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CHILDREN'S PEER SOCIAL COMPETENCE IN RELATION TO EXTENSIVITY OF  
UNRECIPROCATED FRIENDSHIP NOMINATIONS

by

Mindi Mills Stuart

A Thesis

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Science

Major: Psychology

The University of Memphis

August 2014

## **Abstract**

Stuart, Mindi Mills. MS. The University of Memphis. August/2014. Children's Peer Social Competence in Relation to Extensivity of Unreciprocated Friendship Nominations. Major Professor: Dr. Robert Cohen.

Third- through fifth- grade students completed measures to assess loneliness, peer optimism, social preference (liking minus disliking from peers), number of mutual friends, and number of non-reciprocated friends. It is well documented that number of mutual friends is related to positive social outcome. Of interest for the present research was whether the extent of unreciprocated friendship nominations related to other indices of peer social competence (loneliness, peer optimism and social preference). Consistent with previous research, number of mutual friends related to peer outcomes. Both loneliness and peer optimism were related to sex of the child but were not related to number of non-reciprocated friendships. Peer social preference, a measure of group acceptance by peers was significantly, and inversely, related to number of non-reciprocated friendships, for females only. These findings add to the literature emphasizing the importance of friendships for social competence, by identifying the association of non-mutual friendships.

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## **Children's Peer Social Competence in Relation to Extensivity of Unreciprocated Friendship Nominations**

Children's peer relations can be conceptualized as existing within a hierarchy of social complexity from molecular physiological factors, to individual constructs, to interactions, relationships, and group effects (see Rubin, Bukowski, & Parker, 2006.). Each level is important and cannot be reduced to "lower" levels, yet each level influences and is influenced by adjacent levels. With this conceptualization in mind, the present research examines how a certain type of peer relationship relates to a set of individual and group level outcomes. The focus here was on friendship relationships and the specific goal was to examine unreciprocated friendship nominations for loneliness and peer optimism (individual level constructs) and for peer acceptance (group level outcome).

As presented more fully below, friendships are traditionally defined as mutually recognized; each member of the dyad believes a friendship relationship to exist. However, it is certainly the case that some friendship nominations are unreciprocated. The question for the present research is, how does the extent of unreciprocated friendship nominations relate to other social competence variables such as loneliness, peer optimism, and group social preference? As background, first the definition and importance of children's friendships are discussed. This is followed by a presentation of the assessment of friendships, followed by an overview of the present research.

### **Defining Children's Friendships**

Relationships, by definition, refer to two individuals who share a history. They have been more formally characterized as "meanings, expectations, and emotions that

derive from a succession of interactions between two individuals known to each other” (Rubin et al., 2006, p. 577). Thus individuals in relationships will interact with one another and conceptualize their interactions differently than two individuals who interact with one another but are not involved in a relationship. Relationships vary in their closeness and in the affect experienced between members. Furthermore, relationships are understood as embedded within groups. The existence of a relationship is not only recognized by the members of the dyad but also by the peer social group(s) (Rubin et al., 2006). The exchanges between individuals within relationships will be affected by the nature of the group(s) in which they are embedded. Relationships, particularly close relationships, are presumed to be critical for psychosocial adjustment and for development. The present research focused on children’s friendships, which have been the most researched form of children’s peer relationships.

Friendships are conceptualized as close, mutual, and voluntary dyadic relationships (Bukowski & Hoza, 1989). It is important to emphasize that researchers generally include mutual (reciprocated) friendship nominations as a part of their definition of (mutual) friendships, a key issue that is further discussed below. The requirement of mutual nominations for defining friendships is restrictive as it excludes other types of potentially important relationships. Different types of friendship nominations indicate multiple forms of dyadic relationships, including: Mutual Friends (each child nominated the other); Unilateral Given Friend (child nominated classmate); Unilateral Received Friend (classmate nominated child); or Non-Friends (neither child nominated the other) (see Hundley & Cohen, 1999).

Generally, friendships are characterized by positive affective bonds between two people that are intended to facilitate the accomplishment of shared goals (Bukowski, Motzoi, & Meyer, 2009). Friendships are social contexts that promote the development of adaptive social skills, the enhancement of social competence, the maturation of self-identity, and the establishment of social and behavioral norms (Newcomb, Bukowski, & Bagwell, 1999; Olsen, Parra, Cohen, Schoffstall, & Egli, 2012; Rubin et al., 2006). A large body of research documents the importance of close friendships for children's adjustment and development.

### **Importance of Friendships**

The presence or absence of friendships and the quality of friendships have been shown to be related to a large number of psychosocial variables (for review see, Bukowski, Motzoi, & Meyer, 2009; Glick & Rose, 2011; Rubin et al., 2006). Many of these variables relate to social, cognitive, and affective functioning of the individual. Others relate to peer group interpersonal issues. The present study focuses on two individual factors (loneliness and peer optimism) and one interpersonal factor (group acceptance) associated with friendship.

**Loneliness.** Peplau and Perlman (1982) define loneliness as an aversive state experienced when a discrepancy exists between the interpersonal relationships one wishes to have, and those that one perceives they currently have. In short, childhood loneliness is characterized by children's perceptions of distress with aspects of their social relationships (Crick & Ladd, 1993). Dissatisfaction with social relationships indicates that one's personal relationships are in some way inadequate (Heinrich & Gullone, 2006). Feelings of loneliness can arise from a variety of adverse peer relations

that can undermine children's feelings of well-being (Parker & Asher, 1993). Receiving poor acceptance by peers, lacking a friend, or having a friendship that fails to meet important relationship needs each contribute to feelings of loneliness.

Friendships may serve as a buffer against feelings of loneliness for children who experience difficulties with peer group acceptance (Parker & Asher, 1993). For example, having even one friend has been shown to protect rejected or victimized children against feelings of loneliness. That is, mutual friendships have been found to serve a protective function against feelings of loneliness above and beyond the influence of peer group acceptance (Parker & Asher, 1993). This beneficial effect of friendship occurs for both boys and girls (Asher & Paquette, 2003).

Children who experience loneliness more often and more intensely than others are at risk for poor developmental outcomes, especially emotional problems (e.g., symptoms of depression and anxiety; Crick & Ladd, 1993; Nangle, Erdley, Newman, Mason, & Carpenter, 2003). Chronic loneliness is associated with various indices of maladjustment for adolescents and adults, such as dropping out of school, depression, alcoholism, and medical problems (Asher & Paquette, 2003).

Numerous studies have shown that loneliness is experienced by both males and females; however, gender differences are not commonly reported (Heinrich & Gullone, 2006). According to Koenig, Isaacs, and Schwartz (1994), gender differences are not commonly found in childhood loneliness and are thought to emerge during adolescence. When differences have been found, boys tend to be lonelier than girls. In a review of adult samples, Borys and Perlman (1985) also concluded that significant gender

differences were not commonly found, but when they were, males were lonelier than females.

**Optimism.** Optimism has been defined as the “tendency to believe that one will generally experience good versus bad outcomes in life” (Scheier & Carver, 1992, p. 203). Optimism has been positively correlated with more positive attitudes towards school and self-concept (Stipek, Lamb, & Zigler, 1981). In addition, optimism predicts lower levels of childhood depression and externalizing problems among third through sixth grade children (Ey et al., 2005).

Deptula, Cohen, Phillipsen, and Ey (2006) examined a particular, more specific form of optimism, peer optimism, a form further examined in the present research. Peer optimism, or the expectation of good peer outcomes, is particularly important for children’s peer functioning. Children’s self-perceptions and conceptions of their relationships are linked with their emotional functioning, particularly for girls (Rose & Rudolph, 2006). The experience of having a mutual, reciprocated friendship indicates a succession of positive interactions between two children (Hinde, 1979). Children who have more positive social interactions may feel more confident and hopeful in forming relationships in the future.

Negative peer expectations may heighten a sense of alienation from the peer group and reduce one’s hope for forming positive relationships (Ladd & Troop-Gordon, 2003). Negative beliefs may be directly related to particular mood states (e.g., depression) and frequent activation of such beliefs may antecede long-term emotional and conduct difficulties (e.g., internalizing problems, externalizing problems, and loneliness in school). It is important to consider how certain aspects of relationships

contribute to children's adjustment. Of particular interest for the present research, is whether children's beliefs that they have more friends (as indicated by unilateral given friendship nominations) are associated with children's decreased levels of optimism.

**Peer Group Acceptance.** An important distinction in the research literature on peer relations is between peer group acceptance and friendships (Bukowski & Hoza, 1989). Peer acceptance refers to the degree to which children are liked or disliked, in general, by children in their peer group. Again, friendships are mutual relationships between two people. It is important to clearly differentiate the association of group evaluations from dyadic relationship evaluations for peer outcomes.

As mentioned above, relationships, conceptually, are embedded within the peer group. Furthermore, friendship can be viewed as a "gateway" to the peer group in that a child's connectedness to larger social networks will be influenced by friendship choices (Newcomb et al., 1999). For instance, aggressive children tend to choose aggressive peers who exacerbate their negative behavior (Asher & Paquette, 2003). These friendships in turn can influence how a child is perceived by their peers and therefore their level of acceptance by their peer group. More directly, children who are able to befriend a relatively more popular child will find their popularity to be subsequently enhanced (Bukowski, Pizzamiglio, Newcomb, & Hoza, 1996; Hartup, 1996). Multiple aspects of children's peer groups have been reported to vary as a function of gender (e.g., group size, interconnectedness; Gifford-Smith & Brownell, 2003). Boys tend to play in large, less exclusive groups while girls play in smaller, more intimate pairings.

Ladd (1990) found that peer acceptance and friendships were differentially associated with school adjustment. The results revealed peer acceptance as a stronger

predictor of changes in social dissatisfaction and academic readiness, whereas number of friendships was a stronger predictor of changes in affect (i.e., loneliness, anxiety) and school liking. In the studies reviewed by Parker and Asher (1987), low acceptance by peers was highly associated with school dropout. Well-liked children are also more likely to attribute their successes to internal causes, their failures to external causes, and to expect their successes to continue in the future (Sobol & Earn, 1985).

### **Assessing Friendships**

Consistent with reciprocity-based conceptualizations discussed earlier, researchers generally use mutual (reciprocated) nominations as their operational definition of friendships (Olsen et al., 2012). Therefore, only children who independently nominate one another as friends are considered to be friends. These nomination techniques provide a reliable and valid measure of mutual friendships (Bukowski & Hoza, 1989). However, the requirement of mutual nominations for defining friendships is restrictive as it excludes other types of potentially important relationships. Unilateral evaluations are indexed by a child giving an unreciprocated friendship nomination or receiving a friendship nomination from a peer that is unreciprocated. Unilateral (non-reciprocated) evaluations are generally not considered as indicating a friendship relationship; however, they offer an interesting form of a dyadic relationship for the child. From the perspective of the child nominator, there is a belief that a friendship does exist.

As part of a more general relationship conceptualization that included antipathies, Olsen et al. (2012) found that unilateral given friendship nominations were more predictive of maladaptive patterns than unilateral received friendship nominations. Also,

having a higher frequency of unilateral received nominations was associated with higher social competence measures. These findings suggest that these children are well adapted to their social development as they are effective at exhibiting cues that suggest a positive evaluation to peers regardless of their actual internal evaluations of that relationship. Furthermore, Malcolm, Jensen-Campbell, Rex-Lear, and Waldrip (2006) found children's adjustment was related to being liked by the specific classmates whom the children viewed as their closest friends. For the present study, only unilateral given friendship nominations (not unilateral received) were considered when examining non-reciprocated relationships. For the remainder of this paper, the term non-reciprocated, or unreciprocated relationship refers only to an unilateral given friendship nominations.

Although children's peer relations in general, and friendships in particular, have received a great deal of attention over the past several decades, considerations of unreciprocated relationships have been limited. The possible developmental outcomes that may arise from a child expressing the existence of friendships and not having those sentiments returned is worthy of attention (e.g., see Olsen et al., 2012). Hundley and Cohen (1999) reported one of the few studies examining unilateral relationships (i.e., non-reciprocated). These researchers found that children demonstrated an awareness of friendship reciprocity among classmates as indicated by differential levels of liking. It was found that children liked mutual friends more than unilateral given friends. Children also liked children they chose as friends (both mutual and unilateral given nominations) more than the children they did not nominate (both unilateral received and non-friends). Unilateral received friends were liked more than non-friends. These findings highlight the need to consider a variety of dyadic relationships beyond mutually nominated

friendships. As an extension of Hundley and Cohen (1999), it seems valuable to not only expand the operational definition of friendship used, but also to evaluate the psychological significance of doing so. It's important to understand how children's friendship nominations (specifically non-reciprocated nominations) are associated with other measures of peer social competence (e.g., loneliness, optimism, and group acceptance).

### **The Present Research**

The starting point for the present research is that, from the perspective of the nominator, there is no obvious psychological distinction between a friend with whom one has a reciprocated friendship relationship and one with whom one has given an unreciprocated friendship nomination. That is, if Child A nominated Child B as a friend, Child A believed that a friendship existed with Child B whether Child B reciprocated the friendship nomination or not. The thesis for the present research is that measures of children's social competence will be differentially influenced depending on whether a child has few unreciprocated friendship nominations or many unreciprocated friendship nominations. In particular, it is hypothesized that the former children (i.e., few unreciprocated nominations) will report less loneliness and greater peer optimism than the latter children (i.e., many unreciprocated nominations). It is also hypothesized that children with few unreciprocated nominations will be more accepted by their peers than children with many unreciprocated nominations.

## Methods

### Participants

The present study involved collecting data as part of a larger longitudinal investigation of children's peer relations at a university-affiliated public school. Participants were 160 third- through fifth-grade children (77 boys, 83 girls; 3<sup>rd</sup> grade  $n = 55$ , 4<sup>th</sup> grade  $n = 59$ , 5<sup>th</sup> grade  $n = 46$ ). The school served predominantly middle class children (fewer than 20% eligible for free or reduced lunches), from mostly non-Hispanic white (71.7%) and African American (22.8%) families.

The school is highly research-focused, and parents consent at enrollment to allow their children to participate in a wide range of studies, each of which they are specifically informed about and given the opportunity to decline participation for their children. Information about the present study was mailed to parents who were given the opportunity to opt out of the research with assurance of no penalty to their children. Six parents (out of 204) declined to allow their child to participate. At the beginning of each data collection session, children were informed about the purpose of the research, confidentiality, and their right to discontinue participation at any time with no penalty.

### Measures

**Friendship nominations.** Students were given a complete class roster and were instructed to circle an unlimited number of classmates with whom they were friends. Mutual friendships were determined by two children who nominated each other as their friend.

**Sociometric nominations.** Peer liking was measured using nominations, which provides a measure of overall group standing. For sociometric nominations, both liking

and disliking were assessed. Children were given a classroom roster and were asked to circle the names of the students in the class that they “liked the most.” When this task was completed, the children were instructed to turn to the next page, which had an identical classroom roster. Children were asked to circle the names of the students in the class that they “liked the least.” Children were allowed unlimited nominations, and final scores were standardized by classroom, controlling for class size.. A social preference score for each child was calculated by subtracting the standardized disliking score from the standardized liking score following Coie, Dodge, and Coppotelli (1982).

**Loneliness.** The *Loneliness and Social Dissatisfaction Questionnaire* (Asher & Wheeler, 1985) was administered to the students. The questionnaire consists of 16 items that assess children’s feelings of loneliness and social dissatisfaction (e.g., “I feel left out of things at school”), and 8 filler items (e.g., “I like to paint and draw”) using a 5-point Likert scale. Most often, the questionnaire, psychometrically, is considered to assess a single factor, loneliness. Possible responses to each item ranged from 1 (*not at all true*) to 5 (*always true*). Children’s responses to the 16 primary items were averaged to yield total mean scores that range from 1 to 16, with higher scores being indicative of higher levels of loneliness. These items demonstrated excellent psychometric properties with a Cronbach’s alpha of 0.90.

**Peer Optimism.** The *Peer Life Orientation Test* (PLOT) is a 10-item self-report questionnaire assessing children’s expectancies towards peers. The measure includes 5 optimism questions (e.g., “It’s easy for me to become friends with other kids”) and 5 pessimism questions (e.g., “Things usually go wrong for me when I am with other kids”). Children responded to items using a 4-point Likert scale, 1 to 4, with choices “True for

Me,” “Sort of True,” “Sort of Not True,” and “Not True for Me.” Optimism scores were calculated as the mean of responses and keyed such that higher scores indicated higher levels of peer optimism. This scale demonstrated internal consistency for children assessed in the present study with a Cronbach’s alpha of 0.89.

### **Procedure**

As part of a larger longitudinal study, students in each classroom completed a packet of measures in two group sessions lasting approximately 40 – 45 minutes each. During each session, two to three graduate students were present to monitor and answer any questions that children may have regarding the measures. Each child was given a packet which consisted of multiple measures to collect additional data necessary for the larger longitudinal study. Before students began the packet, they were assured of confidentiality and were told not to look at each other’s papers and not to discuss their answers with other students. One of the graduate students led each session and read the children scripted directions at the beginning of each task. The instructions were also printed at the top of each measure. The graduate students monitored children’s completion of questionnaires to inform the session leader when to move on to the next measure. After each student completed his or her packet, the graduate students checked to make sure the students answered the questions that they intended to answer. Students whose parents returned a non-consent form or students who did not want to participate were sent to a different classroom during data collection. For those students whose parents returned consent forms but were absent on the original day of data collection, a graduate student returned on another day to administer the measures and assist the student(s) on an individual basis.

## Results

### Preliminary Analyses

Data were screened following procedures outlined by Tabachnick and Fidell (2001). Although loneliness and peer optimism exhibited substantial skewness, this was expected and there were no notable deviations from normality (e.g., kurtosis, nonlinearity); thus transformations of the variables were not deemed necessary. Multivariate outliers were assessed based on Mahalanobis Distance. No case obtained a value above the critical Mahalanobis Distance value. Descriptive statistics of all raw data are presented in Table 1.

Table 1

*Descriptive Statistics for all Friendship Variables*

Friendship Variables	Males ( <i>n</i> = 77)		Females ( <i>n</i> = 83)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Loneliness	2.05	.87	1.76	.67
Peer Optimism	3.11	.67	3.38	.57
Liked Most	9.57	4.43	10.42	3.31
Liked Least	5.03	3.9	3.57	3.26
Mutual Friendships	5.58	3.43	6.05	3.39
Non-reciprocated Friendships	5.13	4.71	3.8	3.63
Social Acceptance	-.32	2.03	.41	1.58

Pearson product-moment correlation coefficients were conducted for the measures of interest (see Table 2). As expected loneliness and peer optimism were significantly negatively correlated for both males and females, as well as social acceptance and loneliness. Also, social acceptance was significantly positively correlated with peer

optimism for males and females. There was a significant negative correlation between number of mutual friendships and loneliness for males ( $r = -.40, p < .001$ ), but not for females ( $r = -.19, p > .05$ ). Similarly, number of mutual friendships and peer optimism were significantly, positively correlated for males ( $r = .38, p < .001$ ), but were not significantly correlated for females ( $r = .12, p = .29$ ). Interestingly, number of non-reciprocated friendships was not significantly correlated with either of the individual level variables (loneliness and optimism). However, number of non-reciprocated friendships and peer group acceptance were significantly negatively correlated for females ( $r = -.39, p < .001$ ) but were not significantly correlated for males ( $r = -.09, p > .05$ ).

Table 2

*Correlations among the Study Variables*

	1	2	3	4	5
1. Loneliness	-	-.85***	-.49***	-.40***	-.01
2. Peer Optimism	-.79***	-	.54***	.38***	-.05
3. Social Preference	-.40***	.34**	-	.44***	-.09
4. Mutual Friendships	-.19	.12	.33**	-	.36***
5. Non-reciprocated Friendships	.12	-.00	-.39***	.36***	-

*Note.* \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . Correlations for males above the diagonal, correlations for females below the diagonal.

A 3 x 2 multivariate analysis of variance (MANOVA) was performed to investigate grade and sex effects across all measures. Dependent variables included loneliness, peer optimism, peer group acceptance, number of mutual friendships, and number of non-reciprocated friendship relationships. The MANOVA revealed only a

statistically significant multivariate effect for sex  $F(5,150) = 2.81, p < .05$ ; Wilk's Lambda = .91. Univariate ANOVAs indicated significant sex effects for loneliness,  $F(1, 154) = 6.79, p < .01$ ; peer optimism,  $F(1, 154) = 8.07, p < .01$ ; social preference,  $F(1, 154) = 6.04, p < .05$ ; and number of non-reciprocated friendship nominations,  $F(1, 154) = 4.52, p < .05$ . An inspection of the mean scores indicated that females reported lower levels of loneliness ( $M = 1.76, SD = .08$ ) than males ( $M = 2.08, SD = .09$ ); females reported higher levels of optimism ( $M = 3.37, SD = .07$ ) than males ( $M = 3.09, SD = .07$ ); females were more socially accepted by peers ( $M = .38, SD = .2$ ) than males ( $M = -.33, SD = .21$ ); and females gave fewer non-reciprocated friendship relationships ( $M = 3.85, SD = .46$ ) than males ( $M = 5.27, SD = .49$ ). Interestingly, females and males did not differ in their number of mutual friends,  $F(1, 154) = 1.44, p > .05$ ; females,  $M = 6.07, SD = .37$ , males,  $M = 5.41, SD = .40$ .

### **Primary Analyses**

The preliminary analyses indicated that, although number of mutual friendships was correlated with the social competence outcomes in the present research, number of mutual friends did not differ significantly in relation to sex or grade. Number of non-reciprocated friendships in fact did significantly relate to the social competence variables. To further evaluate this relation, hierarchical regressions were performed for number of non-reciprocated friendship relationships to three measures of children's peer social competence (loneliness, peer optimism, and peer group acceptance). Grade level and sex were entered in step 1. In step 2, number of non-reciprocated friendship relationships was entered. Sex was coded as 0 = Males, 1 = Females.

Results of the regression analysis for loneliness are provided in Table 3. The inclusion of grade level and sex were significant in step 1,  $F(2, 157) = 3.10, p < .05$ , and accounted for 4% of the variance. Only sex was a statistically significant predictor,  $t = -2.36$  (i.e., females less lonely than males). For step 2, although sex remained a significant predictor,  $t = -2.35$ , the inclusion of number of non-reciprocated friendships did not significantly predict loneliness,  $F(3, 156) = 2.06, p > .05$ .

Table 3

*Results of Hierarchical Regression Analysis Predicting Loneliness in Relation to Non-reciprocated Friends*

	Loneliness	
	Standardized $\beta$	$\Delta R^2$
Step 1		.038*
Grade	.063	
Sex	-.185*	
Step 2		.000
Grade	.063	
Sex	-.187*	
Non-reciprocated Friends	-.011	

*Note.* \* =  $p < .05$ . \*\* =  $p < .01$ . \*\*\* =  $p < .001$ .

Results of the regression analysis for peer optimism are provided in Table 4. The inclusion of grade level and sex were significant in step 1,  $F(2, 157) = 4.02, p < .05$ , and accounted for 5% of the variance. Only sex was a statistically significant predictor,  $t = 2.72$ , i.e., females more optimistic than males. For step 2, an additional 1% of the variance was accounted for with the inclusion of number of non-reciprocated friends,  $F$

(3, 156) = 2.69,  $p < .05$ . However, this significance was due to the continued significance of sex,  $t = 2.72$ . Number of non-reciprocated friends did not add significantly to the equation.

Table 4

*Results of Hierarchical Regression Analysis Predicting Peer Optimism in Relation to Non-reciprocated Friends*

		Optimism	
		Standardized $\beta$	$\Delta R^2$
Step 1			.049*
	Grade	-.065	
	Sex	.211**	
Step 2			.001*
	Grade	-.065	
	Sex	.215**	
	Non-reciprocated Friends	.024	

*Note.* \* =  $p < .05$ . \*\* =  $p < .01$ . \*\*\* =  $p < .001$ .

Finally, results of the regression analysis for peer group acceptance are provided in Table 5. The inclusion of grade level and sex were significant in step 1,  $F(2, 157) = 3.56$ ,  $p < .05$ , and accounted for 4% of the variance. Only sex was a statistically significant predictor,  $t = 2.54$ , i.e., females higher social preference than males. For step 2, an additional 1% of the variance was accounted for with the inclusion of number of non-reciprocated friends,  $F(3, 156) = 5.19$ ,  $p < .05$ . Sex continued to be a significant predictor,  $t = 2.12$ . Importantly, number of non-reciprocated friends significantly predicted peer social preference,  $t = -2.83$ . The more non-reciprocated friends a child

had, the less liked they were by peers. Follow-up regressions for peer group acceptance were conducted separately for males and females. Grade was still entered in step 1 and remained non-significant. Interestingly, non-reciprocated friendships in step 2 were significant for females,  $F(2, 80) = 8.43, p < .001$ , but were not significant for males,  $F(2, 74) = 1.52, p > .05$ .

Table 5

*Results of Hierarchical Regression Analysis Predicting Peer Group Acceptance in Relation to Non-reciprocated Friends*

	Peer Group Acceptance	
	Standardized $\beta$	$\Delta R^2$
Step 1		.031*
Grade	.061	
Sex	.198*	
Step 2		.002**
Grade	.062	
Sex	.164*	
Non-reciprocated Friends	-.220**	

*Note.* \* =  $p < .05$ . \*\* =  $p < .01$ . \*\*\* =  $p < .001$ .

In sum, loneliness and peer optimism, both individual level variables were affected by sex of the child and were not related to number of non-reciprocated friendships. The group level variable of peer social preference, a measure of general liking by peers was significantly, and inversely, related to number of non-reciprocated friendships, for females only.

## Discussion

Children's dyadic peer relationships are extremely important social contexts contributing to adjustment and development. Friendships have been the most studied form of children's relationships and researchers have traditionally required mutual (reciprocated) friendship nominations for defining friendships. Although a great deal of valuable information has been obtained on the contributions of mutual relationships to development, considerations of alternate relationship forms have been limited. The current research examined the possible developmental outcomes of non-reciprocated friendship relationships, specifically unilateral given; that is, the extent to which children gave unreciprocated friendship nominations. The goal of this research was to assess the association between number of non-reciprocated friendship relationships and indices of peer social competence at the individual level (loneliness and optimism) and at the group level (peer group acceptance).

Consistent with previous findings, the number of classroom mutual friendships a child had was related to social outcomes like loneliness, optimism, and social preference (Deptula et al., 2006; Newcomb et al., 1999; Parker & Asher, 1993). New to the present research was the consideration of non-reciprocated friendship relationships to these three measures of peer social competence (loneliness, peer optimism, peer social preference). Following Hinde (1992), loneliness and peer optimism, as self reports of social functioning can be considered individual levels of peer analysis; peer preference serves as a measure of group level functioning. The number of non-reciprocated friends children thought they had was not associated with peer social competence at the individual level (loneliness and optimism) but did predict how well a child was liked at the group level.

Furthermore, the inverse relation of number of non-reciprocated friendship nominations to social preference was only found to be statistically significant for females. That is, the higher the number of non-reciprocated friendships, the lower the peer social preference of girls.

The gender and peer liking finding associated with non-reciprocated friendship nominations is particularly interesting. As mentioned above, the peer group recognizes and forms perceptions of children in part based on the children's dyadic peer relationships (e.g., Newcomb et al., 1999). Perhaps because boys typically participate in larger play groups than girls, it is more acceptable for them to think they have more friends than they do because of this greater range. Furthermore, girls also participate in more relational aggression, a non-physical form of aggression characterized by the use of exclusion, negative gossip, and verbal threats (Gifford-Smith & Brownell, 2003). Perhaps not returning a friendship nomination is a behavior associated with relational aggression to preserve their status or keep someone out of a clique. These results do not imply a direction of effects between non-reciprocated friendships and social preference.

It is also interesting that the individual assessments of loneliness and peer optimism were not related to extensivity of non-reciprocated friendship nominations. Perhaps children are satisfied with these unreciprocated friendships. From Hundley and Cohen (1999), it is reasonable to assume that children liked their reciprocated friends more than their non-reciprocated friends. The present findings suggest that, liking aside, children's loneliness and peer optimism were not adversely affected by the number of non-reciprocated friends. Future research should include other peer outcome variables

that might show individual level effects of reciprocity of friendships (e.g., depression, social anxiety, or self-esteem).

As noted the present findings support previous research highlighting the number of mutual friends a child has. Number of mutual friends was significantly and positively correlated with social preference for both males and females, but was only significantly correlated with loneliness (negative) and peer optimism (positive) for males. Again, this is evidence for the peers as gateways to the group for all children (e.g., Newcomb et al. 1999). The loneliness and peer optimism findings underscore the belief that girls need fewer close friends than boys due to the structure of their relationships and groups. Boys will feel lonely and less optimistic about peers if they have few reciprocated friendships; girls just need a few close friends.

Unreciprocated friendship nominations are a very inexact measure of relationships. Future research should consider friendship quality to more finely measure the positive and negative features of friendships. Researchers should look at how children rate aspects of their friendships (e.g., companionship, trust, loyalty, conflict resolution) with each child they gave a friendship nomination. Following Berndt and McCandless (2009), researchers should assess children's reports on the level of each feature in a particular friendship by answering questions about behaviors or interactions that are indicative of that feature.

Some limitations of the present research deserve mention. The use of unreciprocated friendship nominations is complicated by the fact that children may nominate peers they would like to be friends with in addition to naming actual friends (Gifford-Smith & Brownell, 2003). Furthermore, unreciprocated nominations may have

occurred as a result of the different phases of friendship formation. Perhaps children who gave a unilateral friendship nomination were in the early stages of forming a friendship with the other child or were in the process of ending a friendship. The use of longitudinal studies following friendships should be used to reveal the possible influences of these phases of friendships. Additionally, the examination of the longer histories of peer relations may reveal that the prolonged experiences of unreciprocated friendships may affect social competence at both the individual and group level.

In conclusion, different relationship experiences were found to influence children's peer social competence and provide further support for the importance of friendships. Non-reciprocated friendship relationships affected indices of peer social competence at the group level (group acceptance) but not at the individual level (loneliness and peer optimism). Therefore, whether children think they have more friends does not relate to their loneliness and optimism but number of mutual friendships does. Importantly, the experience of unreciprocated friendships was associated with how well a child was liked by the peer group. However, this relation only holds true for females. The present findings highlight the unique impact of different relationship experiences on peer social competence.

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