

Relational Aggression and Friendship During Early Childhood: “I Won’t Be Your Friend!”

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Associations between relational aggression and mutual, dyadic friendships during early childhood were assessed in the context of a year-long, short-term longitudinal study. Children’s mutual friendships were determined via sociometric ratings and their relationally aggressive behavior among peers was assessed via naturalistic, free play observations. Generally, children who were more relationally aggressive had more mutual friends, although this relation differed by gender and time of assessment. Future work should include measures of friendship quality and investigate the role of relational aggression within friendship dyads.

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In recent years, a diverse body of knowledge has developed describing the friendship patterns of young children. Early conceptions of friendship depicted young children as incapable of maintaining mutually rewarding peer relationships (Gershman & Hayes, 1983). However, studies conducted during the past several decades have demonstrated that as early as preschool, children can have meaningful, stable relationships with their peers (e.g., Denham & McKinley, 1993; Denham, McKinley, Couchoud, & Holt, 1990; Howes, 1998; Newcomb & Bagwell, 1995). The majority of past studies examining friendship during both early and middle childhood have focused on the positive developmental correlates with close peer friendships such as the development of social competence, but have largely neglected the negative aspects of friendship (Berndt, 1992). In recent years, however, important strides have been made in identifying aspects of friendships that may correspond to negative outcomes. For instance, children whose friendships are characterized by more negative qualities (e.g., lack of closeness and conflict) may experience adjustment difficulties, such as increased engagement in delinquent acts or displaying internalizing symptoms (Berndt). Further, researchers have found that high levels of intimacy within friendships may actually precipitate conflict, which may or may not be aggressive in nature, during both early and middle childhood (Hartup, French, Laursen, Johnston, & Ogawa, 1993; Hartup, Laursen, Stewart, & Eastenson, 1988). An appreciation of how young children's friendships relate to negative social behaviors, such as aggression, is key to developing effective interventions for future problem behaviors later in life. Learning more about the manifestation and correlates of negative facets of peer relationships, early on in development, would be particularly useful. One particularly important negative feature of peer interactions is the use of relational aggression. Given the stability of relational aggression over the early childhood years (Crick, Ostrov et al., 2004), understanding the relation of these negative behaviors to children's friendships is of utmost importance.

In the present investigation, our primary goal was to explore the association between relationally aggressive behavior and the number of same- and opposite-gender mutual friendships that both boys and girls have during early childhood. To address this objective, we examined the friendships and relationally aggressive behavior of preschool children at two time periods over the course of a school year.

Relational Aggression During Early Childhood

Two beliefs about preschoolers and aggression have dominated the field until very recently. The first commonly held belief was that preschool boys were more aggressive than girls, whereas girls were more prosocial than boys (Coie & Dodge, 1998; Maccoby & Jacklin, 1988). The second held that, given the relatively limited cognitive and social capacities of young children, preschoolers were incapable of using more socially sophisticated forms of aggression, such as relational aggression (for review see: Crick, Werner et al., 1999). The findings from recent studies on relational forms of aggression refute these ideas. When children are relationally aggressive, they harm others through damaging a peer's relationships with others or by threatening to end the relationship itself (e.g., telling a peer or close friend he/she is not welcome to join play, spreading rumors, excluding, or gossiping about the

friend). This contrasts with physical forms of aggression where harm is conveyed through physical threats or insults (Crick, 1996; Crick, Casas, & Mosher, 1997; Crick & Grotpeter, 1995). Despite the apparent cognitive complexity of many relationally aggressive behaviors, researchers have documented the existence of this type of aggression in preschool settings in the U.S. and abroad via teacher- and peer-reports (e.g., Bonica, Arnold, Fisher, Zeljo, & Yershova, 2003; Crick, Casas, & Ku, 1999; McNeilly-Choque, Hart, Robinson, & Olsen, 1996; Russell, Hart, Robinson, & Olsen, 2003; Sebanc, 2003), as well as observations (e.g., Ostrov, Woods, Jansen, Casas, & Crick, 2004); for review see; Crick, Ostrov, Appleyard, Jansen, & Casas, 2004; Crick, Werner et al., 1999).

Early suppositions held that girls, as a group, were not aggressive. However, by including forms of aggression that are more salient to females (i.e., relational aggression), researchers generally established that boys and girls were equally aggressive (e.g., Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Buss, 1961; Crick, Werner et al., 1999). For example, preschool girls tend to be significantly more relationally aggressive than boys; whereas preschool boys have a tendency to be more physically aggressive than girls. Teacher, peer, and observational reports have all substantiated this gender difference during early childhood (Crick, Ostrov, Appleyard et al., 2004; Crick, Werner et al., 1999; Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998; McNeilly-Choque et al., 1996; Ostrov & Keating, 2004; Ostrov et al., 2004; Russell et al., 2003; Sebanc, 2003).

There is also theoretical support for these findings. Some theorists argue that girls are more likely than boys to have an interdependent self-construal (Cross & Madson, 1997), whereby their actions are motivated by the goal of maintaining interpersonal relationships (as opposed to physical dominance). Others have found a similar focus on interpersonal relationships in preschool girls (Benenson, 1993; Dunn, 1993; Vaughn et al., 2000). Therefore, if maintaining interpersonal connections with others is highly salient to girls, then relational forms of aggression, which by definition damage these ties, might be the most efficient and effective form of aggression among girls (Crick & Grotpeter, 1995). Given that relational aggression, by definition, involves the manipulation of interpersonal relationships, early friendships may provide a context for these behaviors. On one hand, children may need at least a single mutual friendships in order to perform relationally aggressive behaviors. At the same time, given existing work demonstrating that relationally aggressive children are frequently rejected by their peers (Crick et al., 1997), relationally aggressive children may wind up with few or no friends as these friends are gradually turned away by the aggressive behavior. Based on the work demonstrating the relevance of relational aggression to girls, we made a priori predictions that gender differences would emerge in the association between relational aggression and friendship during early childhood.

Friendships during early childhood

Early research on children's peer relationships depicted friendship as a single, broad construct encompassing both friendship and popularity. In recent years, however, we have gained a better understanding of the differences between these two theoretical concepts. A popular child is one who is well regarded by his/her peer group as a whole, whereas, friendship refers to specific, intense, mutually affective, and often dyadic relationships between children. Although friendship and popularity both refer to aspects of children's peer relationships, each contributes unique variance in the prediction of other social-emotional outcomes (e.g.,

Asher, Parker, & Walker, 1996; Bukowski & Hoza, 1989; Hartup, 1996; Rose & Asher, 1999).

Friendships during early childhood are typically marked by positive emotion, engagement (i.e., children play happily together), coordinated play (i.e., sharing of objects and information), and success at play tasks (Dunn, 1993; Howes, 1996;1998). Interestingly, many early friendships involve conflict and negative interactions (Hartup et al., 1993), however, this may be primarily due to the increase in interaction between friends, relative to other peers that occurs during the preschool years (Hartup et al., 1988). Loyalty and equality are other important features of friendship during early childhood (Dunn, 1993; Gottman, 1986; Newcomb & Bagwell, 1995; Sebanc, 2003). Additionally, despite increased levels of conflict, friends may value conflict resolution more strongly than non-friends (Newcomb & Bagwell, 1995).

Relational Aggression and Friendships During Early Childhood

Given the focus on relationships involved in both relationally aggressive behavior and in early friendships, there is good reason to suspect that meaningful associations will emerge between children's relationally aggressive behavior and their number of mutual friendships. The majority of our empirical knowledge about relational aggression and friendship comes from studies conducted with school-aged children. Research indicates that relational aggression during early childhood is associated with decreased levels of peer acceptance (popularity) and increased peer rejection (Crick et al., 1997). However, the association of mutual friendships and relational aggression over time has yet to be explored during early childhood (Sebanc, 2003). Several studies indicate that most school-aged relationally aggressive children have at least one reciprocal, mutual friendship (Grottpeter & Crick, 1996; Rys & Bear, 1997). Similarly, the first goal of this study was to determine if relationally aggressive preschool boys and girls have at least one reciprocal, mutual friendship.

Although important links between relational aggression and friendship have been demonstrated during the middle childhood period (Crick, 1996; Crick & Grottpeter, 1995; Werner & Crick, in press), there is a striking lack of information about how these constructs are related during early childhood (cf. Sebanc, 2003). Several investigations of the features of children's friendships during early childhood indicated that some friendship dyads affectionately self-disclose to one another using humor and gossip (often regarding other peers), thereby bolstering their intimacy and closeness (Dunn, 1993; Gottman, 1986). Depending on the context and intention of the children involved, some of the gossiping behaviors observed between friends may be consistent with the definition of relational aggression. For example, in a study on friendships during kindergarten, Maguire and Dunn (1997) reported that some friendship pairings included self-disclosure (e.g., "I don't like X, do you?"), conflict, and gossiping without the target of the gossip present. Other researchers have reported even younger children gossiping, beginning as early as 3 or 4 years of age (Dunn; Gottman). One of Gottman's examples of gossiping behavior involves two friends discussing loudly that they would like a third child to go away and not bother them because they are very mad at her (pg. 167). Not being privy to the full interaction, it is not possible to infer the intentions of these children, and hence evaluate whether these behaviors are indeed examples of relational aggression. However, this type of evidence further supports the proposition that friendships during early childhood may be a likely context for relational aggression.

In the first study to systematically investigate the relation between dyadic friendships and relational aggression during early childhood, Sebanc (2003) used sociometric nominations to identify mutual friendship dyads. Teachers rated these dyads on social behaviors (e.g., relational aggression). A gender difference emerged. Girls with friends were less relationally aggressive than girls without friends. Conversely, boys with friends were more relationally aggressive than boys without friends. Sebanc's study takes several important first steps toward investigating the relation of dyadic friendships to relational aggression in young children; however, replication is needed and the association of these constructs over time needs to be established. In Sebanc's (2003) investigation, teacher ratings were used to assess relational aggression. In the current study, we employed extensive, naturalistic, behavioral observations of children's relational aggression during free play in the classroom and on the playground. By using naturalistic observations of aggressive behavior, the current study provides a means to examine relationally aggressive behaviors that teachers may not have the opportunity to view (as children may alter their behavior in the presence of teachers) or may not personally define as aggressive (Crick & Bigbee, 1998; Leff, Power, Manz, Costigan, & Nabors, 2001). The current study also examines a larger and more age-diverse preschool sample than the Sebanc (2003) study. In contrast to the Sebanc study, children's dyadic friendships were also based on peer ratings in the current study, which are believed to be more reliable than peer nominations during early childhood (Asher & Hymel, 1986; Asher, Singleton, Tinsley, & Hymel, 1979; Olson & Lifgren, 1988). Another advantage of sociometric ratings is that they serve to expand the potential range for the number of mutual friendships. The short-term longitudinal design of the present investigation also allows for the investigation of changes in children's number of friendships over the course of the school year. Correspondingly, our second and third objectives were to examine the relation of children's friendships to their relationally aggressive behavior (assessed via naturalistic observations) both concurrently and over the course of a school year.

Numerous studies have demonstrated the stability of children's friendships during early childhood. Although preschoolers most often have short-term sporadic friendships, there is also evidence that they can engage in long-standing, maintained, reciprocal friendships (Gershman & Hayes, 1983; Howes, 1983). Research also suggests moderate stability in children's relationally aggressive behavior during early childhood (Crick, Ostrov, Appleyard et al., 2004). As a further exploration of the friendship experiences of relationally aggressive young children, we sought to determine if relationally aggressive behaviors were associated with the number of friendships children were able to sustain over the course of the school year. For example, we were interested in whether relationally aggressive children who have friends keep the same friendship partners over the course of the year or drift apart from their friendships established early in the year and make new friends by the end of the school year? Given the stability of these early experiences, understanding the experiences of young children is of utmost importance to inform early intervention efforts. Our fourth objective for the present study was to investigate the association between relational aggression and these consistent, maintained friendships.

To test these research questions, we conducted a multi-informant, short-term longitudinal study of children's friendships and relational aggression during early childhood. All measures were administered during both the fall and spring. Numerous authors have emphasized the importance of using multi-informant methods in assessing peer relationship constructs with

young children (McNeilly-Choque et al., 1996; Ostrov & Keating, 2004; Pellegrini, 1996). Consequently, we employed individual interviews with children and naturalistic observations. Based on the finding that children prefer to interact with same-gender play partners during early childhood (Maccoby, 1988; 1990), but that they also maintain some opposite-gender friendships (Hartup & Laursen, 1993; Martin, Fabes, Evans, & Wyman, 1999) we considered both the number of same- and opposite-gender mutual friendships, in addition to the total number of mutual friendships.

Method

Participants

The participants of this study included 101 preschool children (53 girls) and their head teachers who were part of an on-going longitudinal study in a large Midwestern city. Children were attending a university-sponsored preschool that provided part-time care and had written parental consent to participate (rate = 100%). The mean age at the start of this investigation was 49.50 months (SD = 7.20 months). Children represented multiple ethnic backgrounds (11% African American, 4% Asian American, 62% Caucasian, 4% other, 19% unknown). Parents of the participating children had, on average, completed a post-secondary education and a majority had advanced or professional degrees. Yearly income ranged from lower to upper middle class with the majority as middle class. Parents of participating children were primarily married (93%) with only a few (7%) being divorced, separated, or in other living arrangements.

Children were recruited from four separate classrooms. The preschool generally followed the academic calendar. At the start of each academic year (in the fall), most children transitioned to a new classroom and a new head teacher. As a result, children experienced a different peer group in their classroom each year, with a few exceptions where a small number of children happened to transition together. As a result, one school year was selected as the most appropriate time span to examine the development of these children's friendships.

As part of a larger longitudinal project, two cohorts of children (Cohort 1 = 42; Cohort 2 = 59) were each evaluated twice over the course of a single school year. The first assessment was conducted during the fall semester, and the second assessment was conducted approximately 4-6 months later during the spring semester. For all analyses the two cohorts were combined and treated as one sample. There were no differences in demographic information or characteristics relevant to the present study for the cohorts, which were recruited from the same classrooms one year apart.

Assessment of Friendship

A traditional sociometric-rating procedure that has been determined to be reliable and valid for use with young children was individually administered to each participating child (see Asher & Dodge, 1996; Asher et al., 1979; Denham & McKinley, 1993; Hymel, 1983). Peer nomination approaches with limited nominations have also been used with young children in recent research (e.g., Denham & McKinley, 1990; Crick et al., 1997; Sebanc, Pierce, Cheatham, & Gunnar, 2003; Walden, Lemerise, & Smith, 1999), but existing evidence indicates that rating approaches may be more reliable (i.e., higher test-retest reliability) with young children since they require the respondent to provide data on how each group member

feels about all others (Asher & Dodge; Asher & Hymel, 1986; Asher et al.; Hymel; Olson & Lifgren, 1988). In addition, there is empirical evidence suggesting that the relation between sociometric nomination and rating methods is quite strong (see Bukowski & Hoza, 1989). Both distinct assessment methods have been used effectively to identify friendship pairs (see Doll, Murphy, & Song, 2003). Previous research examining children's friendships in terms of the number of reciprocated friendships as determined by rating scales have found it to be a valid measure. For example, one study found significant negative relations between children's number of mutual friendships and self-reported recess inclusion problems (Doll et al., 2003). Additionally, another study found that children with more reciprocated friendships were characterized as somewhat more socially competent than children with fewer reciprocated friends (Vaughn et al., 2000).

Age-appropriate practice items included either pictures of food items or small toys (i.e., toy hammer, teddy bear, or a camera; see Bauer, 1993). During the rating procedure, head and shoulder neutral facial expression pictures of children were used, rather than written rosters. Children were asked to name all the children in their class via the pictures and then to indicate if they liked to play with each child or not ("Do you like to play with (name of peer), yes or no?"). If they responded with yes, they were further prompted with "yes-a little?" or "yes-a lot?" Therefore, children responded no (0), yes-a little (1), or yes-a lot (2) and sorted the pictures into three boxes that contained corresponding faces (i.e., sad/frowning face, neutral face, happy/smiling face; for similar procedures see Denham et al., 2000; Hart et al., 2000; Lindsey, 2002; McNeilly-Choque et al., 1996; Spinrad et al., 2004; Walden et al., 1999). Later in the interview, children were also asked to rate each classmate on relational aggression, physical aggression, and prosocial behavior using a similar method (see Crick, Casas et al., 1999), these data were used for purposes of the larger longitudinal study.

Reciprocal friendship pairs were identified using the highest rating ("yes – a lot") of the 3-point rating scale from the peer rating assessment, as in previous literature (Berndt & Perry, 1986; Bukowski & Hoza, 1989; Doll et al., 2003; Vaughn et al., 2000). First, a choice matrix was created revealing all peer ratings within each classroom (see Bukowski & Hoza, 1989). Specifically, reciprocal friendships were recorded when both members of the dyad rated the other as a "2" for the sociometric status question (i.e., "like to play with a-lot"). Next, the responses were classified according to the gender of the dyad members. Same-gender reciprocal and opposite-gender reciprocal friendships were classified. For each child the number of reciprocal friends was summed at each phase to create the following variables: *Total Reciprocal Friendships*; *Total Same-Gender Reciprocal Friendships*; *Total Opposite-Gender Reciprocal Friendships*. An additional variable was created by summing the number of reciprocal friendships children maintained over the course of the school year, yielding the number of specific friendship pairings that remained intact over the school year, *Total Stable Friends*. In the present sample, during both the fall and the spring, children had between zero and nine reciprocal, mutual friendships, See Table 1. There was moderate stability in the number of mutual friendships that children maintained over the school year (Range = 0 – 7, Mean = 1.31, SD = 1.37).

Assessment of Relational Aggression

Observers were trained with videotapes from past observational studies (Ostrov & Keating, 2004; Ostrov et al., 2004) and were given live practice coding. Observers reached

acceptable levels of reliability prior to the collection of the experimental data. Observations were based on a revised Ostrov and Keating procedure, using the focal child approach (Fagot & Hagan, 1985; Laursen & Hartup, 1989) in which each child was observed for 10 minutes on 8 separate days. Observers recorded all instances of *Relationally Aggressive* behavior including, but not limited to gossiping, spreading malicious rumors, lies, ignoring, and social exclusion. For each behavior, observers recorded in full detail what occurred and the gender of all individuals involved. Observations of several other behaviors not reported here (e.g., victimization, play styles) were collected in the context of the larger longitudinal project.

Table 1.
Descriptive Statistics for Mutual Friendship Variables
by Gender and Assessment Period

	Males	Females
	M (SD)	M (SD)
Fall		
Number of Friends	2.76 (1.54)	3.09 (2.41)
Number of Same-Gender Friends	1.83 (1.25)	2.19 (1.80)
Number of Opposite-Gender Friends	0.90 (1.08)	0.94 (1.15)
Spring		
Number of Friends	2.31 (1.78)	3.81 (2.25)
Number of Same-Gender Friends	1.58 (1.13)	2.91 (1.67)
Number of Opposite-Gender Friends	0.79 (1.05)	0.89 (1.27)

N = 101

Separate behaviors were recorded based on temporal breaks in the interactions during the observation. Each child was observed on eight separate days and observations were summed to yield total scores for each time period. The average number of relationally aggressive instances per ten-minute session was calculated for each child at each time period (fall and spring). In the present study, 160 minutes (2.67 hours) of total observation time was collected for each child during free play times on the playground and in the classroom (80 minutes of observation time per child per assessment period). For the total sample presently reported, 8,055 minutes (134 hours) of observation time was collected per assessment period, which does not include additional time for reliability assessments (yielding 269 hours of total observation time). For 10-15% of total observations, two observers observed the same session for reliability purposes. Intra-Class Correlation Coefficients (ICC) suggest acceptable levels of inter-observer reliability, ICC = .70 to .85 during the study. The manner in which the observations were collected was not amendable to Cohen's Kappa coefficients since the observers did not specifically record intervals when the aggressive behaviors were absent.

The use of Intra-Class Correlation Coefficients (ICC) has been suggested in similar situations (see McGraw & Wong, 1996) and used in past empirical literature (Goldstein, Arnold, Rosenberg, Stowe, & Ortiz, 2001; Ostrov & Keating, 2004; Ostrov et al., 2004). This observational method has demonstrated acceptable validity in the past with moderate correlations between teacher reports and observers ranging from, $r = .42$ to $.50$ for relational aggression (Crick, Ostrov, Cullerton-Sen, Appleyard, & Jansen, 2003; Ostrov & Keating, 2004). In addition, as part of the larger longitudinal project, these observations have been demonstrated to be stable during an academic year (e.g., $r = .44$, $p < .05$ for relational aggression) and across a full calendar year in a new academic classroom (e.g., $r = .31$, $p < .001$ for relational aggression; (Crick, Ostrov, Burr, Jansen, & Cullerton-Sen, 2004; Crick et al., 2003).

Procedure

Individual peer ratings were conducted in the child's school and were administered by a trained graduate student or professional staff member. The interviews lasted approximately 15 minutes and for a few children were completed over 2 sessions. In the standardized procedure, the interviewer first received the child's assent for participation (12 children elected to not participate in an individual interview during the fall assessment period; all children participated in the spring). Children were thanked for their participation and escorted back to their classrooms at the conclusion of the interview. Interviews were conducted approximately 2 months after school began in the fall to ensure that the children were familiar with their classmates. Interviews were repeated a second time for the spring assessment (approximately 5 months later).

Observations were conducted by trained graduate and undergraduate students and took place in the classroom, indoor gymnasium, or on the playground during free play. Children played in the classroom and in the gym exclusively with their own classmates. Occasionally, children had the opportunity to interact with peers from another classroom while on the playground. Most children (64%) had all of their observations conducted in the classroom or gym, with no opportunity to interact with non-classmates. An additional 26% of children had only one of the eight observations on the playground. No child had more than three observations conducted on the playground during any given assessment period. Observers randomly selected whom they were to observe each day and no more than one observation was conducted on each child per day. Prior to the data collection phases, observers spent a considerable amount of time in the classroom and on the playground to diminish children's interest in them, which decreased the level of reactivity in this study (Pellegrini, 1996). Observers remained within earshot of the focal child but were careful not to attract the child's attention. The majority of observations in the classroom were conducted from a visually shielded observation booth attached to the classroom in order to diminish the children's reactivity. Multiple observers observed each child over the course of three months per assessment period.

Results

To address our research objectives, we conducted four sets of analyses. We first examined whether or not relationally aggressive children had friends. The goal of the second and third set of analyses was to examine the relation between the frequency of boys' and girls' relational

aggression with their number of mutual friends. The fourth set of analyses examined the stability of friendships across the school year.

Friendships of Relationally Aggressive Children

In order to examine our first objective, the descriptive assessment of whether or not relationally aggressive children have mutual friendships, we used an extreme group approach (Crick, Casas et al., 1999; Grotjeter & Crick, 1996). During the fall, 15 children were situated at least one standard deviation above the mean in terms of their frequency of relationally aggressive behavior. We classified these children as being highly relationally aggressive, relative to their peers. Some of these children did have mutual friends during the fall, whereas others did not, see Figure 1. The mean number of mutual friends for relationally aggressive boys ($N = 4$) was 1.50. The majority of these boys with mutual friendships tended to have at least one opposite-gender friendship. Relationally aggressive girls ($N = 11$) had an average of 3.82 friends during the fall. The majority of these girls with mutual friendships did not have opposite-gender friendships.

During the spring, 10 children were classified into an extreme group for relational aggression (three female children were included in the extreme group during both the fall and spring), see Figure 1. Similar to the results from the fall, some of these children had mutual friends during the spring, whereas others did not. Only one boy fell into the extreme group for relational aggression during the spring and he had two opposite-gender friendships. The mean number of mutual friends for girls ($N = 9$) was 2.78. The majority of these girls did have opposite-gender mutual friendships. Readers should be cautioned about making formal comparisons between these groups due to the small sample sizes represented. Despite the extreme levels of relational aggression displayed by these children, relative to their peers, it appears that many of them are able to engage in mutual, reciprocal friendships with children of both genders.

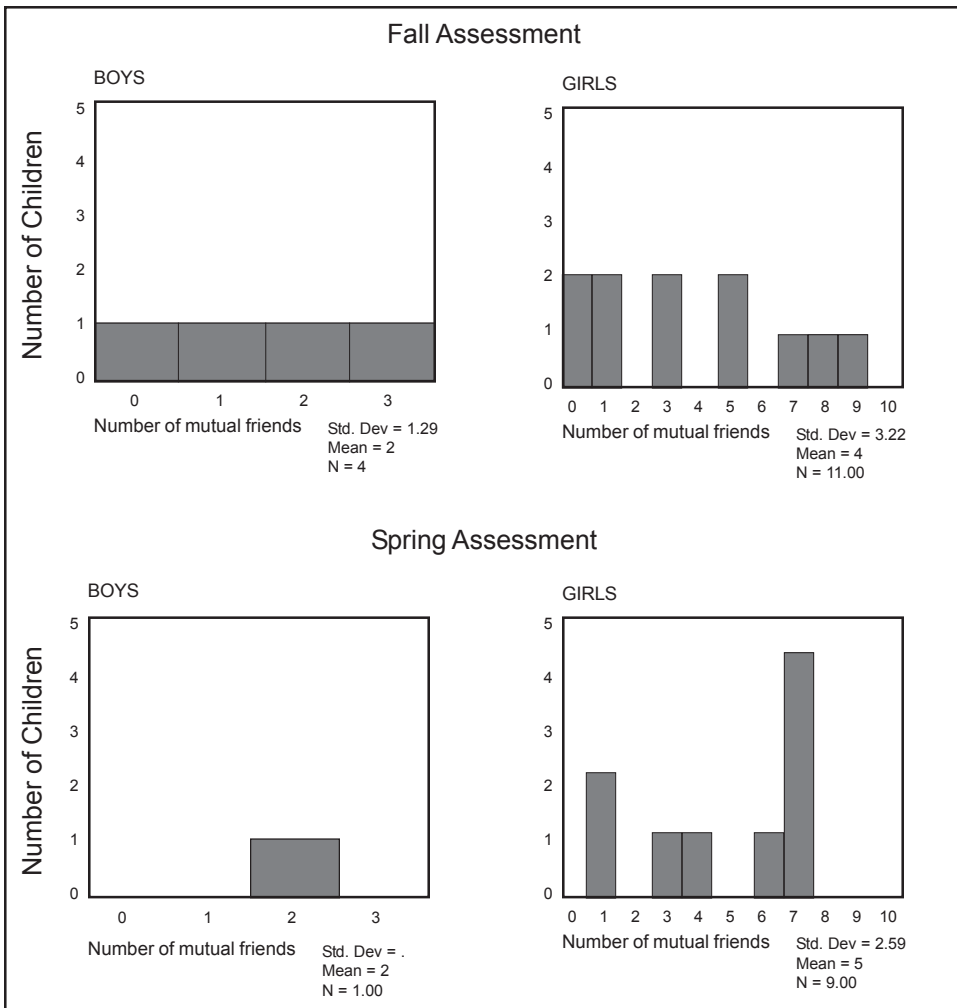
Relation of Boys' and Girls' Friendships to Relational Aggression

To address our second and third objectives, we conducted a set of hierarchical linear multiple regression analyses. In each of these analyses, gender was added both as an independent predictor at step 1 and as part of an interaction term at step 2. This allowed us to assess whether gender functioned as a moderator in these relations. The first pair of these analyses examined concurrent relations, one during the fall semester and the other during the spring semester to assess objective two. The second pair examined the relation of these constructs to one another longitudinally, across the school year to assess objective three.

Concurrent associations. To assess our second objective, evaluating the relative contributions of relational aggression and gender to the number of mutual friendships children hold, we conducted two hierarchical regression analyses. In these analyses, children's frequency of relational aggression and gender were entered at step 1, and the interaction of relational aggression and gender were entered at step 2 in the prediction of children's number of mutual friendships. This allowed for an examination of the general impact of relational aggression on friendships (marked by a significant overall F-value for the first step of the model) as well as whether relational aggression predicted friendships differentially by gender (marked by a significant value for F change).

Figure 1.

Histograms of the number of mutual friendships of boys and girls who fall in the extreme group for displaying high levels of relational aggression relative to their peers. Aggressive status and number of friendships were assessed within the fall and spring time periods. Formal comparisons between groups should be avoided due to the small sample size represented.



Within the fall assessment period, the first hierarchical regression revealed that relational aggression and gender were not significant independent predictors of friendships, $F(2, 88) = 0.27, n.s.$ However, the interaction term significantly improved the prediction of friendships, $DF(1, 85) = 4.02, p < .05, D r^2 = .05$, indicating that gender moderated the relation of relational aggression to friendships. Simple slope follow-up tests revealed that for boys, relational aggression was negatively associated with friendships ($b = -.35, p < .05$). That is,

boys who were more relationally aggressive during the fall had fewer concurrent mutual friendships. In contrast, for girls there was no association between number of friendships and relationally aggressive behavior during the fall ($b = .13$, n.s.).

Within the spring assessment period, the second hierarchical regression revealed that relational aggression ($b = .25$, $p < .01$) and gender ($b = .28$, $p < .01$) were significant predictors of friendship, $F(2, 100) = 10.96$, $p < .001$, $r^2 = .18$. Girls ($M = 3.81$; $SD = 2.25$) had more friendships than boys ($M = 2.31$; $SD = 1.78$)¹. Additionally, the amount of relational aggression children displayed during the spring was positively related to their concurrent number of mutual friendships. That is, children who were more relationally aggressive had more mutual friendships. In contrast to the fall analysis, the interaction term did not significantly add to relational aggression and gender in the prediction of friendships during the spring, indicating that gender did not moderate this relation, $DF(1, 97) = 0.02$, n.s.

Longitudinal Associations. Objective three focused on longitudinal relations between relational aggression and friendships. Specifically, we examined objective three in two ways. First, we predicted friendships during the spring from relational aggression during the fall. Second, we predicted relational aggression during the spring from friendships during the fall.

The impact of relational aggression during the fall and gender on children's friendship status during the spring was examined as the first component of objective three. A hierarchical linear regression was conducted where children's frequency of relational aggression during the fall and gender were entered at step one, and the interaction of relational aggression and gender was entered at step two in the prediction of children's number of mutual friendships during the spring. This allowed for an examination of the general impact of relational aggression on friendships (marked by a significant overall F-value for the first step of the model) as well as an assessment of whether relational aggression predicted friendships differentially by gender (marked by a significant value for F change on step two).

Relational aggression during the fall and gender were significant predictors of friendship during the spring, $F(2, 100) = 8.50$, $p < .001$, $r^2 = .15$. Girls had more friendships than boys, ($b = .31$, $p < .01$; girls: $M = 3.81$, $SD = 2.25$; boys: $M = 2.31$, $SD = 1.78$). Additionally, the amount of relational aggression children displayed during the fall was marginally related to the number of mutual friendships that they had during the spring. There was a marginal non-significant trend for children who were more relationally aggressive during the fall to have more mutual friendships during the spring ($b = .17$, $p = .08$). The interaction term did not significantly add to relational aggression and gender in the prediction of friendships during the spring, indicating that gender did not moderate this relation, $DF(1, 97) = 0.45$, n.s.

To address the second half of objective three, we conducted a hierarchical linear regression to predict the frequency of observed relational aggression during the spring from children's total number of mutual friends and gender during the fall². In this analysis, children's

¹ During the fall assessment period, boys and girls did not significantly differ in their number of mutual friendships, $t(87) = -0.74$, n.s. (boys: $M = 2.76$; $SD = 1.54$, girls: $M = 3.09$; $SD = 2.41$).

² In the larger longitudinal sample, relational aggression was moderately stable across the school year ($r = .45 - .70$).

mutual friendships during the fall and gender were entered at step one, and the interaction of friendships and gender was entered at step two in the prediction of children's relational aggression during the spring. This allowed for an examination of the general impact of friendships on aggression (marked by a significant overall F-value for the first step of the model) as well as whether friendships predicted relational aggression differentially by gender (marked by a significant value for F change for the second step of the model).

The first step of the model was significant, $F(2, 88) = 9.23, p < .001, r^2 = .18$. During the spring, girls were more relationally aggressive than boys, ($b = .33, p < .001$; girls: $M = 0.30, SD = 0.36$; boys: $M = 0.14, SD = .18$)³. Additionally, the number of mutual friendships that children had during the fall significantly predicted their relationally aggressive behavior during the spring. Children who had more mutual friendships were more relationally aggressive ($b = .23, p < .05$). At the second step of the model, the interaction term significantly added to mutual friendships and gender in the prediction of future relational aggression, $DF(1, 85) = 4.05, p < .05$. Gender moderated the relation of fall friendships to relational aggression during the spring. Simple slope follow-up tests revealed that for boys, there was no significant relation between fall friendships and spring relational aggression ($b = -.15, n.s.$). Conversely, for girls the number of mutual friendships they held during the fall significantly predicted their amount of relational aggression during the spring ($b = .34, p < .05$). That is, girls with more friends became more relationally aggressive.

Stable Friendships

To address objective four, we examined the association between the frequency of children's relationally aggressive behavior and the number of mutual friendships that they maintained over the course of the school year using a set of Pearson correlations. During both the fall and the spring, the number of stable mutual friends a child had was significantly related to their total frequency of observed relational aggression, $r_s(89) = .24, p < .05$; and $.39, p < .001$, respectively. Follow-up Pearson correlations conducted separately by gender demonstrated that this relation held for girls during the fall, $r(48) = .30, p < .05$ and the spring, $r(48) = .41, p < .01$. However, this relation was not significant for boys during either the fall, $r(41) = -.05, n.s.$ or the spring, $r(41) = .17, n.s.$ Thus, for girls only, relational aggression was associated with a greater number of stable friendships over the school year.

Discussion

This short-term, longitudinal, observational study addressed several innovative research questions related to preschool children's relational aggression and their number of same- and opposite-gender mutual friendships across a school year. The majority of relationally aggressive children did have mutual friendships. Generally, children's relational aggression and number of mutual friendships at both assessment periods were significantly related. The number of friendships that remained intact across the school year was also associated with relational aggression. Some of these relations differed by gender.

One of the greatest strengths of this investigation is the short-term longitudinal approach. This design afforded a unique understanding of how children's behavior and friendships

³ During the fall assessment period, girls were significantly more relationally aggressive than boys, $t(99) = -2.36, p < .05$ (boys: $M = 0.21, SD = 0.29$; girls: $M = 0.40, SD = .49$).

evolve over the course of a school year during early childhood. As children grow older and know one another better, it is not surprising that their behavior and friendships change correspondingly. Past research documents that aggressive behaviors become more prevalent over the course of the school year (e.g., Goldstein et al., 2001) and can be maintained, reinforced, or sanctioned within peer groups (as in physical aggression Coie & Dodge, 1998). The present study has several other methodological strengths. The time- and labor-intensive naturalistic observations (i.e., 16,160 minutes or 269 hours of total observation) in multiple contexts extend past research on relational aggression and friendship in young children that relied on preschool teacher reports of children's relationally aggressive behavior (Sebanc, 2003). The use of sociometric rating scales as a means to determine mutual friendship dyads may be more reliable than common nomination procedures (Asher & Dodge, 1996; Asher & Hymel, 1986; Asher et al., 1979; Hymel, 1983; Olson & Lifgren, 1988), potentially allowing for a more accurate assessment of children's salient, peer relationships. The present study is also the first known study during early childhood that recognizes the role of both male and female friendships in the socialization of relational aggression over time. These advances are important for the field given that prior methodological techniques were believed to be inappropriate for the study of relational aggression (Bagwell, 2004).

Studies indicate that most school-aged relationally aggressive children have at least one mutual, reciprocal friendship (Grotpeter & Crick, 1996; Rys & Bear, 1997). As our first objective, we sought to examine this relation in a preschool sample. Using an extreme-group approach, we determined that the majority of children who demonstrated extremely high levels of relational aggression, relative to their peers, did have at least one reciprocated friendship, during both the fall and spring assessment periods. This suggests that being relationally aggressive does not prohibit young children from forming mutual friendships. The small number of boys who fell into the extreme group for relational aggression tended to have more opposite-gender friendships than same-gender friendships. This may suggest that by forming friendships with young girls, boys are putting themselves at additional risk for developing relationally aggressive behavior problems. However, this finding needs replication, given the small number of children who were classified as extremely high on relational aggression in the present investigation.

An additional goal of the present investigation was to examine the association of relational aggression to mutual friendships concurrently, within both the fall and spring assessment periods. During the fall, boys who were more relationally aggressive had fewer concurrent mutual friendships. In contrast, for girls, there was no association between the number of mutual friendships and relationally aggressive behavior. At this early point in the school year, it may be that boys who are engaging in gender non-normative forms of aggression (e.g., relational aggression) are less attractive to peers as friendship partners. Research during middle-childhood has demonstrated that children who engage in gender non-normative aggressive behavior are at particular risk for maladjustment (Crick et al., 1997). This may be a further extension of this finding.

By the spring assessment period, there is no longer a gender difference in relational aggression relative to the number of mutual friendships that children hold. As the school year draws to a close, children presumably know one another fairly well and have established mutual friendships. There may be less social stigma for boys who use relational aggression in the context of established friendships, rather than as friendships are first being formed.

The present study also revealed that mutual friendships at the start of the school year significantly predicted an increase in relationally aggressive behavior at the end of the school year, particularly for girls. Given the temporal nature of these results, it appears that friendships formed early on in the school year may serve as either a developmental context or catalyst for increased relational aggression later on in the year for girls. Relationally aggressive friends may promote relational aggression within the context of the relationship by reinforcing negative comments about disliked peers and ignoring positive comments about disliked peers (Werner & Crick, in press). Additionally, this is further qualified by the finding that girls' number of friendships that remained stable over the course of the school year was significantly associated with increased levels of relational aggression during both the fall and spring.

Relationally aggressive friends may use relational aggression in an attempt to maintain the relationship, at least in the short term (Morales et al., in press). By putting demands on their friends, young children may be attempting to have their friends choose their relationship over other desirable outcomes (e.g., use of an appealing toy). This may be particularly true for girls, who generally prefer intimate dyadic relationships (Benenson, 1993), tend to be motivated to act in ways that preserve their social relationships (Cross & Madson, 1997), and endorse relationship maintenance goals during hypothetical conflict situations more than boys (Rose & Asher, 1999). However, the long-term value and consequences of such a strategy have not been examined.

Readers may be tempted to interpret these findings as indicative of relational aggression being a positive or "adaptive" behavior for young girls. However, the present investigation does not directly address this issue, and given the past relevant literature (see Bagwell, 2004), such a conclusion seems unfounded. Instead, it seems quite likely that during early childhood, friendships serve as a context in which children may use relational aggression (as in middle childhood; Grotperter & Crick, 1996). That is, the features or qualities of some friendships may make it easy for children to use relational aggression in ways that, in the short term, provide stability, but in the long term, come with associated risks (Morales, Cullerton-Sen, Crick, & Casas, in press).

The present study was the second examination of friendships and relational aggression during early childhood, following Sebanc (2003). Despite some methodological and theoretical differences, both studies demonstrate meaningful relations between relational aggression and friendships. In Sebanc's investigation, girls with friends were *less* relationally aggressive than girls without friends. In the present study, although there was no significant association between friendships and relational aggression for girls within the fall, four months later, within the spring assessment period, the frequency of girls' observed relational aggression was *positively* associated with their number of mutual friends. Girls' number of mutual friendships during the fall was a significant, positive predictor of relational aggression during the spring. Furthermore, the number of stable friendships maintained across the school year was positively related to girls' relationally aggressive behavior at both the fall *and* spring.

In contrast, boys with friends in Sebanc's (2003) study were *more* relationally aggressive than boys without friends. In the present study, within the fall, the frequency of observed relational aggression was *negatively* associated with boys' number of mutual friends. Four months later, within the spring assessment period, the frequency of observed relational aggression was *positively* associated with boys' number of mutual friends. Clearly, changes

are occurring over the course of the school year. However, there were no significant longitudinal relations between friendships and relational aggression for boys, nor was the number of friendships that were stable over the school year associated with their frequency of relationally aggressive behavior.

At first, the results of the two studies may seem contradictory, however, further examination reveals several key theoretical and methodological differences. First, Sebanc's (2003) investigation examined friendships in terms of a qualitative dichotomy developed via nomination procedures (i.e., children with friends were compared to children without friends in terms of their levels of relational aggression). When given a limited nomination procedure, such as Sebanc's, children may only nominate three classmates. Under these conditions, in order to qualify as friends, children must not only like to play with one another, but they must both be within one another's "top three" choices. In contrast, the present study used unlimited ratings to assess friendships, resulting in a quantitative approach (i.e., the number of mutual friends was associated with children's levels of relational aggression). Children were able to nominate as many classmates as they wish, consequently, any mutual liking among peers within the classroom qualified as a mutual friendship. One possible explanation for the seeming contradiction between the two studies is that girls who display relationally aggressive behavior have fewer "very close" friends (as indexed by Sebanc's nominations) but have more "general friends" (as indexed by the present study's ratings).

An additional explanation for the seeming contradiction is related to the method of assessment for relational aggression. Sebanc's (2003) study examined relational aggression as assessed via teacher reports, whereas the present study used naturalistic observations. Past literature has demonstrated that these two measurement strategies give related, but not identical results (Ostrov & Keating, 2004). In trying to make determinations about which students are relationally aggressive, it is possible that teachers use their knowledge of children's friendships, operating under their own assumption that children who are relationally aggressive will not have friends. Another possibility is that the naturalistic observations used in the present study are limited in that they only consider behaviors children display during free-play, teachers may also assess relational aggression that occurs during circle time or small group projects.

Given that relational aggression frequently comes at the cost of being rejected by the larger peer group (Crick et al., 1997; Crick et al., 2003, April; LaFontana & Cillessen, 2002; McNeilly-Choque et al., 1996; Monks, Smith, & Swettenham, 2003; Ostrov et al., 2004), one might question why children are becoming friends with relationally aggressive peers if their relationships are so problematic. Children may be drawn to relationally aggressive peers for a number of reasons. Relationally aggressive children may have high visibility in the classroom, may have more defined social dominance capacities, and may be imitated more by others in the classroom, which may lead to increased desirability for friendships (Hawley, 1999; 2003). In keeping with past theory, it may not be until later developmental periods (i.e., kindergarten, school-aged years) that all children recognize these relationally aggressive children as bossy, obnoxious, and mean (Hawley, 1999). These findings support the important distinction drawn by researchers in the field of peer relationships that despite being related constructs, friendship and popularity are associated with unique correlates. The present interpretations also fit with recent advances in the field of friendship and peer

networks recognizing that peer relations are not uni-dimensional and some friendships (e.g., deviant ones) may be placing children on a maladaptive pathway for future problems (for review see Bagwell, 2004). Future research is needed to further explore this possibility.

Certainly, many factors, contribute to children's mutual friendships and relationally aggressive behavior. The current study was conducted with a relatively high functioning University-affiliated sample. Consequently, these results may not generalize to other early-childhood populations. The findings from this study must be replicated to establish their validity. However, there are now several studies suggesting that higher SES samples may be most at risk for relationally aggressive behaviors (Bonica et al., 2003; McNeilly-Choque et al., 1996) and thus the present sample may be particularly well suited for detecting these relatively low frequency behaviors. Additionally, the time-intensive nature of observational longitudinal data collection constrained the size of the current sample. Results should also be interpreted with care, given the number of analyses that were conducted and the increased potential for Type one error. It should also be noted that during the observations, for a small number of children on a few number of occasions (i.e., during those observations that were conducted on the playground), there was the opportunity to interact and potentially aggress against children who are not classmates and thus not eligible to be nominated as friends. This could potentially bias the results. However, 94% of all observations were conducted in a single-classroom environment, so the potential negative influence of this is fairly minimal.

Future studies must be conducted to examine the possibilities addressed by this study. Existing literature on physical aggression demonstrates that physically aggressive boys are not always rejected by their peers and often have friends, some of whom may be also be aggressive or delinquent (see Coie & Dodge, 1998). A similar process may be at work in circles of relationally aggressive girls. That is, relationally aggressive girls may develop friendships with other relationally aggressive girls. Future work should move toward the investigation of more process-oriented questions related to relational aggression and children's friendship development, maintenance, and duration with respect to the context of relational aggression relative to the friendship (Is relational aggression used against the friend?) and the qualities of these friendships. Studies also should relate these features of children's friendships to their social-psychological adjustment and examine the relation of these constructs to one another longitudinally, over the course of several school years, from preschool across the transition to kindergarten.

The present investigation contributes to our present understanding that young children's friendships are related to their anti-social behaviors in meaningful ways. Friendships have both positive and negative components and that the developmental context that is provided by these relationships may not be adaptive for all dyads (Bagwell, 2004). Simply encouraging a child who is relationally aggressive to develop friendships will not end their aggressive behavior and may actually increase the amount of aggression displayed. At the same time, not all children who have mutual friendships are relationally aggressive. High quality, positive and consistent friendships during early childhood can support emotional and cognitive development across the transition to kindergarten (Ladd, 1990; Newcomb & Bagwell, 1995), ward off later adjustment problems (such as antisocial behavior; Kupersmidt, Coie, & Dodge, 1990), and serve as protective factors (during physical victimization scenarios: Hodges, Boivin, Vitaro, & Bukowski, 1999; Hodges, Malone, & Perry, 1997; Lansford, Criss, Pettit,

Dodge, & Bates, 2003). Therefore, it is inadvisable to discourage all children from developing mutual friendships. However, it seems likely that friendships in which relationally aggressive behavior occurs do not provide these benefits.

Perhaps the most important implication of these findings for researchers, teachers, and clinicians alike is to recognize the complexities inherent in the relation between young children's relationally aggressive behavior and their friendships. Having mutual friendships during early childhood does not necessarily indicate that a child does not have peer-directed behavior problems. Future research should seek to better elucidate the precise role that relational aggression plays in young children's friendships.

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