

INTERNALIZING SYMPTOMS AND FRIENDSHIPS IN ADOLESCENCE:  
CONSIDERING THE ROLE OF INTERPERSONAL BEHAVIOR  
IN REJECTION AND CONTAGION EFFECTS

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In Partial Fulfillment  
Of the Requirements for the Degree  
Doctor of Philosophy

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by

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The undersigned, appointed by the Dean of The Graduate School, have examined the dissertation entitled

INTERNALIZING SYMPTOMS AND FRIENDSHIPS IN ADOLESCENCE:  
CONSIDERING THE ROLE OF INTERPERSONAL BEHAVIOR  
IN REJECTION AND CONTAGION EFFECTS

Presented by Rebecca A. Schwartz Mette

A candidate for the degree of Doctor of Philosophy

And hereby certify that in their opinion it is worthy of acceptance.

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ABSTRACT

The present research considered associations among internalizing symptoms, interpersonal behaviors, and friendship adjustment in a sample of 552 seventh and tenth graders. Effects of youths' internalizing symptoms on rejection were tested, as were contagion effects of internalizing symptoms within friendships. It was hypothesized that certain interpersonal behaviors would mediate both of these effects. Results indicated that depressed youth, especially girls, tended to report greater rejection by friends over nine months. Support was found for the depression contagion effect but not for the anxiety contagion effect. Little support was found for the hypothesis that interpersonal behaviors mediated these effects. Future research should explore whether some interpersonal behaviors are more likely to be exhibited in clinical samples and how these behaviors may have overlapping, additive, and/or interactive effects on socioemotional adjustment. Applied contributions of this research for the development of interpersonal interventions for youth with internalizing symptoms are discussed.

### Internalizing Symptoms and Friendships in Adolescence:

#### Considering the Role of Interpersonal Behavior in Rejection and Contagion Effects

Internalizing symptoms are relatively common in childhood and adolescence. When considering internalizing problems in research, depression and anxiety symptoms typically are discussed. Depressive symptoms include negative affect, anhedonia, and somatic complaints such as poor sleeping and/or eating patterns (Klein, Dougherty, & Olino, 2005; Kovacs, 1992). Anxiety symptoms often include physiological hyperarousal, intense fear and/or worry, and negative affect (Reynolds & Richman, 1978; Silverman & Ollendick, 2005). Internalizing symptoms are associated with impairment across multiple domains of social, cognitive, and behavioral functioning such as negative cognitive attributions and the experience of stressful events (Kazdin & Marciano, 1998; Lewinsohn, Solomon, Seeley, & Zeiss, 2000). Additionally, internalizing symptoms can co-occur with externalizing symptoms such as substance abuse and conduct problems (Kazdin & Marciano, 1998). Given that internalizing symptoms are associated with a host of difficulties in many contexts, a better understanding of factors which contribute to the development and maintenance of such symptoms in youth is needed. One particular factor which has received increasing attention in the literature is peer relations.

In general, peer relations have been shown to protect youth against the development of internalizing symptoms (e.g., Bagwell, Newcomb, & Bukowski, 1998; Vernberg, 1990), and youth with heightened internalizing symptoms experience problems with peers (e.g., Dumas, Neese, Prinz, & Breckman, 1996; Ollendick, Weist, Borden, & Greene, 1992; Panak & Garber, 1992; Rudolph, Hammen, & Burge, 1994). Nevertheless, some youth are able to establish and maintain close, dyadic friendships, despite higher



levels of internalizing problems (Hogue & Steinberg, 1995). These relationships may be especially important for youth who currently experience emotional difficulties, like depression or anxiety symptoms.

Ironically, however, the friendships of these youth may be affected by their emotional adjustment problems. The literature indicates that internalizing symptomatology in youth may lead to friendship problems (e.g., Bagwell et al., 1998). Although the literature suggests that emotional adjustment problems are associated with friendship problems, very little is known about the *processes* by which youths' emotional adjustment affects their friendships. To address this important issue, the current research examines the conversational processes that may help to explain how youths' emotional adjustment influences their friendship outcomes.

It is equally important to consider the effects of youths' emotional adjustment problems on their friends. Unfortunately, relatively little is known about the effects of having friendships with youth with depressed or anxious symptomatology. Some research indicates that having a friend who is depressed may influence youths' own emotional adjustment in a negative way. For instance, youth with a depressed friend have been observed to experience an increase in their own depressive symptoms over time (Stevens & Prinstein, 2005). Yet almost nothing is known about the interpersonal processes by which friends of youth with internalizing symptoms come to experience emotional difficulties themselves. Given the potentially negative implications for the emotional adjustment of youth who befriend peers with emotional problems, the current research fills an important gap in the literature by examining conversational processes between

friends that may account for one youth's internalizing symptoms influencing his or her friend over time.

In particular, an observational methodology is used to address two main research aims. First, the study examines conversational processes between friends that may help to explain associations between one's own initial internalizing symptomatology and friendship problems nine months later. Second, the proposed research addresses associations between having a friend with internalizing symptomatology and the development of emotional adjustment problems oneself nine months later. The current research includes 7<sup>th</sup> and 10<sup>th</sup> grade adolescent girls and boys, which allows for the investigation of gender and developmental differences.

#### Role of Peers in Development

Individuals' needs for social provisions such as companionship and acceptance are thought to organize their personal relationships across the lifespan (Sullivan, 1953). It has been demonstrated that friends are important influences on youths' development throughout childhood and adolescence (e.g., Berndt & Ladd, 1989). However, the relative importance of and provisions granted by different types of relationships may vary according to developmental period (see Buhrmester, 1996).

Sullivan's Interpersonal Theory of Psychiatry (1953) provides a useful framework for organizing our understanding of the relative importance of interpersonal relations across development. In infancy and early childhood, parents are youths' primary caregivers and sources of social support. As children move into middle childhood, youth are characterized by a need for acceptance which is satisfied by participation in the peer group in general. Adolescence is a particularly crucial period for youths' social and

emotional development. At this time, the need for interpersonal intimacy develops and is met by participation in dyadic friendships. The importance of friends increases greatly and becomes central in the lives of youth (Buhrmester & Furman, 1987; Rubin, Bukowski, & Parker, 1998). For example, adolescents spend larger amounts of time with friends and less time with parents (Buhrmester & Prager, 1995). Later in adolescence and early in adulthood, youth gain necessary social provisions from romantic partnerships such as dating relationships.

Consistent with Sullivan's theory indicating that functioning in the peer group in general is especially important during middle childhood and functioning in dyadic friendships is especially important in adolescence, a distinction is made in the literature between the unique constructs of peer group functioning and functioning in dyadic friendships (see Asher, Parker, & Walker, 1996). Peer group functioning commonly refers to peer acceptance or rejection. Well-accepted youth are held in positive esteem by the peer group while rejected youth are disliked and viewed negatively by their peers. Acceptance / rejection is typically considered to be a one-way (i.e., unilateral) construct (e.g., Bukowski & Hoza, 1989), given that the focal (i.e., accepted or rejected) youth's feelings about the peer group are not considered when assessing his or her peer acceptance or rejection. Acceptance and rejection may be assessed by having peers nominate youth whom they "like most" or "like least" (Coie, Dodge, & Coppotelli, 1982). Alternatively, acceptance scores may be obtained by averaging peer ratings of how well they like to play with, work with, or spend time with individual youth (e.g., Asher & Hymel, 1981; Rose, Swenson, & Carlson, 2004).

On the other hand, youths' dyadic friendships are considered to be reciprocal and mutually influential partnerships which require consideration of both members in assessment. Friendships can be defined as voluntary relationships in which members are attracted to and take pleasure in each other's company (Bukowski, Newcomb, & Hartup, 1996). In assessing different aspects of youths' friendships, a variety of methods can be employed. In particular, indices of functioning in dyadic friendships may include having friends, friendship quality and contact, and friendship stability.

To assess whether or not youth have friends, sociometric friendship nominations often are employed (i.e., "Name your three best friends"). The existence of dyadic friendships is defined in terms of reciprocal choice. That is, a youth is identified as having a friend when the youth is nominated by another child as a friend and also reciprocates that choice (Asher et al., 1996).

The quality of youths' friendships also is important to consider as an indicator of dyadic friendship adjustment (Hartup 1992). Specifically, characteristics of friendship may vary from dyad to dyad (Aboud & Mendelson, 1996). Characteristics of friendships include but are not limited to reciprocity of affection, companionship, help and guidance, conflict resolution, and emotional closeness (Parker & Asher, 1993). For example, youth in well-functioning friendships may be characterized by high levels of these features, whereas youth in lower-functioning or problematic friendships may be characterized by low levels of these positive features as well as by high levels of negative friendship quality. Typically, measures of friendship quality (e.g., Friendship Quality Questionnaire, Parker & Asher, 1993; Network of Relationships Inventory, Furman & Buhrmester,

1985) assess both positive (e.g., affection, companionship, intimacy) and negative (e.g., conflict) aspects of dyadic friendships.

Contact with friends also may be an important index of friendship functioning. Friendship contact may be conceptualized as seeking out rather than avoiding interaction with a friend. Examples of friendship contact may include initiating activities with a friend (e.g., making plans with a friend) and seeking opportunities to be near the friend (e.g., trying to spend time with the friend at school) and to talk with the friend (e.g., speaking on the phone with a friend). While engagement in shared activities and spending time together have long been acknowledged as central components of friendship quality (e.g., Parker & Asher, 1993), initiation (or avoidance) of contact with friends in this way has not been explicitly investigated in research to date. Nevertheless, initiation of contact with friends may have important implications for friendship adjustment. For example, deficits in friendship contact may reflect mounting problems within the friendship. Avoiding contact with friends (e.g., failing to return phone calls, initiating plans with other peers instead of their friend) may represent a form of within-friendship rejection or withdrawal. That is, youth who exhibit these avoidance behaviors may be attempting to distance themselves from their friend.

A last indicator of dyadic friendship functioning to be considered is friendship stability (e.g., Prinstein, Borelli, Cheah, Simon, & Aikins, 2005; Rose, Carlson, Luebke, Schwartz-Mette, Smith, & Swenson, 2011). With age, children form increasingly stable friendships (e.g., Ladd, 1988), suggesting that a developmental task for older children (i.e., adolescents) is to engage in friendships that are durable. To classify a friendship as

stable, youth must have the same reciprocated friendship at an initial and subsequent assessment(s) (Newcomb & Bagwell, 1996).

#### Relations of Peer Group Functioning and Participation in Dyadic Friendships with Adjustment Outcomes

Given the theoretical basis for the importance of peer relations for youth, it is not surprising that peer relations problems are associated with a host of difficulties. There is a great deal of research indicating that peer problems in general and within dyadic friendships in particular are associated with negative adjustment outcomes, such as school dropout, academic problems, and victimization (Asher & Parker, 1989; Parkhurst & Asher, 1992; Perry, Kusel, & Perry, 1988). One indicator of adjustment that has received increased attention in the literature is emotional adjustment.

Problems in both peer group and dyadic friendship functioning have been associated with internalizing symptoms. In terms of peer group functioning, peer rejection has been shown to be related to higher levels of depression (e.g., Bagwell et al., 1998; Cole, 1990; Kistner, David, & White, 2003; Kupersmidt & Patterson, 1991; Panak & Garber, 1992). Peer rejection also is associated with anxiety in middle childhood and early adolescence (Rudolph et al., 1994).

In addition, problems in dyadic friendship functioning are associated with internalizing symptoms. In terms of depressive symptoms, youth with fewer friends in childhood have higher levels of depression in adulthood (Bagwell et al., 1998). In terms of friendship quality, aspects of positive friendship quality have been associated with less depression (Vernberg, 1990), while negative aspects of friendship quality, such as conflict, have been associated with higher levels of depression (Demir & Urberg, 2003;

Hussong, 2000; LaGreca & Harrison, 2005). Fewer studies have addressed the links between friendship stability and depression; however, one study found a link between depressive symptoms and unstable friendships (Prinstein et al., 2005). Much less work has focused on the relation between friendship functioning and general anxiety symptoms. It is reasonable to expect that having problems in dyadic friendships could contribute to worries and concerns that are characteristic of anxiety. However, research to date is mixed regarding this relation (Bagwell et al., 1998; Fordham & Stevenson-Hinde, 1999).

Nevertheless, this body of research suggests a link between peer group and dyadic friendship functioning and internalizing symptoms. This work typically is motivated by the idea that peer problems lead to internalizing behaviors, and the relatively few longitudinal studies that do exist tend to address this direction of effect (Bagwell et al., 1998; Dumas et al., 1996; Kiesner, 2002; Kupersmidt & Patterson, 1991; Panak & Garber, 1992; Ollendick et al., 1992). However, it is equally important to consider how internalizing symptoms contribute to peer problems, which is a major goal of the current research.

### The Current Study

#### *Research Aim 1: Influence of Youths' Internalizing Symptoms on Friendship Adjustment*

The first aim of the current research is to examine the relation between initial internalizing problems and later problematic friendship functioning. In particular, a series of models tested whether initial depression and anxiety symptoms were related to both perceived and actual rejection by a friend nine months later. Perceived rejection was assessed by examining the focal youth's perceptions of friendship quality, youths' self-

reported withdrawal from the friend, and youths' report of termination of the friendship. Actual rejection indices included the friend's perceptions of friendship quality, friends' reported withdrawal from the focal youth, and friends' report of termination of the friendship. The following sections discuss the hypotheses that depression and anxiety symptoms will lead to increased rejection by a friend over time.

*Depression and Anxiety as Predictors of Rejection in Friendship*

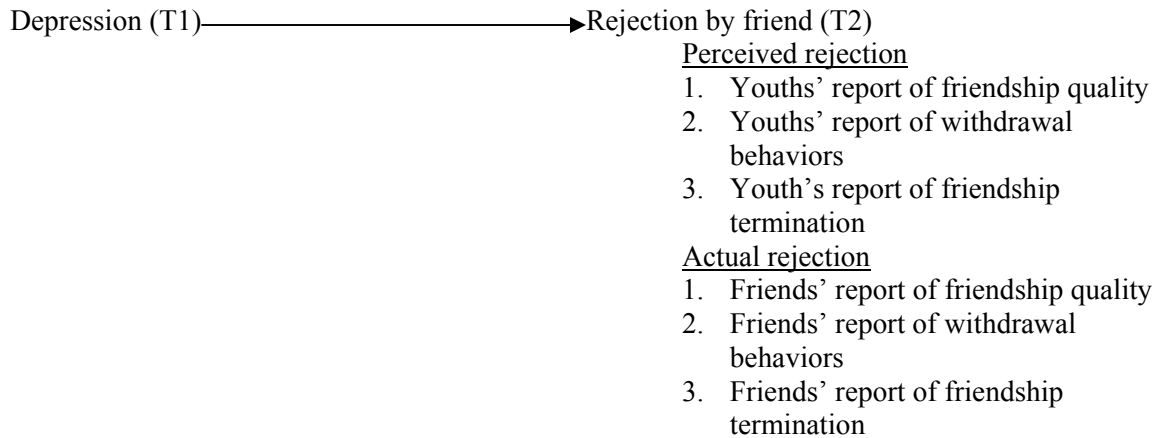
*Depression.* A first purpose of the current study is to demonstrate a link between youths' depression and later rejection by a friend. The current research considered both perceived rejection (youths' own perceptions of lower friendship quality, youths' report of withdrawal from the friend, and youths' report of friendship termination) and actual rejection (friends' reports of lower friendship quality, friends' report of withdrawal from the depressed youth, and friends' report of friendship termination). In terms of the link between depression and perceived rejection, the negative affect characteristic of depressed youth may color youths' perceptions of their friendships. Specifically, depressed youth may have feelings of worthlessness and inappropriate guilt which may result in dysfunctional thoughts such as, "No one likes me" or other perceptions of social dissatisfaction or victimization (De Los Reyes & Prinstein, 2004). These thoughts may lead youth to report problems in their friendship, withdraw from the friendship, and/or terminate the friendship altogether. In terms of the link between depression and actual rejection, the social withdrawal, loss of interest or pleasure in activities that were once enjoyable, and irritability characteristic of depressed youth may result in their friends perceiving the friendship as lower in quality, avoiding contact with them (e.g., not returning telephone calls, reducing social contact), and/or terminating the friendship.



Despite reason to believe that the link between depression and interpersonal rejection in friendships may exist, surprisingly little research has been conducted to investigate this relation. Peer relations research suggests that depression is associated with peer group rejection (Dumas, et al., 1996; Kiesner, 2002; Panak & Garber, 1992; Stice, Ragan, & Randall, 2004), but this research does not speak to rejection within dyadic friendships. In terms of dyadic relationships, the adult literature indicates that depression is associated with rejection by strangers (Coyne, 1976) and college roommates (Joiner, Alfano, & Metalsky, 1992) but does not address rejection within close friendships or in youth.

Only a few studies examine associations between depression and rejection by a friend in youths' peer relations. Depression has been linked prospectively with decreases in self-reported positive friendship quality over three years for girls in middle childhood (Rudolph, Ladd, & Dinella, 2007). Regarding adolescent friendships, only one study examines associations between depression and rejection by a friend. Prinstein and colleagues (2005) provide some support for the relation between heightened depressive symptoms and rejection by a close, reciprocal friend. In boys, depression was associated prospectively with perceived negative friendship quality. For girls who were high in reassurance-seeking, depression was related to decreasing positive friendship quality as reported by their friends. Despite this promising support for the hypothesized association between depression and rejection by a friend, it would be useful for this relation to be examined in additional samples of adolescent friends. The current study also sought to further extend the previous work by including additional indicators of rejection by the friend, specifically friendship withdrawal and friendship termination.

**Hypothesis 1a:** Initial depression will predict later rejection by a friend

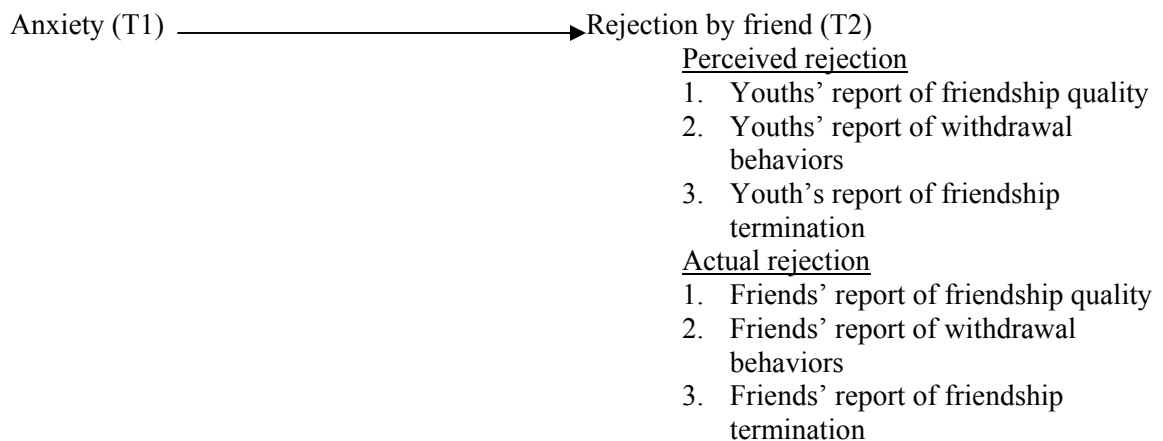


*Anxiety.* Although the majority of research on emotional adjustment and interpersonal rejection focuses on depressive symptoms, it is entirely plausible that anxious youth may suffer similar relationship consequences as a result of their emotional adjustment difficulties. Given anxious youths' heightened sensitivity and worry, they may be likely to perceive rejection or hostility from friends (Bell-Dolan, 1995). That is, if anxious youth worry about their friendships or worry about how their anxiety may affect their friendships, they also may be likely to perceive their friendships to be lower in quality, withdraw from the friendship, and/or terminate the friendship. Further, the worry, fear, irritability, interpersonal sensitivity, and physiological hyper-arousal often exhibited by anxious youth may be viewed negatively by their friends. Friends of anxious youth may perceive youths' anxious symptoms as requiring more attention and effort within the friendship than they want or are willing to give. This may result in friends of anxious youth perceiving the friendship as lower in quality, avoiding contact with the anxious youth, and/or terminating the friendship.

Although it is likely that anxiety, like depression, is associated with friendship difficulties, almost nothing is known about the effects of anxiety within the context of youths' reciprocal friendships. With regard to the link between anxiety and perceived

rejection, one study tested the concurrent relation between anxiety and self-perceptions of friendship quality (Fordham & Stevenson-Hinde, 1999). As expected, among older youth (mean age 10 years), anxiety was associated with lower positive friendship quality. Surprisingly, among younger youth (mean age 9 years), anxiety was associated with lower negative friendship quality. It may be that younger children's anxious symptoms are less problematic for their friendships. However, the finding that anxiety is associated with lower positive friendship quality for older youth needs to be replicated and tested with a prospective design. With regard to the link between anxiety and actual rejection, some studies suggest that anxiety is associated with general peer group rejection (e.g., Rudolph et al., 1994; Strauss, Lahey, Frick, Frame, & Hynd, 1988). However, no research has tested the links between anxiety and actual rejection by a friend. Thus the current study fills an important gap by examining the prospective relations of anxiety with actual rejection by a friend.

**Hypothesis 1b:** Initial anxiety will predict later rejection by a friend



*Conversational Processes as Putative Mediators*

Though there is at least limited support for the idea that depression and anxiety are associated with peer problems, including problems in friendships, very little is known about *why* youth with internalizing problems experience rejection by friends. One

possibility is that youth with emotional adjustment problems exhibit particular behaviors which may be viewed negatively by their friends and may be associated with eventual rejection. One context in which such behaviors may be exhibited is youths' conversations (i.e., self-disclosure) with friends.

An additional goal of the current study was to learn why youths' internalizing symptoms are associated with maladaptive friendship outcomes. It was hypothesized that particular communication patterns may be partially responsible for the relation between internalizing symptoms and negative friendship outcomes. First, the role of communication in dyadic friendships is discussed. Second, particular forms of interpersonal communication examined in the current study are described.

Communication within dyadic friendships often involves self-disclosure. Self-disclosure is commonly defined as the revealing of personal information (e.g., thoughts, feelings, self-evaluations, important past experiences) to others (Altman & Taylor, 1973; Cozby, 1973; Derlega, Metts, Petronio, & Margulis, 1993). The majority of the self-disclosure literature acknowledges reciprocity as a norm (e.g., Cozby, 1973; Derlega et al., 1993; Jourard, 1971), meaning that it is expected that the recipient of self-disclosure will, in turn, divulge similarly personal information (Chaikin & Derlega, 1974; Miller & Kenny, 1986).

Self-disclosure is an important aspect of adolescent friendships. As noted previously, it is during this particular developmental stage that friends become increasingly important sources of social support (Sullivan, 1953). For example, disclosure to peers increases during adolescence, whereas disclosure to parents does not (Buhrmester & Prager, 1995). This likely reflects not only increased time spent with

peers, but also the increasingly important role of peers in terms of providing social support. Notably, Sullivan emphasized the importance of intimacy in adolescent friendships and suggested that self-disclosure was a vehicle for emotional closeness (1953). Typically, self-disclosure within youths' friendships may serve a variety of purposes including social validation, social control, self-clarification, self-expression, and relationship development (Buhrmester & Prager, 1995). Nevertheless, it is possible that particular variants of normative self-disclosure processes are associated with maladaptive friendship functioning.

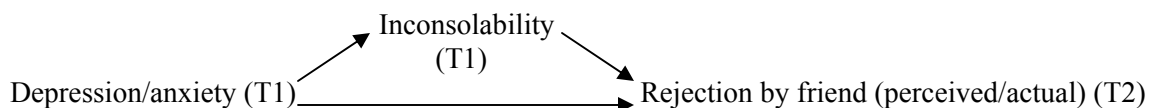
For example, there is limited support in the literature that particular self-disclosure processes may contribute to depressed individuals' susceptibility to rejection by others. Specifically, the related constructs of excessive reassurance-seeking and negative feedback-seeking have been examined as moderators of the relation between depression and rejection. Excessive reassurance-seeking is defined as repeated requests for assurance from close others that one is truly liked and/or cared for (Joiner et al., 1992), while negative feedback-seeking refers to the tendency to solicit negative feedback and criticism from relationship partners (e.g., Borelli & Prinstein, 2006). In terms of the adult research on depression, excessive reassurance-seeking in adulthood has been associated with rejection by close others (e.g., roommate; Joiner et al., 1992). With respect to adolescence, depressed youth who were also high in reassurance-seeking had friends who reported their friendships as deteriorating in positive friendship quality over time (Prinstein et al., 2005). Additionally, negative feedback-seeking in depressed adolescents also was prospectively associated with perceived criticism from a best friend for girls (Borelli & Prinstein, 2006).

While the research support for these types of interpersonal behaviors as contributing to depressed youths' risk for rejection by a friend is encouraging, little else is known about other forms of disclosure that may also play a role in the relation between depression and rejection by a friend for adolescent youth. Further, there is no research support for specific processes by which anxious youth may come to be rejected by friends. Consistent with the call for more research to identify mechanisms by which individuals with emotional adjustment problems come to experience interpersonal problems (Joiner et al., 1992), the current research investigates two types of self-disclosure behavior, inconsolability and conversational self-focus, which may shed light on the processes by which depressed and anxious youth come to be rejected by peers.

*Inconsolability.* The current research examined inconsolability as a potential mediator of the relations of depression and anxiety with rejection by a friend. Researchers have suggested that individuals with affective problems may exhibit inconsolability, or a lack of reactivity to positive stimuli (e.g., First, Spitzer, Gibbon, & Williams, 1995). For the purposes of this study, inconsolability was defined as the persistent expression of negative affect in the face of positive feedback from a friend during conversations about problems. The current study hypothesized that youth with both depressive and anxious symptoms would exhibit inconsolability during conversations with friends about problems, which would in turn contribute to later rejection by their friends.

**Hypothesis 2a:** Inconsolability will mediate the hypothesized relation between focal youth's initial depression and later rejection by a friend

**Hypothesis 2b:** Inconsolability will mediate the hypothesized relation between focal youth's initial anxiety and later rejection by a friend



First, depressed youth were proposed to exhibit inconsolability during self-disclosure to friends. Consider a conversation about problems which takes place between a depressed youth and his or her friend. Negative and/or dysfunctional cognitions associated with being depressed may act as a negative filter for incoming stimuli, thus preventing the youth from taking an alternate, or more positive, perspective on their situation. Depressed youth also may be inconsolable due to the cognitive focus on personal concerns (i.e., inability to disengage from thinking about their own problems) associated with depression. In fact, failure to disengage from such a focus on negative events and/or problems (i.e., rumination) may result in heightened negative affect and depressed cognitions (Pyszczynski & Greenberg, 1987). Depression in youth also may be exhibited as a loss of pleasure in activities that were once enjoyable, which may result in an inability to experience positive affect, even for a short time. Further, irritability and fatigue characteristic of depression in youth also may cause an unwillingness or lack of energy to change mood.

Anxious youth also were expected to demonstrate inconsolability during self-disclosure about problems. The physiological hyperarousal associated with anxiety in youth may make it difficult for youth to relax during conversations with their friends about problems. Further, the persistent rumination about the possibility of negative outcomes exhibited by some anxious youth (Albano, Chorpita, & Barlow, 2003) may prevent them from gaining the benefits of self-disclosure like catharsis of negative emotions. Thus the link between negative thoughts and negative emotions (e.g., Beck, 1995), may spur a cycle from which anxious youth may find it difficult to disengage, thus demonstrating inconsolability during problem talk conversations.

Inconsolability exhibited by youth may then lead to perceived and actual rejection by their friends. If inconsolable youth perceive their friends as being unable to comfort them (i.e., reduce their distress) during conversations about problems, they may perceive their friendships to be lower in quality, avoid their friends, and/or terminate the friendship. In terms of actual rejection, the process of continually offering support to an individual who fails to respond in a positive manner may result in friends feeling ineffective and viewing the process as unrewarding and possibly unpleasant. Friends of inconsolable youth may grow frustrated over repeated attempts to help them and thus disengage from their role as confidant and cease to provide assistance. This frustration may manifest itself in friends' perceiving the friendship as lower in quality, withdrawing, and/or terminating the friendship. This possibility is consistent with the adult literature suggesting that college roommates of depressed individuals experience frustration with depressed individuals' inability to release focus on negative affect (Joiner et al., 1992).

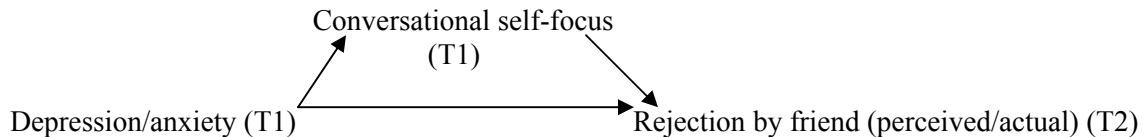
*Conversational self-focus.* The current research also investigated conversational self-focus as a potential mediator of the relations of depression and anxiety with rejection. Conversational self-focus is defined as the tendency of one conversation partner to re-direct a conversation to focus on herself or himself (Schwartz-Mette & Rose, 2009). That is, youth who exhibit conversational self-focus may exhibit persistent attempts to focus conversations on themselves and/or their problems during self-disclosure with a friend. The literature acknowledges the existence of self-focus and, although it has been discussed as potentially maladaptive (e.g., Cozby, 1973; Schwartz-Mette & Rose, 2009; Vangelisti, Knapp, & Daly, 1990), the construct has not been studied extensively. The current study hypothesized that youth with both depressive and



anxious symptoms would exhibit conversational self-focus during conversations with friends about problems.

**Hypothesis 3a:** Conversational self-focus will mediate the relation between focal youth's initial depression and later rejection by a friend

**Hypothesis 3b:** Conversational self-focus will mediate the relation between focal youth's initial anxiety and later rejection by a friend



Youth with depressive symptoms may be especially likely to self-focus during conversations with friends about problems. That is, as depressed individuals tend to exhibit cognitive biases to focus on the self (e.g., Hamilton & Deemer, 1999; Pyszczynski & Greenberg, 1987), it is highly likely that this cognitive self-focusing bias would be reflected during conversations about problems. For instance, a depressed youth who finds it difficult to get his or her mind off of problems may utilize conversations about problems to voice his or her concerns. The depressive, cognitive self-focusing bias may impair the depressed youths' ability to respond to social cues (such as his or her friend wanting to discuss problems) that would thus impair a depressed youths' ability to disengage from discussing his or her problems. In fact, a smaller, single-assessment observational study of adolescent friendship dyads suggests that youth with higher levels of depressive symptoms exhibited self-focus during problem talk conversations with friends (Schwartz-Mette & Rose, 2009). This finding is in line with other work with adults which found that depressed individuals were more likely than non-depressed individuals to deliver higher numbers of negative self-statements and were more likely to respond to a conversation partner's self-disclosure with self-disclosure focused on the self (Jacobsen & Anderson, 1982). Moreover, a study utilizing naturalistic observation

found that linguistic self-focus (i.e., frequent self-referencing in conversation) emerged as the only behavioral process diagnostic of young adults' depressive symptoms (Mehl, 2006).

Anxious youth also were expected to exhibit self-focus during conversations about problems with their friends. Youth with anxious symptomatology may have a difficult time disengaging from their problems, due to the persistent and consuming nature of the worry associated with anxiety. This inability to disengage may prevent anxious youth from allowing friends adequate time to discuss their problems during conversations. In line with these thoughts, results from an initial study of conversational self-focus in adolescent friendships indicate that youth with anxious symptoms exhibit self-focused conversational styles during problem talk conversations with friends (Schwartz-Mette & Rose, 2009).

Conversational self-focus exhibited by depressed and anxious youth in turn may lead to rejection by a friend. Youth who self-focus during conversations about problems may alienate their friends and experience rejection by these friends. Friends of youth who self-focus may perceive the friendship to be lower in quality, as they fail to get their needs met (e.g., help and guidance) during conversations about problems (Schwartz-Mette & Rose, 2009). Further, youth who persist in talking about their own problems may fatigue their friends to the point of their avoiding contact with or terminating the friendship with the self-focusing youth. Finally, as friendship quality actually deteriorates, self-focused youth may also perceive their friendships as being lower in quality, withdraw from the friendship, and/or terminate the friendship.

*Bi-directional Associations of Depression and Anxiety with Rejection*

In addition to the hypothesis that initial internalizing symptoms would be associated with later friendship problems, it also was acknowledged that initial perceived and actual rejection by a friend may predict increased depressive and anxiety symptoms. This hypothesis is consistent with work previously reviewed indicating a relation between peer problems and internalizing symptoms. Ironically, a bidirectional feedback loop may exist such that friendship rejection caused by internalizing symptoms may, in fact, exacerbate existing internalizing symptomatology. Accordingly, the current research tested whether initial perceived and actual rejection by a friend predicts increased depression and anxiety symptoms in youth over time.

**Hypothesis 4a:** Friendship rejection will predict later depression symptoms for youth

**Hypothesis 4b:** Friendship rejection will predict later anxiety symptoms for youth

Rejection by friend (perceived/actual) (T1) —————> Depression/anxiety (T2)

*Research Aim 2: Influence of Friends' Internalizing Symptoms on Youths' Adjustment*

In the following section, the aim of the research shifts from focusing on the effects of youths' internalizing symptoms on their friendships to focusing on outcomes related to the friends themselves. The purpose of the following section is to discuss the hypotheses that depression and anxiety symptoms in youth will spread to their friends over time (i.e., contagion of internalizing symptoms within friendships). This process is important to investigate because depressed and anxious youth, while at risk themselves, may pose an additional risk to their friends by influencing their friends' emotional adjustment in negative ways. While the adult literature demonstrates a contagion effect for depression, relatively few studies address this effect in adolescence. Further, only one study to date has addressed the potential for a contagion effect of anxiety in adolescent

friendships. The current research seeks to confirm the contagion effect for depression, demonstrate additional support for an anxiety contagion effect, and to help to explain these contagion effects with conversational processes.

*Contagion effects: Relations between youths' and friends' internalizing symptoms*

*Depression.* The current study tested a contagion effect for depression in adolescent friendships. As a result of being in consistent, close proximity to individuals who exhibit depressive symptoms, friends of depressed youth may begin to experience symptoms of depression as well. In particular, friends of depressed youth may initially experience these symptoms when with their friend, and these symptoms then may spill into other aspects of their individual experience. The study hypothesized that depression in one friend at will be positively associated with depression in the other friend nine months later.

The depression contagion effect is relatively well-documented within the adult literature (for a review, see Joiner & Katz, 1999). Past studies suggest depressive symptoms can be transmitted between strangers (e.g., Hammen & Peters, 1978; Gotlib & Robinson, 1982; Strack & Coyne, 1983), roommates (e.g., Joiner, 1994; Joiner et al., 1992; Sanislow, Perkins, & Balogh, 1989; Siegel & Alloy, 1990), spouses/relatives (e.g., Coyne et al., 1987; Jacob, Frank, Kupfer, & Carpenter, 1987; Ruscher & Gotlib, 1988), and close friends (Rook, Peitromonaco, & Lewis, 1994; Segrin, 1993).

Far fewer studies have examined depression contagion in youth. This is unfortunate, given that depression contagion could be especially crucial to study in this developmental period. Not only are youth at increasing risk for developing depressive symptoms at adolescence, but forming and maintaining intimate friendships are central

developmental tasks at this time (e.g., Furman & Burhmester, 1985; Sullivan, 1953). Clearly developmental research highlights a myriad of benefits for youth of having close friendships (e.g., Bagwell et al., 1998; Berndt & Keefe, 1995; Parker & Asher, 1993), yet Coyne's theory (1976) suggests that there may be serious downsides to friendships if the friend is depressed.

Only four studies have examined depression contagion in youths' friendships. Stevens and Prinstein (2005) examined depression contagion over an 11-month period in the friendships of early adolescents (398 sixth- and eighth-grade students). The authors found that friends' initial depressive symptoms significantly predicted increases in youths' depressive symptoms over time. In the second study, Prinstein (2007) noted the same effect over 18 months in a smaller sample of older adolescents (100 eleventh-grade students). Giletta and colleagues (2011) also found support for depression contagion (especially among reciprocal best friendships) in adolescence over 12 months. Finally, Schwartz-Mette and Rose (in press) replicated the depression contagion effects previously found for adolescence and demonstrated that depression contagion was present in childhood friendships as well. The current study sought to replicate the depression contagion effect for adolescent friends over a nine-month period.

**Hypothesis 5a:** Initial depression in Friend 1 will spread to later depression in Friend 2

Depression in Friend 1 (T1) —————> Depression in Friend 2 (T2)

*Anxiety.* It is entirely likely that anxiety in one friend may spread to another, as with depression. Youth who are in frequent and close contact with anxious youth may begin to experience anxiety themselves. Specifically, continuous exposure to a friend's anxiety symptoms such as physiological hyperarousal, nervousness, worry, and irritability may result in youth experiencing anxiety symptoms within the context of their

friendship and then in their individual experience. The current study tested the hypothesis that anxiety in one friend will spread to anxiety in the other friend over nine months.

One study in the adult literature examined the possibility of a contagion effect for anxiety in college roommates. In particular, Joiner (1994) found that anxiety in one roommate did not affect the anxiety symptoms of the other roommate over a 3-week period. However, this does not mean that such an effect could not be present between adolescent friends. In fact, given that adolescent friendships are closer relationships and occur at an earlier developmental stage which is characterized by heightened salience and intensity of friendships, it is likely that anxiety contagion could occur in this context. In fact, in the only study that has examined anxiety contagion in youths' friendships to date, Schwartz-Mette and Rose (in press) found that anxiety contagion does occur in youths' friendships and may be particularly salient for females and adolescents. The current study seeks to replicate this initial work by examining the potential of anxiety contagion within adolescents' dyadic friendships.

**Hypothesis 5b:** Initial anxiety in Friend 1 will spread to later anxiety in Friend 2

Anxiety in Friend 1 (T1)  $\longrightarrow$  Anxiety in Friend 2 (T2)

*Understanding Contagion Effects of Depression and Anxiety: Conversational Processes*

Initial findings regarding the existence of a contagion effect for internalizing symptoms are encouraging, despite the relatively small number of studies which have examined this issue in adolescent friendships. However, it remains problematic that even less is known about the potential processes which may help to explain why internalizing symptoms in one friend spread to another over time. Given that self-disclosure may be a common means by which youth with internalizing problems express feelings, share problems, and gain support and/or problem-solving assistance from friends, particular

conversational processes exhibited by these youth may assist in explaining the transmission of emotional adjustment problems from one friend to another.

Despite the call for examination of potential processes which may help to explain contagion effects (Coyne, 1991; Joiner et al., 1992; Joiner, 1994; Stevens & Prinstein, 2005), very few studies have addressed this issue. In fact, studies which address additional variables which may influence depression contagion have examined potential *moderating* variables of the contagion effect such as reassurance-seeking (e.g., Joiner, 1994) and potential mediating variables such as depressogenic attributional style (Stevens & Prinstein, 2005), but, to date, only one study has identified a significant mediator of the contagion effect. In particular, Schwartz-Mette and Rose (in press) tested whether youths' reports of co-rumination with friends (i.e., excessive discussion of problems characterized by rehashing, speculating, and focusing on negative affect; Rose, 2002) mediated contagion effects. Results indicated that co-rumination mediated depression contagion for adolescents and that co-rumination mediated anxiety contagion in a sample of females and adolescents. The current study examined three conversational processes as potential mediators of the hypothesized contagion effects for depression and anxiety.

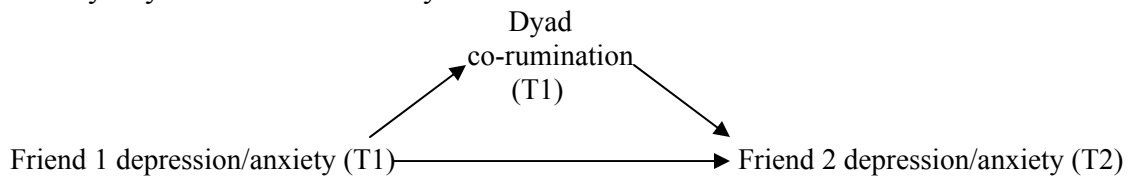
*Co-rumination.* The current research investigated co-rumination as a mediator of the hypothesized depression and anxiety contagion effects. As noted, co-rumination is a conversational process characterized by extensively discussing and revisiting problems, speculating about problems, and focusing on negative feelings (Rose, 2002). In the current study, it was hypothesized that youth with depression and anxiety symptoms will exhibit co-rumination during conversations with friends about problems, which would, in turn, lead to socialization of depression and anxiety symptoms in their friend.

Depressed and anxious youth were proposed to exhibit co-rumination during conversations about problems with friends. Given the negative cognitions and negative affect associated with depression in youth, depressed adolescents may have ample material about which to co-ruminate with friends. Likewise, anxious youth may experience worries and troubles about which they may be likely to co-ruminate with friends. Given the supportive nature of close friendships in adolescence, friends of depressed and anxious youth are likely to participate in this co-rumination in an effort to support and validate their friends' struggles. In fact, previous research suggests that both depressive and anxiety symptoms in youth predict increased co-rumination with friends concurrently (Rose, 2002) and over time (Rose, Carlson, & Waller, 2007).

Friends of depressed and anxious youth who engage in co-rumination may come to experience symptoms of depression and anxiety themselves. Because co-rumination involves a persistent negative focus which could interfere with other activities that could be distracting or more positive, friends of depressed and anxious youth may begin to experience negative affect and a preoccupation with troubles that are consistent with internalizing problems. Initial research indeed suggests that co-rumination predicts increased depression and anxiety symptoms over time at least for girls (Rose et al., 2007).

**Hypothesis 6a:** Co-rumination will mediate the hypothesized relation between initial depression in youth and later depression in their friends

**Hypothesis 6b:** Co-rumination will mediate the hypothesized relation between initial anxiety in youth and later anxiety in their friends





*Self-sacrificing conversational style.* The current study additionally investigated a self-sacrificing conversational style as a potential mediator of the contagion effects of depression and anxiety symptoms. Though such a style has not been investigated with respect to contagion of internalizing symptoms in adolescence, research suggests the existence of a self-sacrificing conversational style (e.g., emotional over-involvement; Fredman, Chambless, & Steketee, 2004). In the current study a self-sacrificing conversational style is described as a tendency of a conversation partner to defer discussing their own personal concerns in favor of discussing the personal concerns of others during conversations with friends about problems. Individuals who engage in such a style may minimize or downplay their own concerns in order to appear supportive of others' problems. The research hypothesized that depression and anxiety symptoms in youth would elicit a self-sacrificing conversational style in their friends, which in turn would lead to their friends to experience increases in depression and anxiety symptoms.

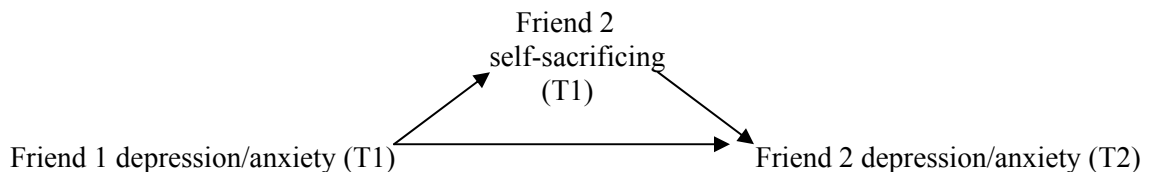
Depressive symptoms in youth were proposed to be associated positively with their friends' self-sacrificing conversational styles. For instance, depressive symptoms such as sad affect could lead friends to feel sympathy and obligation to engage in conversations about the depressed youth's problems. Friends of depressed youth may view themselves as primary sources of social support for the depressed youth and thus be more inclined to stifle personal concerns in favor of supporting their friend. Likewise, anxious symptoms in youth were hypothesized to elicit a self-sacrificing conversational style in their friends. Hearing about a friend's anxious concerns may prompt friends of anxious youth to assume a caretaking role instead of discussing their own problems or worries. Thus friends of anxious youth may similarly view themselves as important

sources of problem-solving assistance and be less likely to bring up personal concerns during conversations about problems.

The friends' self-sacrificing conversational style, in turn, was hypothesized to predict increases in the friends' own depression and anxiety. Youth who consistently focus on others' problems and downplay their own struggles may fail to get their own needs met in the friendship. Moreover, focusing excessively on the problems of the depressed or anxious youth may lead them to take on the depressed or anxious youth's problems as if they were their own and may lead them to feel personal responsibility for depressed or anxious youth's distress (see Zahn-Waxler, Cole, & Barrett, 1991, for a related discussion). In fact, over-involvement in others' problems has been linked with depression in past research (Gore, Aseltine, & Colten, 1993; Smith & Rose, 2011). The current study hypothesized that a self-sacrificing conversational style would at least partially mediate the hypothesized relation between depression and anxiety in youth and depression and anxiety in their friends.

**Hypothesis 7a:** A self-sacrificing conversational style (in Friend 2) will mediate the hypothesized relation between initial depression in youth and later depression in their friends

**Hypothesis 7b:** A self-sacrificing conversational style (in Friend 2) will mediate the hypothesized relation between initial anxiety in youth and later anxiety in their friends



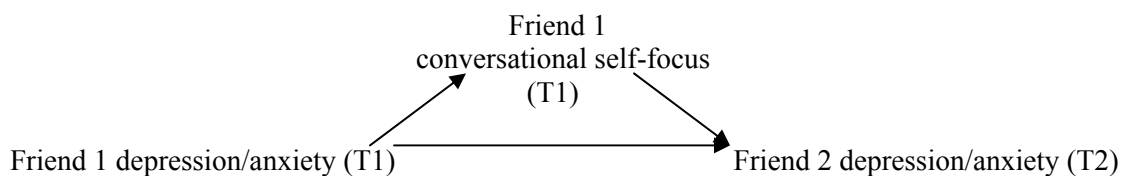
*Conversational self-focus.* Lastly, the current study examined the possibility that conversational self-focus partially mediates contagion effects for depression and anxiety symptoms in adolescent friendships. As discussed, conversational self-focus is defined as the tendency of one conversation partner to redirect a conversation to focus on his or her

own concerns (Schwartz-Mette & Rose, 2009). With regard to the study's first aim, it was hypothesized that conversational self-focus would be related to friendship problems. With regard to contagion effects, it further was hypothesized that depression and anxiety symptoms would be associated with conversational self-focus in youth, which would lead to increased depression and anxiety symptoms in their friends.

As noted, it was proposed that depressed and anxious youth would exhibit conversational self-focus during problem talk with their friends. Continually being directed to the role of listener during conversations with self-focused youth may result in friends' own concerns going unsupported. Normative self-disclosure (i.e., a give-and-take, reciprocal process; Cozby, 1973) between friends is associated with gaining positive functions of self-disclosure such as self-expression and self-validation (Buhrmester & Prager, 1995) and positive emotional adjustment (e.g., Parker & Asher, 1993). Friends of youth who self-focus, on the other hand, may miss out on these protective emotional adjustment benefits of normative self-disclosure. Additionally, friends who are repeated listeners to the neglect of their own problems may become emotionally fatigued. The lack of positive benefits from normative self-disclosure coupled with such feelings of emotional exhaustion may lead friends of youth who self-focus to experience negative affect, irritability, or other symptoms of depression and anxiety themselves.

**Hypothesis 8a:** Conversational self-focus (in Friend 1) will mediate the hypothesized relation between initial depression in youth and later depression in their friends

**Hypothesis 8b:** Conversational self-focus (in Friend 1) will mediate the hypothesized relation between initial anxiety in youth and later anxiety in their friends



### *Gender and Developmental Differences*

Addressing gender and developmental differences was an additional goal of the current research. The study allowed for the examination of both gender and developmental differences in mean levels of study variables as well as relations among variables. Participants were both males and females in same-sex friendship dyads in grades 7 and 10. This sample was selected in order to examine gender and age differences in early and middle adolescence.

#### *Gender Differences*

Consider first mean-level gender differences in study variables. In terms of emotional adjustment, girls typically experience higher levels of internalizing symptoms than boys, particularly in adolescence. Rates of depression are low in childhood for both genders and increase, especially for girls, in adolescence (Twenge & Nolen-Hoeksema, 2002; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). In terms of anxiety, females are more likely than males to experience anxiety symptoms in childhood and adolescence (Lewinsohn, Gotlin, Lewinsohn, Seeley, & Allen, 1998). Thus girls were expected to exhibit higher levels of both depression and anxiety than boys.

In terms of friendship adjustment, gender differences have been found for positive friendship quality in favor of girls (e.g., Prinstein et al., 2005; see Rose & Rudolph, 2006). In the current study, girls were expected to report higher friendship quality than boys. Because rejection within the context of dyadic friendships is understudied, it was unclear if gender differences would emerge in friends' withdrawal behaviors and/or termination of friendship. In terms of stability of friendship, research is mixed as to whether or not gender differences exist. Some studies find that, despite experiencing

higher levels of self-disclosure and intimacy, aspects of positive friendship quality associated with stability (Bowker, 2004), girls have friendships of shorter duration than boys (e.g., Benenson & Christakos, 2003; Kon & Losenkov, 1978). Other studies have failed to observe these gender differences (Berndt & Hoyle, 1985; Bukowski & Newcomb, 1984). Thus no specific hypotheses regarding gender differences in stability of friendship were proposed.

Finally, in terms of putative mediators (i.e., conversational processes), gender differences were expected in co-rumination and self-sacrificing conversational style. Existing studies suggest that girls spend more time in conversation (e.g., Moller, Hymel, & Rubin, 1992) and self-disclose more than boys (Buhrmester & Furman, 1987; Camarena, Sarigiani, & Peterson, 1990; Lansford & Parker, 1999; Rose, 2002). Additional studies support the idea that girls co-ruminate more than boys (Rose, 2002; Rose et al., 2007). This pattern of results also was expected in the current study. Gender differences also favor girls when considering empathy, or the degree to which children understand others' emotions (e.g., Ford, 1982; Roberts & Strayer, 1996; Tucker, Updegraff, McHale, & Crouter, 1999). Although existing studies have not examined self-sacrificing conversational styles, it is likely that girls will be more prone to adopting such a style, given their tendency to empathize with others.

It was unclear whether gender differences will emerge for inconsolability and / or conversational self-focus. Inconsolability is an understudied construct with no available studies speaking to the possibility of gender differences. In terms of conversational self-focus, the existence of a gender difference also is unclear. Preliminary examination of conversational self-focus yielded no mean-level gender differences (Schwartz-Mette &

Rose, 2009). Given girls' greater levels of self-disclosure in friendships, one may expect a gender difference to favor girls. However, girls' more empathetic style and prosocial style (Coie et al., 1982; Crick & Grotpeter, 1995; Paquette & Underwood, 1999; Rose & Asher, 1999) and greater ability to politely take turns in conversations (e.g., Maccoby, 1990) may prohibit them from dominating conversations in this way.

Additionally, the current study examined gender differences in relations among variables. In terms of the relations between internalizing symptoms and rejection by a friend, it was hypothesized that boys will be more likely than girls to reject friends with internalizing symptoms. Girls have been shown to report caring more than boys about having close dyadic friendships (Benenson & Benarroch, 1998). Girls also strongly value social support from friends (Maccoby, 1990). Given girls' stronger relationship orientation, they may be reluctant to reject friends when they exhibit internalizing symptoms. This gender difference was expected for all three indicators of rejection by a friend examined in the current study.

In terms of examining the relations of internalizing symptoms with rejection by a friend with regard to putative mediated processes, gender differences also were expected. For example, it may be that girls are more likely than boys to reject friends who exhibit conversational self-focus. Girls strongly value social support from friends (Maccoby, 1990) and tend to perceive their friendships to be higher in social support than boys (e.g., Colarossi & Eccles, 2000). Therefore, receiving low levels of social support or engagement from a self-focused friend may be especially upsetting to girls. Alternately, it was hypothesized that girls may be *less* likely than boys to reject an inconsolable friend over time. Girls who perceive themselves to be responsible to a friend for social support

to the neglect of their own concerns may also not perceive rejection of the friend as a viable option.

With regard to contagion effects, it was hypothesized that girls may be more likely to experience contagion of internalizing symptoms within their dyadic friendships. Studies indicate that girls have a greater tendency than boys to vicariously experience others' emotions (e.g., Bryant, 1982; Hanson & Mullis, 1985; Olweus & Endresen, 1998). Girls also are more likely to experience sadness or hurt in response to the distress of a peer (Menesini et al., 1997). Given girls tendency to experience emotion in this way within the peer context, they were expected to experience stronger contagion effects of depression and anxiety. This hypothesis is consistent with some past research examining depression contagion effects (Giletta et al., 2011; Stevens & Prinstein, 2005) and anxiety contagion effects (Schwartz-Mette & Rose, in press) within youths' friendships.

#### *Developmental Differences*

The study next considered mean-level developmental differences. In terms of internalizing symptoms, the patterns of developmental differences observed were expected to differ for depression and anxiety. Specifically, the incidence of depression increases greatly at adolescence for girls (Zahn-Waxler et al., 2000). Therefore older adolescent girls in this study may exhibit more depressive symptoms than younger adolescent girls. Developmental differences were not expected for boys. Anxiety symptoms, however, have shown to decrease with age for both boys and girls (e.g., Weems & Costa, 2005). This developmental difference also was expected in the current study.

Age differences also were expected with regard to friendship quality. In particular, older adolescents in the study were expected to report higher levels of friendship quality than younger adolescents. This hypothesis is consistent with past research which suggests that there is a general increase in positive aspects of friendship and a general decrease in negative aspects of friendship with age (e.g., Furman & Buhrmester, 1992). Further, it may be that this developmental difference is significant only for girls, as has been observed in past research (e.g., Rose, 2002). Given the lack of research on other indices of rejection (withdrawal from friend, termination of friendship) it was unclear whether developmental differences would emerge.

Additional age differences were expected with regard to some of the putative mediators of the relation between internalizing symptoms and rejection by a friend as well as mediators of the contagion effect. First, given that inconsolability is a relatively understudied conversational process, it was unclear whether age differences will emerge with regard to this construct. In terms of a self-sacrificing conversational style, it has been discussed that girls have a greater tendency than boys to vicariously experience others' emotions (e.g., Bryant, 1982; Hanson & Mullis, 1985; Olweus & Endresen, 1998). We also know that this gender difference is stronger for older youth (Rose & Rudolph, 2006). Thus an interaction between gender and grade was expected such that older girls will exhibit the highest levels of a self-sacrificing conversational style compared to boys and younger girls. In terms of co-rumination, in line with previous findings that co-rumination increases with age among girls (Rose, 2002), older girls were hypothesized to co-ruminate more than younger girls. No specific relations were expected with regard to differences in co-rumination between younger and older boys. Finally, in



terms of conversational self-focus, younger youth were expected to self-focus more than older youth. With age, youth experience an increase in perspective-taking ability and social-cognitive skills (Buhrmester & Prager, 1995); thus older youths' greater ability to empathize with friends' perspectives may prevent them from dominating conversations about problems.

Developmental differences in some of the relations among variables over time were expected. In terms of the mediated relations of internalizing symptoms and rejection by a friend, it was hypothesized that older youth would experience the particular conversational processes of inconsolability, self-sacrificing conversational style, and conversational self-focus as more negative than younger youth. Given the increasing importance of self-disclosure to peers with age (Buhrmester, 1996; Buhrmester & Prager, 1995; Furman & Buhrmester, 1992), these potentially maladaptive variants of normative self-disclosure may prove especially aversive, thus potentially influencing them to be more rejecting of internalizing youth who exhibit these particular conversational styles. In terms of mediated relations involving co-rumination, no specific developmental differences were expected.

In terms of contagion effects, it is unclear whether older youth are more susceptible to contagion of depressive and anxiety symptoms. To date, the majority of studies on depression contagion have included college-aged (e.g., Joiner, 1994) and middle adolescent samples (Giletta et al., 2011; Stevens & Prinstein, 2005; Prinstein, 2007). The three adolescent studies either included a narrow age range and did not test for developmental differences (Giletta et al., 2011; Stevens & Prinstein, 2005) or only one grade (Prinstein, 2007). Schwartz-Mette and Rose (in press) included both children

(grades 3 and 5) and adolescents (grades 7 and 9) but found no age group differences in depression contagion. However, results suggested that anxiety contagion may not be a particularly salient process for male friendships in childhood. Thus it was unclear whether developmental differences in the depression or anxiety contagion effects would emerge in the current study.

In terms of mediated contagion effects, the one study which has tested mediation of depression and anxiety contagion in youths' friendships indicated that co-rumination mediated depression contagion for adolescents and mediated anxiety contagion in a sample of females and adolescents (Schwartz-Mette & Rose, in press). The current study involves a larger sample, but it is unclear whether or not youth in grade 7 would necessarily differ from youth in grade 9 with regard to mediation of contagion effects.

## Method

### *Participants*

Data were collected across three consecutive summers from three cohorts of adolescents who had just completed either the seventh or tenth grades ( $Ns = 160, 234, 248$ ). Contact information for potential participants was obtained from the grade rosters of public school district in a Midwestern University town. Names were chosen at random with the constraints of recruiting roughly equal numbers of males and females from each grade and oversampling for African American participants to comprise at least 25% of the final sample. Information describing the study was mailed to 1, 771 families. Of these families, 937 were reachable via phone (of the 834 families who were not reached, 248 had disconnected telephone numbers and 586 never answered their telephone although up to three calls were made and voice messages were left when possible). Of the 937

families who could be reached via telephone, 616 did not participate (254 agreed to participate but did not commit to an appointment time and 362 declined participation), and 321 visited the research lab. Participants were asked to choose a non-relative, same-sex friend who was their age to accompany them to the lab. In 317 dyads, friends were within 1 year of one another; in the remaining 4 dyads, friends were 2 years apart.

Of the 642 youth in 321 dyads who participated at Time 1, one dyad ( $n = 2$  youth) was not included because one youth in the dyad indicated that they were not friends at Time 1 and the other youth skipped the friendship status item at Time 1. Of the remaining 640 youth, 166 youth did not participate at Time 2. Representative analyses compared the 474 youth who participated at both time points with the 166 youth who did not participate at Time 2 on all Time 1 study variables. Youth who did not participate at Time 2 had higher Time 1 self-reported friendship conflict scores (included  $M = .71$ , excluded  $M = .93$ ;  $t = 2.76$ ,  $p < .01$ ) and slightly lower Time 1 observed self-focus scores (included  $M = 1.51$ , excluded  $M = 1.36$ ;  $t = 1.39$ ,  $p < .05$ ) than youth who participated at both time points. However, youth did not differ on any other study variables (CDI depression, CES-D depression, anxiety, positive friendship quality, friendship withdrawal, observed inconsolability, observed co-rumination, observed self-sacrificing behavior).

Given the similarities between youth who participated at both time points and youth who participated at Time 1 only, the idea of imputing missing Time 2 data was considered. Of the 166 youth with missing Time 2 data, 88 youth were in dyads in which both youth had missing data (i.e., for 44 dyads, neither friend had Time 2 data). The remaining 78 youth with missing Time 2 data were paired with a friend who participated at Time 2. Rather than imputing data for all 166 youth, the more conservative approach

of imputing data for the 78 youth with missing data whose friends participated at Time 2 was chosen. This allowed the data for the 78 youth who did provide Time 2 data to be included in analyses, even though their friend did not participate at Time 2. See *Missing Data* section below for more information about data imputation procedures.

The final sample included 552 youth in 276 friendship dyads. Of these, 280 were seventh graders (136 female, 144 male;  $M$  age = 13.02) and 272 were tenth graders (148 female, 124 male;  $M$  age = 16.04). Participants were 65% European American, 27% African American, 5% Multiracial, 2% Asian American and less than 1% each American Indian/Alaskan Native, and Pacific Islander/Hawaiian Native. Four youth did not report their racial identity. With regard to ethnic identity, 3.26% of the sample was Latino/a, and 96.74% was non-Latino/a. Ten youth did not report their ethnic identity.

#### *Procedure*

Youth and friends visited the lab together. A parent/guardian provided written consent, and youth provided written assent prior to participation. The friends then were separated and completed a questionnaire assessment in separate rooms. Questionnaires included measures of friendship quality, emotional adjustment, and interpersonal behavior as well as a measure asking youth to identify a current problem they were experiencing.

Friends then were reunited in an observation room where they were given two conversational tasks. Similar to other observational research (e.g., Gavin & Furman, 1996; Grotevant & Cooper, 1983; Leaper, Carson, Baker, Holliday, & Myers, 1995), the room was equipped with a table, two chairs, and video recording equipment mounted on two walls. The first conversational task, a warm-up task, involved the two youth planning

a party that would be fun to have for approximately seven minutes. This task was not used for analysis in the current study. The second conversational task involved each youth discussing a problem that he or she generated during the questionnaire assessment (see information in Measures section). Youth were told that they could discuss each friend's problem for as long as they would like to and were not given a specific length of time to talk about each problem to avoid constraining the youths' display of interpersonal processes of interest (e.g., conversational self-focus). Participants were also told that they could talk about something else and/or play with a puzzle that was on the table when they were finished discussing the problems. After 16 minutes, the experimenter re-entered the room, signaling the end of the conversational task. Youth were compensated \$75 for their participation in the laboratory assessment and for their completion of a week-long palm pilot assessment. The palm pilot assessment was not part of the current project.

Approximately nine months following their initial lab visit, participants were contacted for a follow-up assessment. Youths' contact information was available from their school district and from information obtained during the initial lab visit (i.e., contact information for a relative or close other who would be aware of their location if they moved). Youth either visited the lab to complete the follow-up assessment or were mailed a packet containing questionnaires and a self-addressed stamped envelope for return mailing. The measures used were identical to those administered during the initial assessment. In particular, administration of the follow-up measures allowed the following scores to be computed for each youth: change in depression, change in anxiety, change in friendship quality, change in friendship withdrawal behavior, and friendship termination (based on whether or not youth reported being friends at follow-up). See information in

the Measures section for a complete description of questionnaires. When measures were returned, youth were compensated \$25. Repeated attempts were made to contact youth who initially were difficult to locate. The retention rate was 74% across cohorts.

### *Measures*

*Friendship status and termination.* Youth reported whether the friend who accompanied them to the lab at Time 1 was “a best friend” ( $n = 487, 76\%$ ), “a good friend” ( $n = 145, 23\%$ ), or “just a friend” ( $n = 8, 1\%$ ). Only one youth indicated that the person who accompanied them to the lab at Time 1 was “not a friend.” Subsequently, this dyad was dropped from analyses. Youth also reported friendship status at Time 2 (“best friend”  $n = 246, 57\%$ ; “good friend”  $n = 120, 28\%$ ; “just a friend”  $n = 51, 12\%$ ; “not a friend”  $n = 15, 3\%$ ). A friendship was considered terminated if a youth reported that their Time 1 friend was “not a friend” at Time 2. This measure is presented in Appendix A.

*Center for Epidemiologic Depression Scale (CES-D; Radloff, 1977).* Youth rated each of the 20 items of the CES-D to assess how often within the last week they experienced various affective, somatic, interpersonal, cognitive, and behavioral symptoms of depression. Each item was rated on a 4-point Likert scale ranging from “Rarely or none of the time, less than 1 day” (1) to “Most or all of the time, 5 to 7 days” (4). Each youth received a score that was the mean of the 20 items (Time 1  $\alpha = .86$ ; Time 2  $\alpha = .89$ ). This measure is presented in Appendix B.

*Children’s Depression Inventory (CDI; Kovacs, 1992).* Youth rated the presence and severity of depressive symptoms for each of 26 items. This measure assesses such key feature of depression as negative mood, interpersonal problems, and anhedonia. Youth chose from three answers on each symptom-oriented item, selecting the sentence

that best describes them (e.g., “I am bad all of the time/many times/once in a while”). As in past research with similar populations (Crick & Grotpeter, 1995; Panak & Garber, 1992), the item assessing suicidality was dropped. Participants were given a score for depressive symptoms that was the mean of their scores for all 26 items. Reliability was high in the current study (Time 1  $\alpha = .84$ ; Time 2  $\alpha = .89$ ).

*Children’s Manifest Anxiety Scale-Revised* (RCMAS; Reynolds & Richmond, 1978). To assess anxiety symptoms, the Children’s Manifest Anxiety Scale-R (Reynolds & Richmond, 1978) was used. The 37-item self-report scale consists of 28 anxiety items and 9 social desirability items. Only the anxiety items were administered. This measure assesses core features of anxiety such as physiological hyperarousal and worry. Each item is rated on a 5-point Likert scale ranging from 1 “Not at all true” to 5 “Really true.” Participants were given a score for anxiety symptoms that was the mean of their scores from the 28 anxiety items. Reliability was high in the current study (Time 1  $\alpha = .93$ ; Time 2  $\alpha = .94$ ).

*Friendship Quality Questionnaire* (Rose, 2002; revision of Parker & Asher, 1993). Friendship quality was assessed with a 27-item revised version of the Friendship Quality Questionnaire (Rose, 2002, revision of Parker & Asher, 1993). Of these 27 items, 18 were of interest to the current study. These 18 items are taken from Parker and Asher’s original Friendship Quality Questionnaire (1993). Fifteen items assess aspects of positive friendship quality (i.e., validation and caring, intimacy, conflict resolution, help and guidance, companionship and recreation), and three items assess friendship conflict (i.e., conflict and betrayal). Participants rated each item on a 5-point Likert scale. As in past research (Rose et al., 2004), a score for positive friendship quality was calculated for

each friend by taking the mean of the 15 items used to assess positive aspects of friendship from the original FQQ. Likewise each participant was given a score for friendship conflict that was calculated by taking the mean of the 3 items from the original FQQ assessing conflict and betrayal. Both the positive friendship quality score (Time 1  $\alpha = .90$ ; Time 2  $\alpha = .95$ ) and friendship conflict score (Time 1  $\alpha = .82$ ; Time 2  $\alpha = .85$ ) demonstrated high reliability. This measure is presented in Appendix C.

*Friendship Withdrawal Questionnaire.* This 10-item measure was developed for the current study. Youth reported on items assessing the degree to which they avoided their friend and sought contact with their friend in a variety of contexts. Specifically, the measure included two sets of five parallel items. The first set of five items assesses avoidance (e.g., “How often do you avoid talking with [FRIEND’S NAME] on the phone?”). The second set of five items assesses friendship contact (e.g., “How often do you try to talk with [FRIEND’S NAME] at school?”). Youth rated the degree to which they engaged in each of these behaviors on a 5-point Likert scale ranging from 1 “Never” to 5 “All the time”. The items from the second set were reversed scored. Youth then were given a score for friendship withdrawal that was the mean of all 10 items (Time 1  $\alpha = .72$ ; Time 2  $\alpha = .83$ ). This measure is presented in Appendix D.

*Problem Generation Questionnaire.* Youth were asked to write down a problem that they currently were experiencing. Youth then responded to seven items about this problem (e.g., How hard would it be to solve this problem?); however, these items were not used in the current study. This measure is presented in Appendix E.



### *Observational Coding*

Only data from the problem talk segment was coded for the purposes of the current study. Before any coding was completed, each taped interaction was transcribed verbatim. Transcribers incorporated established transcription symbols (e.g., West & Zimmerman, 1985) to add detail such as verbal inflection and interruptions. All transcripts were then double-checked for accuracy by a second transcriber. Coders first read each transcript and then watched the taped interaction with the transcript in hand so that any language which was unclear could be clarified.

A score for each member of the friendship dyad was assigned for each of the following mediator variables: inconsolability, conversational self-focus, and self-sacrificing conversational style. Similar to past observational research of friendship interactions (e.g., Brendgen, Marikiewicz, Doyle, & Bukowski, 2002), scores were assigned by trained coders who rated each variable on a 5-point Likert scale to reflect the degree to which each relationship process was characteristic of each youth. Scores for co-rumination were assigned to the dyad, rather than to each member of the dyad, and reflected the degree to which the dyad co-ruminated during the problem talk segment (because co-rumination is conceptualized as a dyadic process; Rose, 2002). Trained coders rate each dyad on a 5-point Likert scale to reflect the degree to which each dyad exhibited co-rumination. The scales for each of the variables are described in more detail below. See Appendix F for coding manual and complete description of codes.

For the first cohort, two female raters were trained using recordings from a pilot study involving the same conversational task (i.e., problem talk). Intra-class correlation coefficients were calculated to assess inter-rater reliability. In cases where base rates of

observed behavior were low (inconsolability and self-sacrificing behavior), percent agreement was calculated instead of ICC, as ICC is not an effective index of reliability in cases of low variability in the data. Training continued until raters reached acceptable levels of reliability. One of the original female coders worked with new female coder to reach acceptable levels of reliability for the second and third cohorts. Raters coded 25% of interactions from each cohort to ensure continued reliability.

*Inconsolability score.* Each youth was given a score for inconsolability. Raters assessed the degree to which each youth was characterized by a persistent expression of negative affect in the face of positive feedback from a friend. Youth exhibiting high inconsolability, for example, responded to friends' attempts to cheer them (e.g., "You are really smart.") with negative self-statements (e.g., "But I still failed that test!"). Inter-rater reliability was high in all three cohorts (percent agreement = 93%, 100%, 100%).

*Conversational self-focus score.* Each youth received a score for conversational self-focus (Schwartz-Mette & Rose, 2009). Coders rated the degree to which each friend monopolized the conversation about problems and/or re-directed the conversation to focus on himself or herself. For instance, highly self-focused youth may respond to a friends' problem statement (e.g., "[My boyfriend] is such a jerk sometimes.") with a problem statement of their own (e.g., "Did I tell you about what [my boyfriend] did today?!"). Inter-rater reliability was high in all three cohorts (ICCs = .89, .89, .93).

*Co-rumination score.* Each dyad received a score for co-rumination (Rose, Schwartz, & Carlson, 2005). This score reflect the degree to which each dyad discussed problems extensively (i.e., spends the majority of time discussing problems), exhibited mutual encouragement of problem talk (e.g., "And then what happened?"), rehashed

problems (e.g., “I know we keep talking about this but I just can’t believe it!”), speculated about problems and their causes or consequences (e.g., “What do you think is going to happen now?”), and focused on negative affect (e.g., “You must feel awful!”). Inter-rater reliability was high in all three cohorts (ICCs = .96, .96, .97).

*Self-sacrificing conversational style score.* Finally, each youth received a score that reflected the degree to which they exhibited a self-sacrificing conversational style. Youth with such a style are characterized by consistently steering conversations away from their own problems in favor of attending to their friends’ problems. For example, youth with such a style may respond to a friends’ invitation to discuss personal problems with a statement like, “Oh no, your [problem] is more serious.” Inter-rater reliability was high in all three cohorts (percent agreement = 90%, 100%, 100%).

#### *Missing Data*

To be included in study analyses, at least one youth in each dyad had to participate in the Time 2 assessment. Therefore, Time 2 data were imputed for 78 youth who had missing Time 2 data but whose friends participated at Time 2. Complete data Time 2 data for these 78 youth were imputed using an expectation-maximization procedure.

In addition, some youth who participated in the Time 1 and Time 2 assessments had missing questionnaires. For each questionnaire, at least 98% of the sample completed the measure. Data for the missing questionnaires also were imputed using an expectation-maximization procedure. Finally, a small number of youth skipped only some items on particular questionnaires. On any given questionnaire, less than 1% of the sample skipped more than 2 items. For youth missing items on a given questionnaire, their score for the

measure was calculated using the mean of their available items on that particular questionnaire.

## Results

### *Data Analysis Plan*

As participants were nested in friendship dyads, observations from each friend were not considered independent sources of information (i.e., friends tend to be similar; Campbell & Kashy, 2002). Thus standard data analytic measures (e.g., ordinary least squares and analysis of variance) are less appropriate because the independence assumption is violated (Kashy & Kenny, 2000). For all variables except observed self-sacrificing behavior ( $ICC = .00$ ,  $F = .92$ ,  $p = ns$ ), friends were similar to one another ( $F$  values ranged from 1.18 to 3.35, all  $p$  values  $< .05$ ): positive friendship quality Time 1  $ICC = .70$ , Time 2  $ICC = .59$ ; friendship conflict Time 1  $ICC = .55$ , Time 2  $ICC = .58$ ; friendship withdrawal Time 1  $ICC = .47$ , Time 2  $ICC = .50$ ; CDI depressive symptoms Time 1  $ICC = .15$ , Time 2  $ICC = .24$ ; CES-D depressive symptoms Time 1  $ICC = .22$ , Time 2  $ICC = .35$ ; anxiety symptoms Time 1  $ICC = .19$ , Time 2  $ICC = .18$ ; observed inconsolability  $ICC = .29$ , observed conversational self-focus  $ICC = .16$ . Note that homophily was not evaluated for observed co-rumination, as dyad-level scores were assigned for this variable.

Given the significant homophily in study variables, statistical techniques that account for dependency in dyadic data were used. A particular adaptation of hierarchical linear modeling (Raudenbush & Bryk, 2002), the Actor-Partner Interdependence Model (APIM; Kenny, 1996), was used to test all primary hypotheses in the current study. The APIM has been used in similar research involving peer interactions and partner

influences on individuals' outcome variables (e.g., Burk & Laursen, 2005; Campbell, Simpson, Kashy, & Rholes, 2001; Cillessen, Jiang, West, & Laszkowski, 2005). All study hypotheses were examined by testing multilevel models using Proc Mixed in SAS (Campbell & Kashy, 2002).

#### *Mean-level Gender and Grade Differences*

Means and standard deviations are presented for the whole sample in Table 1 and for each gender and grade group in Table 2. To test mean-level gender and grade group differences, hierarchical linear models were used. Specifically, separate random coefficient models in which youth were nested within friendship dyads were tested for each dependent variable. In each model, the dependent variable was predicted from gender, grade, and the interaction between gender and grade. Standardized parameter estimates are presented in Table 2. For each of the six emotional adjustment variables (Time 1 and 2 CDI depression, CES-D depression, and anxiety), the effect of gender was significant. In every case, girls reported a higher level of symptoms than boys. For grade, the effect was significant when predicting CDI depression and anxiety at Time 1 only. In each case, tenth graders reported a higher level of symptoms than seventh graders. None of the interactions between gender and grade were significant in predicting any adjustment variable at either time point.

With regard to friendship variables, the effect of gender was significant for positive friendship quality at Time 1 and Time 2, with girls reporting higher levels of positive friendship quality than boys at both time points. There were no gender effects for friendship conflict at either time point. For friendship withdrawal, the effect of gender was significant at Time 1 only, with boys reporting higher levels of withdrawal than girls.

There were no grade effects for positive friendship quality, friendship conflict, or friendship withdrawal at Time 1 or Time 2. For the interaction between gender and grade, there were no significant effects for positive friendship quality, friendship conflict, or friendship withdrawal at either time point.

Note that hypothesized mediator variables were only assessed at Time 1. For co-rumination, the effect of gender was significant such that girls were observed to co-ruminate more than boys. The effect of grade also was significant with tenth graders observed to co-ruminate significantly more than seventh graders. The interaction between gender and grade was not significant for co-rumination. For conversational self-focus, the effect of gender was significant, such that girls were observed to self-focus more than boys. No significant grade or interaction effects were present for conversational self-focus. No significant gender, grade, or interaction effects were present for inconsolability or self-sacrificing behavior.

#### *Research Aim 1: Internalizing Symptoms and Friendship Rejection*

*Hypothesis 1a: Initial depression will predict later rejection by a friend.*

Hierarchical linear models were tested in which the Time 2 indicators of friendship rejection were predicted from youths' Time 1 depressive symptoms. Multiple indices of Time 2 friendship rejection were used, namely youths' and friends' reports of positive friendship quality, youths' and friends' reports of friendship conflict, youths' and friends' reports of friendship withdrawal, and youths' and friends' reports of friendship termination. Separate hierarchical linear models were tested for each dependent friendship variable. In each model, the Time 2 friendship rejection variable was predicted by youth's self-reported depressive symptoms as measured by either the CDI or CES-D.

Initial levels of friendship rejection were controlled in each model. For example, the first model tested whether youths' Time 1 CDI scores predicted their self-reports of Time 2 positive friendship quality, controlling for their self-reported Time 1 positive friendship quality. Subsequent analyses were conducted to determine if each relation was moderated by gender and/or grade. In particular, gender, grade, and all possible interactions were added as predictors to each model. Simple slope analyses (Aiken and West 1991; Holmbeck 2002) were conducted to probe significant interactions with gender and/or grade.

Standardized parameter estimates are presented in Table 3. Youths' initial depressive symptoms (CDI and CES-D) predicted lower levels of self-reported positive friendship quality at Time 2. These relations were moderated by gender. In particular, the interaction between gender and CDI depression was significant in predicting self-reported positive friendship quality at Time 2,  $t = 2.27, p < .05$ . Simple slope analyses indicated that the effect of CDI depression for girls was significant, standardized parameter estimate (PE) =  $-.14, p < .01$ , such that greater depression at Time 1 predicted lower self-reported positive friendship quality at Time 2. However, the effect of depression was not significant for boys, PE =  $.02, p = ns$ . Similarly, the interaction between gender and CES-D depression was significant in predicting self-reported positive friendship quality over time,  $t = 3.36, p < .001$ , such that the effect of CES-D depression on later self-reported positive friendship quality was significant for girls, PE =  $-.22, p < .0001$ , but not boys, PE =  $.04, p = ns$ . Youths' initial depression did not significantly predict friend-reports of positive friendship quality, and this relation was not moderated by gender and/or grade.

Initial depressive symptoms (CDI and CES-D) also predicted higher levels of self-reported friendship conflict over time. The relation of Time 1 CDI scores with Time 2 self-reported friendship conflict was moderated by gender,  $t = 2.25, p < .05$ . Simple slope analyses indicated that the effect of CDI depression was significant for girls,  $PE = .14, p < .01$ , such that greater depression at Time 1 predicted greater self-reported friendship conflict at Time 2. The effect was not significant for boys,  $PE = -.02, p = ns$ . The relation between Time 1 CES-D depression and Time 2 self-reported friendship conflict was not moderated by gender and/or grade. Youths' initial depression (CDI or CES-D) did not predict friend reports of friendship conflict, and this relation was not further moderated by gender and/or grade.

With regard to friendship withdrawal, youths' Time 1 depressive symptoms (CDI and CES-D) predicted increased self-reported friendship withdrawal at Time 2. These relations were moderated by gender. In particular, the interaction between gender and CDI depression was significant in predicting self-reported friendship withdrawal,  $t = 3.04, p < .01$ , with simple slope analyses indicating the effect of depression on Time 2 self-reported withdrawal was significant for girls,  $PE = .21, p < .0001$ , but not boys,  $PE = -.04, p = ns$ . Similarly, the interaction between gender and CES-D depression was significant,  $t = 2.05, p < .01$ , with depression predicting greater self-reported Time 2 friendship withdrawal for girls,  $PE = .22, p < .0001$ , but not boys,  $PE = .00, p = ns$ .

Youths' initial levels of depressive symptoms were not significantly related to friends' reports of withdrawal for the full sample. In examining potential moderation by gender and/or grade, the three-way interaction between gender, grade, and CDI depression was significant,  $t = 2.18, p < .05$ . However, simple slope analyses indicated



that none of the simple slopes for any of the gender/grade groups were significant. The three-way interaction between gender, grade, and CES-D depression was significant in predicting friend-reported withdrawal over time,  $PE = -.09, p < .05$ . The effect of depression on Time 2 friend-reported withdrawal was significant only for tenth-grade girls,  $PE = .13, p < .05$ .

With regard to friendship termination, youths' CDI scores did not significantly predict self-reported friendship termination, and this relation was not moderated by gender and/or grade. However, youths' Time 1 CES-D scores were associated with Time 2 self-reported friendship termination. Further, the interaction between gender and CES-D depression was significant in predicting self-reported termination of friendships over time,  $t = 1.93, p \leq .05$ . Simple slope analyses indicated that the effect of depression on self-reported friendship termination was significant for girls,  $PE = -.15, p < .01$ , but not boys,  $PE = .03, p = ns$ . Youths' Time 1 depressive symptoms were not significantly related to friend-reported friendship termination at Time 2, and this relation was not further moderated by gender and/or grade.

*Hypothesis 1b: Initial anxiety will predict later rejection by a friend.* A series of hierarchical linear models were tested in which each of the Time 2 friendship rejection indices were predicted from youths' reports of initial anxiety symptoms. This series of models was identical to the models tested above (Hypothesis 1a) except that anxiety symptoms were used in place of depressive symptoms. As with depression, additional analyses were conducted to examine potential moderation of relations by gender and/or grade. Standardized parameter estimates are presented in Table 4.

Anxiety symptoms did not predict changes in youths' or friends' perceptions of positive friendship quality over time. However, youths' anxiety symptoms at Time 1 did predict increased self-reported friendship conflict at Time 2. This relation was further moderated by grade. Specifically, the interaction between grade and anxiety was significant in predicting later self-reported friendship conflict,  $t = 2.54, p < .05$ , such that initial anxiety symptoms predicted increases in later self-reported friendship conflict for seventh graders,  $PE = .16, p < .01$ , but not tenth graders,  $PE = -.02, p = ns$ . Youths' Time 1 anxiety symptoms were not significantly related to friends' reports of friendship conflict at Time 2, and this relation was not further moderated by gender and/or grade.

Regarding self-reported friendship withdrawal, the main effect of youths' Time 1 anxiety symptoms was not significant. However, the interaction between gender and anxiety was significant,  $t = 2.27, p < .05$ , such that initial anxiety predicted greater self-reported friendship withdrawal for girls,  $PE = .13, p < .05$ , but not boys,  $PE = -.05, p = ns$ . Youths' initial anxiety symptoms were not significantly associated with later friend-reported friendship withdrawal, and this relation was not moderated by gender and/or grade.

With regard to friendship termination, youths' anxiety symptoms were not associated with self-reported friendship termination at Time 2. Similarly, youths' anxiety symptoms did not predict friend-reported termination at Time 2. Neither relation was moderated by gender and/or grade.

*Hypothesis 2a: Inconsolability will mediate the relation between youths' initial depressive symptoms and later rejection by a friend.* Mediation was explored for those models in which the relation between initial depressive symptoms and the Time 2

friendship rejection variable was significant for the entire sample or for a subgroup (e.g., girls). In terms of self-reported friendship adjustment, these significant associations were: associations of the CDI and CES-D with Time 2 self-reported positive friendship quality (for the whole sample and for only girls); associations of the CDI and CES-D with Time 2 self-reported friendship conflict (for the whole sample and for only girls for the CDI); associations of the CDI and CES-D with Time 2 self-reported friendship withdrawal (for the whole sample and for only girls); and associations of the CES-D with Time 2 friendship termination (for the whole sample and for only girls). In terms of friend-reported friendship adjustment, the mediation model for associations between the CES-D and Time 2 friend-reported withdrawal was examined for tenth-grade girls. Altogether, this meant that mediation could be tested for 14 models in which an indicator of depression significantly predicted an indicator of Time 2 friendship adjustment. In order to test mediation, it also was necessary that two additional criteria were met: the indicator of youths' initial depressive symptoms was related to their higher levels of inconsolability and that youths' inconsolability was associated with the Time 2 indicator of friendship rejection (controlling for youths' Time 1 depressive symptoms as well as the indicator of Time 1 friendship rejection).

First, the associations between depressive symptoms and inconsolability were examined. Specifically, given the mediation models that could be tested, the association of the CDI and inconsolability was tested in the full sample and the sample of girls. The association of the CES-D and inconsolability was tested for the full sample, the sample of girls, and the sample of tenth-grade girls. In each case, a multilevel model was tested in which the indicator of Time 1 depressive symptoms predicted observed inconsolability.

Youths' Time 1 CDI scores did not significantly predict their observed inconsolability in the full sample,  $PE = .05, p = ns$ , or in the sample of girls,  $PE = .03, p = ns$ . Similarly, youths' Time 1 CES-D scores did not significantly predict their observed inconsolability in the full sample,  $PE = .03, p = ns$ , in the sample of girls,  $PE = .01, p = ns$ , or in the sample of tenth-grade girls,  $PE = .00, p = ns$ . Thus, mediation could not be tested in any of these groups.

*Hypothesis 2b: Inconsolability will mediate the relation between youths' initial anxiety symptoms and later rejection by a friend.* Mediation was explored for only those models in which the relations between initial anxiety symptoms and later friendship rejection variables were significant. Recall that Youths' Time 1 anxiety symptoms significantly predicted greater Time 2 self-reported friendship conflict (for the full sample and for tenth graders) and greater Time 2 self-reported friendship withdrawal over time (for girls). In order to test mediation for these models, it was necessary that youths' Time 1 anxiety symptoms significantly predicted their observed inconsolability and that inconsolability was associated with the indicator of Time 2 friendship rejection (controlling for Time 1 anxiety as well as the Time 1 friendship rejection variable). For the full sample, the sample of tenth graders, and the sample of girls, models were tested in which youths' observed inconsolability was predicted from their Time 1 anxiety symptoms. Time 1 anxiety symptoms did not significantly predict observed inconsolability in the full sample,  $PE = .06, p = ns$ , in the tenth-grade sample,  $PE = .06, p = ns$ , or in the sample of girls,  $PE = .10, p = ns$ . As such, mediation could not be tested in any of these groups.

*Hypothesis 3a: Conversational self-focus will mediate the relation between youths' initial depressive symptoms and later rejection by a friend.* Mediation was explored for the 14 models in which an indicator of youths' initial depressive symptoms significantly predicted an indicator of Time 2 friendship rejection. To test for mediation, it was necessary that the indicator of depression predicted observed self-focus and that observed self-focus predicted the indicator of later friendship rejection (controlling for youths' Time 1 depression and Time 1 friendship rejection).

The association of depression with self-focus was considered first. Given the mediation models to be tested, the association of the CDI with self-focus was tested in the full sample and the sample of girls. The association of the CES-D with self-focus was tested in the full sample, the sample of girls, and the sample of tenth-grade girls. Youths' Time 1 CDI scores significantly predicted observed self-focus in the full sample,  $PE = .10, p < .05$ . However, initial CDI scores were not significantly associated with self-focus in the sample of girls,  $PE = .08, p = ns$ . Youths' Time 1 CES-D scores also predicted self-focus in the full sample,  $PE = .11, p < .01$ . Initial CES-D scores did not predict self-focus in the sample of girls,  $PE = .10, p = ns$ , or in the sample of tenth-grade girls,  $PE = .09, p = ns$ . Thus, it was not possible to proceed with testing mediation in the models involving the sample of girls or the sample of tenth-grade girls.

Given that both CDI and CES-D scores predicted observed self-focus in the full sample, it next was necessary to test whether youths' observed self-focus predicted indices of Time 2 friendship rejection (controlling for the indicator of Time 1 depression and the indicator of Time 1 friendship rejection) in the remaining models. Regarding the models involving the CDI, youths' self-focus did not significantly predict Time 2 self-

reported positive friendship quality,  $PE = -.05$ ,  $p = ns$ , self-reported negative friendship quality,  $PE = -.01$ ,  $p = ns$ , or self-reported withdrawal,  $PE = -.03$ ,  $p = ns$ . In terms of models involving the CES-D, youths' self-focus did not significantly predict Time 2 self-reported positive friendship quality,  $PE = -.05$ ,  $p = ns$ , self-reported negative friendship quality,  $PE = -.01$ ,  $p = ns$ , or self-reported withdrawal,  $PE = -.03$ ,  $p = ns$ .

However, youths' observed self-focus did predict youths' self-reports of Time 2 friendship termination (controlling for their Time 1 CES-D symptoms),  $PE = .12$ ,  $p < .01$ . Given that all required relations were significant, it was then possible to test whether the association between youths' Time 1 depression (CES-D) and their Time 2 self-reports of friendship termination was significantly mediated by their level of observed self-focus. The significance of the mediated effect was tested using Sobel's test (1982). Sobel's test indicated that the mediated effect was marginally significant,  $z = 1.85$ ,  $p = .06$ . As Sobel's test is highly conservative (MacKinnon, Warsi, & Dwyer, 1995) and thus has low power to detect significant effects, an additional method of evaluating the significance of the mediated effect was used. Specifically, the asymmetric confidence interval method (see MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002) was used to estimate confidence intervals [CIs] for mediated effects (95% asymmetric CIs were calculated for the indirect effect [IE] using PRODCLIN; MacKinnon, Fritz, Williams, & Lockwood, 2007; Tofighi & MacKinnon, 2011) and indicated that conversational self-focus did significantly mediate the relation between youths' initial CES-D scores and their later self-reports of friendship termination ( $IE = .012$ , 95% CI [.001, .028]). This meant that depressed youths' initial tendency to self-focus helped to explain their perceptions that their friendships had ended by Time 2.

*Hypothesis 3b: Conversational self-focus will mediate the relation between youths' initial anxiety symptoms and later rejection by a friend.* Recall that there were three significant associations between youths' anxiety and later friendship rejection. Therefore it was possible for three mediation models to be tested. Mediation was explored for the relation between Time 1 anxiety symptoms and Time 2 self-reports of friendship conflict (for the whole sample and for tenth graders) and for the relation between Time 1 anxiety symptoms and Time 2 self-reports of friendship withdrawal (for girls). Given the mediation models that could be tested, the association of initial anxiety symptoms and observed self-focus was tested for the full sample, the sample of tenth graders, and the sample of girls. Youths' Time 1 anxiety did predict increased levels of observed self-focus in the full sample,  $PE = .13, p < .01$ , and in the sample of tenth graders,  $PE = .15, p < .05$ . The relation between initial anxiety and self-focus was marginally significant in the sample of girls,  $PE = .11, p = .07$ .

Next, it was necessary to test whether youths' observed self-focus predicted later friendship rejection (controlling for Time 1 anxiety symptoms and Time 1 friendship rejection). Youths' self-focus did not significantly predict their Time 2 self-reports of friendship conflict in the full sample,  $PE = -.02, p = ns$ , or in the sample of tenth graders,  $PE = -.04, p = ns$ . Youths' self-focus also did not predict their Time 2 self-reported friendship withdrawal in the sample of girls,  $PE = .00, p = ns$ . Thus mediation could not be tested in any of the three models.

*Supplementary analyses.* Given that many of the criteria for testing mediation of links between initial internalizing symptoms and later friendship rejection were not met, several of the relations between youths' initial internalizing symptoms and observed

behaviors and relations between observed behaviors and Time 2 friendship rejection variables were not tested. Although all but one of the mediation models were not significant, it was of interest to test relations between youths' initial internalizing symptoms with observed behavior and relations between observed behavior and Time 2 friendship rejection. Supplementary analyses in this section tested these relations for all variables as well as potential moderation of relations by gender and/or grade.

First, relations involving observed inconsolability were examined (see Table 5). Three separate HLM models were tested in which youths' Time 1 emotional adjustment (CDI, CES-D, anxiety) predicted their observed inconsolability. Neither youths' Time 1 CDI scores nor Time 1 CES-D scores significantly predicted youths' observed inconsolability. Similarly, youths' Time 1 anxiety scores did not significantly predict youths' observed inconsolability. HLM models then tested whether youths' Time 1 emotional adjustment predicted their observed self-focus. Youths' Time 1 CDI scores, Time 1 CES-D scores, and Time 1 anxiety scores each significantly predicted their observed self-focus. None of these relations were moderated by gender and/or grade.

Next, separate HLM models tested whether youths' observed behaviors predicted each of the eight the friendship rejection variables, controlling for initial friendship rejection (see Table 6). Inconsolability did not significantly predict increases in any of the Time 2 friendship rejection variables, and none of these relations were moderated by gender and/or grade. Youths' self-focus did not predict significant changes in their self-reported positive friendship quality, and this relation was not moderated by gender and/or grade. However, youths' self-focus did predict decreases in friend-reported positive friendship quality over time. This relation was moderated by gender. In particular, the



two-way interaction between gender and self-focus was significant,  $t = 2.06$ ,  $p < .05$ . Simple slope analyses indicated that youths' self-focus predicted decreases in friend-reported positive friendship quality over time for girls (PE =  $-.15$ ,  $p < .01$ ) but not for boys (PE =  $.04$ ,  $p = ns$ ).

Regarding friendship conflict, youths' self-focus was not significantly associated with changes in self-reported friendship conflict over time. However, the relation between youths' self-focus and friend-reported friendship conflict was marginally significant. Neither relation was moderated by gender and/or grade. Similarly, youths' self-focus was not significantly associated with Time 2 self-reported friendship withdrawal, but youths' self-focus did predict significant increases in Time 2 friend-reported friendship withdrawal. Neither of these relations were moderated by gender and/or grade.

Finally, the association between youths' self-focus and their self-reported friendship termination was significant. This relation was moderated by gender and grade such that the three-way interaction of gender, grade, and self-focus was significant in predicting self-reported termination at Time 2,  $t = 2.02$ ,  $p < .05$ . Simple slope analyses indicated that the effect of self-focus on self-reported friendship termination was significant only for seventh-grade girls, PE =  $.30$ ,  $p < .0001$  (seventh-grade boys PE =  $.00$ ; tenth-grade girls PE =  $.00$ ; tenth-grade boys PE =  $.05$ ; all  $p$  values = ns). Youths' self-focus did not significantly predict friend-reported termination at Time 2, and this relation was not moderated by gender and/or grade.

*Hypothesis 4a: Rejection will predict youths' later depressive symptoms.*

Hierarchical linear models were tested in which the Time 2 indicators of depressive

symptoms were predicted from the indices of friendship rejection, namely youths' and friends' reports of positive friendship quality, youths' and friends' reports of friendship conflict, youths' and friends' reports of friendship withdrawal, and youths' and friends' reports of friendship termination.

In each model, Time 2 depressive symptoms (as measured by either the CDI or CES-D) were predicted from one of the friendship rejection variables. Youths' Time 1 depression scores were included in each model to control for initial levels of depression.

Standardized parameter estimates are presented in Table 7. Regarding later depressive symptoms, neither self-reported positive friendship quality nor self-reported friendship conflict predicted increases in youths' depressive symptoms (CDI or CES-D) over time. Similarly, neither friend-reported positive friendship quality nor friend-reported friendship conflict predicted increases in youths' depressive symptoms (CDI or CES-D) over time. Interestingly, higher levels of youths' self-reported friendship withdrawal at Time 1 predicted decreased depressive symptoms (CES-D) at Time 2,  $PE = -.08, p < .05$ ; however, friend-reported withdrawal did not significantly predict youths' depressive symptoms over time (CDI or CES-D). Neither self- nor friend-reported termination at Time 2 was associated with Time 2 depressive symptoms (CDI or CES-D).

To examine possible moderation by gender and/or grade, gender, grade, and all possible interactions were added as predictors to each model. Of all the interactions tested, only one was significant. In particular, the interaction between gender and friend-reported friendship withdrawal was significant in predicting later depressive symptoms (CES-D),  $PE = -.15, p < .05$ . Simple slope analyses indicated that, for girls, friends' reports of withdrawal at Time 1 was a marginally significant predictor of greater

depressive symptoms in youth at Time 2,  $PE = .09, p = .10$ . The relation was negative for boys but did not reach significance,  $PE = -.08, p = ns$ .

*Hypothesis 4b: Rejection will predict youths' later anxiety symptoms.* A series of hierarchical linear models were tested in which anxiety symptoms were predicted from each of several friendship rejection indices. This series of models was identical to the models tested above (Hypothesis 4a) except that anxiety symptoms were used in place of depressive symptoms. Standardized parameter estimates are presented in Table 7. Neither self-reported or friend-reported positive friendship quality nor self-reported or friend-reported conflict predicted increases in anxiety symptoms over time. Similar to depression, self-reported friendship withdrawal at Time 1 was associated with lower levels of anxiety symptoms at Time 2,  $PE = -.10, p < .01$ , but friends' reports of initial withdrawal were not associated with youths' Time 2 anxiety symptoms. Neither self- nor friend-reports of friendship termination at Time 2 were associated with youths' Time 2 anxiety symptoms. To examine possible moderation of these relations by gender and/or grade, gender, grade, and all possible interactions were added as predictors to each model. Of all the interactions tested, none were significant.

*Research Aim 2: Contagion of Internalizing Symptoms*

*Hypothesis 5a: Youths' initial depressive symptoms will predict increases in friends' depressive symptoms over time.* Hierarchical linear models tested whether youths' initial depressive symptoms predicted increases in friends' depressive symptoms over time. Specifically, a model in which friends' Time 2 depressive symptoms were predicted from youths' Time 1 depressive symptoms was tested (controlling for friends' Time 1 depressive symptoms). Separate models were used for CDI scores and CES-D

scores. Standardized parameter estimates are presented in Table 8. Youths' initial CDI scores did not significantly predict increases in friends' CDI scores over time. However youths' initial CES-D scores did predict increases in friends' CES-D scores over time, controlling for friends' initial CES-D scores,  $PE = .07, p < .01$ .

To examine potential moderation by gender and/or grade, gender, grade, and all possible interactions were added as predictors to each depression contagion model (CDI and CES-D). Neither grade nor gender moderated the either of the depression contagion effects.

*Hypothesis 5b: Youths' initial anxiety symptoms will predict increases in friends' anxiety symptoms over time.* Hierarchical linear models also tested whether youths' initial anxiety symptoms predicted increases in friends' anxiety symptoms over time, controlling for friends' initial levels of anxiety symptoms. The model used to test anxiety contagion was identical to the model which tested depression contagion except anxiety variables were used in place of depression variables. Standardized parameter estimates are presented in Table 8. Youths' Time 1 anxiety did not predict increased Time 2 anxiety in their friends. To examine potential moderation by gender and/or grade, gender, grade, and all possible interactions were added as predictors to the anxiety contagion model. None of the interactions tested were significant.

*Hypothesis 6a: Co-rumination will mediate the relation between youths' initial depressive symptoms and friends' later depressive symptoms.* In order to test whether co-rumination mediated the depression contagion effect, it was necessary that youths' initial depressive symptoms predicted observed dyadic co-rumination and that co-rumination in turn predicted friends' Time 2 depressive symptoms (controlling for youths' and friends'

Time 1 depression). This analysis could be conducted only using the CES-D because contagion was not significant using the CDI. First, an HLM was tested in which observed co-rumination was predicted from youths' Time 1 CES-D depression. Results indicated significant positive associations between youths' Time 1 CES-D symptoms and observed dyadic co-rumination,  $PE = .13, p < .01$ . Next, an HLM was tested in which friends' Time 2 CES-D scores were predicted from observed co-rumination, controlling for youths' and friends' Time 1 CES-D scores. Observed co-rumination did not significantly predict friends' Time 2 CES-D scores,  $PE = -.06, p = ns$ . Thus mediation was not tested in this model.

It was possible that the relation between co-rumination and friends' Time 2 CES-D scores was moderated by gender and/or grade. As such, gender, grade, and all possible interactions were added to the model in which co-rumination predicted friends' Time 2 CES-D symptoms, controlling for youths' and friends' Time 1 CES-D scores. None of the interactions tested were significant, and mediation was not tested within any of the gender/grade groups.

*Hypothesis 6b: Co-rumination will mediate the relation between youths' initial anxiety symptoms and friends' later anxiety symptoms.* Given that the basic anxiety contagion effect was not significant, mediation of anxiety contagion by co-rumination was not tested.

*Hypothesis 7a: Friends' self-sacrificing behavior will mediate the relation between youths' initial depressive symptoms and friends' later depressive symptoms.* In order to test whether friends' self-sacrificing behavior mediated the depression contagion effect, it was necessary to determine whether youths' initial depressive symptoms

predicted friends' observed self-sacrificing behavior and whether friends' observed self-sacrificing behavior predicted friends' later depressive symptoms, controlling for youths' and friends' initial depressive symptoms. First, a model tested the association between youths' initial CES-D symptoms and friends' observed self-sacrificing behavior. The relation was marginally significant,  $PE = .08, p = .07$ . Next, a model was tested in which friends' observed self-sacrificing behavior predicted friends' Time 2 CES-D scores, controlling for youths' and friends' Time 1 CES-D scores. Self-sacrificing behavior did not significantly predict friends' Time 2 CES-D scores,  $PE = -.04, p = ns$ . Thus mediation was not tested in this model.

It was possible that the relation between self-sacrificing behavior and friends' later CES-D scores was moderated by gender and/or grade. Gender, grade, and all possible interactions were added to the model in which friends' Time 2 CES-D scores were predicted from friends' observed self-sacrificing behavior, controlling for youths' and friends' Time 1 CES-D scores. Neither gender nor grade significantly moderated the association between observed self-sacrificing and friends' later depressive symptoms.

*Hypothesis 7b: Friends' self-sacrificing behavior will mediate the relation between youths' initial anxiety symptoms and friends' later anxiety symptoms.* Given that the basic anxiety contagion effect was not significant, mediation of anxiety contagion by self-sacrificing behavior was not tested.

*Hypothesis 8a: Youths' conversational self-focus will mediate the relation between youths' initial depressive symptoms and friends' later depressive symptoms.* In order to test whether youths' conversational self-focus mediated the depression contagion effect, it was necessary that youths' initial depressive symptoms predicted their observed

self-focus and that youths' observed self-focus predicted increases in friends' depression over time. First, a model was tested in which youths' Time 1 CES-D scores predicted their observed self-focus. Youths' initial depressive symptoms were significantly associated with observed self-focus,  $PE = .11, p < .01$ . Next, a model was tested in which youths' observed self-focus predicted friends' Time 2 CES-D scores, controlling for youths' and friends' Time 1 CES-D scores. Youths' self-focus did not significantly predict friends' Time 2 CES-D scores,  $PE = -.04, p = ns$ . Thus mediation was not tested in this model.

It was possible that the relation between self-focus and friends' later CES-D scores was moderated by gender and/or grade. Gender, grade, and all possible interactions were added to the model in which youths' observed self-focus predicted friends' Time 2 CES-D symptoms, controlling for friends' Time 1 CES-D scores and youths' Time 1 CES-D scores. Neither gender nor grade moderated the relation between self-focus and friends' later depression. Thus it was not possible to pursue testing mediation in any gender/grade group.

*Hypothesis 8b: Youths' conversational self-focus will mediate the relation between youths' initial anxiety symptoms and friends' later anxiety symptoms.* Given that the basic anxiety contagion effect was not significant, mediation of anxiety contagion by conversational self-focus was not tested.

*Supplementary analyses.* Because many of the criteria for testing mediation of contagion effects were not met, many of the relations between youths' initial internalizing symptoms and the observed behaviors and relations between observed behaviors and friends' Time 2 internalizing symptoms were not tested. Moreover,

whether or not these relations were further moderated by gender and/or grade was not explored. Supplementary analyses described in this section will test these relations.

First, basic relations involving youths' initial internalizing symptoms and observed behaviors were examined (see Table 5). Separate HLM models were tested in which an indicator of youths' Time 1 internalizing symptoms (CDI, CES-D, anxiety) predicted observed behavior (dyadic co-rumination, friends' self-sacrificing behavior, youths' self-focus). Co-rumination was significantly associated with youths' Time 1 CDI scores, CES-D scores, and anxiety scores. Youths' Time 1 CDI scores did not significantly predict friends' self-sacrificing behavior. However, the association between youths' Time 1 CES-D scores and friends' self-sacrificing behavior was marginally significant. Youths' Time 1 anxiety scores did not predict friends' self-sacrificing behavior. As already presented in Table 5, youths' self-focus was significantly predicted by youths' Time 1 CDI, CES-D, and anxiety scores. None of these relations were moderated by gender and/or grade.

Next, analyses examined whether observed behaviors predicted friends' Time 2 internalizing symptoms (see Table 9). Separate HLM models were tested in which friends' Time 2 internalizing symptoms (CDI, CES-D, anxiety) were predicted from observed behavior (dyadic co-rumination, friends' self-sacrificing behavior, youths' self-focus), controlling for friends' Time 1 internalizing symptoms. Co-rumination did not significantly predict friends' Time 2 CDI, CES-D, or anxiety scores. Similarly, neither friends' self-sacrificing behavior nor youths' self-focus predicted friends' Time 2 CDI, CES-D, or anxiety scores. None of these relations were moderated by gender and/or grade.



## Discussion

The current study provides important new information regarding the associations among internalizing symptoms, interpersonal behaviors, and relationship problems in adolescents' close same-sex friendships. An initial goal of the study was to examine the relation between youths' internalizing symptoms and friendship problems. In particular, associations of youths' depressive and anxiety symptoms with self- and friend-reported positive friendship quality, friendship conflict, friendship withdrawal, and friendship termination were examined.

Results generally suggest that youths' depressive symptoms predict greater self-reported friendship problems over time. Of the 16 associations examined (two indicators of depression with four indicators of self-reported friendship problems and four indicators of friend-reported friendship problems), eight were significant for the whole sample or for girls. The association of depression assessed with the CES-D with later self-reported negative friendship quality was significant for the whole sample. For girls, significant associations included the relation between depression assessed with the CES-D and the CDI with later self-reported positive friendship quality, depression assessed with the CDI and later self-reported negative friendship quality, depression assessed with the CES-D and the CDI and later self-reported friendship withdrawal, and depression assessed with the CES-D and later self-reported friendship termination. One relation was significant when friend-reported friendship problems were considered. This was the association between CES-D depression and later friend-reported friendship withdrawal, which was significant only for tenth-grade girls. Findings from the current study are largely consistent with previous findings indicating relations between elevated

depressive symptoms and self-reported positive friendship qualities (e.g., Rose et al., 2011; Rudolph et al., 2007), friendship conflict (e.g., Demir & Urberg, 2004; Hussong, 2000; LaGreca & Harrison, 2005), and friendship instability (e.g., Prinstein et al., 2005; Rose et al., 2011).

Additionally, the current study adds to our understanding of the effects of youths' anxiety symptoms on their friendships. Of the eight relations tested (one indicator of anxiety with four indicators of self-reported friendship problems and four indicators of friend-reported friendship problems), two were significant. Specifically, youths' anxiety symptoms predicted increased self-reported friendship conflict for youth in the seventh grade. Youths' anxiety also predicted increased self-reported friendship withdrawal for girls. Generally speaking, the relatively few past studies that have addressed these effects provide somewhat mixed support for associations between anxiety and friendship problems (Fordham & Stevenson-Hinde, 1999; Rose et al., 2011). Moreover, the two significant effects in the current study did not hold when youths' depressive symptoms were controlled. Taken together, results appear to suggest that youths' depressive symptoms may have a stronger effect on friendship problems than youths' anxiety symptoms (see also Rose et al., 2011).

While past research has examined associations of youths' internalizing symptoms with positive friendship quality, friendship conflict, and friendship stability, surprisingly, youths' withdrawal from friendships had not been systematically evaluated. Examining withdrawal behaviors in the friendships of youths with internalizing symptoms is important, as doing so may shed light on the processes by which youths' friendships come to deteriorate over time. One indicator of internalizing symptoms (depression

assessed with the CESD) predicted later friend-reported friendship withdrawal for tenth-grade girls. Moreover, every indicator of internalizing symptoms (depressive symptoms assessed with both the CES-D and CDI and anxiety symptoms) was associated with later self-reported friendship withdrawal behaviors for girls. Perhaps depressed and anxious girls withdraw from friendships because they are attuned to problems developing in the friendship and feel unable to cope with the associated relationship stress.

The pattern of effects clearly indicated that the relations between internalizing symptoms and later friendship problems were stronger for girls than boys. Specifically, of the 10 significant effects between an indicator internalizing symptoms and later friendship problems observed in the current study, eight were significantly moderated by gender. These results fit with some previous research suggesting that effects of youths' internalizing symptoms on friendship adjustment may be especially negative for girls (e.g., Prinstein et al., 2005; Rudolph et al., 2007). Girls' friendships tend to be characterized by high levels of friendship provisions (e.g., affection, nurturance, validation) and the exchange of social resources (see Rose & Rudolph, 2006), which presumably require a reasonable amount of motivation and energy to maintain. Depressive symptoms like negative affect, low motivation, and fatigue may impair girls' ability to summon these necessary emotional resources to maintain their friendships, and, as a result, friendship problems may develop.

The findings that the effects of internalizing symptoms are especially common for girls were particularly interesting in light of the fact that many more significant effects emerged for self-reported friendship problems than friend-reports of friendship problems. Specifically, of the 10 significant associations of internalizing symptoms with later

friendship problems, nine involved an indicator of self-reported friendship adjustment. Negative, self-focused rumination and feelings of guilt and worthlessness characteristic of youth with internalizing symptoms may lead them to perceive that they are a burden on their friends. Feeling like a burden may signal interpersonal failure especially strongly for girls given their greater interpersonal orientation (Maccoby, 1988; Nolen-Hoeksema & Girgus, 1994; Paul & White, 1990). That is, if girls do not believe that they are fulfilling their responsibilities in interpersonal relationships, they may be more apt to self-report friendship problems than boys and/or their friends.

It also is possible that friends of distressed youth do perceive some difficulties in the friendship related to youths' internalizing symptoms but do not consistently report greater friendship problems because they feel torn about how to respond. Friends may initially work to remain positive about these relationships due to feelings of affection, loyalty, and responsibility for the distressed friend. This could be especially true for girls, if girls are more likely to see themselves as supportive caretakers within friendships (see Rose & Rudolph, 2006). Over time, friends of depressed youth may become increasingly weary of trying to console their friends. The current study followed youth and their friends for nine months. Future studies which follow youth for longer periods of time may reveal stronger associations between initial internalizing symptoms and *friends'* perceptions of relationship problems.

Another goal of the current research was to examine whether the effects of youths' depressive and anxiety symptoms on rejection by friends were mediated by youths' observed behaviors during problem talk conversations with friends, namely conversational self-focus and inconsolability. There were 10 cases in which an indicator

of internalizing symptoms significantly predicted an indicator of later friendship problems (for the full sample or a subsample) so there were 10 mediation models to be tested. Each of these 10 models was tested using observed self-focus as a mediator and again using observed inconsolability as a mediator. Of the 20 mediational models that were tested, only one was significant. Overall, there was little support found for the idea that observed interpersonal behaviors would account for the effects of youths' initial internalizing symptoms on the deterioration of their friendships.

Nevertheless, one mediational model was found to be significant. Specifically, support was found for the hypothesis that youths' conversational self-focus would mediate the effect of youths' CES-D depression scores on youths' later reports of friendship termination. That is, youth who initially reported elevated depressive symptoms were observed to self-focus during problem talk conversations with friends, which then predicted their later self-reports of friendships termination. It is noteworthy that youths' observed behavior during one 16-minute conversation with a friend mediated the relation between their self-reported depressive symptoms and friendship termination over nine months. Depressed youth who self-focus during conversations with friends may have especially high expectations for friends' behavior in that they utilize problem talk to discuss their own concerns and may expect their friends to be fully supportive and helpful in reaction to their disclosures. However, depressed adolescents who self-focus may not experience immediate relief as a result of one-sided conversations about their problems. As such, they may perceive that these friendships are not helpful in alleviating their distress and may consequently terminate these friendships.

Because many meditational models were not tested (they were not tested for any case in which the index of internalizing symptoms did not predict the index of later friendship rejection), there were a number of associations between a) internalizing symptoms and self-focus or inconsolability and b) self-focus or inconsolability and later friendship rejection that were not tested. Supplementary analyses were conducted to examine these associations. First, relations of youths' initial internalizing symptoms with inconsolability were tested. None of the indicators of internalizing symptoms were related to inconsolability. However, all three indicators of youths' initial internalizing symptoms (CDI depression, CES-D depression, and anxiety) were related to self-focus. In addition, relations of youths' inconsolability and self-focus with self- and friend-reported friendship problems were tested. Inconsolability was not significantly related to any self- or friend-reported friendship problems. However, youths' observed self-focus was related to friends' later reports of lower positive friendship quality, greater conflict, and more friendship withdrawal behaviors. It is interesting that youths' self-focus predicted friend-reports (but not self-reports) of later friendship problems given that youths' internalizing symptoms predicted self-reports (but not friend-reports) of friendship problems.

At first glance, these supplementary results may seem to beg the question of why more support was not found for the mediation models involving conversational self-focus given that youths' internalizing symptoms predicted their self-focus and their self-focus predicted friends' reports of friendship problems. Recall, however, that youths' initial internalizing symptoms predicted 10 indicators of self-reported friendship problems but only one indicator of friend-reported friendship problems. How can it be that youths'

internalizing symptoms predict their self-focus and youths' self-focus predicts friend-reports of friendship problems but youths' internalizing symptoms do not tend to predict friend-reports of friendship problems?

Viewing the issue from a statistical perspective, this can happen because the association between internalizing symptoms and observed self-focus is not very large in magnitude. To take an extreme example, if there was a perfect relationship between internalizing symptoms and self-focusing, then every youth with internalizing symptoms would self-focus. In this scenario, if self-focus were related to friends' reports of friendship problems, then internalizing symptoms also would be related to friends' reports of friendship problems. However, given the smaller magnitude of the association between internalizing symptoms and observed self-focus in the current study, it is possible that some youth with internalizing symptoms do self-focus and some do not. This could weaken the relation between internalizing symptoms and friend-reports of friendship problems (given that self-focus is predicting the friend-reports of friendship problems).

In trying to understand why some depressed youth may self-focus and others may not, considering youths' self-awareness may be useful. Some depressed youth may be especially sensitive to the idea that they could be perceived as a burden or a "downer" by friends and thus avoid dominating conversations about problems. These youth may, therefore, buffer friends from their distress and have friends who do not report increased friendship problems over time. However, as discussed previously in regards to relations between internalizing symptoms and self-reports of friendship problems, these youth with internalizing symptoms may come to perceive their friendships as problematic (even

more than their friends do) because they perceive themselves as not contributing enough to the friendship. This may be especially common among youth with a well-developed self-awareness. In contrast, we know from the current study and past research (Schwartz-Mette & Rose, 2009) that at least some depressed youth do engage in conversational self-focus. Perhaps youth with less awareness and insight regarding the potential implications of their depressive symptoms for their friendships are especially likely to self-focus. These youth then may be especially likely to have friends who notice and report relationship problems. Future research could incorporate an assessment of interpersonal self-awareness to explore its potential role in the relations among internalizing symptoms, self-focus, and self- and friend-reported relationship problems.

As noted, despite the findings for self-focus, the supplementary analyses did not indicate important associations of internalizing symptoms with inconsolability or of inconsolability with friendship rejection. In fact, very little inconsolability was observed in the current sample ( $M = 1.04$  on a Likert scale ranging from 1.00-5.00). Inconsolability may be more characteristic of youth with severe symptomatology. Given the goal of examining the development of youths' symptoms within the interpersonal context of friendship, a community sample was purposefully selected for the current research because highly disturbed youth have been found to be less likely to even have friendships (Rutter & Garmezy, 1983). Nonetheless, as some youth with high levels of internalizing symptoms do have friendships (Hogue & Steinberg, 1995), future research using clinical samples may shed important light on the interplay between severity of symptoms and interpersonal behavior. For instance, youth with subclinical depression may experience a temporary boost in positive affect in response to friends' support during problem talk if



they have sufficient cognitive flexibility to entertain the idea that things may not always be so bad. However, highly depressed youth may respond to friends' encouragement with pessimism, as friends' perspectives are inconsistent with their own entrenched negative cognitions. Therefore, youth in clinical samples may be more likely to display inconsolability. Moreover, such a disconnect between distressed youths' and friends' internal experiences may prove particularly damaging for friendships.

The second aim of the current study was to examine depression and anxiety contagion effects and the potential mediating role of observed behaviors. Regarding depression contagion, the study replicated past work documenting depression contagion in adolescent friendships (Giletta et al., 2011; Prinstein, 2007; Schwartz-Mette & Rose, in press; Stevens & Prinstein, 2005). This further supports the notion that depression contagion is a relevant process with regard to the development of depressive symptoms with adolescents' interpersonal context. However, results did not support previously documented anxiety contagion effects for youth. It is unclear why anxiety contagion effects did not emerge in the current study, as the sample and anxiety measure were similar to those in the previous study documenting anxiety contagion in youths' friendships (Schwartz-Mette & Rose, in press). Additional studies are needed to clarify the degree to which anxiety contagion is a relevant process for youth.

In regards to mediation of the depression contagion effect, three observed behaviors were considered as potential mediators: dyadic co-rumination, friends' self-sacrificing behavior, and youths' conversational self-focus. However, none of these behaviors mediated the depression contagion effect. In order to gain a better understanding of the relations relevant to the proposed mediational models, however,

supplementary analyses were conducted. Specifically, analyses examined whether initial depression or anxiety predicted the three observed behaviors (co-rumination, self-focus, and self-sacrificing behavior) and whether the three observed behaviors predicted increases in the friends' internalizing symptoms over time.

In regards to associations of youths' internalizing symptoms with the observed behaviors, all three indicators of internalizing symptoms were associated with observed co-rumination and with self-focus. In particular, both depression and anxiety were related to observed co-rumination, which is consistent with other research indicating that youth with internalizing symptoms tend to co-ruminate (e.g., Hankin, Stone, & Wright, 2010; Rose, 2002; Rose et al., 2007). The significant associations of both depression and anxiety with observed self-focus were discussed earlier with regard to the current sample and also are consistent with past findings (Schwartz-Mette & Rose, 2009). However, neither youths' depression nor anxiety was related to their friends' tendency to engage in self-sacrificing behavior. This is likely because very little self-sacrificing behavior was observed in the current study ( $M = 1.05$  on a Likert scale of 1.00-5.00). Self-sacrificing during conversations with friends may be too sophisticated for adolescents, given the complex social perspective-taking skills needed to engage in this behavior. As such, self-sacrificing could be more relevant for young adults whose friends struggle with internalizing symptoms.

In terms of associations between the observed behaviors and friends' later symptoms, self-sacrificing behavior also did not predict changes in any index of friends' internalizing symptoms over time. This was not surprising given that little self-sacrificing behavior was observed. It was more unexpected, though that co-rumination and self-

focus also did not predict changes over time in friends' internalizing symptoms.

Regarding self-focus, it was hypothesized that the friends of youth who self-focus might become increasingly distressed because their needs are not met within the relationship (e.g., need for reciprocal self-disclosure). However, having a single self-focused friend may not be sufficient to induce internalizing symptoms. That is, perhaps youth with self-focused friends tend to find alternative outlets for sharing thoughts and gaining social support (e.g., parents, siblings, other friends). Future research could examine youths' conversations in multiple relationships and test whether the cumulative effect of having multiple self-focused conversation partners is deleterious for youths' emotional adjustment over time.

The results regarding co-rumination were unexpected as past research does indicate that co-rumination predicts increases in friends' internalizing symptoms over time (Schwartz-Mette & Rose, in press). Interestingly, other analyses of the current data set indicated that *self-reported* co-rumination did significantly mediate the depression contagion effect (Schwartz-Mette, 2011). This might suggest that the observational assessment of co-rumination is not valid. However, still other findings based on this dataset (Rose, Schwartz-Mette, Glick, Smith, & Luebbe, under review) support the validity of the observational assessment (e.g., by indicating that observed co-rumination is associated with self-reported co-rumination and internalizing symptoms). Still, the current study is a conservative test given the small slice of behavior observed. Future research incorporating multiple observations over longer periods of time may be better capture the cumulative effect of excessive problem talk on friends' adjustment.

An additional direction for future inquiry is to incorporate a broader assessment of the suite of interpersonal behaviors potentially linked with depression and anxiety.

Research suggests that youth with internalizing symptoms engage in a variety of behaviors including co-rumination, conversational self-focus, excessive reassurance-seeking, and negative feedback-seeking (Borelli & Prinstein, 2006; Schwartz-Mette & Rose, 2009, in press; Prinstein et al., 2005). It will be important for future studies to include multiple interpersonal behaviors in the same models predicting friendship difficulties. Doing so could test whether there are overlapping, unique, additive, and/or interactive effects of youths' interpersonal behavior on socioemotional adjustment.

In addition, it will be important to examine how particular interpersonal behaviors may surface, ebb, and flow over the course of friendships. Certain interpersonal behaviors may be most relevant early in relationships and/or at lower levels of symptoms. For instance, perhaps youth with low levels of distress initially engage in co-rumination with friends. Although not a focus of the current research, co-rumination is associated with higher positive friendship quality (e.g., Rose, 2002). This may create an especially close relationship context in which contagion effects may be likely to occur. As symptoms intensify in one or both youth, however, youth may become less willing and/or able to engage in the reciprocal, dyadic process of co-rumination and may begin to exhibit more one-sided behaviors, such as conversational self-focus and inconsolability that may place a strain on the relationship. As the friendships become more troubled, this, in turn, could contribute to further increases in youths' internalizing symptoms. Utilizing multiple assessments over longer periods of time may help to explain the potential

differential timing and effects of certain interpersonal behaviors in the friendships of depressed and anxious youth.

Finally, the applied implications of the current research should be considered. Most generally, the current research supports the notion that youth with even subclinical depressive and anxiety symptoms are at risk for friendship problems. Moreover, the current study suggests that distressed youth are likely to perceive problems in their friendships, withdraw from friendships, and terminate friendships, perhaps even before their friends are willing to do the same. Mental health professionals may benefit from this knowledge and may focus on specific, negative interpersonal cognitions that may lead distressed youth to withdraw from friendships prematurely. This may help distressed youth to see that their depressive symptoms may actually be fueling their perceived friendship problems.

With regard to interventions, some existing evidence-based treatments for internalizing disorders explicitly acknowledge the importance of increasing distressed youths' adaptive social engagement (Clarke, Lewinsohn, & Hops, 1990; Mufson, Moreau, Weissman, & Klerman, 1994). Yet much of the focus in these treatments is on the particular disruptions in interpersonal contexts that may have created youths' distress, as opposed to how internalizing symptoms may affect existing relationships. It may not be enough to merely encourage depressed and anxious youth to understand their problematic past relationships, initiate conversations, make new friends, and plan future social activities. Rather, it may be crucial to help youth with internalizing symptoms understand their tendencies to engage in specific interpersonal behaviors that may be problematic in friendships.

Existing evidence-based treatments for internalizing symptoms could be supplemented with psychoeducation, self-monitoring skills instruction, and in vivo (in session) interpersonal process feedback surrounding particular interpersonal behaviors associated with internalizing symptoms, like conversational self-focus. Given that youths' self-focus predicts friend-reported friendship rejection, such additions to existing treatments may prove helpful for enhancing youths' self-awareness surrounding self-focus and other previously identified problematic interpersonal behaviors (e.g., excessive reassurance-seeking, negative feedback-seeking). If youth are able to learn to identify and observe their own engagement in problematic interpersonal behaviors, youth may then be able to apply more adaptive coping strategies to avoid putting their friendships or their friends at risk.

Despite limitations and the need for more research, the current study adds to our understanding of the complex interplay of youths' depressive and anxiety symptoms, interpersonal behaviors, and friendship adjustment. It is hoped that the current study inspires additional inquiry regarding these interesting and potentially impactful observed behaviors. Moreover, the current research underscores the importance for scholars and practitioners alike to acknowledge the role of specific interpersonal behaviors in impacting youths' social and emotional adjustment.

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Table 1  
*Means and Standard Deviations for Study Variables (Whole Sample, N = 552)*

	M	SD	Observed Range	Possible Range
<u>Internalizing Symptoms</u>				
T1 CDI	0.26	0.22	0.00-1.27	0.00-3.00
T1 CES-D	1.57	0.41	1.00-3.40	1.00-4.00
T1 RCMAS	2.10	0.65	1.00-4.36	1.00-5.00
T2 CDI	0.34	0.27	0.00-1.65	0.00-3.00
T2 CES-D	1.70	0.48	1.00-3.75	1.00-4.00
T2 RCMAS	2.22	0.71	1.00-5.00	1.00-5.00
<u>Friendship Adjustment</u>				
T1 Positive Friendship Quality	2.89	0.71	0.00-4.00	0.00-4.00
T1 Friendship Conflict	0.74	0.85	0.00-4.00	0.00-4.00
T1 Friendship Withdrawal	2.11	0.53	1.00-4.00	1.00-5.00
T2 Positive Friendship Quality	2.30	0.97	0.00-4.00	0.00-4.00
T2 Friendship Conflict	0.86	0.95	0.00-4.00	0.00-4.00
T2 Friendship Withdrawal	4.59	0.69	1.00-5.00	1.00-5.00
<u>Observed Interpersonal Behaviors</u>				
T1 Inconsolability	1.05	0.23	1.00-3.00	1.00-5.00
T1 Conversational Self-Focus	1.49	0.77	1.00-5.00	1.00-5.00
T1 Co-Rumination	2.26	0.69	1.00-4.00	1.00-5.00
T1 Self-Sacrificing Behavior	1.05	0.22	1.00-3.00	1.00-5.00

*Notes.* T1 = Time 1. T2 = Time 2. CDI = Children's Depression Inventory. CES-D = Center for Epidemiological Study Depression Scale. RCMAS = Revised Children's Manifest Anxiety Scale.

Table 2  
*Mean-Level Gender and Grade Group Differences in Study Variables*

	Girls	Boys	Seventh	Tenth	Gender	Grade Group	Interaction
	M (SD)	M (SD)	M (SD)	M (SD)	PE	PE	PE
<u>Internalizing Symptoms</u>							
T1 CDI	.30 (.24)	.22 (.19)	.24 (.23)	.29 (.21)	-.19****	.10*	-.03
T1 CES-D	1.65 (.45)	1.48 (.34)	1.53 (.39)	1.60 (.42)	-.20****	.07	-.04
T1 RCMAS	2.24 (.68)	1.94 (.58)	2.01 (.65)	2.18 (.63)	-.22****	.11**	.01
T2 CDI	.38 (.28)	.29 (.25)	.33 (.30)	.35 (.25)	-.17***	.03	-.03
T2 CES-D	1.81 (.52)	1.59 (.41)	1.67 (.49)	1.73 (.48)	-.23****	.05	-.02
T2 RCMAS	2.40 (.74)	2.04 (.63)	2.18 (.74)	2.27 (.67)	-.25****	.05	-.02
<u>Friendship Adjustment</u>							
T1 Positive Friendship Quality	3.21 (.54)	2.56 (.72)	2.89 (.70)	2.91 (.73)	-.46****	.00	-.06
T1 Friendship Conflict	.66 (.85)	.82 (.85)	.75 (.83)	.72 (.87)	.09	-.01	.08
T1 Friendship Withdrawal	1.96 (.51)	2.29 (.50)	2.12 (.55)	2.11 (.52)	.31****	.01	.04
T2 Positive Friendship Quality	2.47 (1.07)	2.12 (.81)	2.30 (.98)	2.31 (.95)	-.18***	-.01	.03
T2 Friendship Conflict	.93 (1.05)	.80 (.84)	.93 (1.00)	.79 (.90)	-.08	-.08	.02
T2 Friendship Withdrawal	2.46 (.81)	2.51 (.53)	2.49 (.67)	2.48 (.71)	.03	-.01	-.06
<u>Observed Interpersonal Behaviors</u>							
T1 Inconsolability	1.06 (.27)	1.03 (.18)	1.04 (.23)	1.05 (.23)	-.06	.00	.00
T1 Conversational Self-Focus	1.59 (.84)	1.39 (.67)	1.47 (.77)	1.51 (.77)	-.13**	.02	.04
T1 Co-Rumination	2.49 (.69)	2.02 (.59)	2.01 (.60)	2.51 (.68)	-.32****	.35****	.02
T1 Self-Sacrificing	1.06 (.26)	1.03 (.18)	1.05 (.23)	1.04 (.22)	-.07	-.03	-.04

Notes. \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . \*\*\*\* $p < .0001$ . PE = standardized parameter estimate. T1 = Time 1. T2 = Time 2. CDI = Children's Depression Inventory. CES-D = Center for Epidemiological Studies Depression Scale. RCMAS = Revised Children's Manifest Anxiety Scale. Gender was coded as 0 = Girls, 1 = Boys; grade group was coded as 0 = Seventh graders, 1 = Tenth graders.

Table 3  
*Initial Depressive Symptoms Predicting Time 2 Friendship Adjustment*

DV =	T2 Positive FQ (self-report) PE	T2 Positive FQ (friend-report) PE
T1 CDI	-.08*	-.01
Girls	-.14**	
Boys	.02	
T1 CES-D	-.13**	.00
Girls	-.22****	
Boys	.04	
DV =	T2 Conflict (self-report) PE	T2 Conflict (friend-report) PE
T1 CDI	.09*	.03
Girls	.14**	
Boys	-.02	
T1 CES-D	.09*	.05
DV =	T2 Withdrawal (self-report) PE	T2 Withdrawal (friend-report) PE
T1 CDI	.12**	.00
Girls	.21****	Girls, 7 <sup>th</sup> -.07
Boys	-.04	Boys, 7 <sup>th</sup> .07
		Girls, 10 <sup>th</sup> .06
		Boys, 10 <sup>th</sup> -.17
T1 CES-D	.15***	.02
Girls	.22****	Girls, 7 <sup>th</sup> -.06
Boys	.00	Boys, 7 <sup>th</sup> .04
		Girls, 10 <sup>th</sup> .13*
		Boys, 10 <sup>th</sup> -.13
DV =	T2 Termination (self-report) PE	T2 Termination (friend-report) PE
T1 CDI	-.06	-.04
T1 CES-D	-.10*	-.03
Girls	-.15**	
Boys	.03	

*Notes.* \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . PE = standardized parameter estimate. T1 = Time 1. T2 = Time 2. FQ = Friendship Quality. CDI = Children's Depression Inventory. CES-D = Center for Epidemiological Studies Depression Scale. Initial levels of friendship adjustment were controlled in each model.

Table 4  
*Initial Anxiety Symptoms Predicting Time 2 Friendship Adjustment*

DV =	T2 Positive FQ (self-report) PE	T2 Positive FQ (friend-report) PE
T1 RCMAS	-.05	.00
<hr/>		
DV =	T2 Conflict (self-report) PE	T2 Conflict (friend-report) PE
T1 RCMAS	.09*	.01
Seventh	.16**	
Tenth	-.02	
<hr/>		
DV =	T2 Withdrawal (self-report) PE	T2 Withdrawal (friend-report) PE
T1 RCMAS	.06	.01
Girls	.13*	
Boys	-.05	
<hr/>		
DV =	T2 Termination (self-report) PE	T2 Termination (friend-report) PE
T1 RCMAS	-.05	-.01

*Notes.* \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . PE = standardized parameter estimate. T1 = Time 1. T2 = Time 2. FQ = Friendship Quality. RCMAS = Revised Children's Manifest Anxiety Scale. Initial levels of friendship adjustment were controlled in each model.

Table 5

*Relations Between Youths' Time 1 Internalizing Symptoms and Observed Behaviors*

DV =	Youths' Inconsolability PE	Youths' Self-Focus PE	Dyadic Co-Rumination PE	Friends' Self-Sacrificing PE
T1 CDI	.05	.10*	.13**	.04
T1 CES-D	.03	.11**	.13**	.08 <sup>†</sup>
T1 RCMAS	.06	.13**	.14**	.00

*Notes.* <sup>†</sup> $p = .07$ . \* $p < .05$ . \*\* $p < .01$ . PE = standardized parameter estimate. T1 = Time 1. CDI = Children's Depression Inventory. CES-D = Center for Epidemiological Studies Depression Scale. RCMAS = Revised Children's Manifest Anxiety Scale.



Table 6  
*Relations Between Observed Behaviors and Time 2 Friendship Adjustment*

DV =	T2 SR Pos. FQ PE	T2 FR Pos. FQ PE	T2 SR Conflict PE	T2 FR Conflict PE	T2 SR Withdrawal PE	T2 FR Withdrawal PE	T2 SR Termination PE	T2 FR Termination PE
Inconsolability	.02	-.04	.00	.03	.04	.01	.01	.06
Self-Focus	-.06	-.08*	.00	.06 <sup>†</sup>	.02	.09*	.12**	.04
		Girls Boys				Girls, 7 <sup>th</sup> Boys, 7 <sup>th</sup> Girls, 10 <sup>th</sup> Boys, 10 <sup>th</sup>	.30**** .00 .00 .05	

*Notes.* <sup>†</sup> $p = .09$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\*\* $p < .0001$ . PE = standardized parameter estimate. T1 = Time 1. T2 = Time 2. SR = self-report. FR = friend-report. Pos. FQ = Positive Friendship Quality. Initial levels of Time 1 friendship rejection variables were controlled in each model.

Table 7  
*Initial Friendship Adjustment Predicting Time 2 Internalizing Symptoms*

DV =	T2 CDI PE	T2 CES-D PE	T2 RCMAS PE
T1 Positive FQ (self-report)	.04	.06	.04
T1 Positive FQ (friend-report)	-.02	.03	.03
T1 Conflict (self-report)	.01	.02	-.01
T1 Conflict (friend-report)	.00	.00	.01
T1 Withdrawal (self-report)	-.05	-.08*	-.10**
T1 Withdrawal (friend-report)	.00	-.03	-.01
		Girls Boys	.09 <sup>†</sup> -.08
T2 Termination (self-report)	-.03	-.04	-.04
T2 Termination (friend-report)	-.01	-.02	-.04

*Notes.* <sup>†</sup> $p = .10$ . \* $p < .05$ . \*\* $p < .01$ . PE = standardized parameter estimate. T1 = Time 1. T2 = Time 2. FQCQ = Friendship Quality. CDI = Children's Depression Inventory. CES-D = Center for Epidemiological Studies Depression Scale. RCMAS = Revised Children's Manifest Anxiety Scale. Initial levels of youths' internalizing symptoms were controlled in each model.

Table 8  
*Depression and Anxiety Contagion Effects in Youths' Friendships*

DV =	Friends' T2 CDI PE
Friends' T1 CDI	.61****
Youths' T1 CDI	.00
DV =	Friends' T2 CES-D PE
Friends' T1 CES-D	.54****
Youths' T1 CES-D	.07**
DV =	Friends' T2 RCMAS PE
Friends' T1 RCMAS	.63****
Youths' T1 RCMAS	.02

*Notes.* \*\* $p < .01$ . \*\*\*\* $p < .0001$ . PE = standardized parameter estimate. T1 = Time 1. T2 = Time 2. CDI = Children's Depression Inventory. CES-D = Center for Epidemiological Studies Depression Scale. RCMAS = Revised Children's Manifest Anxiety Scale. Youths' and friends' Time 1 symptoms were entered as simultaneous predictors in order to control for initial levels of friends' symptoms when testing contagion.

Table 9

*Relations Between Observed Behaviors and Friends' Time 2 Internalizing Symptoms*

DV =	Friends' T2 CDI PE	Friends' T2 CES-D PE	Friends' T2 RCMAS PE
Dyadic Co-Rumination	-.07	-.05	-.03
Friends' Self-Sacrificing Behavior	.01	-.02	.00
Youths' Self-Focus	-.05	-.03	-.05

*Notes.* PE = standardized parameter estimate. T2 = Time 2. FQCQ = Friendship Quality. CDI = Children's Depression Inventory. CES-D = Center for Epidemiological Studies Depression Scale. RCMAS = Revised Children's Manifest Anxiety Scale. Initial levels of friends' internalizing symptoms were controlled in each model.

Appendix A

Information Sheet

Name: \_\_\_\_\_

Age: \_\_\_\_\_ Birthdate: \_\_\_\_ / \_\_\_\_ / \_\_\_\_ Sex (check one): \_\_\_girl \_\_\_ boy

For the next two questions, check all categories that apply:

1. What is your ethnicity?

- \_\_\_\_\_ Hispanic or Latino
- \_\_\_\_\_ Not Hispanic or Latino

2. What is your race?

- |   |                                 |
|---|---------------------------------|
| _____ American Indian / Alaskan Native          | _____ Black or African American |
| _____ Asian                                     | _____ White                     |
| _____ Native Hawaiian or Other Pacific Islander | _____ Other                     |

3. The person who I came with today is (check one):

- \_\_\_\_\_ a best friend
- \_\_\_\_\_ a good friend
- \_\_\_\_\_ just a friend
- \_\_\_\_\_ not a friend

4. Who lives in the home that you spend most of your time in? (check all that apply)

- |                                     |                                    |
|-------------------------------------|------------------------------------|
| _____ mother                        | _____ father                       |
| _____ step-mother                   | _____ step-father                  |
| _____ brother (how many? ____)      | _____ sister (how many? ____)      |
| _____ step-brother (how many? ____) | _____ step-sister (how many? ____) |
| _____ grandmother (how many? ____)  | _____ grandfather (how many? ____) |

Below list anyone else who lives in your home (and explain their relationship to you):

---



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**The next two questions are about your mother. If you live with your biological mother, answer these questions about her. If you live with another woman who helps to take care of you (e.g., a stepmother, a grandmother), answer these questions about her instead. If there is no woman who lives with you and helps to take care of you, skip these questions.**

**5. How far did she go in school?**

- Eighth grade or less  
 More than eighth grade but did not graduate from high school  
 High school graduate or completed a GED  
 Went to college but did not graduate  
 Graduated from college  
 Professional training beyond college (like graduate, medical, or law school)  
 She went to school but I don't know for how long.  
 She never went to school.  
 I don't know if she went to school.

**6. Does she work for pay?**

Yes  
 If so, what type of work does she do?

\_\_\_\_\_

No

If not:

Is she a homemaker?  Yes  No  
 Is she disabled?  Yes  No  
 Is she retired?  Yes  No

**The next two questions are about your father. If you live with your biological father, answer these questions about him. If you live with another man who helps to take care of you (e.g., a stepfather, a grandfather), answer these questions about him instead. If there is no man who lives with you and helps to take care of you, skip these questions.**

**7. How far did he go in school?**

- Eighth grade or less  
 More than eighth grade but did not graduate from high school  
 High school graduate or completed a GED  
 Went to college but did not graduate  
 Graduated from college  
 Professional training beyond college (like graduate, medical, or law school)  
 He went to school but I don't know for how long.  
 He never went to school.  
 I don't know if she went to school.

**8. Does he work for pay?**

Yes

If so, what type of work does he do? \_\_\_\_\_

No

If not:

Is he a homemaker?  Yes  No

Is he disabled?  Yes  No

Is he retired?  Yes  No

## Appendix B

**What I Have Been Feeling**

Below is a list of ways you might have felt or behaved. Please circle the number that indicates how often you have felt this way during the past week.

1. I was bothered by things that didn't usually bother me.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

2. I did not feel like eating; my appetite was poor.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

3. I felt that I could not shake off the blues even with help from my family and friends.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

4. I felt I was just as good as other people.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

5. I had trouble keeping my mind on what I was doing.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

6. I felt depressed.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

7. I felt that everything I did was an effort.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

8. I felt hopeful about the future.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)



**9. I thought my life had been a failure.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**10. I felt fearful.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**11. My sleep was restless.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**12. I was happy.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**13. I talked less than usual.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**14. I felt lonely.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**15. People were unfriendly.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**16. I enjoyed life.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**17. I had crying spells.**

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**18.** I felt sad.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**19.** I felt that people dislike me.

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

**20.** I could not get "going."

1	2	3	4
Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)

## Appendix C

**My Friendship****Answer these questions about: [My Friend]****1. [My Friend] and I get mad at each other a lot.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**2. If [My Friend] had to move away, I would miss [My Friend].**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**3. [My Friend] and I tell each other that we're good at things.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**4. [My Friend] and I make each other feel important and special.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**5. I feel happy when I'm with [My Friend].**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**6. When there is free time at school, [My Friend] and I are always together.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**7. If [My Friend] and I get mad at each other, we always talk about how to get over it.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**8. I think about [My Friend] even when [My Friend] is not around.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**9. [My Friend] and I talk about the things that make us sad.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**10. [My Friend] and I make each other feel good about ideas that [My Friend] or I have.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**11. [My Friend] accepts me no matter what I do.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**12. [My Friend] and I do fun things together a lot.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**13. [My Friend] and I argue a lot.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**14. [My Friend] and I go to each other's houses after school and on weekends.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**15. [My Friend] understands what I'm really like.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**16. When [My Friend] or I are having trouble figuring out something, we usually ask each other for help and advice.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**17. When [My Friend] and I are mad about something that has happened to us, we can always talk to each other about it.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**18. [My Friend] is important to me.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**19. [My Friend] and I always make up easily when we have a fight.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**20. [My Friend] and I fight.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**21. [My Friend] and I often help each other with things so we can get done quicker.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**22. I am satisfied with my relationship with [My Friend].**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true

**23. [My Friend] and I always get over our arguments really quickly.**

0	1	2	3	4
not at all true	a little true	somewhat true	pretty true	really true



## Appendix D

**What I Do With My Friend**

**Directions:** Below is a list of things that people sometimes do with their friends. Please circle the number below which best describes how often you do each of these things.

**1. How often do you avoid spending time with [FRIEND's NAME] at school?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**2. How often do you avoid spending time with [FRIEND's NAME] after school and on weekends?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**3. How often do you avoid talking with [FRIEND's NAME] on the phone?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**4. How often do you avoid talking with [FRIEND's NAME] over text messages and e-mail?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**5. How often do you try to make plans with other friends rather than with [FRIEND's NAME]?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**6. How often do you try to spend time with [FRIEND's NAME] at school?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**7. How often do you try to spend time with [FRIEND's NAME] after school and on weekends?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**8. How often do you try to talk with [FRIEND's NAME] on the phone?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**9. How often do you try to talk with [FRIEND's NAME] over text messages and e-mail?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

**10. How often do you try to make plans with [FRIEND's NAME] rather than with other friends?**

1	2	3	4	5
Never	Rarely	Sometimes	Fairly often	All the time

## Appendix E

**Problems**

List a problem that you have and answer the following questions about the problem.

**PROBLEM:** \_\_\_\_\_

**1. How upsetting is this problem?**

1	2	3	4	5
Not at All				Very
Upsetting				Upsetting

**2. How important is this problem?**

1	2	3	4	5
Not at All				Very
Important				Important

**3. How hard would it be to solve this problem?**

1	2	3	4	5
Not at All				Very
Hard				Hard

**4. How hard would it be to feel better about this problem?**

1	2	3	4	5
Not at All				Very
Hard				Hard

**5. How much do you want to feel better about this problem?**

1	2	3	4	5
Not At				Very
All				Much

**6. How much do you want this problem not to bother you?**

1	2	3	4	5
Not At				Very
All				Much

**7. How much do you want to not be upset about this problem?**

1	2	3	4	5
Not At				Very
All				Much

Appendix F

**Interpersonal Processes in Friendships**  
**Observational Coding Manual**

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**Dyad-level coding****Co-Rumination (5 aspects)**

Co-rumination is defined as talking extensively about problems with a relationship partner and is characterized by a large amount of time spent talking about problems, mutual encouragement of problem talk, rehashing problems, speculating about problems, and dwelling on negative affect.

**Ways dyads may co-ruminate / Examples:**

a) time spent talking about problems : the dyad spends a large amount of time talking about problems (e.g., friends spend  $\frac{3}{4}$  of the problem talk segment discussing problems)

b) mutual encouragement of problem talk : the dyad keeps the problem talk going

Alice: We have been talking about this forever! Oh well, it's okay.

Jane: I know; it's important. So what happened with [the problem] yesterday?

c) rehashing problems : the dyad talks about problems or parts of the problems over and over

Daniel: I mean I know I've said this already, but she freaking *stole* his wallet!!

Josh: Right, dude. She freaking stole it. And remember how she said she didn't do it?

d) speculating about problems : the dyad discusses reasons why the problem exists, what may happen next, etc.

Jennifer: Why do you think he did that? He can't be that mean.

Sarah: I don't know. I mean, maybe he was having a bad day?

e) dwelling on negative affect : the dyad focuses on the experience of negative emotions like feeling sad, anxious, angry, or depressed

Bill: It sucks man. It really sucks.

Henry: Seriously. You must feel like crap.

### **Additional Notes**

Similar to other interpersonal processes (e.g., conflict or support), co-rumination is best conceptualized as occurring along a continuum. That is, conversations cannot simply be labeled as “co-rumination” or “not co-rumination.” Instead conversations vary in the degree to which they involve co-rumination:

*\*Some conversations involving problems may not involve co-rumination.* For example, a youth may tell a friend that he is free on Friday night because his girlfriend broke up with him, and then the friends begin to make plans for Friday without discussing the break up further.

*\*On the other end of the continuum,* a youth might tell her friend that she is free on Friday because her boyfriend broke up with her, and, in this case, the friend prompts the youth with questions, the girls rehash details of the break up, speculate about the causes and social repercussions of the break up, and talk a lot about how bad the youth feels.

*\*Furthermore, it is possible for a conversation to involve some co-rumination but not as much as the extreme example.* For instance, the conversation might involve some aspects of co-rumination (e.g., speculating) but not others (e.g., dwelling on negative feelings) or involve all aspects of co-rumination at a lower intensity than in the extreme example.

*\*A moderate score for particular aspects of co-rumination may be obtained in one of two ways. For example, one youth may exhibit a large amount (e.g., a “4” or “5”) of one aspect while the other youth exhibits a small amount (a “1” or “2”). In this case a moderate score of “3” may be given for the dyad on that particular aspect. Alternatively, both youth may exhibit moderate amounts of a particular aspect. In this case, the dyad may also score a “3” for that particular aspect.*

### **Rating Scale**

Aspects of co-rumination (i.e., encouraging, rehashing, speculating and focusing on negative affect) will be scored on a 1-5 scale where each number represents the amount of each aspect the dyad exhibits:

- 1: Not at all or very little
- 2: A little of the time
- 3: Some of the time
- 4: A lot of the time
- 5: All the time / Very much

Average the subscale ratings in order to determine the “general” co-rumination score. If youth have a low average (e.g., three of four subscales are 1 and only one is rated 2 or higher), the general score **MUST** be at least a 2, even if the technical average is less than 2.

**Individual-level coding****Conversational Self-Focus**

Conversational self-focus is defined as one conversation partner re-directing a conversation to focus on the self or aspects of the self. During problem talk conversations, an individual exhibiting conversational self-focus will shift the focus of the conversation from a friend's problem to focus on a problem of their own or another topic related to themselves.

**Ways individuals may exhibit conversational self-focus / Examples:**

There are countless ways in which individuals may self-focus during conversations.

These may be blatant or subtle, passive or aggressive, seemingly sensitive or insensitive, etc. Often times, self-focus will have one or more of the following components:

**a) the "me" statement**

Conversational self-focusers may shift conversations by making statements about the self which include "I" or "me."

A: I really like David, but I'm not sure he likes me back.

B: I know! I do too! I passed him in the hallway and I almost died.

Youth who are not exhibiting self-focus may respond in the following way:

A: I really like David, but I'm not sure he likes me back.

B: Aww...you guys would be so cute together.

b) changing the subject

Conversational self-focusers may also change the subject of the conversation. This form also has a “me” focus, but doesn’t necessarily continue speaking about the subject initially raised:

A: I really like David, but I’m not sure he likes me back.

B: You know, this week has been so hard for me. I am exhausted.

Youth who are not exhibiting self-focus may continue to discuss the subject at hand:

A: I really like David, but I’m not sure he likes me back.

B: Does he know?

c) “one-upping”

Conversational self-focusers may “one-up” their conversation partners. In this form, self-focusers may take a friend’s statement and “best” it, like in the following example:

A: I really like David, but I’m not sure he likes me back.

B: Did I tell you he called me today? Crazy!

Youth who are not exhibiting self-focus may not try to ‘steal the limelight’:

A: I really like David, but I’m not sure he likes me back.

B: And he called you the other day—that’s a good sign!

**Additional Notes**

*Self-focus can be blatant.* For example:

A: I really like David, but I'm not sure he likes me back.

B: Oh my gosh, me too! I passed him in the hallway and I thought I would die!

OR

A: I really like David, but I'm not sure he likes me back.

B: Let's talk about Adam; he is way cuter.

*Self-focus can also be more passive.* Self-focusers may not always blatantly re-direct conversations; rather they may integrate a balance of self-directed statements and moderate conversation encouragers/concessions.

A: I really like David, but I'm not sure he likes me back.

B: Yeah? He's cute. (*moderate conversation encourager/concession*)

A: Seriously!

B: I am so into Adam. He's ridiculously good-looking. (*re-direction of conversation*)

*It is important to take into account the quality and quantity of conversational self-focus.*

For example, some youth may exhibit large amounts of passive self-focus. Other youth may exhibit small amounts of blatant self-focus. Both of these youth may receive a moderate score for self-focus. On the other hand, one youth may exhibit a moderate amount of passive self-focus while another youth exhibits a moderate amount of blatant

self-focus. The passive self-focuser in this case would receive a lower score than the blatant self-focuser.

*It is also important to take a broad look at the entire conversation as well as specific responses to problem talk.* For example, did one youth dominate the problem talk such that they spent most of the time on their problem while the other youth spoke very little? Was this because the dominant youth interrupted and/or turned the problem talk away from their friend? If so, the dominant youth may receive a higher score for self-focus, even though they didn't need to continually re-direct the conversation.

### **Rating Scale**

Conversational self-focus (i.e., turning conversations to focus on the self or aspects of the self) will be scored on a 1-5 scale where each number represents the amount of self-focus the individual exhibits:

- 1: Not at all or very little
- 2: A little of the time
- 3: Some of the time
- 4: A lot of the time
- 5: All the time / Very much

**Individual-level coding****Inconsolability**

Inconsolability is defined as persistent negativity in the face of positive remarks or positive feedback from a friend during conversations about problems. Youth exhibiting inconsolability may show a persistent expression of negative affect (negative emotion), negative behaviors (rolling eyes, crossing arms), or negative verbal statements.

**Ways individuals may exhibit inconsolability / Examples:**

a) negate or refuse help from the friend: Inconsolable youth may respond to a friend's attempt to help them with a problem by negating or refusing the help, as in the following example:

Jenny: Well, I could help you study for the test.

Sally: No, it won't help.

b) negate or refuse support from the friend: Inconsolable youth may respond to a friend's attempt to cheer them up or support them by negating or refusing the support, as in the following example:

Adam: You're really smart!

Brian: But I still failed that test.



c) exhibit non-verbal negativity in the face of support from the friend: Inconsolable youth may also exhibit their inconsolability through negative affect or negative behaviors/body language.

Sandy: Seriously, it's going to be okay.

Bev: ((*rolls eyes and huffs*))

### **Additional Notes**

You might think of inconsolable youth as being a sort of brick wall against which attempts at cheering them hit hard and fall to the ground. In other words, inconsolable youth are hard to cheer up, or simply, difficult to soothe.

Some inconsolable youth may show some improvement in mood while talking to a friend, while others may show no improvement. The youth showing some positivity or improvement in mood may score lower on inconsolability, while the youth showing no improvement would score higher.

In the event that the friend does nothing to try to cheer or console the friend, doesn't offer statements in support of the friend, doesn't smile or try to engage the friend (e.g., jokes), and/or doesn't even talk about the friend's problem, we would not be able to rate the youth for inconsolability (i.e., would give them a rating of 1). That is, unless the friend is doing something to console the youth, we wouldn't code the youth's behavior as highly inconsolable. For example, if a youth is completely negative the entire time, but their

friend is not doing anything to talk about and/or help them with their problem, we wouldn't code that as high on inconsolability. If the youth is completely negative when their friend is trying to talk about the youth's problem or trying to cheer up the youth, then we could code that as highly inconsolable. This may help with distinguishing inconsolability from the negative affect portion of the co-rumination score. That is, a dyad high in negative affect on the co-rumination codes may or may not have youth and/or friends rated high on inconsolability. The following examples may help to illuminate this difference:

This dyad may score high on the "dwelling on negative affect" portion of the co-rumination score (e.g., 4 or 5):

Allen: That sucks! (*focuses on negative affect*)

Joe: I know it does suck! (*focuses on negative affect*)

This dyad may score lower on "dwelling on negative affect" (e.g., 1 or 2) and may have one friend (\*) score higher on inconsolability (e.g., 3 or 4) because they, but not their friend are focusing on negative affect and are inconsolable:

Tricia: But you could get extra help on that test right? (*consoling statement*)

\*Kelli: No; it's not even worth it. (*focuses on negative affect, inconsolable*)

This dyad may score lower on “dwelling on negative affect” (e.g., 1 or 2) because one youth (\*) is focused on negative affect, but the youth (\*) may not score high on inconsolability because her friend is not trying to console her (e.g., 1 or 2):

\*Beth: This problem can never be solved. (*focuses on negative affect*)

Amy: What are you doing after school tomorrow? (*not trying to console*)

\*Beth: It’s going to go on forever. (*focuses on negative affect*)

### **Rating Scale**

Inconsolability (i.e., persistent negativity in the face of positive feedback) will be scored on a 1-5 scale where each number represents the amount of inconsolability the individual exhibits:

1: Not at all or very little

2: A little of the time

3: Some of the time

4: A lot of the time

5: All the time / Very much

**Individual-level coding****Self-Sacrificing Style**

A self-sacrificing conversational style can be defined as a tendency of one conversation partner to defer discussing their personal concerns in favor of the personal concerns of another. In other words, it is downplaying one's own concerns and elevating the concerns of another. Self-sacrificing can be thought of as overly devoted or involved behavior. It is beyond what we may think of as a normal level of support and engagement on the part of a friend.

**Ways individuals may exhibit a self-sacrificing style / Examples:****a) downplay the seriousness of their own concerns**

Jake: Oh, sorry. We haven't talked about your problem yet.

Henry: No problem; it's not important.

Jill: Do you want to talk?

Maria: Nah, it's stupid.

**b) elevate the priority of the other person's concerns**

Ashley: Do you want to talk about your problem first?

Erin: Oh no, yours is way more serious.

Aaron: That sucks man!

Blake: Oh well. So anyway, what were you saying about your problem?

### **Additional Notes**

*The prototypic self-sacrificer* will both downplay their concerns and elevate the concerns of the other. For example, if the individual displays a moderate amount of downplaying and a moderate amount of elevating, he or she may receive a moderate score for self-sacrificing. *However*, it is also possible that a self-sacrificer may exhibit a high degree of one aspect but a low degree of the other and also receive a moderate score. [Of course, if he or she exhibits small amounts of both aspects (e.g., a little downplaying, a little elevation), a low score would be given. Likewise if he or she exhibits large amounts of both aspects (e.g., a lot of downplaying, a lot of elevation), a high score would be given.]

*It is important to note what the youths' problems are.* For instance, if Friend A's problem is that his parents are getting divorced and he is saying things like, "It's not important," we may think that is more self-sacrificing than if his problem was that he "couldn't think of a problem to write down."

*Also consider the time spent discussing problems.* That is, if Friend B talks for 8 minutes (half the time) about his problem, and then says, "So what about your problem?" to Friend A, we may not necessarily think of that as self-sacrificing, as it may reflect Friend B's attempts to not dominate the conversation. However, if Friend B talked for 30 seconds and then deflected to Friend A, we may consider self-sacrificing.

*Self-sacrificing can be active or passive.* Active self-sacrificing may be expressed as verbal statements downplaying the seriousness of their concerns and/or elevating the concerns of the other. Passive self-sacrificing, on the other hand, may be exhibited as not

attempting to talk about problems or resisting talking about problems in favor of listening to and/or supporting the other. Active self-focusing will get a higher score than passive self-focusing. For example, if the youth actively elevates his friend's problem and actively downplays his problem, he would get a high score (e.g., 4 or 5). He may get a slightly lower score (e.g., 3) if he actively engages in one component of self-sacrificing (e.g., elevating his friend's problem) and passively engages in the other component (e.g., downplaying his own problem). Finally, if he is passively engaging in both elevating his friend's problem and downplaying his own problem, he would get a lower score (e.g., 1 or 2).

*Finally, be careful not to confuse self-sacrificing with general apathy* (e.g., "I don't care who goes first."). Some youth may not take the problem talk task seriously. We could infer this if they are saying things like, "This is dumb" or "I don't want to do this" throughout the talk. Some youth may feel nervous talking in front of a camera, so we need to watch them carefully to try to figure out whether they are not talking about their problems because they are nervous about the observation, because they don't care about the task, or because they are self-sacrificing.

**Rating Scale**

Self-sacrificing (i.e., persistent negativity in the face of positive feedback) will be scored on a 1-5 scale where each number represents the amount of self-sacrificing the individual exhibits:

- 1: Not at all or very little
- 2: A little of the time
- 3: Some of the time
- 4: A lot of the time
- 5: All the time / Very much

**Directions for Coding**

1. Find the dyad's data folder in the file cabinets in Room 405. Retrieve the DVD and transcript.
2. Record the names of Friend A and Friend B in the appropriate places on the Observational Coding Sheet.
3. Find the Problems questionnaire (Room 405) and record Friend A's problem and Friend B's problem on the Observational Coding Sheet (in the "Problem\_\_\_\_\_" section of the coding sheet).
4. Locate the problem talk segment of the DVD. It should be about 7 minutes into the recording.
5. Read the transcript of the problem talk segment for the dyad. Write down any other problems that they discuss during the problems talk (in the Other Problem 1\_\_\_\_, 2\_\_\_\_, 3\_\_\_\_ etc. blanks on the coding sheet). It does happen from time to time that youth will discuss problems they have that are not listed on their sheet. Record whether they discuss the problems listed on their sheet by circling Y or N next to each problem.  
  
\*Note: please read the entire transcript: sometimes it appears that youth are "finished" with talking about problems (in fact, they often say things like, "So are we done?") but then talk about problems at a later point in the conversation.
6. Read over your coding sheet and/or manual to familiarize yourself with the rating scales and behaviors that you are coding.
7. Watch the videotaped problem talk segment, referencing the transcript as needed to make a rating for ONE youth (or if you are working on Co-Rumination codes, make a



rating for the dyad then skip to step 9). You watch the interaction as many times as necessary to make a valid rating for the youth.

8. (If you are working on the individual codes:) Next watch the problem talk segment, referencing the transcript as needed to make a rating for the OTHER youth. Of course, you may watch the interaction as many times as necessary to make a valid rating.

9. Record any problems, questions, or relevant notes for yourself on the coding sheet to discuss at the next lab meeting.

**Observational Coding Sheet: Dyad**

Dyad \_\_\_\_\_ Coder \_\_\_\_\_ Date \_\_\_\_\_

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Friend A's name \_\_\_\_\_

Problem \_\_\_\_\_ Discussed? Y/N

Other problem 1 \_\_\_\_\_ Discussed? Y/N

Other problem 2 \_\_\_\_\_ Discussed? Y/N

Other problem 3 \_\_\_\_\_ Discussed? Y/N

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Friend B's name \_\_\_\_\_

Problem \_\_\_\_\_ Discussed? Y/N

Other problem 1 \_\_\_\_\_ Discussed? Y/N

Other problem 2 \_\_\_\_\_ Discussed? Y/N

Other problem 3 \_\_\_\_\_ Discussed? Y/N

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*How characteristic of this dyad are the following?*

Co-Rumination

Rehashing	1	2	3	4	5
Speculating	1	2	3	4	5
Dwelling on	1	2	3	4	5
Negative Affect					
Encouraging	1	2	3	4	5
Problem Talk					
Co-Rumination (general score)	1	2	3	4	5

Notes, Questions, or Problems:

**Observational Coding Sheet: Individual**

**Dyad** \_\_\_\_\_ **Coder** \_\_\_\_\_ **Date** \_\_\_\_\_

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**Friend A's name** \_\_\_\_\_

**Problem** \_\_\_\_\_ **Discussed? Y/N**

**Other problem 1** \_\_\_\_\_ **Discussed? Y/N**

**Other problem 2** \_\_\_\_\_ **Discussed? Y/N**

**Other problem 3** \_\_\_\_\_ **Discussed? Y/N**

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**Friend B's name** \_\_\_\_\_

**Problem** \_\_\_\_\_ **Discussed? Y/N**

**Other problem 1** \_\_\_\_\_ **Discussed? Y/N**

**Other problem 2** \_\_\_\_\_ **Discussed? Y/N**

**Other problem 3** \_\_\_\_\_ **Discussed? Y/N**

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***Friend A***

*How characteristic of \_\_\_\_\_ are the following?*

Conversational Self-Focus	1	2	3	4	5
Inconsolability Self-Sacrificing	1	2	3	4	5
Conversational Style	1	2	3	4	5

---

**Friend B**

How characteristic of \_\_\_\_\_ are the following?

Conversational Self-Focus	1	2	3	4	5
Inconsolability Self-Sacrificing	1	2	3	4	5
Conversational Style	1	2	3	4	5

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Notes, Questions, or Problems:

Friend A-

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Friend B-

## VITA

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Her research interests include the influence of psychopathology on close relationships and interpersonal behaviors and self-disclosure processes associated with internalizing disorders. Additionally, Becca has an interest in issues related to professional training and competence and has been a member of the American Psychological Association's Competence Problems Workgroup since 2006. Her clinical interests include internalizing disorders, personality pathology, and developmental transitions in late adolescence and early adulthood.