

Parent–adolescent relationship qualities, internal working models, and attachment styles as predictors of adolescents’ interactions with friends

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ABSTRACT

This study examined how parent–adolescent relationship qualities and adolescents’ representations of relationships with parents were related to interactions in 200 adolescent–close friend dyads. Adolescents and friends were observed discussing problems during a series of structured tasks. Negative interactions with mothers were significantly related to adolescents’ greater conflict with friends, poorer focus on tasks, and poorer communication skills. Security of working models (as assessed by interview) was significantly associated with qualities of friendship interactions, whereas security of attachment styles (as assessed by questionnaire) was not. More dismissing (*versus* secure) working models were associated with poorer focus on problem discussions and weaker communication skills with friends, even after accounting for gender differences and current parent–adolescent relationship qualities.

KEY WORDS: adolescence • attachment • friendships • parent–child relations • peer relations • psychology • social interactions

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Developing close relationships outside of the family is a hallmark task of adolescence (Berndt, 1996; Buhrmester & Prager, 1995). Close friendships involve not only shared activities and companionship, but also mutual self-disclosure and closeness (Youniss & Smollar, 1985). The quality of adolescent friendships predicts concurrent and future psychosocial adjustment (Cairns & Cairns, 1994; Markiewicz, Doyle, & Brendgen, 2001) and serves as a critical foundation for developing satisfying and healthy close relationships in later adolescence (Connolly, Furman, & Konarski, 2000; Furman, 1999). Many theories propose that experiences with parents play an important role in shaping the quality of adolescent's peer interactions (Kerns, Contreras, & Neal-Barnett, 2000; Parke & Ladd, 1992). Attachment theory, in particular, figures prominently in understanding links between parent-child relationships and the development of close friendships. The objective of the current study was to investigate how current parent-adolescent relationship qualities and adolescents' representations of relationships with parents were related to observed qualities of adolescents' interactions with a friend.

According to attachment theory, early parent-child relationships have an important impact on children's capacity to form interpersonal bonds in extra-familial relationships such as friendships. The security of early attachment relationships with parents is associated with more positive friendships, social competence, and popularity (LaFreniere & Sroufe, 1985; Rose-Krasnor, Rubin, Booth, & Coplan, 1996; Youngblade & Belsky, 1992). Theoretically, secure parent-child relationships are linked to more positive peer outcomes because children develop a sense of self-worth and self-efficacy, learn about reciprocity, and develop positive social expectations (Elicker, Englund, & Sroufe, 1992). Conversely, young children who have insecure attachment relationships with parents fail to develop the emotional and social resources they need for positive peer interactions. Indeed, children with early insecure relationships with parents have poorer social competence and more negative friendships (LaFreniere & Sroufe, 1985; Shulman, Elicker, & Sroufe, 1994; Youngblade & Belsky, 1992).

Representations: Working models and styles

Attachment theorists posit that one of the primary modes of linkage between children's attachment relationships with parents and peer interactions is through *representations* of relationships with parents. Representations of relationships with parents are mental templates thought to derive from cumulative, affective interchanges with primary caregiving figures (Main, Kaplan, & Cassidy, 1985). Such representations shape a child's core strategy for self-regulating emotions, thoughts, and behaviors in close relationships (Bowlby, 1973). Thus, representations of relationships with parents not only shape information processing and behavioral and affect regulation with parental figures, but also they are expected to carry over to other close relationships, such as friendships, which share some characteristics with attachments to parents (Elicker, Englund, & Sroufe, 1992).

Researchers have used two different methodological approaches to assess representations. Representations of relationships with parents have primarily

been assessed with interviews such as the Adult Attachment Interview (AAI) (George, Kaplan, & Main, 1985, 1996). This approach is based on the idea that representations are reflected in an individual's narrative and appraisal of her or his experiences in close relationships; differences in representations are inferred from a person's approach to the discourse task and the degree of coherence in the discourse, rather than the experiences with parents per se (Hesse, 1999). For example, secure representations entail coherent and collaborative narratives characterized by open communication about reported attachment experiences. In contrast, the narratives of those with more dismissing representations are incoherent as the adolescent attempts to limit the influence of the relationships by idealizing, derogating, or failing to remember her or his experiences (Main, 1991). Preoccupied representations also involve incoherent discourse of a different nature, typically characterized by prolonged, vague, confused, oscillatory, or angry discussions of attachment related experiences. We use the term *working model* to refer to these internalized representations of relationships assessed in interview narratives.

In addition, self-report questionnaire methods exist for assessing representations of relationships, particularly romantic relationships, but also relationships with parents (see Crowell, Fraley, & Shaver, 1999). We employ the term *style* to refer to these self-report assessments of representations. There is considerable debate over whether questionnaire and interview methods assess similar or different constructs. Although it was once assumed that working models and styles measured the same, or at least similar, representational constructs as interview methodology, mounting evidence indicates that the interview and questionnaire assessments have small overlap and are not interchangeable (Crowell, et al., 1999; Roisman, Holland, Fortuna, Fraley, Clausell, & Clark, 2007). Whereas the conceptual distinctions between working models and styles require further clarification, some attachment researchers have posited that working model measures may primarily assess strategies of emotion regulation in the context of interpersonal relationships (Spangler & Zimmermann, 1999), whereas self-reported attachment styles may tap more specific cognitive attitudes and beliefs about a type of relationship (Mayseless & Scharf, 2007).

Links between representations and adolescent friendships

Theoretically, adolescence is a particularly crucial period to understand the links between attachment to parents and peer relationships. Representations of parents have especially important implications for the development of close relationships, as such representations encompass fundamental beliefs and expectations about intimacy and closeness (Furman & Simon, 1999; Sroufe & Fleeson, 1986). Friendships in adolescence are marked by greater intimacy and closeness than in childhood and represent a key context in which adolescents learn to adaptively seek and provide support in relationships autonomous from the family (Clark-Lempers, Lempers, & Ho, 1991; Furman & Buhrmester, 1992; Lempers & Clark-Lempers, 1992). Thus, adolescents' representations of relationships with parents may, in theory, be particularly important determinants of interactions in close,

established friendships because adolescents' relationships with parents and friends share some similar properties (Kerns, 1994). In longstanding, close friendships, adolescents may have intimate conversations and turn to the other for support just as they may with parents.

A well-established association exists between security of attachment to parents and peer relations in early and middle childhood (Schneider, Atkinson, & Tardif, 2001). Moreover, security of attachment appears to be more strongly related to the quality of preadolescent friendships than to other facets of peer relations (Schneider, Atkinson, & Tardif, 2001). However, few studies have examined these links in adolescence. Most existing studies on adolescence have examined the links between attachment security and general adolescent peer competence and popularity (e.g., Allen, Porter, McFarland, Marsh, & McElhaney, 2005) rather than friendship per se. The security of adolescent's representations of relationships with parents is associated with the positive qualities of friendships as assessed by interview and self-reports of greater closeness and help in friendships (Lieberman, Doyle, & Markiewicz, 1999; Zimmermann, 2004). Additionally, a handful of studies have investigated links between adolescents' representations of parents and observed interactions with friends. In one study, adolescents' security of working models was related to seeking support from a close friend during a joint problem-solving task (Allen, Porter, McFarland, McElhaney, & Marsh, 2007), whereas in another study insecurity was associated with behaving more disruptively toward a friend when experiencing a negative emotional state (Zimmermann, Maier, Winter, & Grossmann, 2001). Also, adolescent girls with secure working models of parents were less likely to withdraw from a discussion of personal problems with a friend than were those with insecure working models (Black, Jaeger, McCartney, & Crittenden, 2000).

The existing literature provides a basis for expecting differences between secure and insecure representations, yet we know less about how specific types of insecurity are related to patterns of adolescents' friend interactions. Hypothetically, *dismissing* representations of relationships with parents develop from a child's affective experience of unavailable or insensitive reactions from a primary caregiver. In theory, because children with more dismissing representations anticipate rejection, they tend to develop deactivating strategies for regulating affect in interpersonal relationships as a means of minimizing potential conflict (Cassidy & Kobak, 1988). Importantly, such strategies may significantly interfere with adolescents' abilities to establish close and intimate friendships. Consistent with this idea, adolescents' dismissing working models are associated with poorer friendship quality as assessed by interview (Zimmermann, 2004). We do not yet know how dismissing representations of relationships with parents relate to adolescents' observed interactions with close friends.

Preoccupied representations of relationships with parents are thought to evolve from experiences of inconsistent or intrusive caregiving such that children anticipate inconsistent responses from caregivers (Cassidy & Berlin, 1994). Consequently, preoccupied representations may be tied to utilizing

hyperactivating expressions of negative affect in an effort to elicit attention from attachment figures and significant others (Allen & Land, 1999; Cassidy & Berlin, 1994). Preoccupied working models are associated with adolescents' overpersonalizing disagreements and recanting positions during discussions with parents (Allen & Hauser, 1996). Yet, to our knowledge, there is no work addressing how adolescents' preoccupied representations of relationships with parents are related to qualities of interactions with a close friend. An investigation into how different dimensions of insecurity are associated with adolescent–friend interactions is warranted because dismissing and preoccupied representations may have different implications for social interactions (Main, Kaplan, & Cassidy, 1985).

Although it is clear that security of both working models and styles are associated with the characteristics of close relationships, few investigations have simultaneously examined both. Numerous scientists have called for such studies in order to provide insights into the similarities and differences in the two constructs (Furman & Simon, 1999; Roisman et al., 2007). Most existing studies relate the AAI, which focuses on representations of relationships with parents, to self-report measures of romantic styles. Thus, any differences could stem from the methodological approach (i.e., interview narratives *versus* self-report questionnaires), or the relationship being asked about (i.e., parent *versus* romantic).

Additionally, attachment security typically has been examined either as a feature of the parent–child relationship or as a mental representation of parent relationships. Attachment theorists have typically examined the parent–child *relationship* in infancy and emphasized the importance of *representations* in adolescence. Yet, adolescents' *current relationships with parents* have largely been ignored. This omission is surprising given the widespread recognition that parents continue to serve as primary attachment figures in adolescence, and current qualities of parent–adolescent relationships are likely to influence adolescents' social functioning (Allen & Land, 1999). Representations of relationships with parents, as assessed by either the AAI or self-reported styles, are strongly related to characteristics of current relationships (Allen et al., 2007). Accordingly, findings attributed to representations could stem from the current relationship with parents. Thus, an investigation of the contribution each makes to qualities of adolescent friendship interactions is necessary.

Negative interactions in parent–adolescent relationships may have particularly important implications for adolescents' interactions with friends. Parent–adolescent relationships characterized by more frequent negative and hostile interactions are tied to greater social and behavioral difficulties (Allen, Hauser, Eickholt, Bell, & O'Connor, 1994; Ge, Best, Conger, & Simons, 1996). We do not yet know how negative interactions with parents are related to qualities of adolescents' close friendships.

The present study and hypotheses

The objective of the present study was to examine how both qualities of current parent–adolescent relationships and adolescents' representations

of relationships with parents were associated with the qualities of adolescents' interactions with a close friend. We focused on three interactional dimensions central to developing close friendships: (i) on task, referring to the degree to which adolescents discussed personal problems and goals *versus* engaged in distractive strategies to avoid problem discussions; (ii) conflict, referring to the degree of negative and conflictual behavior during discussions with friends; and (iii) communication skills, the ability to communicate openly and positively during discussions of personal problems and goals.

In terms of current parent-adolescent relationship qualities, we hypothesized that supportive and negative qualities of mother-adolescent and father-adolescent relationships would be related to the qualities of adolescents' interactions with a close friend. This hypothesis was based on the theoretical idea that the affective quality of parents' current relationships with their child exerts an important impact on an adolescent's social skills (Kerns et al., 2000; Morris, Silk, Steinberg, Myers, & Robinson, 2007; Parke & Ladd, 1992). Specifically, we predicted that more supportive relationships with mothers and fathers would be associated with adolescents' greater focus on tasks and better communication skills with friends, whereas more negative interactions with mothers and fathers were expected to be related to less focus on tasks, greater conflict, and weaker communication skills.

We also expected that adolescents' representations of relationships with parents would be associated with friendship interactions. We included two different assessments of representations – working models and styles – and made parallel predictions for the two. Adolescents with more preoccupied representations tend to employ hyperactivating strategies to handle emotions (Cassidy & Berlin, 1994), which might lead to conflict and interfere with effective communication. Thus, we hypothesized that preoccupied representations of parents would be associated with adolescents' greater use of conflict behavior and poorer communication skills during friendship interactions. Because adolescents with more dismissing representations presumably devalue intimacy and are uncomfortable with their own and others' expression of emotions (Cassidy & Kobak, 1988), we expected that greater dismissing *versus* secure representations of parents would be linked to adolescents' avoidance of problem discussions and weaker communication skills.

Additionally, we hypothesized that adolescents' representations of relationships with parents would add a unique contribution to the prediction of adolescents' interactions with a close friend, after accounting for current parent-adolescent relationship qualities. This prediction was based on the premise that adolescents' representations of relationships with parents are somewhat distinct from current supportive and negative experiences in parent-adolescent relationships. Current relationships with parents may have an impact through learning mechanisms, such as modeling or reinforcement contingencies, whereas representations may influence expectations and appraisals of interactions (Kerns, 1994). For example, representations may influence interpretations of experiences, beliefs about how conflict is

resolved, or ways to cope with negative emotions (Kerns, 1994; Spangler & Zimmermann, 1999). Additionally, representations are based on *cumulative* experiences with parents throughout childhood, whereas adolescents' *current* relationships with parents are not identical to relationships earlier in childhood (Grossmann, 1999). In infancy and childhood, parent–child relationship qualities and representations of parent relationships are closely linked because the representations are based on concrete experiences. However, with the emergence of formal operations and gains in abstract and multi-dimensional reasoning (Keating, 2004), adolescents are able to evaluate their experiences and develop representations of attachment to parents separate from the accumulation of actual experiences (Main et al., 1985). Some may even develop secure representations of relationships with parents despite adverse experiences with parents in early childhood. Thus, the current supportive and negative qualities of parent–adolescent relationships are not necessarily isomorphic with their representations of these relationships, and each may be linked to adolescents' interactions with a friend.

Methods

Participants

The participants were part of a longitudinal study investigating the role of romantic relationships on adolescent psychosocial adjustment. The overall sample comprised 200 adolescents who were recruited when they were in the 10th grade (100 boys, 100 girls; *M* age = 15.27 years, range 14 to 16 years old). They were recruited from a diverse range of neighborhoods and schools in a metropolitan area of the Western United States. Designed to be relatively representative of the United States, the sample consisted of 11.5% African American, 12.5% Hispanic, 1.5% Native American, 1% Asian American, 4% biracial, and 69.5% White, non-Hispanic adolescents. With regard to family structure, 57.5% were residing with two biological or adoptive parents, 11.5% were residing with a biological or adoptive parent and a step-parent or partner, and the remaining 31% were residing with a single parent or relative. The sample was of average intelligence and comparable to national norms on multiple measures of substance use, internalizing and externalizing symptomatology (Furman, Low, & Ho, 2009).

The primary mother figure residing with the participant (*N* = 197) and a close friend (*N* = 191) nominated by the focal adolescent also participated. The vast majority of mothers were the participants' biological or adoptive parent (97%); a minority was a step-mother or grandmother whom the participant had lived with for at least 4 years. Close friends were 13 to 18 years of age (*M* = 15.41, *SD* = .87), and their racial/ethnic identity and socioeconomic background were similar to that of the focal adolescents'. The majority of adolescents and their peers were same-sex friends (*n* = 166); a minority were other-sex friends (*n* = 25). The mean duration of friendships was 4.21 years (*SD* = 3.12). Ninety-nine percent of friendships were reciprocated based on adolescent and friend ratings of the relationship.

Participants, mothers, and friends were financially compensated for participating. The confidentiality of the participants' data was protected by a Certificate of Confidentiality issued by the U. S. Department of Health and Human Services.

Procedure and measures

Although the primary focus of the overall study was on romantic relationships, information was also gathered about relationships with parents and friends. In particular, adolescents participated in a series of laboratory sessions in which they were interviewed about their close relationships and were observed interacting in their relationships. They also completed questionnaires at each session as well as between the visits. Close friends participated in observed interactions with the focal adolescents and friends and mothers also completed questionnaires. The following measures were used in the present paper.

Parent-adolescent relationship qualities. Perceptions of current support and negative interactions with mothers and fathers were assessed using a composite of adolescent and mother report on the *Network of Relationships Inventory (NRI): Behavioral Systems Version* (Furman, 2000). Adolescents described qualities of their current relationships with their primary mother figure and primary father figure on 8 scales: (i) adolescent seeks safe haven (e.g., "How much do you seek out this person when you're upset?"), (ii) adolescent provides safe haven, (iii) adolescent seeks secure base (e.g., "How much do you turn to this person for encouragement?"), (iv) adolescent provides secure base, (v) companionship (e.g., "How much do you and this person play around and have fun?"), (vi) quarreling (e.g., "How much do you and this person argue with each other?"), (vii) criticism (e.g., "How much do you and this person criticize each other?"), and (viii) annoyance (e.g., "How much do you and this person get annoyed with each other's behavior?"). All items were rated on a 5-point Likert scale. Mothers completed parallel versions of the measure in which they described their relationship with the target adolescent as well as the adolescent's relationship with his or her father figure. Adolescents' and mothers' reports of corresponding relationships were moderately related ($M r = .43$). Extensive validity and reliability data exist for the NRI (see Furman, 1996; Furman & Buhrmester, 2009).

We conducted principal axis analyses with oblique rotation of scale scores for each reporter's description of each relationship. Consistent with prior work (Furman, 1996), the most theoretically interpretable solutions consisted of two factors for each report of each type of relationship: support (comprised of participant seeks safe haven, participant provides safe haven, participant seeks secure base, participant provides secure base, and companionship) and negative interactions (comprised of quarreling, criticism, and annoyance). Four composites were created by averaging adolescent and mother report on the respective scales: current support with mother, current support with father, current negative interactions with mother,

and current negative interactions with father (Cronbach's $\alpha = .93$ to $.94$). Supplementary analyses revealed that the mother and father support composites were highly related ($r > .95$) to the corresponding support composites of the original Network of Relationships Inventory (Furman & Buhrmester, 1985), which included a different, but overlapping, set of social provisions.

Working models of relationships with parents. The Adult Attachment Interview (AAI; George, Kaplan, & Main, 1985, 1996) assessed adolescents' working models of relationships with parents. This semi-structured interview consists of 18 questions and lasts approximately an hour. Participants were asked to describe their childhood relationships with parents and to support their descriptions by providing particular memories. The interview also asks about instances of separation, rejection, threatening behavior, and being upset, hurt, or ill. Additionally, the interviewer asked participants about why their parents behaved the way they did, how these experiences influenced their current personality, and what they had learned from their experiences.

Interviews were audiotaped and transcribed verbatim for coding using Main and Goldwyn's (1998) scoring system. On the basis of ratings on eleven standard scales and characteristic descriptions of the categories, coders classified transcripts as secure, dismissing, or preoccupied. Classifications focus on discourse properties and how coherently adolescents describe, interpret, and understand their experiences with parents, regardless of what those experiences are. Secure working models are characterized by an ability to describe relationships with parents coherently and express valuing of these relationships and attachment-related experiences. Dismissing working models are reflected in attempts to limit the influence of relationships with parents by idealizing, devaluing, or failing to remember childhood attachment experiences. Preoccupied working models are characterized by being angrily preoccupied and caught up in relationships with parents or by being confused, vague, and passive regarding experiences with parents.

Coders also rated how prototypically secure, dismissing, and preoccupied the transcript was on three 9-point Likert scales (1 = extremely uncharacteristic to 9 = extremely characteristic). The dismissing and secure dimensions were strongly negatively correlated ($r = -.86$); thus, these dimensions were combined to create one dismissing-secure dimension, with higher scores reflecting greater dismissing characteristics and lower scores reflecting greater security. Given the nature of our analyses, we utilized these continuous dimensions (*versus* the original three categories) in order to encompass the most parsimonious, conceptually accurate picture of adolescents' working models.

In addition to a primary classification, an individual was categorized as unresolved if a marked lapse in reasoning or discourse occurred with respect to discussing a loss or abusive experience. Only a very small number of participants were unresolved (3.3%); thus, ratings of unresolved loss or trauma were not examined.

All interviews were rated by coders who had attended Main and Hesse's workshop and successfully passed their reliability certification test. Coders were naïve to other information about the participants. Pairs of coders independently coded 10% of the transcripts; inter-rater agreement for the overall classification and the three continuous prototype scores was satisfactory (classification kappa = .67; scores *M ICC* = .73).

Attachment styles. Adolescents' reports on the attachment style scale of the *Behavioral Systems Questionnaire* (BSQ; Furman & Wehner, 1999) were used to assess their self-perceptions of attachment *styles* with parents. This measure has previously demonstrated acceptable internal reliability and validity (e.g., Furman & Simon, 2004; Furman, Simon, Shaffer, & Bouchev, 2002). This self-report questionnaire contains a series of questions about how adolescents approach attachment in parent–adolescent relationships. For example, “I consistently turn to my parents when upset or worried.” Continuous measures of secure, dismissing, and preoccupied attachment styles (Cronbach's alpha = .75 to .89) were each assessed with 5 items rated on a five-point Likert scale. Once again, the secure and dismissing scales were strongly negatively related ($r = -.73$), accordingly, these scales were combined to create a dismissing-secure style scale. Higher scores reflected greater dismissing qualities, whereas lower scores reflected more security of attachment style.

Adolescent–close friend interactions. Adolescent–close friend dyads were videotaped participating in a series of six, 5-minute interactions that were designed to elicit attachment and caretaking behaviors. As a warm-up task, the pair planned a celebration. In the next two tasks, each adolescent discussed a problem he or she was having outside of their friendship. In the fourth task, the pair discussed a personal goal that the adolescent was working toward. Next, the adolescents discussed a problem inside their friendship, which both adolescents had selected as a significant conflict. Finally, as a wrap-up task, the adolescents discussed past good times in their friendship. In the present study, the warm-up and wrap-up segments were not coded. To minimize halo effects, each segment was coded at a different time.

The *Interactional Dimensions Coding System* (IDCS; Julien, Markman, & van Widenfelt, 1986) was used to assess qualities of adolescents' interactions with friends during each task. Coders rated adolescent and friend behavior separately. Adolescents' observed behavior was of primary interest in the current study, but parallel sets of observed ratings of friends' behavior were used in one set of follow-up analyses. The IDCS was originally designed to assess adult couples' interactions during a problem discussion and was slightly modified to make the scales more applicable to an adolescent population. We also added a scale, task avoidance, to assess adolescents' and their friends' avoidance of the assigned discussion topic or task. Coders rated adolescents' affect and behavior on 10 scales on a 5-point Likert scale with half-point intervals (1 = extremely uncharacteristic to 5 = extremely

characteristic). The coding system included 10 scales assessing the participant's behavior: (i) positive affect; (ii) negative affect; (iii) problem-solving (ability to define a problem and work toward a satisfactory solution); (iv) denial (rejection of problem's existence or of personal responsibility); (v) dominance (exertion of forceful control or power); (vi) task avoidance (avoidance of problem discussion through distraction or excessive humor); (vii) support-validation (positive listening and speaking skills that demonstrate support); (viii) conflict (disagreement and hostility); (ix) withdrawal (withdrawal from or avoidance of interacting with the other); and (x) communication skills (ability to convey thoughts and feelings in a clear, constructive manner). Ratings were averaged across the four tasks.

On the basis of principal axis factor analysis with oblique rotation, we derived three composites from the 10 scales: (i) On Task, comprised of task avoidance (factor loading = $-.80$) and problem-solving (.55), (ii) Conflict, containing conflict (.84), dominance (.75), and denial (.46), and (iii) Communication Skills, consisting of communication skills (.75), withdrawal ($-.86$), positive affect (.97), negative affect ($-.75$), and support-validation (.70). Composites were calculated by averaging across scales.

Interactions were rated by coders naïve to other information about the participants. Inter-rater agreement was checked on 22% of all tasks coded. Intraclass correlation coefficients for composites ranged from .69 to .83.

Results

Data preparation

Variables were examined to determine if the scores were normally distributed (Behrens, 1997). All variables had acceptable levels of skew and kurtosis. Outliers were adjusted to fall 1.5 times the interquartile range below the 25th percentile or above the 75th percentile (i.e., to the whiskers in Tukey's (1977) boxplot).

There was a small percentage (2.6%) of missing data in the current sample. Instead of excluding these adolescents from the analyses, multiple imputation was employed to impute missing data values. The advantages of multiple imputation compared to other methods for handling missing data include less biased parameter estimates and more accurate estimation of variability (Schafer & Graham, 2002). Data imputation was conducted using NORM (Schafer, 1997a, 1997b). We created three imputed data sets and conducted analyses on each. To combine the results, we used Rubin's (1987) rules for the multiple regressions and arithmetic averages for the other analyses. The combined results are presented subsequently.

Descriptive information

Means and standard deviations for current parent-adolescent relationship qualities, working models, attachment styles, and adolescents' interactions with friends are presented in Table 1. According to categorical attachment classifications on the AAI, 43% of adolescents were classified as secure,

TABLE 1
Means, standard deviations, and correlations of parent-adolescent relationship qualities, representations, and adolescents' interactions with a friend

	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	M	SD
1. Mother Support	-.27***	.42***	.00	-.15*	-.58***	-.01	-.03	.10	-.03	.07	.10	.07	.01	3.15	0.73
2. Mother Negative Interactions	1.00	-.16*	.33***	.07	.27***	-.02	.14*	-.30***	.29***	-.20**	-.22**	.17*	-.02	2.04	0.58
3. Father Support		1.00	-.28***	-.01	-.33***	-.13+	-.03	.11	.08	.00	.10	.00	-.03	2.47	0.75
4. Father Negative Interactions			1.00	-.04	.10	.17*	.07	-.17*	.10	.05	-.15*	-.02	.05	2.03	0.62
5. Dismissing-Secure Model				1.00	.27***	-.04	.12	-.31***	.07	-.24***	-.30***	.01	-.11	5.31	2.65
6. Dismissing-Secure Style					1.00	.11	.08	-.18*	.08	-.10	-.14*	-.10	-.04	2.97	0.97
7. Preoccupied Model						1.00	-.02	.07	.08	.15*	.10	-.04	.08	1.66	1.51
8. Preoccupied Style							1.00	-.06	.04	-.12	-.09	-.01	-.13+	2.17	0.85
9. Adolescent On Task								1.00	-.39***	.56***	.86***	-.36***	.37***	3.49	0.65
10. Adolescent Conflict									1.00	-.37***	-.25***	.49***	-.16*	1.33	0.25
11. Adolescent Communication										1.00	.41***	-.33***	.58***	3.57	0.49
12. Friend On Task											1.00	-.38***	.54***	3.46	0.65
13. Friend Conflict												1.00	-.32***	1.30	0.23
14. Friend Communication													1.00	3.54	0.51

Note. *** $p < .001$. ** $p \leq .01$. * $p < .05$. + $p < .10$. $N = 200$.

51% were dismissing, and 6% were preoccupied. This distribution is similar to previous findings of attachment classifications in adolescence (Furman, Simon, Shaffer, & Bouchev, 2002; Hamilton, 2000; Seiffge-Krenke, 2006).

Gender differences in key variables were examined with a series of independent samples *t*-tests. Boys had higher ratings of dismissing *versus* secure working models relative to girls, $t(200) = -3.73$, $d = 1.36$, $p = .001$. Boys also reported higher dismissing *versus* secure styles than girls, $t(200) = -2.45$, $d = 0.34$, $p = .02$. Consistent with the literature (Furman & Buhrmester, 1992), current support in mother-adolescent relationships was greater among girls than boys, $t(200) = 2.54$, $d = .26$, $p = .01$. Compared to boys, girls were more on task and displayed better communication skills on average, $t(200) = 3.89$, $d = 0.34$, $p = .001$, and $t(200) = -4.04$, $d = 0.27$, $p = .001$, respectively. There were no differences between same-sex and other-sex friend dyads on any of the variables used in the present study.

Parent-adolescent relationship qualities, representations of relationships, and adolescent-friend interactions

Correlations were conducted to examine the hypothesized associations between adolescent-friend interactions and current parent-adolescent relationship quality or representations of relationships with parents. As displayed in Table 1, current negative interactions with mothers were related to all three dimensions of adolescents' interactions with a friend. Consistent with predictions, negative interactions with mothers were positively associated with adolescents' displays of conflict, and inversely associated with adolescents' focus on task and communication skills during friendship interactions. Father-adolescent negative interactions were inversely correlated with adolescents' focus on task during friend interactions. Neither perceived support with mothers nor fathers was significantly related to adolescents' interactions with a friend.

Ratings of dismissing-secure working models were significantly, inversely correlated with adolescents' focus on task discussions and communication skills. Adolescent dismissing-secure style scores were also significantly, inversely correlated with adolescents' focus on task with a friend. Ratings of preoccupied working models were associated with adolescents' better communications skills.

We also examined the associations among current parent-adolescent relationship qualities, adolescents' working models, and attachment styles. Links between current parent-adolescent support and negative interactions with attachment representations were in the expected directions. Current support in relationships with mothers and fathers was inversely related to adolescents' dismissing-secure style scores. Mother support was also inversely associated with ratings of adolescents' dismissing-secure working models. Current negative interactions with mothers were positively correlated with dismissing-secure style and preoccupied style scores, and negative interactions with fathers were positively correlated with ratings of preoccupied working models. Consistent with prior research, adolescents' working models and attachment styles of parents were only slightly related

(Furman et al., 2002). Specifically, corresponding scores for dismissing-secure styles and working models were significantly correlated, but preoccupied scores were not significantly associated.

Multivariate predictors of adolescents' interactions with a friend

Next, we conducted a series of hierarchical linear regressions to address the hypothesis that adolescents' representations of relationships with parents (working models and styles) would act as unique predictors of adolescents' interactions with a friend after accounting for current parent-adolescent relationship qualities. The dependent variables were one of the three dimensions of adolescents' interactions with a friend (i.e., on task, conflict, and communication skills). In step 1, we entered gender into the regression equation. We controlled for gender because descriptive analyses indicated significant gender differences in qualities of friendship interactions. In step 2, we entered the four variables describing current qualities of parent-adolescent relationships (i.e., mother negative interactions, mother support, father negative interactions, father support). In step 3, we simultaneously entered the four indices assessing attachment representations of relationships with parents (dismissing-secure working models, dismissing-secure styles, preoccupied working models, preoccupied styles).

As hypothesized, current parent-adolescent relationship quality and adolescents' representations of relationships with parents provided unique contributions to the prediction of adolescents' focus on task with friends ($\Delta R^2 = .11, p = .001$ & $\Delta R^2 = .06, p = .01$, respectively). Specifically, adolescents' negative interactions with mothers were predictive of less focus on tasks ($\beta = -.30, p < .001$). Additionally, after controlling for gender differences and current relationship qualities with parents, ratings of adolescents' dismissing-secure working models predicted focus on tasks ($\beta = -.25, p < .001$). Said differently, greater dismissing *versus* secure qualities of working models were predictive of more avoidance of discussing problems and goals with friends.

Only current parent-adolescent relationship qualities provided a contribution to the prediction of adolescent conflict ($\Delta R^2 = .08, p = .001$). Specifically, more frequent negative interactions between adolescents and their mothers were associated with adolescents' greater displays of conflictual and hostile behavior with friends ($\beta = .31, p < .001$). Working models were not significantly associated with conflict.

Perceived parent-adolescent relationship quality significantly contributed to the prediction of communication skills with a friend ($\Delta R^2 = .06, p = .01$). Specifically, current negative interactions with mothers were associated with adolescents' weaker communication skills ($\beta = -.28, p < .001$). Also, father-adolescent negative interactions were positively associated with communication skills (i.e., in an unexpected direction, $\beta = .14, p < .05$). Because this association was nonsignificant in the correlation analyses, this effect was likely a spurious suppressor effect due to the significant correspondence between father-adolescent and mother-adolescent negative interactions ($r = .33, p < .001$). In fact, follow-up analyses revealed that

father-adolescent negative interactions were only significant when mother-adolescent negative interactions were included in the regression equation predicting adolescent communication skills; father-adolescent negative interactions were nonsignificant when only mother-adolescent and father-adolescent support variables were included in the equation.

Taken altogether, adolescents' representations of relationships with parents did not add a significant, additional contribution to the prediction of communication with friends. However, ratings of dismissing-secure working models specifically significantly predicted adolescents' communication skills during close friend discussions ($\beta = -.14, p < .05$). Said differently, greater dismissing *versus* secure characteristics of working models were associated with adolescents' poorer communication during friend interactions.

Exploration of indirect effects: friends' behavior

The preceding analyses revealed a number of associations between the parent-adolescent relationship or representation variables and adolescents' interactions with a friend. However, these associations could stem from direct links between the parent-adolescent variables and interactions with a friend, or they could be indirect links that were mediated by choice of friends. For example, negative interactions with mothers could be associated with having friends who also are prone to engage in conflictual behavior, and such behavior by friends may lead to greater conflictual behavior on the part of the adolescent. Thus, we conducted follow-up analyses to investigate whether the observed effects that were significant in both the correlational and regression analyses were either direct, mediated by the friend's behavior, or both.

We used a distribution-of-products approach to test for indirect effects because it has better statistical power and less likelihood of Type I errors than traditional methods (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002; MacKinnon, Lockwood, & Williams, 2004). A confidence interval for the indirect effect is derived based on the asymmetric distribution of the product of two coefficients: (i) α , the effect of the independent variable on the mediator, and (ii) β , the effect of the mediator on the dependent variable. Confidence intervals were then calculated using the Prodcin software program (MacKinnon, Fritz, Williams, & Lockwood, 2007). The β coefficient was derived from regressing the dependent variable (i.e., adolescent on task, conflict, or communication skills) on the potential mediating variable (i.e., friend on task, conflict, or communication skills) and the independent variables of adolescent gender, parent-adolescent relationship qualities (i.e., mother support, mother negative interactions, father support, father negative interactions), and representations of parents (i.e., dismissing-secure working model, dismissing-secure style, preoccupied working model, preoccupied style). The α coefficient was derived by regressing the friend's behavior on the independent variables of adolescent gender, parent-adolescent relationship qualities, and representations of parents.

In no case was there a significant mediated effect of the parent–adolescent relationship or representation variable on the adolescent’s behavior via the friend’s behavior (confidence intervals for the product all included 0). Even after controlling for the corresponding friend’s behavior, mother–adolescent negative interactions were directly associated with adolescent on task behavior, conflict, and communication skills (all $ps < .01$); ratings of adolescents’ dismissing-secure working models also had a direct effect on adolescents’ communication skills ($p < .05$). The overall effect was significant for the association between dismissing-secure working models and adolescent on task behavior ($p < .001$), but the effects were not clearly direct or indirect.

Discussion

Drawing on attachment theory, the current study examined links between relationships with parents and friendships. Current parent–adolescent relationship qualities and representations of relationships with parents were both associated with qualities of adolescents’ interactions with a friend. This study extended prior work showing links between adolescents’ relationships with parents and popularity (e.g., Allen, Porter, McFarland, Marsh, & McElhaney, 2005) to the important social domain of friendship. Moreover, a primary contribution of the current study was to demonstrate that multiple links exist between relationships with parents and adolescent friendships. Typically investigators either have examined parent–child relationship qualities or representations of relationships with parents separately. The present findings underscore the unique relevance of both in explaining qualities of adolescents’ friendship interactions.

Current parent–adolescent relationship qualities. Findings from the present study highlighted the importance of current negative interactions with mothers for adolescents’ interactions in friendships. Greater reported frequency of current negative interactions between adolescents and their mothers was associated with adolescents having poorer communication skills and being less focused on discussing problems and goals during tasks. Additionally, current negative interactions with mothers were singularly associated with adolescents’ conflict behavior during close friend discussions. The present findings extend prior work demonstrating links between adolescents’ negative interactions with parents and general psychosocial adjustment (Allen et al., 1994; Ge et al., 1996) by demonstrating that conflictual interactions with mothers are specifically linked to the qualities of adolescents’ interactions in friendships. Several theoretical explanations may account for such findings. During adolescence, children continue to rely on their parental figures as a secure base from which to explore and forge new close relationships outside of the family (Allen & Land, 1999). Frequent negative interactions with mothers are likely to interfere with the effective functioning of the secure base, and hence, interrupt adolescents’ ability to succeed at establishing close relationships with friends. Alternatively, the

findings can be explained in terms of a social modeling mechanism. Specifically, how conflict is handled in the mother-adolescent relationship may serve as a model for adolescents' ability to effectively or ineffectively engage in conflict resolution and problem discussions with peers.

Current negative interactions with fathers were significantly associated with less focus on tasks in the correlational analyses, but not in the regression analyses. This pattern of results may have occurred because negative interactions with fathers were correlated with negative interactions with mothers, which were also predictive of less focus on tasks. It is possible that negative interactions in the family are generally associated with less task focus with a friend, or it is possible that the relation between negative interactions with fathers and less focus was a result of their common covariation with negative interactions with mother. Current negative interactions with fathers were also associated with more positive communication skills in the regression analyses, but this link was not significant in the correlational analyses. Because of the moderate correspondence between mother and father negative interactions, this was likely a spurious suppressor effect. Indeed, follow-up analyses suggested that it was only with the inclusion of mother-adolescent negative interactions in the regression analysis predicting adolescent communication skills that father-adolescent negative interactions were significant. Although fathers are expected to play an important role in their children's social development, attachment research has tended to focus on mothers more than fathers. Adolescents turn to mothers to fulfill attachment needs more often than fathers (Markiewicz, Lawford, Doyle, & Haggart, 2006), perhaps making interactions with mothers more salient in their effects on friendship interactions. Another possibility is that fathers play a more important direct or indirect role in other facets of social interaction (e.g., Parke, 2004). Alternatively, the role of fathers in their children's friendship quality may be more important at other stages in development, particularly in younger childhood as some research has suggested (McElwain & Volling, 2004).

Also unexpectedly, perceptions of current support with mothers or fathers were not significantly related to adolescents' interactions with friends. These findings are inconsistent with Black's (2002) study of 39 adolescents, mothers, and friends in which observed maternal support was related to observed qualities of adolescents' interactions with friends. In that study, the observations of interactions with mothers and friends were similar in nature and occurred in the same laboratory session. Perhaps links between parental support and friendships are more likely to occur in such circumstances of shared method than in the present study where we examined associations between questionnaire assessments of mother-adolescent and father-adolescent relationships and observed qualities of adolescent-friend interactions. Nonetheless, it is noteworthy that we did find significant links between questionnaire measures of negative interactions with mothers and observed interactions with friends. Accordingly, negative interactions with mothers may simply have greater importance for adolescent social functioning than supportiveness per se. Additionally, support may very well be

important for adolescents' peer competence, but perhaps for dimensions other than those examined in the current study. For example, in a recent review of parental support and its links to child outcomes, Barber, Stolz and Olsen (2005) reported that parental support was linked with social initiative in particular.

Representations. Consistent with an attachment theoretical perspective, adolescents' security of representations of relationships with parents were associated with qualities of friendship interactions, even after accounting for gender differences and current parent-adolescent relationship qualities. These results are congruent with a prior body of research demonstrating a moderate effect size between parent-child attachment security and peer competence in childhood, particularly for friendships (Schneider et al., 2001). The current findings are also in agreement with previous work finding links between security of working models and friendship interactions (Allen et al., 2007; Black et al., 2000; Zimmermann et al., 2001). The extent to which working models were relatively more dismissing *versus* secure was negatively associated with communication skills and the degree of focus during discussion tasks. These findings suggest that adolescents with relatively more dismissing *versus* secure models are less able and willing to talk effectively about their concerns and their friends' concerns. Also, those adolescents whose models were relatively more dismissing in nature made more efforts to avoid discussion of adolescents' and friends' concerns by using excessive humor, attempting to distract friends from the conversation about problems and goals, and making light of discussion topics. These patterns are consistent with previous work suggesting a link between dismissing working models and poorer friendship quality (Zimmermann, 2004). Moreover, this pattern supports the idea that working models serve as emotion regulation systems (Kobak, Cole, Ferenz-Gillies, & Fleming, 1993). Specifically, adolescents with more dismissing working models of parents may have difficulty communicating openly and constructively about emotional topics, and instead, may employ deactivating affect regulation strategies aimed at minimizing hurt and distress (Cassidy & Kobak, 1988; Dozier & Kobak, 1992). This approach is in contrast to adolescents with greater security of working models who presumably have a history of having their emotional needs met and as a consequence, may be more comfortable and ultimately more effective at establishing intimacy and closeness in friendships (Kobak & Duemmler, 1994).

Although the extent to which attachment styles were dismissing *versus* secure was inversely associated with adolescents' focus on tasks with friends, the association for styles was no longer significant after controlling for gender, parent-adolescent relationship qualities, and other representations. Mixed support for linkages between attachment styles and friendship interactions has also been found in prior work with late adolescents (Grabill & Kerns, 2000). Whereas working model ratings are derived from careful coding of the total transcripts and are not simply based on what those being interviewed say they do, styles are self-perceptions by virtue of

being assessed by questionnaire. Perhaps in some cases, adolescents are not aware of how they approach parent relationships, and they may inaccurately describe their approaches on self-report measures. This may particularly be the case for dismissing representations. For example, individuals with more dismissing working models frequently claim very positive relationships with parents but are either unable to provide evidence or actually contradict these assertions during the interview (Main, Kaplan, & Cassidy, 1985). In this case, an individual would have a more dismissing working model, but may self-report a more secure style. In a related vein, working models may capture implicit strategies for regulating emotion in the context of relationships, which may arguably be outside of conscious awareness (Grossmann, 1999; Maier, Bernier, Pekrun, Zimmermann, & Grossmann, 2004). As such, working models might be especially at play during discussions of personal problems that could elicit negative affect. Another possibility is that working models and observational assessments are more closely linked because they both involve discourse and interactions. Taken together, our results corroborate previous reports of low correlations between working models and styles (Crowell et al., 1999; Furman et al., 2002; Roisman et al., 2007), and provide further evidence that these constructs indeed have some important methodological and conceptual distinctions which require further exploration.

Contrary to our expectations, preoccupied working models were significantly correlated with better communications skills in adolescents' friend interactions. However, this effect became non-significant after accounting for gender, current parent-adolescent relationship qualities, and other representations. Thus, the bivariate association between preoccupied models and communications might have reflected a spurious third factor. In particular, girls tended to have more preoccupied representations, and they displayed significantly better communication skills, potentially leading to an association between preoccupied representations and communication skills.

Preoccupied attachment representations were not very related to friendship interactions in either set of analyses. Our power to detect significant effects may have been limited as the community sample in the current study contained a very low number of adolescents with preoccupied working models when defined in the classical categorical manner (6%). Whereas this low frequency is typical of community populations of adolescents, preoccupied working models are somewhat more common among adolescents with greater levels of socio-emotional difficulties (Allen, Hauser, & Borman-Spurrell, 1996; Kobak, Sudler, & Gamble, 1991; Rosenstein & Horowitz, 1996). Accordingly, studies of such populations might yield greater insight regarding how insecure-preoccupied representations relate to adolescents' interactions with friends. Additionally, preoccupied working models are theoretically characterized by the use of hyperactivating strategies of affect regulation in an effort to elicit attention from significant others (Allen & Land, 1999; Cassidy & Berlin, 1994). Such strategies may be less salient in a dyadic context in which the partner is not vying with other people or other factors for the friend's attention. Additionally, hyperactivating strategies

may incorporate frequently vacillating between ambivalent displays of positive relatedness and distancing behaviors (Simpson, 1990). Highly inconsistent behaviors are often difficult to capture using global ratings of behavior. Thus, future use of a microanalytic observational coding system is warranted to explore potential patterns in series of behaviors for pre-occupied representations and adolescents' interactions with their friends.

Consistent with a significant body of literature documenting gender differences in friendships and communication styles (Maccoby, 1990), adolescent girls were significantly more focused on discussing problem tasks with friends than boys were, and girls also displayed better communication skills with friends than boys did. However, most links between current relationship qualities with parents or representations of relationships with parents and friendship interactions remained even after accounting for gender differences in friendship interactions.

Limitations and future directions

Several limitations of the present study exist. The direction of any causal relations among current parent–adolescent relationship qualities, representations of relationships with parents, and adolescent–friend interactions cannot be established because we utilized cross-sectional data. Similarly, we cannot rule out that the observed links between parent–adolescent relationships and friendships were accounted for by some third variable such as emotion regulation, for example. In theory, representations of relationships with parents may influence how adolescents approach, regulate affect, and behave with close friends (Kerns et al., 2000). Alternatively, it remains quite possible that adolescents' interactions in friendships influence working models or attachment styles of parents. For instance, individual differences in adolescents' experiences of intimacy and support in close friendships might affect or alter their expectations and behaviors with respect to parents. In fact, one very interesting question for future study is whether insecure views of parents can become secure as a function of adolescents' experience of an open and intimate close friendship. Adolescence may be a particularly ripe time for the study of such potential changes, as working models are likely to become more stabilized and organized during this period of developmental transition (Allen & Land, 1999).

Although we utilized tasks designed to elicit attachment-related behavior, it is possible that other tasks or other coding systems might assess specific safe haven or secure base behaviors, such as support seeking, that were not captured in the present study. As noted previously, it would also be interesting to examine the links between attachment representations and friendship interactions in different contexts, such as when other peers are present.

The primary purpose of the present study was to demonstrate that current qualities of relationships with parents and representations of relationships with parents were associated with adolescents' interactions with friends. Secondly, we also investigated the role of adolescents' friends' behavior in mediating these associations. We found no evidence of mediated

effects. In other words, the associations of parent-adolescent relationship qualities or attachment representations with adolescents' interactions were primarily direct effects and were not explained by who one's friends are or how the friends behaved.

Further work is now needed to understand the precise mechanisms through which current relationships and representations of relationships with parents are associated with interactions with friends. Perhaps as social learning theorists would expect, qualities of current parent-adolescent relationships are directly linked with adolescents' interactions with close friends through the direct carryover of social skills or patterns of interactions. The links between representations of relationships with parents and friendship interactions could be direct or indirect. For instance, the Adult Attachment Interview and the Current Relationship Interview are both uniquely predictive of aspects of marital functioning (Treboux, Crowell, & Waters, 2004), suggesting the paths could be direct. Alternatively, others have proposed that adolescents' distinct representations of friendships may mediate the links between representations of parents and qualities of friendship interactions (Markiewicz et al., 2001). Subsequent research should examine whether representations of relationships with parents and representations of relationships with friendships are either directly or indirectly predictive of interactions with friends. Having demonstrated the existence of links between multiple dimensions of adolescents' relationships with parents and friendships, the challenge for future work is to understand the processes underlying them.

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