Published in final edited form as:

J Res Adolesc. 2017 September ; 27(3): 644–660. doi:10.1111/jora.12305.

Distinguishing attachment and affiliation in early adolescents' narrative descriptions of their best friendship

Meredith J. Martin,

University of Nebraska – Lincoln

Patrick T. Davies, and

University of Rochester

E. Mark Cummings

University of Notre Dame

Close friendships have a profound influence on the lives of adolescents. High quality friendships consistently and independently predict happiness, academic success, social competence, and lower levels of internalizing and externalizing symptoms (Bagwell & Schmidt, 2011; Gaertner, Fite, & Colder, 2010; Vitaro, Boivin, & Bukowski, 2009). Early research on the sequelae of friendship quality tended to frame relationship characteristics as a collective aggregation of provisions such as intimacy, companionship, and emotional support (Bukowski, Simard, Dubois, & Lopez, 2011). As a result, the most commonly used methodological approach involves aggregating survey or interview measures of the positive aspects of friendship into a single, dimensional measure of “quality” (e.g., Bukowski, Hoza, & Boivin, 1994; Furman & Buhrmester, 1985; Zimmermann, 2004). These omnibus measures have generated invaluable knowledge regarding the nature and consequences of friendship quality. However, recent calls underscore the complementary value of understanding links between specific aspects of friendship and particular forms of psychological adjustment (Bagwell & Coie, 2004; Bukowski et al, 2011; Rubin, Fredstrom, & Bowker, 2008).

Highlighting the value of better understanding discrete friendship dimensions, studies show that the provisions individuals ascribe to their close friendships differ as a function of adolescent age, gender, and ethnicity (Furman & Buhrmester, 1992; De Goede, Branje, & Meeus, 2009; Way, Cowal, Gingold, Pahl, & Bissessar, 2001). However, empirical tests of associations between specific friendship provisions and adolescent adjustment are rare. The few existing studies each examine friendship provisions in isolation from one another in analytic models predicting adjustment (Buhrmester, 1990; Marsh, Allen, Ho, Porter, & McFarland, 2006; for an exception, see Wood, Bukowski, & Santo, 2015). Although these studies represent an important first step, they preclude the test of whether specific friendship provisions hold unique power as precursors or sequelae of adolescent psychological adjustment. To address this gap, this study aims to examine the transactional interplay

between adolescents' socio-emotional adjustment and two provisions central to friendship: attachment and affiliation.

A behavioral systems approach for characterizing friendship attachment and affiliation

Drawing on conceptual distinctions between the underlying functions of close friendship (e.g., Furman, 2001; Mikulincer & Selinger, 2001), we adopt a behavioral systems model for dissecting friendship provisions. Behavioral systems models posit that the meaning adolescents ascribe to their interpersonal relationships are organized around distinctive goals sculpted by natural selection (Davies & Martin, 2013; Mikulincer & Shaver, 2007). Attachment and affiliation are considered to be the most relevant behavioral systems influencing adolescents' experiences in their close friendships (Furman, 2001; Kobak & Zajac, 2011). The *attachment system* functions to elicit care and assistance from supportive others and the *affiliative system* promotes the formation of cooperative partnerships (Gilbert, 2015; Mikulincer & Selinger, 2001). Friendships meet attachment needs when they function as a "safe haven" and a "secure base." Safe haven refers to comfort, reassurance, and support in times of distress, while a secure base encourages autonomous action and supports the individual in pursuing activities that might otherwise evoke anxious feelings (Kerns, Mathews, Koehn, Williams, & Siener-Ciesla, 2015). Experiencing emotional support or instrumental aid may serve adolescents' need for attachment by demonstrating that their friend is effective at relieving distress and supporting exploration. In contrast, friendship experiences that bolster a sense of connectedness, mutualism, and reciprocity serve an affiliative function. Sharing in disclosures or receiving validating comments may meet affiliative needs by solidifying teens' sense of intimacy, trust, and mutual investment in the friendship bond (Furman, 1998; Wood et al., 2015).

Although the attachment and affiliative systems are posited to fluidly increase and decrease in saliency with changes in environmental cues, behavioral systems approaches also postulate that there are individual differences in one's relative bias towards prioritizing each system's function across situations and across time. Because behavioral systems are largely organized by automatic, reflexive processes, existing self-report assessments of friendship may not be capable of sensitively capturing the implicit nature of the attachment and affiliation processes (Bretherton & Munholland, 2008; Davies & Martin, 2013). Rather, the saliency of each system should be most evident in adolescents' internal representations of their friendship. Internal representations refer to affectively-charged, implicit conceptualizations of a relationship, formed from experience, that shape individuals' perceptions, appraisals, and expectations for future interactions (Bretherton & Munholland, 2008). As such, we propose that adolescents' internal representations will provide a sound barometer of their implicit prioritization of attachment and affiliative provisions of their best friendships.

Past studies have utilized semi-structured interviews to capture these implicit working models, finding that adolescents' representations of their close friendships serve as unique predictors of adjustment over and above their representations of parents or romantic partners

(e.g., Furman, Simon, Shaffer, & Bouchee, 2002). However, these studies have focused almost exclusively on attachment (Chow, Ruhl, & Buhrmester, 2016; Furman et al., 2002; Markiewicz, Lawford, Doyle, and Haggart, 2006; Miller, Notaro, & Zimmerman, 2002). The current study attempts to build on the existing literature by testing the value of distinguishing between adolescent representations of friendship attachment and affiliation in understanding the developmental course of their social and emotional adjustment. The only existing interview assessment designed to capture both provisions, the Friendship Interview (Furman, 2001), ultimately aggregates adolescents' responses to these dimensions, resulting in an omnibus score for secure, preoccupied, and dismissing (Furman et al., 2002; Furman, Stephenson, & Rhoades, 2014). This again precludes a direct comparison of the predictive value of attachment and affiliation. None of the existing interviews were designed to compare the centrality of attachment and affiliation provisions to adolescents' representations of friendship.

Capturing the implicit saliency of these provisions requires an assessment strategy that can elicit the underlying structure of adolescents' internal representations of their best friendship with limited guidance or prompting. Without being primed to discuss specific provisions, adolescents whose affiliative systems are more salient should spontaneously and coherently recall episodic memories describing the two friends' engagement with one another in ways that promote mutual warmth, pleasure, and enjoyment. In contrast, greater saliency of the attachment system should be evidenced by memories describing adolescents' confidence in their friend's ability to bolster their sense of security through safe haven and secure base. Research on the development of autobiographical narratives supports this rationale, suggesting that memories of a relationship that are most readily accessible and fluent are also the most meaningful and important to an individual's internal representations of that relationship (Fivush, 2011; Tani, Smorti, & Peterson, 2015). Our use of the descriptive term "high in" friendship attachment or affiliation from this point forward will, therefore, refer to the relative centrality of attachment or affiliative provisions to adolescents' conceptualization of the benefits of their best friendship. In this sense, attachment saliency is not "more" attachment to the exclusion of other systems (i.e., preoccupation), but rather a balanced valuing of attachment characterized by overarching security.

Transactions among adolescent adjustment and friendship attachment and affiliation

To advance specificity in the prediction of social and emotional adjustment in friendship models, a behavioral systems framework proposes that the distinct functions of the attachment and affiliative systems have unique implications for adjustment. With its role in organizing intrinsic interest and investment in others as a way of forming and maintaining cooperative alliances (Miller & Rodgers, 2001; Depue & Morrone-Strupinsky, 2005), a highly salient affiliative system, strengthened within the friendship dyad, is theorized to uniquely facilitate social competence by aiding adolescents in capitalizing on opportunities to acquire and refine social skills (Davies & Martin, 2013; Gilbert, 2015). As adolescents venture outside the context of the friendship dyad, a heightened affiliative orientation is posited to provide a benevolent lens of trust, motivation to develop cooperative partnerships,

and optimistic expectancies of reciprocation of their interpersonal investments. In turn, peers may be more attracted to highly affiliative individuals, providing abundant opportunities for teens to refine and enhance their social skills and standing. Although research has yet to capture the distinctive composition of the affiliative system, there is some indirect empirical support for the hypothesis that the greater friendship affiliation would specifically predict teen social competence. For example, studies have shown that teen reports of greater friendship intimacy are associated with classmate reports of their sociability and prosociality (Barry & Wentzel, 2006; Buhrmester, 1990). Guided by the unique functions of these two behavioral systems, our first objective was to test the hypothesis that more salient representations of friendship affiliation would predict subsequent increases in social competence during early to middle adolescence.

In contrast, stronger, more elaborated representations of attachment are proposed to alter adolescent negative mood and emotional (i.e., internalizing) problems by orienting teens towards accessing and expecting support from best friends in times of distress or threat. However, whether the saliency of attachment in teens' friendship relationships serves to increase or decrease their vulnerability to internalizing problems is less clear. Some conceptualizations have postulated that the ability to utilize friends to regulate negative emotions (i.e., safe haven function) and confidence in friends' availability as a foundation for exploring challenging or novel activities (i.e., secure base function) support adolescents' developing regulatory systems as an intrapersonal buffer against internalizing problems (Brumariu & Kerns, 2010; Wilkinson, 2010). Others suggest that relying on friendships to meet attachment needs may do more emotional harm than good (e.g., Rosenthal & Kobak, 2010). The sparse empirical findings on this issue have taken varied approaches to conceptualizing and measuring friendship attachment and results have not decidedly favored one model over the other. Therefore, our second objective was to test whether more salient representations of friendship attachment would be associated with fewer adolescent internalizing symptoms over time.

Although our behavioral systems approach is designed to advance an understanding of the developmental consequences of specific ways of thinking about close friendships, we also examined whether individual differences in psychological functioning may alter teens' prioritization of the attachment and affiliative functions of their best friendships. For example, greater negative affect experienced by adolescents with internalizing difficulties may prompt them to increasingly prioritize close friends as attachment figures. In similar fashion, the interpersonal skills of socially competent adolescents may subsequently evoke greater affection and connection in the friendship dyad. Although some evidence suggests that teen psychological problems may undermine broader indices of friendship quality (e.g., Oppenheimer & Hankin, 2011), studies have yet to examine bidirectional relationships between multiple friendship provisions and psychological adjustment.

The current study

In summary, our goal was to delineate the bidirectional relationships between the saliency of attachment and affiliation in teen representations of their best friendships and their social competence and emotional problems by following adolescents over three annual

measurement occasions beginning in 7th grade (13 years old). We utilized a multi-method, multi-informant measurement battery to examine whether a behavioral systems framework offered greater precision in identifying distinctive developmental outcomes associated with specific friendship functions. Narrative assessments of adolescent representations of friendship affiliation and attachment were assessed at each wave in conjunction with parent and teacher reports of their social competence and internalizing symptoms. Thus, we were able to utilize a cross-lagged panel design to assess bidirectional paths between adolescent friendship representations and psychological adjustment. The three-wave design also permitted the examination of stability in adolescent representations over time. Although internal representations have been hypothesized to evidence moderate stability over time (e.g., Bretherton & Munholland, 2008), canalization models have proposed that individual differences in organized, stereotyped patterns of thinking become increasingly stable across development (Fraley, Brumbaugh, Rholes, & Simpson, 2004).

Developing an approach to sensitively capturing adolescent friendship representations was also a central goal of our paper. Although a few existing questionnaires and structured interview measures have distinguished between the attachment and affiliative systems (i.e., Furman & Buhrmester, 2009; Mikulincer & Selinger, 2001), the current study is designed to extend this research by assessing adolescents' implicit representations of the relative saliency of friendship attachment and affiliation as distinct predictors. Accordingly, we adapted the semi-structured interview format of the Friendship Interview (FI; Furman, 2001) to ask adolescents to describe their best friendship relationship with limited guidance or prompting. Next, we developed a novel approach to obtain dimensional ratings of friendship attachment and affiliation. Trained coders evaluated the saliency of both provisions based on the coherency and elaboration of each theme in teens' narrative descriptions of their best friendship relationship. This resulted in a single, continuous rating of friendship attachment and affiliation saliency.

To provide a rigorous test of the generalizability of our transactional model, we included several covariates in our analyses. First, because girls tend to report greater friendship security, affection, intimacy, and reciprocity and evidence higher levels of internalizing problems (Bagwell & Schmidt, 2011; Hall, 2011), we examined adolescent gender as a covariate. In addition, adolescent gender was also specified as a potential moderator of the transactional pathways based on some, albeit inconsistent, findings that associations between friendship quality and adjustment may differ for boys and girls (Demir & Urberg, 2004). Second, parent-child relationship quality and family socioeconomic status (SES) were included as covariates based on their documented associations with better adolescent friendship quality and psychological adjustment (Brown & Bakken, 2011; Furman et al., 2002). Finally, best friends change frequently during adolescence. In some cases, these changes are associated with poorer friendship quality and psychological adjustment (Hiatt, Laursen, Mooney, & Rubin, 2015; Poulin & Chan, 2010). Therefore, we also included consistency in adolescent nominations of best friends as a covariate. This also allowed us to examine changes in adolescents' internal representations of their best friendship over and above changes in the friendship dyad itself.

In the context of this multi-method, multi-informant design, the overarching goal of the current study was to examine whether the distinction between attachment and affiliation as unique provisions would contribute meaningfully to our knowledge of the association between friendship and adolescent well-being. First, we examined the stability of adolescent friendship representations across the three time points. Second, we tested whether friendship affiliation and attachment evidence unique, prospective associations with adolescents' social competence and internalizing symptoms. Lastly, we sought to place these questions within a broader developmental model by examining the bidirectional relationships between each friendship provision and adolescent adjustment over time.

Methods

Participants

Participants for this study were drawn from a larger longitudinal project examining the impact of family conflict on adolescents' adjustment. Adolescents, their parents, and teachers were recruited through schools and the community in both a moderate-sized metropolitan area in the Northeast and a small city in the Midwest. Families were recruited if they had a child in the seventh grade and were fluent in English. This resulted in a sample of 293 adolescents who were followed over three annual measurement occasions beginning when the teens were in 7th grade ($M_{age} = 13$). Participant retention rates were excellent: 95% ($N = 278$) at Wave 2 and 90% ($N = 263$) across the three waves. Families who participated in multiple waves of data collection did not differ from those who dropped out on any demographic or substantive variables included in this study. Approximately 50% of the adolescents were female ($n = 146$). Parents reported a median family income ranging from \$55,000 to \$74,999 with 13% of the sample reporting a household income under \$23,000. The median parental educational level was a Bachelor's degree (39%), with a significant proportion earning a high school diploma or GED as their highest degree (18%). The majority of parents were married (87%). Children lived with their biological mother in the vast majority of cases (95%). The sample largely identified themselves as White (73%), followed by Black (17%), Hispanic or Latino (6%), and other/mixed (7%).

Procedures

At each wave of data collection, adolescents and their parents visited the laboratory at one of the two sites. Laboratories at each site were designed to be comparable to each other in size and quality. The study was approved by the Institutional Review Board at each research site. During each wave adolescents endorsed a current academic teacher who "you've spent the most time with and who knows you the best." The chosen teachers completed surveys on adolescent adjustment, with the majority returning completed questionnaires in Waves 1 (85%; $N = 239$), 2 (81%; $N = 204$) and 3 (85%; $N = 204$). Mothers and fathers completed demographic interviews at Wave 1, as well as questionnaire assessments of their adolescents' adjustment during each of the three waves. At Wave 1, 278 mothers (95%) and 254 fathers (87%) completed assessments. This number dropped to 258 mothers (88%) and 230 fathers (78%) in Wave 2 and 244 mothers (83%) and 214 fathers (73%) in Wave 3. Parents, adolescents, and teachers received monetary payments for their participation.

Adolescents participated in the Three-Words Interview (3WI; Martin & Davies, 2012), a semi-structured, narrative interview about their best friendship adapted from the Friendship Interview (FI; Furman, 2001) at each wave. In the 3WI, a trained experimenter first asked the adolescents to name a single best friend. Best friends could be of either sex, but could not be a blood relative or resident in the home. All adolescents were able to select a single best friend with little or no difficulty. Participants provided their friend's first and last name for purposes of tracking stability and change in friends across waves. The experimenter then asked the teens to select three words to describe their relationship with their best friend. For each word selected, the experimenter asked the participant them to describe a memory to illustrate how or why their friendship reflected the chosen word. Experimenters continued to offer general probes (e.g., "Can you tell me more about that?" and "What about this memory explains why your friendship is [word chosen]?") for each description until the teen indicated that they had no further information to share. Interviews were video-recorded and transcribed verbatim for later coding.

Measures

Internal representations of the best friendship—The Three-Words Coding System (3WCS; Martin & Davies, 2015) assesses the saliency of the attachment and affiliative systems for adolescents' internal representations of their best friendship. At each wave, trained raters independently evaluated the content, organization, and coherency of adolescents' narratives to assess the strength of attachment and affiliation themes along seven-point scales, ranging from 1 (*No support for the system's function*) to 7 (*Strong support for the system's function*). Each behavioral system could be expressed more or less strongly (i.e., saliently) depending on the degree to which its function was supported by the teens' narrative descriptions and episodic examples across all three words. Thus, higher scores for attachment and affiliation were not merely a reflection of the percentage or sum of narrative content devoted to its function or specific sets of friendship features. Rather, raters evaluated the overall organization and coherency of the narrative in supporting the central importance of each system's function in the friendship relationship. Therefore, higher scores for each code reflected the openness, coherency, episodic richness (i.e., evidence supporting their descriptions), and affective meaning of the narrative description of their best friendship.

Friendship attachment consisted of coherent descriptions of the friendship as functioning to elicit continued support and protection from the best friend in times of distress or need. Narratives that were high in friendship attachment frequently described memories in which the friend is characterized as being stronger or wiser in some way, trustworthy, offering instrumental or emotional support, and providing secure base (see Table 1a). The mean ratings of friendship attachment were $M = 2.67$ ($SD = 1.75$) at Wave 1, $M = 2.56$ ($SD = 1.47$) at Wave 2, and $M = 3.68$ ($SD = 1.71$) at Wave 3. Conversely, *friendship affiliation* was supported by coherent descriptions of the friendship as serving to promote and sustain cooperation, reciprocity, and alliance with the friend. Descriptions frequently consisted of expressions of warmth and affection, a sense of shared identity or activity, humor, reciprocal validation, and intimate disclosure (see Table 1b). The mean ratings of friendship affiliation were $M = 3.45$ ($SD = 1.46$) at Wave 1, $M = 3.33$ ($SD = 1.10$) at Wave 2, and $M = 4.50$ ($SD = 1.40$) at Wave 3.

Support for the construct validity of the 3WCS was found in a separate sample of 200 early adolescents (mean age = 13) and their parents. Friendship attachment and affiliation rated using the 3WCS evidenced specificity such that each 3-words dimension correlated uniquely with its complementary subscale (i.e., attachment and affiliation, respectively) on the Behavioral Systems (i.e., Furman & Buhrmester, 2009) questionnaire (Martin & Davies, 2015). In the current study, six independent raters were employed so that there was one primary rater and one secondary rater who overlapped on 50% of the interviews at each wave. Interrater reliability was satisfactory for friendship attachment and affiliation at Wave 1 (ICC = .78 and .92, respectively), Wave 2 (ICC = .74 and .87, respectively), and Wave 3 (ICC = .73 and .86, respectively). The primary coders' ratings were retained for all analyses in this study.

Internalizing symptoms—At each wave, parents and teachers completed well-established questionnaires to assess adolescent internalizing symptoms. First, mothers and fathers filled out the Anxious/Depressed subscale of the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001). Parents responded to the fourteen items (e.g., “Unhappy, sad, or depressed;” “Too fearful or anxious”) along three-point scales ranging from 0 (*Not true*) to 2 (*Very or often true*). Internal consistencies were satisfactory across the three waves ($\alpha = .78-.86$). Second, teachers completed the Anxious/Depressed subscale, this time from the Teacher Report Form (TRF; Achenbach & Rescorla, 2001). This included seventeen items similar in format to the CBCL. Internal consistency for the TRF Anxious/Depressed scale was satisfactory across the three waves ($\alpha = .78-.86$). Finally, teacher reports on the Emotion Problems subscale of the teacher version of the Strengths and Difficulties Questionnaire served as a fourth measure of adolescent internalizing symptoms (SDQ; Goodman, 1997). Response alternatives ranged from 0 (*Not at all true*) to 2 (*Very true*), with sample items including statements such as “this child is often unhappy, distressed, or tearful” and “this child has many worries, often seems worried.” Internal consistencies ranged from .63 to .73. Parent and teacher reports of internalizing symptoms were modestly correlated, with r s ranging from .20 to .36, $p < .001$, across waves. To provide a single parsimonious assessment of parent and teacher reports of adolescent internalizing symptoms at each wave, each of the four subscales were standardized and all available ratings were averaged at Waves 1, 2, and 3. Of the participating adolescents at each wave, 73% had adjustment data from at least two of the three reporters (i.e., mother, father, teacher) at Wave 1, 63% at Wave 2, and 56% at Wave 3. Internal consistency of the four-scale composite was acceptable at each wave: $\alpha = .67, .65$, and $.67$ at Waves 1, 2, and 3, respectively.

Social competence—Parents and teachers also completed assessments of adolescent social competence. First, mothers and fathers completed the social competence subscale of the Perceived Competence Scale (Harter, 1988). This included six items reflecting adolescents' friendly and cooperative orientation towards peers (e.g., “My child is easy to like”). After selecting from one of two opposing statements (e.g., “My child usually does things by him/herself OR my child is always doing things with other kids”), parents then rated the statement as either “sort of true” or “really true” of their child. The internal consistency of this scale for mothers and fathers ranged from .64 - .69 across the three waves. In addition, teachers completed the Peer Problems subscale of the teacher report

version of the SDQ (Goodman, 1997). Teachers reported on each of the five items (e.g., “This student is generally liked by other youth” “This student is picked on or bullied by other youth”) using a scale ranging from 0 (*Not true*) to 2 (*Certainly true*). Internal consistencies for the scale ranged from .68 to .74 across the three waves. After reverse scoring the SDQ Peer Problems scale to be consistent with the social competence scales (i.e., higher values reflect fewer peer problems), parent and teacher reports were modestly correlated, with r s ranging from .26 to .41, $p < .001$, across waves. The three scales were standardized and all available ratings were averaged together within each wave to create a single assessment of social competence ($\alpha = .72$ at Wave 1, $\alpha = .67$ at Wave 2, and $\alpha = .68$ at Wave 3). The pattern of missing data by reporter (i.e., mother, father, teacher) was the same as for internalizing symptoms.

Covariate: Maternal relationship quality—Both mothers and adolescents provided an assessment of the quality of the mother-child relationship at Wave 1 by each completing two self-report scales. First, mothers and adolescents completed the relevant version of the Parental Attachment Security Scale (PASS; Davies, Forman, Rasi, & Stevens, 2002). The adolescent version of the PASS includes 15 items reflecting adolescents’ use of their mother as a source of protection and support (e.g., “When I’m upset, I go to my mom for comfort”). Responses ranged from 1 (*Not at all true of me*) to 4 (*Very true of me*) and were summed so that high values reflect higher quality maternal relationships. The parent version of the PASS included 9 items capturing the degree to which their children rely on them for support and protection (e.g., “When my child is upset, s/he goes to me for comfort”). Mothers responses ranged from 1 (*Not at all like my child*) to 5 (*A whole lot like my child*). Second, mothers and adolescents reported on mothers’ emotional availability using the Warmth and Affection subscale of the respective versions of the Parental Acceptance-Rejection Questionnaire (PARQ; Rohner, Saavedra, & Granum, 1991). For both reporters, the subscale included 20 items (e.g., “My mom makes me feel wanted and needed;”; “I let my child know that I love him/her”) scored from 1 (*never*) to 5 (*always*). Internal consistencies for maternal and adolescent reports on PASS and PARQ ranged from .90 to .95. These measures were standardized and averaged within reporter to create two scales for mother and child reports of relationship quality. These variables were correlated, $r = .37$, $p < .001$. The two variables were then averaged to create a single score multi-informant composite of maternal relationship quality at Wave 1, $\alpha = .73$.

Covariate: Consistency in best friend—Adolescent consistency in best friendships were quantified through dummy coding using the following procedure: “1” denoted the same friend was nominated across contiguous waves and “0” indicated selecting a different best friend, resulting in two change variables, one reflecting the adolescent choosing the same best friend at Waves 1 and 2, and the other from Waves 2 to 3. Changes in best friendship nominations occurred for 47% of adolescents from Wave 1 to Wave 2 and 40% from Wave 2 to Wave 3. Collectively, only 8% of the sample nominated the same best friend across all three waves.

Covariate: Family socioeconomic status—At Wave 1, parents completed demographic interviews to obtain assessments of maternal and paternal level of education

(in years) and total annual household income. Income was divided into thirteen categories reflecting increments from the lowest (i.e. less than \$6,000) to highest (i.e., \$125,000 or more) income categories. To obtain a multi-indicator composite of socioeconomic status to use as a covariate in the following analyses, mother and father reports were averaged to yield one value for parent-reported family income ($\alpha = .93$) and one for parents' mean education ($\alpha = .70$). These two variables were then standardized and aggregated to form a single composite of SES ($\alpha = .76$).

Results

Descriptive statistics for each variable by gender are reported in Table 2. ANOVAs revealed that girls' friendship narratives were more likely than boys' to be rated higher in both attachment [$F(1,252) = 9.58, p < .01$] and affiliation [$F(1,252) = 10.30, p < .01$] in Wave 1, higher in affiliation only in Wave 2 [$F(1,202) = 7.60, p < .01$], and higher in attachment only in Wave 3 [$F(1,172) = 5.18, p < .05$]. Teachers rated girls as having more peer problems at Wave 2 [$F(1,208) = 4.38, p < .05$] and greater internalizing symptoms at Wave 3 in comparison to boys [$F(1,211) = 6.28, p < .01$]. Likewise, mothers also rated girls as having more internalizing problems than boys at Wave 3 [$F(1,241) = 4.30, p < .05$]. No other gender differences were identified in the individual measures of the covariates or primary variables. For descriptive purposes, Table 3 presents the correlations among target constructs in this study.

Stability of friendship attachment and affiliation over time

Stability in the saliency of friendship attachment and affiliation was examined using Amos 24.0 software (Arbuckle, 2016). This allowed for missing data to be estimated using full information maximum likelihood (FIML) estimation (Schlomer, Bauman, & Card, 2010). To obtain a pure estimate of differential stability and change in the saliency of each friendship provision (i.e., attachment, affiliation), separate path models were ran. For each model, structural paths were specified between contiguous assessments of friendship representations (i.e., the saliency of a provision at T_1 predicting the corresponding provision at T_1+1) across the three waves. To control for the consistency of best friendship, paths were also specified from the dummy variable denoting same best friend nomination in Waves 1 and 2 and same friends in Waves 2 and 3 to the subsequent friendship provision variable.

The friendship affiliation path model provided a good representation of the data, $\chi^2(2; N = 293) = .52, p = .77$; $CFI = 1.0$; $CMIN/df = .26$; $RMSEA = .00$. Stability paths were moderate in magnitude: $\beta = .27$ from Waves 1 to 2 and $\beta = .29$ from Waves 2 to 3. A pairwise parameter comparison examining the relative strength of the two stability paths was nonsignificant, $z = .80, p = .42$, indicating that continuity across the two temporal lags was statistically comparable. The path model for attachment representations also evidenced adequate fit, $\chi^2(2; N = 293) = 4.48, p = .11$; $CFI = .95$; $CMIN/df = 2.24$; $RMSEA = .06$. In contrast to the affiliation findings, the stability coefficient for representations of attachment from Waves 1 to 2 was weaker, $\beta = .19, p = .01$. However, the magnitude of the stability coefficient for representations of friendship attachment from Waves 2 to 3 (ages 14 to 15) increased, $\beta = .41, p < .01$. Pairwise parameter comparisons further indicated that the

increase in stability of attachment representations from the early to later lag of adolescence was significant, $z = 2.76, p < .01$.

Transactional links among representations of friendship provisions and adjustment

To examine our research questions regarding specificity in the transactional associations between friendship attachment and affiliation and adolescent adjustment, we conducted successive cross-lagged path models for each form of adolescent functioning (i.e., social competence, internalizing problems). We again used Amos 24.0 software, with missing data estimated using FIML estimation to retain the full sample for both models. The structural paths estimated in each of the models are shown in Figures 1 and 2. For each, autoregressive paths were specified for the two friendship functions and adolescent psychological adjustment across contiguous measurement occasions (i.e., Wave 1 to 2; Wave 2 to 3). Cross-lag reciprocal paths were also estimated among each friendship representation and the specific form of adolescent adjustment across contiguous waves of assessment. Maternal relationship quality, SES, gender, and friendship consistency were all included as covariates predicting the two friendship representations and the specific form of adolescent adjustment at Waves 2 and 3. All manifest variables (including Wave 1 covariates and primary variables) were allowed to covary within wave to account for concurrent associations among the constructs.

Internalizing symptoms model—Figure 1 displays the results for internalizing symptoms. The model provided a good fit with the data: $\chi^2(12; N = 293) = 20.34, p = \text{n.s.}$; $CFI = .96$; $CMIN/df = 1.70$; $RMSEA = .04$. As predicted, the cross-lagged paths indicated friendship affiliation and internalizing symptoms did not serve as significant predictors of each other at any time point. Supporting the hypothesized specificity of friendship functions, friendship attachment representations were uniquely associated with adolescent internalizing symptoms. Wave 2 friendship attachment predicted fewer internalizing symptoms at Wave 3, $\beta = -.16, p < .01$, controlling for prior levels of internalizing symptoms and the inclusion of both friendship affiliation and the covariates in the model. Pairwise parameter comparisons suggest that the pathway from Wave 2 attachment saliency to Wave 3 internalizing symptoms was stronger than the comparable path involving Wave 2 friendship affiliation, although the difference only approached significance at $z = -1.32, p = .09$. Moreover, this pathway was significantly stronger than the negligible association between Wave 1 friendship attachment and Wave 2 internalizing symptoms, $z = -2.84, p < .01$. Internalizing symptoms, by contrast, did not predict subsequent friendship attachment.

Covariates also evidenced links with the primary variables. Higher SES at Wave 1 predicted greater friendship affiliation at Wave 3, $\beta = .15, p < .05$. Maternal relationship quality at Wave 1 predicted higher friendship attachment at Wave 2, $\beta = .13, p < .05$. Gender predicted friendship affiliation at Wave 1, $\beta = .14, p < .05$, and both internalizing symptoms and attachment at Wave 2, $\beta = .12, p = .05$ and $\beta = .14, p < .05$, respectively. In all three cases, girls evidenced higher subsequent levels (i.e., wave 2 affiliation, Wave 3 internalizing symptoms and attachment). Lastly, selecting the same best friend in Waves 1 and 2 predicted friendship consistency in the following lag, $\beta = .24, p < .01$ and lower friendship attachment

at Wave 3, $\beta = -.15$, $p < .05$. Friend consistency from Wave 2 to 3 also predicted higher friendship attachment in Wave 3, $\beta = .14$, $p < .05$.

Social competence model—As shown in Figure 2, the cross-panel model for teen social competence provided a good representation of the data, $\chi^2(12; N = 293) = 17.90$, $p = \text{n.s.}$; $CFI = .99$; $CMIN/df = 1.27$; $RMSEA = .03$. Consistent with hypotheses, friendship affiliation at Wave 1 predicted higher levels of social competence at Wave 2, $\beta = .15$, $p < .01$, even after controlling for Wave 1 social competence, friendship attachment, and the covariates. In support of a transactional pattern, Wave 2 social competence, in turn, predicted increases in adolescent friendship affiliation at Wave 3, $\beta = .18$, $p < .01$. Supporting the hypothesized specificity of effects, friendship attachment was not associated with social competence at any wave. Pairwise parameter comparison further support Wave 1 affiliation as a stronger predictor of Wave 2 social competence than friendship attachment, $z = -3.51$, $p < .01$, although the influence of social competence on Wave 3 affiliation was only marginally different from its influence on Wave 3 attachment, $z = -1.82$, $p = .07$.

The covariates evidenced patterns of associations with the primary variables that were similar to those in the previous model. Higher Wave 1 SES predicted more friendship affiliation at Wave 2, $\beta = .15$, $p < .05$. Maternal relationship quality predicted greater social competence, $\beta = .17$, $p < .01$, and greater friendship attachment, $\beta = .17$, $p < .01$, at Wave 2. Adolescent gender predicted friendship attachment at Wave 3, $\beta = .15$, $p < .05$, with girls again evidencing higher levels. Finally, friendship consistency from Waves 1 to 2 continued to predict higher levels of consistency from Waves 2 to 3, $\beta = .24$, $p < .01$, friendship affiliation at Wave 2, $\beta = .14$, $p < .05$, and attachment at Wave 3, $\beta = .14$, $p = .05$.

Generalizability across adolescent gender

To test the generalizability of our findings, we also conducted multi-group path models to examine whether the findings for all four models (i.e., two stability path models and two cross-lag models) differed significantly as a function of adolescent gender. For each of the four models, we specifically compared a model in which all paths were freely estimated for groups of boys and girls with a fully constrained model in which all paths (i.e., autoregressive paths, cross-lags, and covariate paths) were set to equality across the two groups. In all four analyses, the chi-square difference comparisons showed that the free-to-vary model did not offer significant improvements in fit (all $ps > .20$). Thus, the results indicated that adolescent gender was not a significant moderator in any of the analyses.

Discussion

Recent recommendations in the field have emphasized the value of identifying the distinctive sequelae of different dimensions of friendship to complement the focus on omnibus assessments of friendship quality (e.g., Bukowski et al., 2011). To address this call, our study applied a behavioral systems framework to test of the value of distinguishing between affiliation (i.e., forming cooperative partnerships that bolster a sense of connectedness, mutualism, and reciprocity) and attachment (i.e., successfully accessing support, care, and protection) functions of friendship. We restructured an existing friendship assessment (i.e., Furman, 2001) into a brief narrative procedure to differentiate between the

relative salience of attachment and affiliative provisions in teens' internal representations of their best friendships. Building on a history of conceptual distinctions between these two behavioral systems (e.g., Furman 2001; Mikulincer & Selinger, 2001), this paper is the first to examine the centrality of affiliation and attachment to adolescents' internal representations of their best friendship. In breaking further ground, repeated assessments of teen representations and psychological outcomes within a three-wave, cross-lagged panel design specifically allowed us to examine the unique roles of friendship affiliation and attachment as both predictors and sequelae of adolescent social and emotional adjustment.

Sequelae of friendship attachment

The results provided partial support for our hypothesis that the greater salience of friendship attachment would uniquely predict adolescent internalizing symptoms. Whereas friendship attachment was a negligible predictor of social competence in this study, it was uniquely associated with internalizing symptoms even after including friendship affiliation and several covariates (i.e., maternal relationship quality, SES, adolescent gender, consistency of best friend). Possessing friendship representations with more salient attachment themes at age 14 (Wave 2) predicted decreases in adolescents' internalizing symptoms one year later. Given its role in accessing social support to regulate negative affect (i.e., safe haven) and promoting exploration in times of doubt (i.e., secure base), these data support the proposal that the saliency of friendship attachment is specifically relevant for teens' emotion regulation abilities.

Highlighting the developmental specificity of the findings, changes in the strength of friendship attachment as a predictor of internalizing symptoms across the two temporal periods highlights a potential developmental shift in the consequences of attachment in best friendships. The moderating role of developmental period was specifically evidenced by findings indicating that friendship attachment at age 14 was a significantly stronger predictor of internalizing symptoms one year later than the comparable and negligible pathway for friendship attachment at age 13. As one potential operative process, peers at the start of adolescence may be relatively unprepared to provide attachment support, particularly secure base. Best friends are likely more invested in building closeness and intimacy in their relationship, with mutuality potentially occurring at the expense of autonomy support or enacting "parent-like" scaffolding behaviors to foster the development of independent emotion regulation strategies. By contrast, age 14 (Wave 2) may mark a transition whereby adolescents become more effective at providing care. Studies of friends' support behaviors are rare, but there is some evidence that teens' capacity to provide support increases across early adolescence (i.e., Davis & Franzoi, 1991; Helsen, Vollebergh, & Meeus, 2000). Conversely, as adolescents progress through early adolescence, it is possible that they become better able to utilize best friends as attachment figures. In the context of the current findings, the function of attachment in adolescents' friendship representations may shift in meaning, coming to serve a protective role in reducing internalizing problems.

Sequelae of friendship affiliation

Guided by the function of affiliation to form and sustain cooperative partnerships, we hypothesized that friendship affiliation would uniquely predict increases in adolescent social

competence over time. Findings partially supported this prediction, with Wave 1 affiliation predicting greater social competence over the subsequent one-year period. This lends support for the value of increasing specificity by distinguishing between meaningful components of friendship quality. Given that highly affiliative representations were comprised of adolescent narrative descriptions of their best friendships as fun, humorous, intimate, and affectionate, two processes may be operating to increase social competence. As a primary socialization context, close friendships may be critical to strengthening and refining the affiliative system. As adolescents draw on past friendship experiences as a lens for simplifying and interpreting novel interpersonal contexts, they may be more likely to appraise peer relationships as opportunities to fulfill affiliative goals. Accordingly, adolescents with salient affiliative representations may increase social standing with peers through their greater motivation to seek out and invest in peer relationships (Padilla-Walker, Fraser, Black, & Bean, 2015). Second, under expectations that their best friend will be accepting, validating, and invested in maintaining the relationship, friendships may be an ideal context in which to practice social skills that can then be applied to other relationships (Glick & Rose, 2011).

Transactions among representations of friendship and adolescent adjustment

Developmental frameworks have further highlighted the importance of identifying bidirectional cascades in the interplay between multiple systems over time (Sameroff, 2009). Accordingly, our cross-panel design afforded novel tests of the bidirectional associations between friendship affiliation and attachment and adolescent social and emotional adjustment. Analyses specifically reveal friendship affiliation as part of a bidirectional or transactional cascade with social competence. Teens with highly affiliative friendship representations at Wave 1 were rated by teachers and parents as more socially competent at Wave 2 which, in turn, predicted greater saliency of affiliation in friendship representations at Wave 3. These results support a positive feedback loop or amplification process whereby affiliation with best friends and general social competence mutually enhance one another. As noted earlier in our discussion, the first part of this cascade offers support for the hypothesis that investment in affiliative goals with best friends may fuel affectively rewarding interactions and continued social engagement with peers. In reflecting the second part of the cascade, greater peer competence may foster greater affiliation, companionship, and mutuality in friendships through multiple processes (McElhaney, Antonishak, & Allen, 2008). For example, socially competent adolescents may ultimately come to value the affiliative function of their friendships more by virtue of attracting and developing relationships with similarly skilled peers (Nangle, Erdley, Zeff, Stanchfield, & Gold, 2004). In addition, neurological reward systems (i.e., the mesolimbic dopamine system) develop increasing sensitivity and affective response to social rewards and peer evaluations across early to middle adolescence (Crone & Dahl, 2012; Somerville, 2013). Thus the broader transactional pattern we observed here may be undergirded by these developmental changes, with friendship experiences being the primary contributor to changes in affiliative functioning in late childhood through early adolescence and then wider peer acceptance becoming the primary driver of affiliation during the transition to middle adolescence.

Differential stability

Our findings also indicated that the saliency of attachment and affiliation provisions in adolescent's representations of their best friendship evidence modest to moderate stability. According to theory (e.g., Bretherton & Munholland, 2008), some degree of stability is expected based on adolescents' tendencies to draw on existing schemas as guides for processing and interpreting subsequent friendship experiences. By the same token, the self-sustaining nature of this assimilation process is also posited to be counteracted by plasticity in representations. In highlighting the ongoing potential for change, adolescents are also theorized to remain open to revising representations based on significant changes in social experiences (Fraley et al., 2004). Although the moderate stability of friendship affiliation was comparable across the two temporal lags, friendship attachment evidenced significant increases in stability with adolescent age. This move from modest to moderate stability across the two time spans is consistent with canalization models. Canalization is proposed to be a product of mutually reinforcing transactions between adolescents increasingly relying on close friends for support and repeatedly experiencing friends' caregiving. For example, studies of friends' supportive behaviors suggest that adolescents' capacity to provide support increases into middle adolescence (e.g., Helsen et al., 2000). As friends spend increasing amounts of time together, adolescents may have more experiences that solidify their expectations of their best friend as an effective caregiver in times of distress.

Conclusions

A full interpretation of the findings requires consideration of the study's limitations. First, because our sample was comprised of largely White, middle class adolescents, caution is warranted in generalizing these findings to other populations. Second, although the sample characteristics of this study afforded an analysis of shifts in pathways among teens' internal representations of friendship and their psychological adjustment as they transitioned from early to middle adolescence, a more comprehensive identification of changes in the developmental sequelae of friendship functions will require additional measurement occasions that index wider spans of development. Third, it is plausible that the relationship between adolescents' friendship representations and adjustment stems from adolescents' broader verbal intelligence, due to our reliance on narrative coherence in the 3-Words Interview and Coding System. This possibility is mitigated somewhat by prior research with narrative assessments suggesting that the influence of verbal IQ on coherence is negligible for adolescent populations (e.g., Reese et al., 2011; Kerns, 2008; Schmuely-Goetz, Target, Fonagy, & Datta, 2008). Lastly, given the value of including multiple perspectives in the assessment of psychological adjustment (e.g., De Los Reyes et al., 2015), future research would benefit from the inclusion of adolescent self-reports. This may be particularly useful for internalizing symptoms, given that adult reports may be limited to observable expressions of underlying emotion problems.

These findings point to several future directions as well. Our study was specifically focused on the developmental implications of attachment and affiliation. Therefore, identifying the socialization antecedents and correlates (e.g., friendship interaction or family relationship qualities) of these friendship functions is an important next step for research. In addition, we focused here on two of the most salient friendship provisions during adolescence (i.e.,

attachment, affiliation). It will be important in future research to expand the substantive scope to other dimensions of friendship. Caregiving is one example (e.g., Furman, 2001).

In conclusion, our study was the first to consider how adolescents differentially prioritize attachment and affiliation in making meaning of their best friendships. The findings supported the assumption that adolescents vary in the degree to which they prioritize certain friendship provisions as central to their conceptualizations of the relationship and that these individual differences have meaning for adjustment (Bukowski et al., 2011). Additionally, the 3-Words Interview and Coding System provide a relatively efficient method for garnering narrative descriptions that tap meaningful individual differences in adolescents' internal representations of their best friendship. Within the context of the transactional analyses, we found that representations of attachment and affiliation specifically had distinctive antecedents and sequelae. The application of a behavioral systems approach to friendship is in its infancy. However, the findings in this study underscore its potential value in redefining friendship quality in a way that offers a new level of precision in understanding its developmental correlates and sequelae.

Acknowledgments

This study was supported by the National Institute of Mental Health awarded to Patrick T. Davies and E. Mark Cummings (2R01 MH071256). The authors are grateful to the many adolescents, parents, teachers, and staff who participated in this project.

References

- Achenbach, TM., Rescorla, LA. Manual for the ASBA school-age forms and profiles. Reliability and validity information (school-age 6–18). Burlington: University of Vermont Research Center for Children, Youth, and Families; 2001.
- Arbuckle, JL. IBM. Chicago: IL: 2016. Amos (Version 24.0).
- Bagwell CL, Coie JD. The best friendships of aggressive boys: Relationship quality, conflict management, and rule-breaking behavior. *Journal of Experimental Child Psychology*. 2004; 88:5–24. [PubMed: 15093723]
- Bagwell, CL., Schmidt, ME. Friendships in childhood and adolescence. New York, NY: Guilford Press; 2011.
- Barry CM, Wentzel KR. Friend influence on prosocial behavior: The role of motivational factors and friendship characteristics. *Developmental Psychology*. 2006; 42:153–163. [PubMed: 16420125]
- Bretherton, I., Munholland, KA. Internal working models in attachment relationships: Elaborating a central construct in attachment theory. In: Cassidy, J., Shaver, PR., editors. *Handbook of attachment: Theory, research, and clinical applications*. 2nd. New York, NY: Guilford Press; 2008. p. 102–127.
- Brown BB, Bakken JP. Parenting and peer relationships: Reinvigorating research on family–peer linkages in adolescence. *Journal of Research on Adolescence*. 2011; 21:153–165.
- Brumariu LE, Kerns KA. Parent–child attachment and internalizing symptoms in childhood and adolescence: A review of empirical findings and future directions. *Development and Psychopathology*. 2010; 22:177–203. [PubMed: 20102655]
- Buhrmester D. Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Development*. 1990; 61:1101–1111. [PubMed: 2209180]
- Bukowski WM, Hoza B, Boivin M. Measuring friendship quality during pre and early adolescence: The development and psychometric properties of the friendship qualities scale. *Journal of Social and Personal Relationships*. 1994; 11:471–484.
- Bukowski, WM., Simard, M., Dubois, M., Lopez, L. Representations, process, and development: A new look at friendship in early adolescence. In: Amsel, E., Smetana, J., editors. *Adolescent*

vulnerabilities and opportunities: Developmental and constructivist perspectives. Cambridge, UK: Cambridge University Press; 2011. p. 159-181.

- Chow CM, Ruhl H, Buhrmester D. Reciprocal associations between friendship attachment and relational experiences in adolescence. *Journal of Social and Personal Relationships*. 2016; 33:122–146.
- Crone EA, Dahl RE. Understanding adolescence as a period of social–affective engagement and goal flexibility. *Nature Reviews Neuroscience*. 2012; 13:636–650. [PubMed: 22903221]
- Davies PT, Forman EM, Rasi JA, Stevens KI. Assessing children's emotional security in the interparental subsystem: The Security in the Interparental Subsystem (SIS) Scales. *Child Development*. 2002; 73:544–562. [PubMed: 11949908]
- Davies PT, Martin MJ. The reformulation of emotional security theory: The role of children's social defense in developmental psychopathology. *Development & Psychopathology*. 2013; 25:1435–1454. [PubMed: 24342849]
- Davis MH, Franzoi SL. Stability and change in adolescent self-consciousness and empathy. *Journal of Research in Personality*. 1991; 25:70–87.
- De Goede IH, Branje SJ, Meeus WH. Developmental changes and gender differences in adolescents' perceptions of friendships. *Journal of Adolescence*. 2009; 32:1105–1123. [PubMed: 19304316]
- De Los Reyes A, Augenstein TM, Wang M, Thomas SA, Drabick DA, BURGERS DE, Rabinowitz J. The validity of the multi-informant approach to assessing child and adolescent mental health. *Psychological Bulletin*. 2015; 141:858–900. [PubMed: 25915035]
- Demir M, Urberg KA. Friendship and adjustment among adolescents. *Journal of Experimental Child Psychology*. 2004; 88:68–82. [PubMed: 15093726]
- Depue RA, Morrone-Strupinsky JV. A neurobehavioral model of affiliative bonding: Implications for conceptualizing a human trait of affiliation. *Behavioral and Brain Sciences*. 2005; 28:313–349. [PubMed: 16209725]
- Fivush R. The development of autobiographical memory. *Annual Review of Psychology*. 2011; 62:559–582.
- Fraley, RC., Brumbaugh, CC., Rholes, WS., Simpson, JA. A dynamical systems approach to conceptualizing and studying stability and change in attachment security. In: Rholes, WS., Simpson, JA., editors. *Adult attachment: Theory, research, and clinical implications*. New York: Guilford; 2004. p. 86-132.
- Furman, W. Friends and lovers: The role of peer relationships in adolescent romantic relationships. In: Collins, WA., Laursen, B., editors. *Relationships as developmental contexts: The 30th Minnesota Symposia on Child Development*. Hillsdale, NJ: Erlbaum; 1998. p. 133-154.
- Furman W. Working models of friendships. *Journal of Social and Personal Relationships*. 2001; 18:583–602.
- Furman W, Buhrmester D. Children's perceptions of the personal relationships in their social networks. *Developmental Psychology*. 1985; 21:1016–1024.
- Furman W, Buhrmester D. Age and sex differences in perceptions of networks of personal relationships. *Child Development*. 1992; 63:103–115. [PubMed: 1551320]
- Furman W, Buhrmester D. Methods and measures: The network of relationships inventory: Behavioral systems version. *International Journal of Behavioral Development*. 2009; 33:470–478. [PubMed: 20186262]
- Furman W, Simon VA, Shaffer L, Bouchey HA. Adolescents' working models and styles for relationships with parents, friends, and romantic partners. *Child Development*. 2002; 73:241–255. [PubMed: 14717255]
- Furman W, Stephenson JC, Rhoades GK. Positive interactions and avoidant and anxious representations in relationships with parents, friends, and romantic partners. *Journal of Research on Adolescence*. 2014; 24:615–629. [PubMed: 26346530]
- Gaertner AE, Fite PJ, Colder CR. Parenting and friendship quality as predictors of internalizing and externalizing symptoms in early adolescence. *Journal of Child and Family Studies*. 2010; 19:101–108.
- Gilbert P. An evolutionary approach to emotion in mental health with a focus on affiliative emotions. *Emotion Review*. 2015; 7:230–237.

- Glick GC, Rose AJ. Prospective associations between friendship adjustment and social strategies: friendship as a context for building social skills. *Developmental Psychology*. 2011; 47:1117–1132. [PubMed: 21443336]
- Goodman R. The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*. 1997; 38:581–586. [PubMed: 9255702]
- Hall JA. Sex differences in friendship expectations: A meta-analysis. *Journal of Social and Personal Relationships*. 2011; 28:723–747.
- Harter, S. Manual for the self-perception profile for adolescents. University of Denver; 1988. Unpublished manual
- Helsen M, Vollebergh W, Meeus W. Social support from parents and friends and emotional problems in adolescence. *Journal of Youth and Adolescence*. 2000; 29:319–335.
- Hiatt C, Laursen B, Mooney KS, Rubin KH. Forms of friendship: A person-centered assessment of the quality, stability, and outcomes of different types of adolescent friends. *Personality and Individual Differences*. 2015; 77:149–155. [PubMed: 25620829]
- Kerns KA, Mathews BL, Koehn AJ, Williams CT, Siener-Ciesla S. Assessing both safe haven and secure base in parent-child relationships. *Attachment and Human Development*. 2015; 17:337–353. [PubMed: 25965983]
- Kerns, KA. Attachment in middle childhood. In: Cassidy, J., Shaver, PR., editors. *Handbook of attachment: Theory, research, and clinical applications*. 2nd. New York, NY: Guilford Press; 2008. p. 366-382.
- Kobak, RR., Zajac, K. Rethinking adolescent states of mind: A relationship/lifespan view of attachment and psychopathology. In: Cicchetti, D., Roisman, GI., editors. *The origins and organization of adaptation and maladaptation: Minnesota symposia on child psychology*. Vol. Vol. 36. New York, NY: Wiley; 2011. p. 185-229.
- Markiewicz D, Lawford H, Doyle AB, Haggart N. Developmental differences in adolescents' and young adults' use of mothers, fathers, best friends, and romantic partners to fulfill attachment needs. *Journal of Youth and Adolescence*. 2006; 35:121–134.
- Marsh P, Allen JP, Ho M, Porter M, McFarland FC. The changing nature of adolescent friendships longitudinal links with early adolescent ego development. *The Journal of Early Adolescence*. 2006; 26:414–431. [PubMed: 18548124]
- Martin, MJ., Davies, PT. Unpublished interview protocol. Rochester NY: University of Rochester; 2012. Three-Words Interview: Best friends.
- Martin, MJ., Davies, PT. Unpublished coding manual. Rochester NY: University of Rochester; 2015. Three-Words Coding System: Best friends.
- McElhaney KB, Antonishak J, Allen JP. "They like me, they like me not": Popularity and adolescents' perceptions of acceptance predicting social functioning over time. *Child Development*. 2008; 79:720–731. [PubMed: 18489423]
- Mikulincer M, Selinger M. The interplay between attachment and affiliation systems in adolescents' same-sex friendships: The role of attachment style. *Journal of Social and Personal Relationships*. 2001; 18:81–106.
- Mikulincer, M., Shaver, PR. *Attachment in adulthood: Structure, dynamics, and change*. New York, NY: Guilford Press; 2007.
- Miller AL, Notaro PC, Zimmerman MA. Stability and change in internal working models of friendship: Associations with multiple domains of urban adolescent functioning. *Journal of Social and Personal Relationships*. 2002; 19:233–259.
- Miller, WB., Rodgers, J. *The ontogeny of human bonding systems: Evolutionary origins, neural bases, and psychological manifestations*. Boston, MA: Kluwer Academic Publishers; 2001.
- Nangle DW, Erdley CA, Zeff KR, Stanchfield LL, Gold JA. Opposites do not attract: Social status and behavioral-style concordances and discordances among children and the peers who like or dislike them. *Journal of Abnormal Child Psychology*. 2004; 32:425–434. [PubMed: 15305547]
- Oppenheimer CW, Hankin BL. Relationship quality and depressive symptoms among adolescents: a short-term multiwave investigation of longitudinal, reciprocal associations. *Journal of Clinical Child & Adolescent Psychology*. 2011; 40:486–493. [PubMed: 21534059]

- Padilla-Walker LM, Fraser AM, Black BB, Bean RA. Associations between friendship, sympathy, and prosocial behavior toward friends. *Journal of Research on Adolescence*. 2015; 25:28–35.
- Poulin F, Chan A. Friendship stability and change in childhood and adolescence. *Developmental Review*. 2010; 30:257–272.
- Reese E, Haden CA, Baker-Ward L, Bauer P, Fivush R, Ornstein PA. Coherence of personal narratives across the lifespan: A multidimensional model and coding method. *Journal of Cognition and Development*. 2011; 12:424–462. [PubMed: 22754399]
- Rohner, RP., Saavedra, JM., Granum, EO. Handbook for the study of parental acceptance and rejection. Storrs, CT: University of Connecticut, Center for the Study of Parental Acceptance and Rejection; 1991. Parental acceptance-rejection questionnaire: Test manual; p. 17–48.
- Rosenthal NL, Kobak R. Assessing adolescents' attachment hierarchies: Differences across developmental periods and associations with individual adaptation. *Journal of Research on Adolescence*. 2010; 20:678–706. [PubMed: 22545000]
- Rubin K, Fredstrom B, Bowker J. Future directions in.. Friendship in childhood and early adolescence. *Social Development*. 2008; 17:1085–1096.
- Sameroff, A. The transactional model. In: Sameroff, A., editor. The transactional model of development: How children and contexts shape each other. Washington, DC: American Psychological Association; 2009. p. 3–21.
- Shmueli-Goetz Y, Target M, Fonagy P, Datta A. The Child Attachment Interview: A psychometric study of reliability and discriminant validity. *Developmental Psychology*. 2008; 44:939–956. [PubMed: 18605826]
- Somerville LH. The teenage brain sensitivity to social evaluation. *Current Directions in Psychological Science*. 2013; 22:121–127. [PubMed: 24761055]
- Tani F, Smorti A, Peterson C. Is friendship quality reflected in memory narratives? *Journal of Social and Personal Relationships*. 2015; 32:281–303.
- Vitaro, F., Boivin, M., Bukowski, WM. The role of friendship in child and adolescent psychosocial development. In: Rubin, KH, Bukowski, WM., Laursen, B., editors. Handbook of peer interactions, relationships, and groups. New York: The Guilford Press; 2009. p. 568–585.
- Way N, Cowal K, Gingold R, Pahl K, Bissessar N. Friendship patterns among African American, Asian American, and Latino adolescents from low-income families. *Journal of Social and Personal Relationships*. 2001; 18:29–53.
- Wilkinson RB. Best friend attachment versus peer attachment in the prediction of adolescent psychological adjustment. *Journal of Adolescence*. 2010; 33:709–717. [PubMed: 19910040]
- Wood MA, Bukowski WM, Santo JB. Friendship security, but not friendship intimacy, moderates the stability of anxiety during preadolescence. *Journal of Clinical Child & Adolescent Psychology*. 2015; 2015:1–12.
- Zimmermann P. Attachment representations and characteristics of friendship relations during adolescence. *Journal of Experimental Child Psychology*. 2004; 88:83–101. [PubMed: 15093727]

Figure 1.

Path model displaying all possible cross-lagged paths between friendship attachment, friendship affiliation, and parent and teacher reports of internalizing symptoms over three years. The covariates Maternal Relationship Quality, Adolescent Gender, and SES were specified as exogenous predictors of all downstream variables in this model but, for ease of illustration, are not displayed here. All path coefficients shown are standardized values. All path coefficients shown are standardized values. Bolded paths reflect regression coefficients that are significant at $p < .05$. Light grey paths were included in the model, but were not significant. ** $p < .01$, * $p < .05$.

Figure 2.

Path model displaying all possible cross-lagged paths between friendship attachment, friendship affiliation, and parent and teacher reports of social competence over three years. The covariates Maternal Relationship Quality, Adolescent Gender, and SES were specified as exogenous predictors of all downstream variables in this model but, for ease of illustration, are not displayed here. All path coefficients shown are standardized values. Bolded paths reflect regression coefficients that are significant at $p < .05$. Light grey paths were included in the model, but were not significant. ** $p < .01$, * $p < .05$.

Table 1

Sample excerpts from adolescents' narrative descriptions of their best friendship relationship. Adolescents chose a word describing their friendship (in bold) and then recounted a memory about their friendship illustrating why they chose that descriptor. The excerpts shown here represent prototypical examples of narratives that are organized around either an attachment (i.e., safe haven and secure base) or affiliative (i.e., companionship and intimacy) theme. Adolescents' narratives were transcribed verbatim. Ellipses reflect a pause in an adolescents' narrative stream, not missing information. Participants' use of their best friends' name is marked as "[Name]" in order to maintain confidentiality.

(a) Excerpts from narratives scored high for Attachment:

- Female, Age 13 **OPEN:** I chose 'open' because we always tell each other everything. Like my friend the other day... we go to Washington D.C. for our 8th grade trip. [Name] was rooming with my one friend and my one friend said she didn't want to be with me for the Washington D.C. trip in the same room. So I kinda felt a little sad about that so [Name] like helped me through it. And she told me things like she told me to "be yourself" and "be upbeat." That totally helped me through it and we ended up just spending the entire time together so like, it didn't even matter anymore.
- Male, Age 14 **STRONG:** I was over his house playing baseball and got hit in the face and he was the only person there that helped me. I was on the ground with blood and there were eight people laughing but [Name] helped me, picked me up and put me into his bed, woke me up and iced me, bandaged my eye and stuff.
[Experimenter: What about this memory explains why your friendship is 'strong'?]
Because he has my back no matter what. If I need him he's there, period.

(b) Excerpts from narratives scored high for Affiliation:

- Male, Age 13 **SPECIAL:** Ever since the first year that I knew him we had this tradition of going trick-or-treating and that's special because it's a really good memory and we went together. It was really fun. We laughed and watched movies.
[Experimenter: What about this memory explains why your friendship is 'special'?]
It's special because last year he had to cancel some things to arrange that. He goes out of his way. To go out of his way to do that... that special touch of "you'd do that for me"? I finally have a friend where you know it's going to last, not just a temporary thing. It's a feeling... makes you feel warm and special inside. It is really rare and he knows that too....That's what's 'special.'
 - Female, Age 15 **AMAZING:** Like, I remember once, we were on the phone for, like, practically like all night but we never got bored of each other. It was the middle of the summer and like nothing was going on but we were just talking about like life in general and like laughing like through half the thing and just like laughing about like anything and everything....Um we talked about boys, our memories, um like dreams and hopes and stuff and jokes, really corny jokes... And, like, everything that we were both interested in. And she was telling me about how she thinks of me more like a sister and how I think like the same thing with her.
-

Table 2

Means and standard deviations for all study variables by adolescent gender. Boxes colored grey evidenced a mean difference by gender at $p < .05$.

Construct	Reporter	Measure	Wave 1				Wave 2				Wave 3			
			BOYS		GIRLS		BOYS		GIRLS		BOYS		GIRLS	
			M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Best Friendship Representations	A	Friendship Attachment	2.51	1.53	3.10	1.46	2.32	1.31	2.64	1.48	3.00	1.57	3.54	1.56
	A	Friendship Affiliation	3.41	1.04	3.84	1.08	3.09	.85	3.46	1.07	4.35	1.17	4.40	1.12
Internalizing Symptoms	T	Emotional Problems	.88	1.24	1.11	1.66	1.01	1.58	1.10	1.25	.76	1.21	1.09	1.78
	T	Anxious/Depressed Symptoms	2.28	3.20	2.85	3.75	2.35	3.28	2.09	2.83	1.59	2.68	2.72	3.76
	M	Anxious/Depressed Symptoms	2.68	3.15	3.23	3.23	2.34	2.55	2.57	2.61	1.83	2.55	2.59	3.13
	D	Anxious/Depressed Symptoms	2.78	3.09	2.93	3.41	2.16	2.57	2.10	2.71	1.78	2.54	2.41	3.76
Social Competence	T	Peer Problems (reversed)	8.46	1.94	8.61	1.85	8.17	2.37	8.76	1.59	8.32	1.96	8.77	1.55
	M	Socially Competent Behavior	18.84	3.31	18.80	3.37	19.14	3.12	19.02	3.23	18.94	3.34	19.14	3.00
	D	Socially Competent Behavior	18.99	3.28	18.97	3.24	19.03	3.30	19.58	2.63	18.76	3.44	19.44	2.94
Maternal Relationship Quality	M	Maternal Support	38.36	5.53	38.12	6.58								
	M	Maternal Warmth	88.04	7.64	87.26	9.19								
	A	Maternal Support	53.05	7.01	52.73	9.14								
	A	Maternal Warmth	84.56	11.66	84.31	14.96								

Note: For Reporter: A = Adolescent, T = Teacher, M = Mom, D = Dad

Table 3

Correlations among the primary variables used in analyses. Maternal relationship quality, internalizing symptoms, and social competence reflect the mean aggregate scores of multiple reporters.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Gender	----																
2. SES	-.07	----															
3. Maternal Rel. Quality	-.02	.15**	----														
Wave 1																	
4. Same friend W1 & W2	-.02	.01	.03	----													
5. Affiliation	.21**	.16**	.08	-.07	----												
6. Attachment	.22**	-.10	.04	-.08	.07	----											
7. Internalizing Symptoms	.09	-.17**	-.04	.01	.08	.07	----										
8. Social Competence	.14*	.18**	.18**	.02	-.02	.10	-.37**	----									
Wave 2																	
9. Same friend W2 & W3	-.10	.03	-.05	.24**	-.03	.07	-.03	.17*	----								
10. Affiliation	.20**	.09	.02	.11	.26**	.13†	.01	.05	-.02	----							
11. Attachment	.10	.11	.06	.04	.07	.18**	.10	.05	.06	-.01	----						
12. Internalizing Symptoms	.01	-.10	-.06	-.11	-.04	.12†	.42**	-.10	-.01	-.11	.13†	----					
13. Social Competence	.19**	.13†	.23**	.10	.17*	-.06	.01	.33**	.01	.21**	.06	-.27**	----				
Wave 3																	
14. Affiliation	.03	.15*	.10	-.06	.25**	.03	-.02	.19**	-.10	.34**	-.13	.01	.22*	----			
15. Attachment	.16*	.12	-.01	-.11	.11	.21**	-.04	-.01	.13	.01	.48*	.02	.08	-.29**	----		
16. Internalizing Symptoms	.13†	-.01	-.14*	-.06	-.10	.20**	.20**	-.05	-.13	.01	-.11	.25**	-.22*	.01	.01	----	
17. Social Competence	.16*	.06	.07	.08	.15*	-.04	-.10	.34**	.14	.18*	.16*	-.27**	.51*	.09	-.01	-.30**	----

Note:

* $p < .05$

† $p < .08$

10' d
**

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript