

## Children's Peer Relations and Their Psychological Adjustment

### Differences between Close Friendships and the Larger Peer Group

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In a longitudinal study that followed children from fourth through sixth grades, we tested whether problems in children's peer relations preceded psychological maladjustment and whether adjustment difficulties paved the way for poor social relationships. Both close friendships and peer group acceptance were examined. Our findings indicated that less peer acceptance predicted more internalizing and externalizing symptoms and less global self-worth two years later but that psychological adjustment did not predict future peer acceptance. Conversely, the lack of a supportive close friendship did not predict worse psychological functioning; however, depressive symptoms and low self-worth did predict less close friend support two years later. These findings highlight the importance of distinguishing the different kinds of social bonds that children form with peers.

It is no wonder that as children grow they spend more time with peers and place more importance on those relationships (Larson & Richards, 1991; Steinberg & Morris, 2001). Peers can provide companionship, support, nurturance, validation of self-worth, and a sense of belonging (Furman & Robbins, 1985; Zarbatany, Hartmann, & Rankin, 1990). In this way, a failure to form satisfying ties to peers may leave children more vulnerable to

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emotional and behavioral problems in childhood. The reverse causal ordering, suggesting that psychological problems increase the risk of developing difficulties with peers, has also been proposed (Brendgen, Vitaro, Turgeon, & Poulin, 2002; Hodges, Boivin, Vitaro, & Bukowski, 1999; Rubin, Bukowski, & Parker, 1998; Ladd, 2006). The reasoning here is that characteristics of the maladjusted child can lead to social interactions that are uninviting and even aversive and can limit opportunities for the kinds of social experiences that foster social skills.

Whatever the direction of effects with psychological adjustment, it is important to consider distinctions between different types of peer relations. Friendships are characterized by mutual liking, affection, and intimacy even at young ages (Ladd, Kochenderfer, & Coleman, 1996; Howes, 1996; Parker & Gottman, 1989); however, it is in late childhood and adolescence that intimacy and emotional support become key components in the connection between friends (Buhrmester & Prager, 1995). In addition to dyadic bonds, individuals have a relationship with their larger peer group. The group's perception of a given child is reflected in that child's level of social or peer acceptance. These two components of children's peer networks have been theorized to serve different functions. For instance, it has been proposed that friendships are a unique source of affection, intimacy, and nurturance, whereas the peer group provides a sense of inclusion and belonging (Furman & Robbins, 1985; Weiss, 1974). Given these distinct functions, it stands to reason that friendships and peer acceptance might be related to psychological adjustment in different ways (Bagwell, Newcomb, & Bukowski, 1998; Parker & Asher, 1993).

In order to make such comparisons, the longitudinal study described here assessed both aspects of children's social relationships. We tested whether less peer acceptance preceded poor adjustment as well as whether less psychological adjustment led to a lack of acceptance by peers. Similarly, we examined whether children's reports of less supportive close friendships predicted more emotional and behavioral problems and whether these problems predicted less support from close friends. Based on existing research, we expected to find evidence for both directional orderings linking poor social relationships to psychological maladjustment.<sup>1</sup>

1. However, there is research to suggest that for some youths this may not be the case. For instance, through the process of deviancy training, antisocial children and adolescents can promote the escalation of deviant behavior in their friends (Dishion, McCord, & Poulin, 1999; Snyder, Schrepferman, Oeser, Patterson, Stoolmiller, Johnson, & Snyder 2005). Thus, among these children more involvement with and more support from close friends may serve to increase, rather than decrease, future maladjustment. Several studies also suggest that whereas emotional and behavioral problems generally predict poor social outcomes, among a subset of aggressive children pop-

“Psychological maladjustment” is a clinical term commonly used to denote two types of problems.<sup>2</sup> Externalizing symptoms are thought to be the result of insufficient self-control or self-regulation, whereas internalizing symptoms occur when children overcontrol their impulses (Eisenberg, Fabes, Guthrie, Murphy, Maszk, Holmgren, & Suh, 1996). Low self-esteem, or self-worth, is highly correlated with both types of problems and is generally regarded as a dominant characteristic of maladjustment in children (Mash & Barkley, 2003). The designations of “internalizing” and “externalizing” problems refer to symptom clusters of behaviors, thoughts, and feelings that often co-occur. For instance, anxiety and depression, the hallmarks of internalizing problems, are manifested in symptoms such as sadness and fear, ruminations, perfectionism, somatic complaints (without an apparent medical cause), and social withdrawal. On the other hand, externalizing problems encompass features of delinquency, such as lying, setting fires, and lack of guilt, as well as aggressive behavior, such as screaming and fighting.<sup>3</sup> In the current study, all three indicators of psychological maladjustment—internalizing symptoms, externalizing symptoms, and low self-worth—were assessed at two time points.

A brief overview of the relevant research literature presented below focuses on findings based on longitudinal designs in which both peer relationships and psychological adjustment were examined at different time points. We begin with studies of peer acceptance and then discuss research on close friendship support. Where possible, we highlight research based

ularity with peers is maintained and even enhanced over the course of childhood and adolescence (Cillessen & Mayeux, 2004; Haselager, Cillessen, van Lieshout, Riksen-Walraven, & Hartup, 2002; Rodkin, Farmer, Pearl, & Van Acker, 2000; Rose, Swenson, & Waller, 2004; Vaillancourt, Hymel, & McDougall, 2003). In this investigation, we evaluated general trends in the associations between peer relations and psychological adjustment in a sample of school-age children. We do not attempt to study subgroups, such as highly aggressive and antisocial children, for whom developmental trajectories may vary.

2. In the clinical research literature, problems in psychological adjustment are often discussed as “emotional and behavioral problems.” This term refers to externalizing and internalizing symptoms clusters and not only to the maladaptive social behavior (e.g., aggression, social withdrawal) often studied by developmental psychologists. Consistent with other clinical research, in this study we often use the terms “internalizing symptoms,” “externalizing symptoms,” “emotional problems,” and “behavioral problems” interchangeably.

3. We recognize that there is some overlap between the constructs of adjustment problems and social behaviors (often studied as an antecedent to the development and maintenance of social relationships). However, problems in psychological adjustment include additional features beyond socially inappropriate behaviors, such as aggression and social withdrawal. “Psychological adjustment” is a term that encompasses not only behaviors but also thoughts and feelings. It is possible that the social behaviors associated with specific forms of maladjustment mediate the link with poor peer relations.

on studies of participants who were close to the age range covered in this study (fourth through sixth grades).

### *Peer Acceptance and Psychological Adjustment*

There is reliable evidence indicating that children who are not well accepted by their peer group are likely to later display more externalizing symptoms (Coie, Lochman, Terry, & Hyman, 1992; Deater-Deckhard, Dodge, Bates, & Pettit, 1998; Hymel, Rubin, Rowden, & LeMare, 1990; Kraatz-Keiley, Bates, Dodge, & Pettit, 2000; Kupersmidt & Patterson, 1991; Ladd, 2006; Ladd & Troop-Gordon, 2003; Laird, Jordan, Dodge, Pettit, & Bates, 2001; Morison & Masten, 1991). Longitudinal research on internalizing outcomes has not uncovered a comparably robust association. Positive associations have been reported between a lack of peer acceptance and parent and child descriptions of internalizing symptoms (Boivin, Hymel, & Bukowski, 1995; Coie et al., 1992; Kraatz-Keiley et al., 2000; Kupersmidt & Patterson, 1991; Morison & Masten, 1991; Panak & Garber, 1992). Furthermore, this association holds when composite scores based on combined parent, child, and teacher ratings of internalizing symptoms are used (Burks, Dodge, & Price, 1995; Deater-Deckhard et al., 1998; Laird et al., 2001; Nolan, Flynn, & Garber, 2003). However, as was the case in the present study, in three tests (Hymel et al., 1990; Kraatz-Keiley et al., 2000; Ladd & Troop-Gordon, 2003) internalizing difficulties were not predicted by a lack of peer acceptance when the outcome variable was measured solely by teacher reports, although in a recent investigation with teacher ratings, poor peer acceptance did forecast internalizing difficulties (Ladd, 2006). The nonsignificant association may be explained by the observation that teachers often underreport their students' internalizing symptoms (Hinshaw, Han, Erhardt, & Huber, 1992), thereby decreasing the likelihood of detecting an association with other variables. A couple of longitudinal studies have tested the association between lack of peer acceptance and subsequent declines in self-worth (Hymel et al., 1990; Morison & Masten, 1991). In both studies, problems with the peer group did not predict lower levels of self-worth at a subsequent time point.

We were also interested in the reverse temporal ordering, that is, whether problems in adjustment would predict less acceptance by the peer group. The premise that children with emotional and behavioral difficulties bring about problems with peers has recently been termed the "disorder-driven model" of social outcomes (Ladd, 2006). In a seven-year study (ages 5–12) with yearly assessments, Ladd (2006) tested this model as an alternative to the traditional approach (i.e., peer acceptance predicting adjustment)

and found that neither internalizing nor externalizing problems contributed to changes in peer rejection. However, in other research studies, externalizing symptoms were associated with reduced acceptance by peers (Hymel et al., 1990; Laird et al., 2001). Interacting with children who are prone to be aggressive, disruptive, and hostile may lead to alienation, dislike, and eventually isolation from the larger peer group.

Depressed children, on the other hand, may initiate little prosocial contact, whine and complain, lack energy or motivation to engage in activities, and behave in an irritable manner with their peers (Caldwell, Rudolph, Troop-Gordon, & Kim, 2004; Peterson, Mullins, & Ridley-Johnson, 1985). Clearly, these behaviors have the potential to sour positive interactions and limit a child's opportunities to be included in the group. Whereas some longitudinal studies find that symptoms of depression in childhood predict less peer acceptance (Brendgen et al., 2002; Chen & Li, 2000; Vernberg, 1990), other studies do not find such an association (Little & Garber, 1995; Nolan et al., 2003). Note that these investigations concentrate on depression as a marker of internalizing difficulties. Although we were unable to identify any published longitudinal studies testing whether anxiety (another feature of internalizing problems) and self-worth predict future peer acceptance, these are also plausible hypotheses. Anxious children may withdraw or avoid social situations altogether (Rubin & Burgess, 2001; Vernberg, Abwender, Ewell, & Beery, 1992), and children with low self-esteem may lack the confidence needed for initiation of social interaction and group entry.<sup>4</sup>

### *Close Friend Support and Psychological Adjustment*

Research on friendship support has developed in the context of two research traditions: the study of social support and the study of friendships. Whereas the former conceptualizes friendship support as a protective factor against the detrimental effects of stress, the latter views support as a quality of the relationship between two individuals. Regardless of their origins, research studies examining this construct have converged on a definition of friendship

4. Although we are aware of a related body of research focusing on children labeled "anxious solitary" (Gazelle & Ladd, 2003) or "passive withdrawn" (Rubin & Coplan, 2004), these studies assess social withdrawal, which is associated with anxiety, and not anxiety as an adjustment problem per se. The research shows that by middle or late childhood, social withdrawal is concurrently associated with a lack of acceptance by peers (Boivin & Hymel, 1997; Rubin, Chen, & Hymel, 1993). Moreover, longitudinal research has shown that passive withdrawal in middle childhood precedes deterioration in social acceptance over the course of preadolescence and adolescence (Hymel et al., 1990; Morison & Masten, 1991; Ollendick, Greene, Weist, & Oswald, 1990; Rubin, 1993; Rubin, Chen, McDougall, Bowker, & McKinnon, 1995).

support that includes emotional support (e.g., caring, listening, understanding) as well as instrumental support (e.g., giving advice, helping with tasks).

Supportive friendships have been conceptualized as critical to children's psychological adjustment because they are inherently esteem-enhancing and provide positive experiences of companionship, nurturance, and affection (Furman & Robbins, 1985; Sullivan, 1953; Weiss, 1974). In addition, close friends are thought to help children better cope with stressors, thereby reducing emotional distress, by providing guidance and instrumental aid as well as a forum for discussion and self-disclosure. This line of reasoning suggests that support from friends should lead to better psychological outcomes. Studies indirectly testing this assertion (e.g., by assessing the presence of a friendship rather than the support it provides or by cross-sectional research measuring predictors and outcomes concurrently) have garnered support for the important role of friendships in children's adjustment (Parker & Asher, 1993; Hodges, Boivin, Vitaro, & Bukowski, 1999). However, longitudinal studies have not found similar evidence that support from a close friend forecasts less internalizing or externalizing symptoms or higher global self-worth (Berndt, Hawkins, & Jiao, 1999; DuBois, Felner, Brand, Adan, & Evans, 1992; Giordano, Cernkovich, Groat, Pugh, & Swinford, 1998; Poulin, Dishion, & Haas, 1999; Way & Robinson, 2003; Windle, 1992). These studies sampled adolescents who were at least a few years older than the current sample, and many of the variables were operationalized in ways that are more appropriate for older groups. For example, some studies assessed externalizing difficulties with items about criminal behavior, drug use, and alcohol consumption (Giordano et al., 1998; Windle, 1992). Due to the difficulties inherent in generalizing findings from prior studies of adolescents to children and preadolescents, it seemed important to test how younger children's psychological adjustment relates to friendship support.

One possible explanation for the failure to find that close friend support predicts psychological adjustment is that the reverse temporal direction is more powerful. Perhaps symptoms of adjustment problems are so disruptive to close relationships that children with these characteristics are unable to maintain supportive friendships. Late childhood and preadolescence is a time when intimacy in children's friendships increases (Buhrmester & Prager, 1995; Sharabany, Gershoni, & Hofman, 1981). Behaviors associated with externalizing problems, such as aggression, hostility, and impulsivity, may hinder the formation of intimate friendships. Similarly, correlates of internalizing problems, such as rumination, crying, and an excessive reliance on friends, may tax close friendships to the point of deterioration or dissolution.

The few studies that have addressed this possibility do not paint a consistent picture. For example, two studies found that more internalizing symptoms predicted reduced friendship support (Hirsch & DuBois, 1992; Vernberg, Abwender, Ewell, & Beery, 1992), but another study did not find this association (Windle, 1994). Similarly, externalizing symptoms (Windle, 1994) and global self-worth (Way & Pahl, 2001) failed to predict friendship support one year later. Because the existing research literature is characterized by a limited number of longitudinal studies, a focus on older children, and inconsistent findings, it was unclear how adjustment difficulties in a sample of younger children would relate to support in close friendships two years later.

## Methods

### *Participants*

The data for this study were collected as part of a larger longitudinal investigation. The UCLA Family Development Study (FDS) followed children annually from fourth through sixth grades. In addition to children's self-reports, teachers in each grade provided information about target children's psychological adjustment and peer acceptance. Hypotheses were tested with data from fourth (Time 1) and sixth grades (Time 2) only. Fifth-grade data were omitted in order to reduce the number of analyses reported and simplify the presentation of results; however, the findings were virtually identical to those using fourth- and sixth-grade data.<sup>5</sup>

Cohorts of fourth graders were recruited into the study during three consecutive years. A total of 677 children qualified to participate; 247 (37%) participated in Time 1 interviews (116 girls and 131 boys;  $M = 9.5$  years old). There was a high child retention rate across the three years of the study (in sixth grade, 226 children participated [92%]; 108 girls and 118 boys). During Time 1, virtually all teachers of fourth-grade participants ( $n = 245$ ; 99%) provided ratings. During Time 2, however, teachers' participation rate was somewhat lower, with sixth-grade teachers of 156 target children (69%) completing questionnaires. Nonetheless, in comparing children who did and

5. The UCLA Family Development Study included annual assessments of target children in fourth, fifth, and sixth grades, permitting longitudinal analyses from fourth to fifth grades, from fifth to sixth grades, and from fourth to sixth grades. Analyses that include fifth-grade scores are not reported here because the results were similar to the results of the fourth- to sixth-grade analyses. The only exceptions are two analyses involving teacher-reported internalizing behaviors. In the association between fourth and fifth grades and fifth and sixth grades (but not fourth and sixth grades), internalizing behaviors predicted both peer acceptance and close friend support.



did not have teacher data in sixth grade, no differences were found on any of the fourth-grade variables.

The sample represents a primarily Caucasian population of parents and children who reside in the more affluent neighborhoods of a large metropolitan area. More than half (54%) of the participating families reported incomes above \$80,000 per year, and more than 80% of parents were college graduates. The ethnic breakdown of parents, based on self-identification, is as follows: 81% Caucasian, 8% Asian/Pacific Islander, 4% Latino, 1% African American, 1% Native American, and 5% Other.

### *Procedures*

Parents of fourth graders at one parochial school and two public schools in a large metropolitan area were sent letters describing the study. Children who returned consent forms signed by their parents and who agreed to participate completed annual interviews. In exchange for participation, the children received a \$5—\$10 honorarium at each time point. Teachers completed ratings for participating children in their classroom and received \$5 for each completed child questionnaire.

### *Measures*

Six measures were used in the analyses presented here. Two measures assessed children's relationships with peers, and four measures assessed children's psychological adjustment.

*Peer acceptance.* An 8-item measure developed for the purpose of this study assessed teacher's perceptions of how well accepted a child is by her or his classmates based on criteria such as how well liked or disliked the child is and the extent to which the child is excluded from play and activities organized by other children (Flook, Repetti, & Ullman, 2005; McGrath & Repetti, 2002). Two different teachers (one in fourth grade and the other in sixth grade) responded to questions on a 5-point Likert scale, with higher scores indicating more acceptance by classmates. A few different lines of evidence point to the psychometric integrity of this measure. The scale has excellent internal consistency (Cronbach's  $\alpha$  in fourth grade = .94 and in sixth grade = .88) and correlates with validated measures of teacher, parent, and child self-reported social functioning (McGrath & Repetti, 2002). Also, it is correlated cross-sectionally with classmates' ratings of likability ( $r[82] = .49, p < .001$ ), based on data available for a subset of the participants when they were in the fifth grade. Finally, fourth-grade teachers' ratings were moderately correlated with sixth-grade teachers' ratings on the scale



( $r[156] = .55, p < .001$ ), indicating some stability over two years and across different raters.

*Close friend support.* The Close Friend Support subscale of the Social Support Scale for Children (Harter, 1985b) assesses whether children perceive that they have a caring, understanding friend to whom they can disclose problems and feelings. Questions are presented in a structured alternative format designed with a 4-point response scale (Harter, 1982). For instance, "Some kids have a close friend who they can tell problems to BUT other kids don't have a close friend who they can tell problems to." Responses to six questions are averaged, with higher scores indicating more support. The Close Friend Support subscale has been shown to be valid and reliable (Harter, 1985b). In our sample, internal consistency of the scale was acceptable to good (Cronbach's  $\alpha$  in fourth grade = .70 and in sixth grade = .84). Mean levels of support in fourth grade were 3.44 (SD = .52) and 3.57 (SD = .54) in sixth grade, which were higher than scores obtained in standardization samples (in fourth grade, 2.93 to 3.14 [SD = .61–.72]; in sixth grade, 2.87 to 3.16 [SD = .58–.72]; Harter, 1985b). Children's ratings of close friend support in fourth and sixth grades were moderately correlated ( $r[226] = .37, p < .001$ ).

*Global self-worth.* The 6-item Global Self-Worth subscale of the Self-Perception Profile for Children (Harter, 1985a) measures children's global judgments of their worth as individuals. Questions are presented in a 4-point structured alternative format so that respondents first choose which type of child they are most like and then decide whether they are "sort of" and "really" like this child. For example, an item might state, "Some kids are happy with themselves as a person BUT other kids are often not happy with themselves." A mean of the items is computed, with higher scores reflecting greater self-worth. This is a widely used subscale whose reliability and validity have been established with various populations (for review, see Harter, 1999). In this study, the internal consistency was good (Cronbach's  $\alpha$  in fourth grade = .75 and in sixth grade = .83), and fourth and sixth graders in our study reported relatively high self-worth (fourth-grade  $M = 3.51$ ,  $SD = .49$ ; sixth-grade  $M = 3.53$ ,  $SD = .53$ ) compared to the standardization samples (fourth-grade  $M = 2.80$ – $3.13$ ,  $SD = .56$ – $.80$ ; sixth-grade  $M = 2.97$ – $3.20$ ,  $SD = .58$ – $.67$ ) (Harter, 1985a). Global self-worth in this sample was quite stable from fourth to sixth grades ( $r[226] = .55, p < .001$ ).

*Depressive symptoms.* The Children's Depression Inventory (CDI) (Kovacs, 1985) is a 27-item self-report measure of the affective, cognitive, somatic, and motivational symptoms of depression designed for use with school-aged children. Children respond by indicating which of three sentences best describes how they have been feeling during the past two

weeks. Responses are summed, and higher scores correspond to greater symptom severity. The scale has demonstrated good reliability and validity (Carey, Faulstich, Gresham, Ruggiero, & Enyart, 1987; Saylor, Finch, Spirito, & Bennett, 1984; Kovacs, 1985). The internal consistency of the measure for this sample was high (Cronbach's  $\alpha$  in fourth grade = .85 and in sixth grade = .89). In the current study, the means of fourth and sixth graders ( $M = 5.47$ ,  $SD = 5.49$  and  $M = 5.21$ ,  $SD = 5.87$ , respectively) were relatively low compared to other nonreferred samples (e.g., mean for ages 7–12 = 9.81) (Kovacs, 1992). Furthermore, depressive symptoms were stable across the two years of the study ( $r[226] = .60$ ,  $p < .001$ ).

*Internalizing and externalizing symptoms.* On the Teacher Report Form (TRF) (Achenbach, 1991), teachers rate how frequently participating children in their class have displayed symptoms indicative of emotional distress in the last six months, with higher scores indicating greater maladjustment. The scale has been found to be valid and highly reliable as well as stable (Edelbrock & Achenbach, 1984; Edelbrock, Greenbaum, & Conover, 1985; Achenbach, 1991). The TRF's internalizing broadband scale (36 items) consists of questions about anxious, depressed, and withdrawn symptoms (e.g., "The pupil cries a lot," "The pupil fears going to school") as well as somatic complaints often associated with anxiety and depression (e.g., aches or pains, dizziness, nausea). Mean internalizing scores for fourth graders in the current sample ( $M$  for boys = 6.33,  $SD = 7.75$ ;  $M$  for girls = 5.65,  $SD = 6.67$ ) were similar to those typically found in nonreferred samples ( $M$  for 5–11-year-old boys = 5.3,  $SD = 5.6$ ;  $M$  for 5–11-year-old girls = 5.5,  $SD = 6.4$ ); mean scores for sixth graders ( $M$  for boys = 3.14,  $SD = 5.24$ ;  $M$  for girls = 3.47,  $SD = 4.63$ ) were somewhat lower than those of other nonreferred children. The 34-item TRF externalizing broadband scale includes questions about delinquent and aggressive symptoms (e.g., "The pupil is defiant or talks back to staff," "The pupil doesn't seem to feel guilty after misbehaving"). In the current sample, the mean externalizing scores of fourth graders ( $M$  for boys = 7.26,  $SD = 10.39$ ;  $M$  for girls = 4.90,  $SD = 8.02$ ) were approximately equal to those of other nonreferred children ( $M$  for 5–11-year-old boys = 7.2,  $SD = 9.6$ ;  $M$  for 5–11-year-old girls = 4.2,  $SD = 6.8$ ); however, the mean scores of sixth graders in this sample ( $M$  for boys = 3.68,  $SD = 5.30$ ;  $M$  for girls = 2.41,  $SD = 3.83$ ) appeared to be low compared to national samples. The internal consistencies of the two broadband scales were high (for internalizing symptoms, Cronbach's  $\alpha$  in fourth grade = .90 and in sixth grade = .86; for externalizing symptoms, Cronbach's  $\alpha$  in fourth grade = .95 and in sixth grade = .88). The symptoms assessed by the TRF were also relatively stable from fourth to sixth grades, with externalizing problems being more highly

correlated ( $r[155] = .50, p < .001$ ) than internalizing problems ( $r[155] = .27, p < .01$ ).

## Results

Table 1 presents cross-sectional and cross-panel correlations between measures of peer relations and psychological adjustment. All statistically significant correlations were in the expected direction. Relatively high cross-sectional correlations were observed among the three self-report and three teacher-report variables, suggesting a potential respondent bias. In addition, there may have been a respondent bias that influenced children's self-reports across the two years. Control variables in the regression analyses presented below correct for this possible confound. Note that in the case of teachers, there could be no concern about systematic error due to rater bias across time because, for all participants, fourth- and sixth-grade teachers were different individuals.

Hierarchical multiple regression analyses tested longitudinal associations between the two indicators of peer relations and the four measures of psychological adjustment. All predictor variables were assessed when children were in the fourth grade (Time 1), and the criteria or outcome variables were based on measurements made in the sixth grade (Time 2). Thus, half of the models contained a peer relations variable (peer acceptance or close friend support) as the fourth-grade predictor, and in the other half of the models these variables, as measured in the sixth grade, acted as the criterion. Each regression model included as a control the Time 1 score that children received on the corresponding criterion. This control variable was entered in the first step of the model, and the centered predictor variable was included in the second step. Moderation of the above associations by gender was tested by adding to the second step a dummy coded gender variable and the interaction term of child gender by the centered predictor. Following Aiken and West's (1991) procedures for post hoc probing of significant interactions, we plotted the interactions and examined the simple slopes for the two gender groups. The strength of the association between the predictors and criteria for boys and girls separately are reported where relevant.

### *Peer Acceptance and Psychological Adjustment*

As presented in Table 2, four multiple regression models tested the hypothesis that lack of peer acceptance in fourth grade predicts lower levels of psychological adjustment two years later. In each regression, peer acceptance

**Table 1.** Correlations between Peer Relations and Psychological Adjustment Variables

	1	2	3	4	5	6	7	8	9	10	11	12
1. T1 classroom peer acceptance <sup>a</sup>	—											
2. T1 close friend support <sup>b</sup>	.19**	—										
3. T1 depressive symptoms <sup>b</sup>	-.27***	-.38***	—									
4. T1 global self-worth <sup>b</sup>	.17**	.53***	-.67***	—								
5. T1 internalizing behavior <sup>a</sup>	-.55***	-.09	.23***	-.15*	—							
6. T1 externalizing behavior <sup>a</sup>	-.46***	-.03	.11†	-.07	.44***	—						
7. T2 classroom peer acceptance <sup>c</sup>	.55***	-.11	.19*	-.06	.36***	.22**	—					
8. T2 close friend support <sup>b</sup>	.11	.37***	-.32***	.35***	-.12†	.02	.01	—				
9. T2 depressive symptoms <sup>b</sup>	-.21**	-.29***	.60***	-.48***	.10	-.03	-.07	-.36***	—			
10. T2 global self-worth <sup>b</sup>	.24***	.34***	-.55***	.55***	-.12†	.01	.18*	.44***	-.71***	—		
11. T2 internalizing behavior <sup>c</sup>	-.35***	-.07	.11	-.07	.27**	.12	-.40***	.07	.18	-.06	—	
12. T2 externalizing behavior <sup>c</sup>	-.42***	.04	.12	.05	.19*	.50***	-.34***	.04	-.02	.01	.55***	—

<sup>a</sup> Fourth-grade teacher reports; <sup>b</sup> Child reports, fourth and sixth grades; <sup>c</sup> Sixth-grade teacher reports.

†  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Note. Ns for cross-sectional correlations at T1 = 244–247 and at T2 = 156–226. Ns for cross-panel correlations = 155–226.

was entered as the predictor variable with a psychological adjustment variable as the criterion, controlling for the corresponding adjustment variable in fourth grade. Although lower peer acceptance scores in the fourth grade did not predict self-reported depressive symptoms, they did predict lower self-worth in sixth grade as well as the sixth-grade teachers' reports of more internalizing and externalizing symptoms.

In light of the argument that peer acceptance and close friendship should be studied together, we also tested whether peer acceptance continued to predict the three indicators of psychological adjustment even after controlling for close friend support. Multiple regression models similar to those described above (i.e., fourth-grade peer acceptance as the predictor and sixth-grade adjustment as the criterion) were tested, with fourth-grade close friend support as a second control variable (in addition to the fourth-grade adjustment variables). In all three analyses, acceptance by peers remained a significant predictor of psychological adjustment after two years. Less peer acceptance predicted more internalizing ( $F_{3,155} = 7.68, p < .001$ ;  $\beta_{\text{Peer acceptance}} = -.29, p < .01$ ) and externalizing symptoms ( $F_{3,155} =$

**Table 2.** Hierarchical Multiple Regression Analyses Predicting Psychological Adjustment from Fourth-Grade Peer Acceptance

Fourth-Grade Predictor Variables	B	SEB	$\beta$	R <sup>2</sup>	$\Delta R^2$
Dependent Variable = Sixth-Grade Depressive Symptoms					
$F(2, 225) = 60.59^{***}$					
Depressive symptoms	.61 <sup>***</sup>	.06	.58 <sup>***</sup>	.35 <sup>***</sup>	
Peer acceptance	-.01	.01	-.04	.35 <sup>***</sup>	.00
Dependent Variable = Sixth-Grade Global Self-Worth					
$F(2, 225) = 51.20^{***}$					
Global self-worth	.56 <sup>***</sup>	.06	.52 <sup>***</sup>	.29 <sup>***</sup>	
Peer acceptance	.09 <sup>*</sup>	.03	.15 <sup>*</sup>	.32 <sup>***</sup>	.03
Dependent Variable = Sixth-Grade Internalizing Behavior					
$F(2, 155) = 11.57^{***}$					
Internalizing behavior	.09	.07	.11	.07 <sup>**</sup>	
Peer acceptance	-.04 <sup>**</sup>	.01	-.29 <sup>**</sup>	.13 <sup>***</sup>	.06
Dependent Variable = Sixth-Grade Externalizing Behavior					
$F(2, 155) = 31.35^{***}$					
Externalizing behavior	.18 <sup>***</sup>	.04	.38 <sup>***</sup>	.25 <sup>***</sup>	
Peer acceptance	-.04 <sup>**</sup>	.01	-.24 <sup>**</sup>	.29 <sup>***</sup>	.04

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

**Table 3.** Hierarchical Multiple Regression Analyses Predicting Peer Acceptance from Fourth-Grade Psychological Adjustment

Fourth-Grade Predictor Variables	B	SEB	$\beta$	R <sup>2</sup>	$\Delta R^2$
Dependent Variable = Sixth-Grade Peer Acceptance $F(2, 156) = 34.35^{***}$					
Peer acceptance	.47***	.06	.54***	.31***	
Depressive symptoms	-.20	.26	-.05	.31***	.00
Dependent variable = Sixth-Grade Peer Acceptance $F(2, 156) = 33.98^{***}$					
Peer acceptance	.48***	.06	.56***	.31***	
Global self-worth	-.03	.11	-.02	.31***	.00
Dependent Variable = Sixth-Grade Peer Acceptance $F(2, 155) = 34.337^{***}$					
Peer acceptance	.44***	.07	.51***	.31***	
Internalizing behavior	-.34	.34	-.08	.31***	.00
Dependent Variable = Sixth-Grade Peer Acceptance $F(2, 155) = 33.83^{***}$					
Peer acceptance	.50***	.07	.57***	.31***	
Externalizing behavior	.12	.20	.04	.31***	.00

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

21.58,  $p < .001$ ;  $\beta_{\text{Peer acceptance}} = -.26$ ,  $p < .01$ ) as well as less self-worth ( $F_{3,225} = 34.32$ ,  $p < .001$ ;  $\beta_{\text{Peer acceptance}} = .14$ ,  $p < .05$ ).

The interaction of child gender and peer acceptance was significant in predicting depression ( $\beta = -.15$ ,  $p < .05$ ). However, follow-up analyses in which data for boys and girls were examined separately indicated that the simple slope of neither group differed significantly from 0. The interaction between child gender and peer acceptance was a significant predictor of global self-worth ( $\beta = .21$ ,  $p < .01$ ). Additional analyses indicated that lack of peer acceptance predicted lower self-worth among girls ( $\beta = .30$ ,  $p < .001$ ) but not among boys ( $\beta = .02$ ,  $p = .85$ ).

Table 3 presents the results of four multiple-regression analyses that tested the reverse temporal ordering: psychological adjustment in fourth grade predicting teacher-rated peer acceptance in sixth grade. In none of the four multiple regressions was a psychological adjustment variable a significant predictor of peer acceptance ( $p > .10$ ). The high  $R^2$  values and the significance of the overall regression models were due to the variance in sixth-grade peer acceptance that was explained by the control variable, fourth-grade ratings of peer acceptance. The only moderation by gender was the significant interac-

**Table 4.** Hierarchical Multiple Regression Analyses Predicting Psychological Adjustment from Fourth-Grade Close Friend Support

Fourth-Grade Predictor Variables	B	SEB	$\beta$	R <sup>2</sup>	$\Delta R^2$
Dependent Variable = Sixth-Grade Depressive Symptoms					
$F(2, 226) = 62.50^{***}$					
Depressive symptoms	.59 <sup>***</sup>	.06	.57 <sup>***</sup>	.35 <sup>***</sup>	
Close friend support	-.03	.02	-.08	.36 <sup>***</sup>	.01
Dependent Variable = Sixth-Grade Global Self-Worth					
$F(2, 226) = 48.11^{***}$					
Global self-worth	.55 <sup>***</sup>	.07	.51 <sup>***</sup>	.30 <sup>***</sup>	
Close friend support	.08	.07	.08	.30 <sup>***</sup>	.00
Dependent Variable = Sixth-Grade Internalizing Behavior					
$F(2, 155) = 6.32^{**}$					
Internalizing behavior	.20 <sup>**</sup>	.06	.27 <sup>**</sup>	.07 <sup>**</sup>	
Close friend support	-.01	.02	-.05	.08 <sup>**</sup>	.01
Dependent Variable = Sixth-Grade Externalizing Behavior					
$F(2, 155) = 25.22^{***}$					
Externalizing behavior	.23 <sup>***</sup>	.03	.50 <sup>***</sup>	.25 <sup>***</sup>	
Close friend support	.02	.02	.06	.25 <sup>***</sup>	.00

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

tion between peer acceptance and depression ( $\beta = -.22, p < .05$ ). Depressive symptoms in fourth grade predicted less peer acceptance among boys ( $\beta = -.24, p < .05$ ) but not among girls ( $\beta = .10, p = .29$ ).

*Close Friend Support and Psychological Adjustment*

Table 4 presents four multiple-regression models testing the hypothesis that close friend support predicts psychological adjustment. In each regression, the predictor term was self-reported close friend support in fourth grade, and the criterion was one of the four sixth-grade psychological adjustment variables, with the corresponding fourth-grade adjustment variable as the control. Close friend support did not predict any of the four indices of psychological adjustment.<sup>6</sup> Furthermore, in none of those multiple regressions was a child gender by close friend support interaction term significant.

6. Since close friend support was not a significant predictor of any psychological adjustment variable, no further analyses were conducted to test whether its effect would be diminished when controlling for peer acceptance.



**Table 5.** Hierarchical Multiple Regression Analyses Predicting Close Friend Support from Fourth-Grade Psychological Adjustment

Fourth-Grade Predictor Variables	B	SEB	$\beta$	R <sup>2</sup>	$\Delta R^2$
Dependent Variable = Sixth-Grade Close Friend Support					
$F(2, 226) = 23.42^{***}$					
Close friend support	.31 <sup>***</sup>	.07	.29 <sup>***</sup>	.14 <sup>***</sup>	
Depressive symptoms	-.55 <sup>**</sup>	.17	-.21 <sup>**</sup>	.17 <sup>***</sup>	.03
Dependent Variable = Sixth-Grade Close Friend Support					
$F(2, 226) = 23.21^{***}$					
Close friend support	.27 <sup>***</sup>	.08	.25 <sup>***</sup>	.14 <sup>***</sup>	
Global self-worth	.25 <sup>**</sup>	.08	.23 <sup>**</sup>	.17 <sup>***</sup>	.03
Dependent Variable = Sixth-Grade Close Friend Support					
$F(2, 224) = 17.58^{***}$					
Close friend support	.37 <sup>***</sup>	.07	.35 <sup>***</sup>	.13 <sup>***</sup>	
Internalizing behavior	-.22	.17	-.08	.14 <sup>***</sup>	.01
Dependent Variable = Sixth-Grade Close Friend Support					
$F(2, 224) = 16.74^{***}$					
Close friend support	.38 <sup>***</sup>	.07	.36 <sup>***</sup>	.13 <sup>***</sup>	
Externalizing behavior	.05	.12	.03	.13 <sup>***</sup>	.00

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

The last set of analyses, presented in Table 5, tested whether psychological adjustment in fourth grade predicted support from a close friend in sixth grade. Self-reports of more depressive symptoms in fourth grade predicted reports of less supportive close friendships in sixth grade.<sup>7</sup> Similarly, lower self-worth in fourth grade predicted less sixth-grade close friend support. However, teacher-reported internalizing and externalizing symptoms were not significant predictors of future friendship support ( $\beta = -.08$ ,  $p = .20$ , and  $\beta = .03$ ,  $p = .68$ , respectively). Note that the different pattern of results obtained using self-report versus teacher-report predictor variables cannot be explained by an inflation of the results due to stable respondent biases inherent in self-report scales because reliable error variance was

7. Because of possible overlap between the contents of CDI items with relational referents and items on the Close Friend Support subscale, six relational items on the CDI were removed, and depression scores for all participants were recomputed. Wherever significant associations were found between the depression and peer relations variables, regression models were tested with the new depression scores. The results did not change; depression in fourth grade continued to predict less support from close friends two years later.

removed with the control variable. There were no gender differences in the association between close friend support and any of the predictor variables.

## Discussion

We investigated whether two aspects of children's peer relations predicted their psychological adjustment from fourth to sixth grades as well as the reverse temporal ordering, that is, whether adjustment predicted the development of social relationships. We found that being less accepted by peers predicted worse psychological adjustment, but a lack of close friendship support did not predict increased maladjustment. On the other hand, indicators of psychological maladjustment foreshadowed less support from close friends two years later but did not predict less peer acceptance. Overall, moderation of the findings by gender was minimal, suggesting that for the most part the patterns applied to both boys and girls.

### *Peer Acceptance*

Evidence from this study replicates other research indicating that children who are less accepted by their peers exhibit more externalizing symptoms as time progresses. In addition, although most studies utilizing teacher reports of internalizing symptoms have reported no association between peer acceptance and internalizing problems, this study replicated findings from a recent study by Ladd (2006) indicating that less peer acceptance precedes later internalizing difficulties. It is possible that as more efforts have been invested in educating teachers about the importance of early detection of children's internalizing symptoms, they are better able to recognize such symptoms in the classroom environment. The significant findings reported in the more recent studies may therefore reflect elementary and middle school teachers' increased awareness of these symptoms in their students. Likewise, teachers may be more attuned than classmates to subtle signs of minor social problems that can foster a loss of self-confidence in the future (Ladd & Profilet, 1996). This heightened awareness may explain the contributions of peer acceptance to global self-worth observed in this study, in contrast to the nonsignificant findings of other research that has relied on peer nominations to measure acceptance in the classroom.

A significant gender difference indicated that peer acceptance was linked to future feelings of self-worth among girls but not among boys. It has been suggested that interpersonal factors play a larger role in the self-concepts of females and that disruptions to social networks should therefore have a greater impact on females' self-evaluations (Cross & Madson,

1997). It would follow that less acceptance from the peer group should affect girls more negatively than it would boys. However, this pattern was not observed when close friend support was the predictor; in those analyses, friendship support did not predict psychological adjustment for either group. Given the generally high levels of support that the girls and boys in this study described in their close friendships, there may be other, possibly negative, features of preadolescent friendships that better differentiate those relationships and that forecast poor psychological adjustment in adolescence (see Klima, 2007).

Although early peer acceptance predicted later psychological adjustment, our indicators of psychological adjustment in fourth grade did not contribute to lower teacher-rated peer acceptance in sixth grade. These findings are somewhat surprising given past research showing at least mixed evidence for the disorder-driven model of social outcomes. The lack of significant findings could, to some degree, reflect heterogeneity in the developmental trajectories of children with externalizing and internalizing problems (Cillessen & Mayeux, 2004; Gazelle & Ladd, 2003; Gazelle & Rudolph, 2004). For instance, during the critical transition to middle school, some subgroups of aggressive children may have risen in social status, while the status of others may have fallen. Similarly, entrance into a new school setting may have diminished experiences of peer rejection and exclusion among some anxious or depressed children but increased those experiences among others. It is interesting that although depression did not predict less peer acceptance in the total sample, among boys only symptoms of depression in the fourth grade were linked to less acceptance from peers in the sixth grade. Children who are depressed may appear to their classmates to be dependent and unassertive. Because these behaviors clash with traditional male gender role expectations, they may elicit scorn and social avoidance when displayed by boys (Rogosch & Newcomb, 1989). However, the same behaviors may be more acceptable in girls and may not subject them to a similar degree of negative social consequences.

### *Close Friendship Support*

Consistent with the existing research literature on older adolescents, a lack of support from close friends in fourth grade did not predict more externalizing or internalizing symptoms, nor did it predict lower global self-worth by sixth grade. Although our findings suggest that 9–12 year olds do not differ from older children in this regard, it is important to keep in mind that the participants in this study were generally well adjusted. Limited variability in the adjustment outcomes would make it difficult to detect subtle asso-

ciations with close friendship support. Moreover, higher-functioning children are likely to possess other resources (e.g., family support, coping skills) that may protect them from the consequences of reduced support from friends.

Our tests of the reverse ordering of variables did uncover significant associations: depressive symptoms and low self-worth contributed to less perceived support from friends. It is noteworthy that close friend support was linked to earlier levels of depression but not to internalizing symptoms, which includes not only depressive symptoms but also anxiety symptoms and social withdrawal. This pattern of findings may point to a unique role that depressive symptoms can play in the development of problems with close friends. Other children may distance themselves from peers who are sad and irritable, thereby reducing the amount of social support that a child with symptoms of depression perceives in his or her social relationships. In fact, studies have found that symptoms of depression in children and adolescents contribute to problems with their peers (Rudolph & Hammen, 1999; Rudolph, Hammen, Burge, Lindberg, Herzberg, & Daley, 2000); however, these studies have not concentrated on close friendships *per se*. As children approach adolescence, intimacy and self-disclosure become increasingly important in relationships with close friends. If a child's relationships are not cultivated due to a lack of self-confidence or depression, peers who enjoyed, or at least tolerated, playing with that child in elementary school may not maintain the friendship through adolescence. Thus, poor self-worth and depressive symptoms in late childhood may constitute risk factors for a failure to establish and maintain supportive friendships during adolescence.

The pattern of findings for self-reported depressive symptoms and self-esteem was not repeated when we examined teacher ratings of internalizing problems. Perhaps some internalizing symptoms, such as anxiety and social withdrawal, do not necessarily lead to future difficulties garnering social support from close friends. Research on anxious children who are socially withdrawn in preadolescence suggests that this particular category of internalizing problem likely leads to rejection by the peer group (for a review, see Rubin, Burgess, & Coplan, 2002), but whether these problems also lead to disturbance in close friendships is a question that has not been as well addressed in the research literature. Future research would benefit from the division of internalizing and externalizing problems into more specific symptom clusters in order to closely examine how particular markers of maladjustment relate to peer difficulties. In addition, it is important to consider that depressive symptoms are often associated with negatively biased social perceptions. For example, a report based on this study indicated that children with more depressive symptoms underestimated their social and

academic competence (McGrath & Repetti, 2002). The same may be true for perceptions of social support from friends.

Overall, we found that children who are not accepted by their peers display more symptoms of maladjustment a few years later, but children who have relatively little support from close friends do not develop similar difficulties. In fact, peer acceptance predicted future adjustment even with perceptions of close friend support controlled in the analysis. Our findings are consistent with past research showing that less social acceptance by the peer group makes a difference in children's adjustment but that lacking friend support does not have the same impact on well-being. When we examined the reverse temporal ordering, indicators of maladjustment preceded less support from close friends but not decreases in acceptance by peers. Thus, our findings replicate those of Ladd (2006), indicating that the disorder-driven model of social outcomes does not seem to apply to acceptance by the peer group. With respect to support from close friends, it appears that adjustment problems can forecast relationship difficulties. Similar to the findings with older adolescents, this study did not find that externalizing symptoms in middle childhood were linked to reduced support from friends in the future. However, it is possible that the social perceptions of children with externalizing behavior problems preclude the recognition of lower-quality friendships in comparison to others. (Recall that the measure of close friend support was a self-report measure.) Depressive symptoms and global self-worth did predict less support from close friends, but an overall score for internalizing symptoms was not a significant predictor. These results mirror the mixed findings of other research, which has yet to tease apart the effects of depression and anxiety on qualities of close friendships and on subjective perceptions of those friendships.

### *Limitations and Future Directions*

The generalizability of this study's findings may be restricted by the low response rate and relative homogeneity of our sample. We tested associations between peer relations and psychological adjustment in a group of primarily Caucasian preadolescents whose parents reported relatively high incomes and advanced educational attainment. We do not know the extent to which the same pattern of longitudinal associations would be observed in samples of ethnic minority and lower socioeconomic status (SES) youths or among children in different age groups. Although the homogenous nature of the sample is, in this respect, a weakness of the research, it also presented certain advantages. By reducing variability in key constructs due to factors such as ethnicity, SES, and age, we were better able to test the central asso-

ciations of interest. The next step is to address these questions in samples of children with different characteristics or in larger and more diverse samples that allow for tests of the moderating effects of social context and age.

The assessment of children's social acceptance at school through teacher ratings represents another limitation of our study. Because peer nominations were not obtained in fourth grade or in sixth grade in this study, we were unable to test hypotheses with the more commonly used approach to measuring peer acceptance. Of course, any error associated with the use of teacher reports only served to weaken our ability to detect meaningful effects. Nevertheless, future research could benefit from a direct comparison of the predictive links between peer acceptance and psychological adjustment from the perspectives of both teachers and classmates.

The associations between peer relations and adjustment variables in this study were statistically significant but relatively small. In cases in which the set of predictors accounted for more than one-third of the total variance in the criterion, the majority of this variance was attributable to the stability of the outcome over two years (i.e., the criterion variable as assessed in fourth grade). Despite medium to large stability coefficients from fourth to sixth grades ( $r = .27-.60$ ), it is noteworthy that the hypothesized predictors nonetheless made significant contributions to the outcomes. Thus, peer acceptance appears to play a small but reliable role in the development of adjustment problems during preadolescence; similarly, maladjustment (i.e., depression and low self-esteem) may have a small but predictable influence on close friend support. As is always the case with correlational designs, although our analyses were framed as tests of causal associations, alternative interpretations (e.g., third variable explanations) could not be ruled out.

The current investigation emphasizes the importance of studying close friendships in late childhood and preadolescence in addition to the traditional focus on social acceptance. Few studies have looked at how psychological adjustment may be related to close friendships in childhood. The almost exclusive focus on adolescence is presumably due to the increased role that friendships play during this period. Understanding friendship in a developmental context is key for demarcating when (at what ages) it is linked to psychological adjustment and how such a link may relate to processes throughout the life course. The findings from this study suggest that attachment to friends in adolescence may be jeopardized by emotional and behavioral difficulties that are present during late childhood. Future investigations may offer additional insight into the detrimental effects of childhood psychopathology on adolescent, and perhaps even adult, social functioning.

Whereas many studies have focused on the link between one aspect of peer relationships and psychological adjustment, in this study both dyadic and group variables were investigated. By including both peer relations constructs, we uncovered opposite patterns of association. It is possible that a lack of peer acceptance during childhood contributes to the development of emotional and behavioral problems that, in turn, lead to a deterioration of close friendships and loss of an important source of social support during adolescence. This trajectory offers an interesting way of thinking about the dependence of dyadic and group interactions as well as the cascading negative effects that may result from problems in one peer domain. In order to address these questions, long-term longitudinal research would be needed in which multiple aspects of peer relationships and psychological adjustment are assessed throughout childhood, preadolescence, and adolescence. Such a design could yield rich data amenable to path analyses that would shed light on the reciprocal influences of psychological and social processes.

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