.18
Minority Status	.46	.37	1.26	—	—	—
Gender	-1.37 <sup>***</sup>	.40	-3.45 <sup>***</sup>	-.48	.33	-1.44
Attachment Security	-1.44 <sup>***</sup>	.37	-3.87 <sup>***</sup>	—	—	—
Security × Gender	—	—	—	—	—	—
Linear Change						
Family Income	-.16	.27	-.56	.06	.15	.39
Gender	-.47	.28	-1.68	—	—	—
Minority Status	.25	.22	1.12	-.82 <sup>*</sup>	.61	-1.33
Attachment Security	-.30	.24	-1.26	-.57 <sup>*</sup>	.27	-2.12 <sup>*</sup>
Security × Gender	.32	.22	1.41	—	—	—

<sup>†</sup>Note.  $p \leq .10$ .

\*  $p \leq .05$ .

\*\*  $p \leq .01$ .

\*\*\*  $p \leq .001$ .