

# Peer Exclusion and Victimization: Processes That Mediate the Relation Between Peer Group Rejection and Children's Classroom Engagement and Achievement?

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Longitudinal data from a study of kindergarten through 5th graders were used to estimate a structural model in which chronic peer exclusion and chronic peer abuse were hypothesized to mediate the link between children's early peer rejection, later classroom engagement, and achievement. Peer exclusion and abuse were expected to predict changes in 2 forms of school engagement (classroom participation and school avoidance), and changes in both forms of engagement were expected to predict changes in achievement. The model fit the data well and lent support to the premise that distinct forms of peer maltreatment and classroom engagement mediate the link between early peer rejection and changes in children's achievement. Early peer rejection was associated with declining classroom participation and increasing school avoidance, but different forms of chronic peer maltreatment mediated these relations. Whereas chronic peer exclusion principally mediated the link between peer rejection and classroom participation, chronic peer abuse primarily mediated the link between rejection and school avoidance. Children's reduced classroom participation, more than gains in school avoidance, anteceded decrements in children's achievement.

*Keywords:* peer relationships, peer victimization, exclusion, school adjustment, classroom engagement

The premise that peer group acceptance and rejection influences children's development and adjustment has been a compelling impetus for research on children's peer relationships since the 1930s (see Ladd, 2003). Since that time, a sizable body of empirical findings has been assembled, much of which is consistent with the inference that peer group rejection is a cause of children's adjustment difficulties (see Ladd, 1999; MacDougall, Hymel, Vaillancourt, & Mercer, 2001; Parker & Asher, 1987). Contributing to this corpus of evidence were early investigations in which investigators found that peer group rejection was concurrently linked with child maladjustment (e.g., Koch, 1933; Northway, 1944) and recent longitudinal studies in which researchers reported that childhood peer group rejection not only anteceded early- and later emerging adjustment problems (Boivin, Hymel, & Bukowski, 1995; Ladd, 1999) but also predicted these problems independently of other potential risk factors (e.g., children's behavioral

dispositions, and the like; Coie, Lochman, Terry, & Hyman, 1992; Ladd & Burgess, 2001).

Among the most convincing evidence gathered to date are findings that implicate peer group acceptance or rejection as an antecedent of children's school adjustment problems (see Ladd, 2003; Parker & Asher, 1987). The construct of peer acceptance/rejection has been defined at the level of the peer group (e.g., in contrast to friendship, which is defined at the level of the dyad), and it has been construed as an attitudinal variable that reflects the collective valence of group members' sentiments (i.e., liking, disliking) toward individuals in the group (Buhs & Ladd, 2001). Thus, when administered in classrooms, measures of peer group acceptance/rejection yield information about how well liked versus disliked a child is, on average, by classmates. Low classroom peer acceptance has been consistently linked with indicators of school disengagement (e.g., negative school attitudes, school avoidance; Ladd, 1990; Ladd, Kochenderfer, & Coleman, 1997), and, relative to other types of peer relationships, peer group rejection appears to be one of the strongest predictors of academic readiness and achievement (Buhs & Ladd, 2001; Ladd, Birch, & Buhs, 1999; Ladd et al., 1997; Vandell & Hembree, 1994).

Although these findings support the interpretation that peer group rejection negatively impacts children's engagement and achievement in the school environment, insufficient effort has been devoted to understanding how this linkage is established or develops over time. In part, this limitation stems from a lack of theory about the processes through which peer group rejection may affect children's involvement in learning opportunities and achievement in classrooms. Only recently have investigators begun to question how peer sentiments, themselves not directly observable, can affect children's adjustment (Boivin & Hymel,

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Portions of this study were conducted as part of the Pathways Project, a longitudinal investigation of children's social/psychological/scholastic adjustment in school contexts, supported by the National Institutes of Health Grants 1 & 2-RO1MH-49223 and RO1HD-045906 awarded to Gary W. Ladd. We would like to express our appreciation to all the children and parents who made this study possible and to the staff of the Pathways Project for assistance with data collection.

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1997; Buhs & Ladd, 2001; Bukowski, Hoza, & Boivin, 1993; Coie, 1990; Wentzel & Caldwell, 1997).

Toward this end, researchers have begun to formulate and evaluate frameworks that identify specific mediating processes that account for the association between peer group rejection and children's school engagement and achievement. On the basis of propositions advanced by Coie (1990), Buhs and Ladd (2001) proposed a model in which it was hypothesized that the effects of peer rejection on children's achievement is mediated through two processes: (a) the negative behavioral treatment that rejected children receive from peers and (b) resulting changes that such treatment causes in children's classroom participation (see Figure 1). The specific premises upon which this model was constructed can be summarized as follows (see Buhs & Ladd, 2001): First, peers express the dislike they feel toward rejected children by treating them more negatively than other classmates, and, once manifested, these negative behaviors serve as visible markers of rejection for both the larger peer group and for rejected children. Second, once children are marked by maltreatment, or behavioral manifestations of rejection, they become marginalized from classroom peer activities. Marginalization occurs because, as peers become aware of children who are often targeted for maltreatment, they tend not to associate with these children or include them in classroom activities. Moreover, rejected children disengage from classroom activities as a way of avoiding further abuse. Third, disengagement from classroom activities negatively impacts children's learning, which ultimately leads to lower levels of achievement.

Preliminary empirical support for this model was obtained by Buhs and Ladd (2001) with a sample of young children who were identified at school entrance and followed from fall to spring of their kindergarten school year. Results showed that children who were rejected by their classmates in the fall of the school year were more likely to be maltreated by classmates and that exposure to these rejecting behaviors partially mediated the negative association found between peer rejection in the fall of kindergarten and changes in classroom participation over the course of the school year. Furthermore, these findings also revealed that early peer rejection was negatively related to later achievement and that this association was partially mediated through peer maltreatment and declining classroom participation, respectively.

Although illuminating, the Buhs and Ladd (2001) results were limited in three important ways. First, because the construct of peer maltreatment was evaluated as a latent variable, the findings did not generate a high degree of specificity about the types of peer maltreatment that may be most closely associated with children's

classroom disengagement. The latent peer maltreatment variable was constructed from three indicators of rejecting behaviors, including being ignored or rebuffed by peers when attempting to interact or enter activities (via a measure of unilateral entry bids), being actively excluded from peer activities (peer exclusion), and being verbally or physically harassed (peer abuse or victimization). Measurement model results revealed that, although the latent negative treatment variable contained information about all three forms of maltreatment, exclusion had the highest lambda (loading) of the three indicators. For this reason, the investigators speculated that, as children began school, exclusion might be a more powerful mediator of the link between peer rejection, declining classroom participation, and underachievement.

Whether exclusion is the principal mediator between rejection and classroom disengagement, and whether this inference generalizes beyond the first year of formal schooling—and to other forms of school disengagement—remains to be evaluated. Note that Buhs and Ladd (2001) hypothesized that classroom disengagement was a consequence not only of peers' exclusionary behaviors but also of children's propensity to avoid contexts in which they are likely to be abused by peers. This logic implies that there are two pathways to classroom disengagement that emanate from peers' rejecting behaviors: First, children become less active participants in classroom activities because their opportunities to do so are increasingly restricted as a result of peer exclusion. Second, children who are harassed by peers seek to avoid classrooms (or the school context in general) as a means of escaping further abuse. Whereas exclusion by peers is construed as a cause of reduced participation in classroom activities, abuse is seen as increasing children's motivation to avoid the classroom or school context.

Notice that these two pathways imply that different forms of classroom disengagement evolve from each form of peer maltreatment. This observation illustrates a second limitation of the Buhs and Ladd (2001) study: Only one form of classroom engagement (i.e., classroom participation) was examined as a mediator between peer maltreatment and children's achievement. A better test of the Buhs and Ladd model would entail an empirical evaluation of the following predictions: (a) decrements in children's classroom *participation* are better predicted by peer exclusion than by peer abuse, and increments in children's *school avoidance* are better predicted by peer abuse than by peer exclusion; and (b) the link between peer exclusion and achievement is mediated through classroom participation, and the link between peer abuse and achievement is mediated through school avoidance.

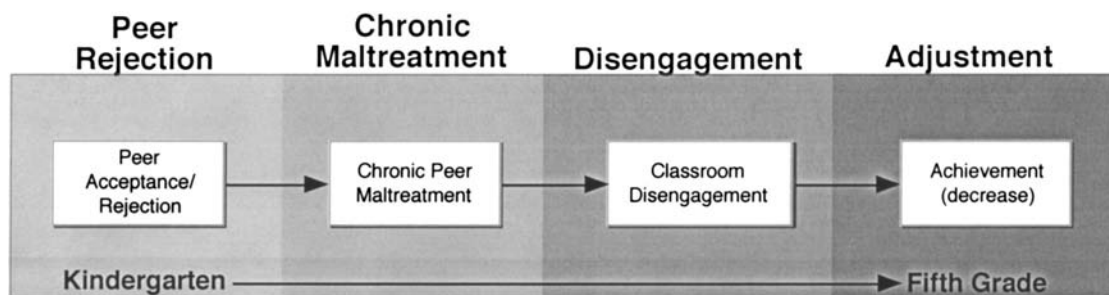


Figure 1. Hypothesized mediating process linkages.

Third, the Buhs and Ladd (2001) results were limited by features of their longitudinal design and assessment plan. Although it was proposed that peer rejection incites peer maltreatment, the measures of these constructs were obtained concurrently. A more rigorous test of this premise requires a design and assessment plan in which the former variable is assessed prior to the latter, thereby establishing temporal precedence for peer rejection. Furthermore, because Buhs and Ladd (2001) conducted their study within a single school year (kindergarten), it remains to be determined whether the forms of peer maltreatment that originate from early peer rejection endure over time (e.g., across grade levels) and, if so, whether children who are exposed to sustained (chronic) rather than transient maltreatment are at greater risk for classroom disengagement and delayed scholastic progress. On the basis of logic that originates within theories of psychological risk, stress, and support (Dohrenwend & Dohrenwend, 1981; Johnson, 1988; Ladd & Troop-Gordon, 2003), it was hypothesized that prolonged peer maltreatment increases the probability that children will disengage from classrooms (or the school context) and that increasing disengagement impairs children's achievement. Thus, it was predicted that longer rather than shorter histories of peer maltreatment, after controlling for contemporary exclusion or abuse, would mediate the link between early peer rejection and later classroom disengagement.

Thus, the principal purpose of this investigation was to address prior limitations by implementing the proposed innovations and gathering data that would reflect on the aforementioned hypotheses (see Figure 1). In contrast to the Buhs and Ladd (2001) short-term longitudinal design, we conducted a 6-year prospective longitudinal study that spanned the school years of kindergarten through fifth grade. The assessment plan was expanded to include measures of peer group acceptance/rejection, peer exclusion, peer abuse, classroom participation, school avoidance, and achievement. *Peer group acceptance/rejection* was defined as the extent to which individuals were liked/disliked by classroom peers and indexed with averaged sociometric ratings that were obtained from classmates during children's first year in grade school (kindergarten). One form of peer maltreatment—*peer exclusion*—was defined as the extent to which children were the target of peers' nonaggressive rejecting behaviors, including behaviors such as ignoring, avoiding, or refusing to associate with them in the classroom context. The other form of peer maltreatment—*peer abuse*—was defined as the extent to which children were recipients of classmate's aggressive and harassing behaviors (i.e., the target of confrontive aggressive acts such as verbal and physical aggression). Measures of the two peer maltreatment constructs were obtained in kindergarten and every year thereafter until grade 5, and separate indicators of chronic versus current peer maltreatment were created so that the predictive efficacy of chronic peer maltreatment could be estimated while controlling for current peer maltreatment. The constructs used to represent aspects of classroom disengagement were termed *classroom participation* and *school avoidance*. Classroom participation encompassed two aspects of children's classroom behavior that have been termed *autonomous* and *cooperative participation* (see Buhs & Ladd, 2001; Ladd et al., 1999; Ladd, Buhs, & Seid, 2000). Both forms of participation have been shown to be indicators of classroom engagement and predictors of achievement. *Autonomous participation* refers to classroom behaviors that are characterized by initia-

tive or self-directedness (e.g., starting activities, working independently, seeking challenges), and *cooperative participation* refers to classroom behaviors that are conducted in a socially responsible manner (i.e., adhering to classroom rules and role expectations; see Ford, 1985; Wentzel, 1991). *School avoidance* was defined as the degree to which children expressed a desire to avoid school and engaged in school-avoidant behaviors. *Achievement* was defined as the accuracy with which children could solve progressively more advanced reading, mathematics, and spelling problems on an individualized achievement test. Measures of children's classroom participation, school avoidance, and achievement indices were obtained in grades 3 and 5, and for each of these measures, earlier scores were partialled from later scores to create (residualized) indices that reflected change (relative to peers) in children's performance over time.

### Evaluation of Hypothesized and Alternative Models

Model development was guided by three principal objectives. The first was to examine more completely the basic tenets of the Buhs and Ladd (2001) model and address the hypothesized model extensions. The second was to evaluate these premises within the context of an extended prospective longitudinal study and an elaborated assessment plan. The third was to more directly test the postulate that early peer rejection antecedes peer maltreatment. Accordingly, peer rejection was measured during kindergarten and evaluated as an antecedent of children's chronic peer maltreatment during subsequent grades.

Model evaluation was conducted by determining the extent to which data from this investigation corroborated the proposed network of variable linkages that were stipulated within the revised, hypothesized model (see Figure 2) and by including pathways representing alternative hypotheses (i.e., pathways from chronic peer abuse to classroom participation and from chronic exclusion to school avoidance). A model that fit the data well was further modified to improve fit and parsimony (see Figure 3) and was also evaluated to determine whether the parameters generalized across gender subgroups within the sample participants (boys vs. girls).

### *The Hypothesized Model*

On the basis of the foregoing hypotheses and rationales, specific patterns of linkages were specified among the investigated variables, and confirmatory path analyses were used to identify a final model. The path diagram for the hypothesized model (see Figure 2) was constructed as follows: First, paths were included to represent the hypothesis that early peer group rejection promotes two forms of chronic peer maltreatment (exclusion, abuse). Thus, lower levels of peer acceptance are shown as predicting not only higher levels of chronic peer exclusion but also higher levels of chronic peer abuse. Because there is evidence to suggest that deviant behavioral styles, particularly children's tendencies to act aggressively or withdrawn among peers, antecede not only peer rejection but also peer maltreatment (for a review, see Ladd, 2003; MacDougall et al., 2001), indicators of these constructs were obtained in kindergarten and included in the model as potential predictors of (a) both forms of chronic peer maltreatment and (b) changes in children's achievement. Inclusion of these paths made it possible to evaluate the strength and direction of the hypothe-

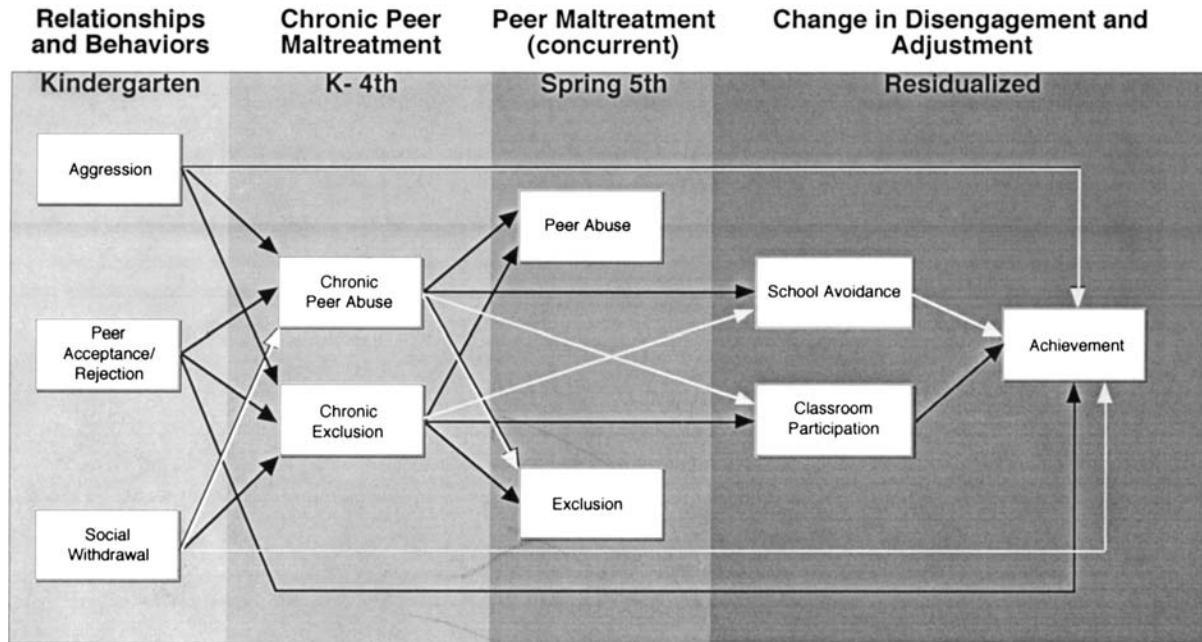


Figure 2. Hypothesized model, including alternative pathways, as initially estimated (gray pathways are those that received nonsignificant path estimates in the initial estimate and were dropped in the reduced model).

sized paths from early rejection to chronic maltreatment in the context of other, plausible causes of chronic peer maltreatment and to estimate the extent to which the hypothesized mediated paths between acceptance/rejection, peer maltreatment, and classroom

disengagement accounted for changes in achievement that was not attributable to (i.e., independent of) children’s deviant behavioral styles. Next, the hypothesized paths from chronic exclusion to change in classroom participation and from chronic abuse to

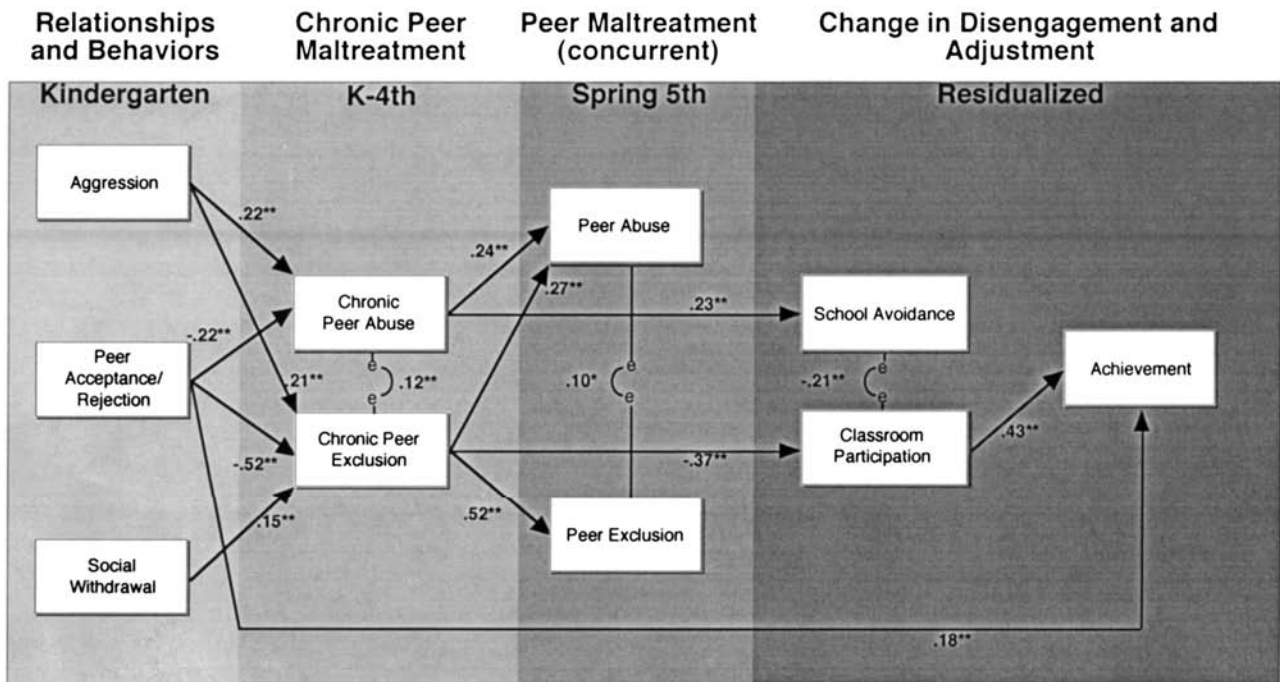


Figure 3. Reduced model structural equations modeling results (nonsignificant paths removed). \* $p < .05$ . \*\* $p < .01$ .

change in school avoidance were incorporated into the model. Separate indicators of fifth-grade peer exclusion and peer abuse were integrated into the model so that both forms of chronic peer maltreatment could be estimated as antecedents of classroom engagement while controlling for the influence of contemporary peer maltreatment. Finally, the model contained paths from both indicators of classroom disengagement to changes in children's achievement so that it was possible to evaluate the hypothesis that declining classroom disengagement (reductions in classroom participation, gains in school avoidance) precipitate underachievement. Additionally, because of evidence indicating that the two forms of peer maltreatment are related constructs and because the same type of informant (i.e., teachers) provided data on classroom participation and school avoidance, the error terms of these pairs of variables, respectively, were allowed to covary (see Figure 3).

#### *Generalizability of the Hypothesized Model Across Gender*

Next, we examined the extent to which the paths identified in the final model were different for boys versus girls. On the basis of past evidence (see MacDougall et al., 2001), it might be argued that peer rejection is a stronger predictor of childhood maladjustment for boys. However, neither theory nor evidence suggests that the link between chronic peer maltreatment and changes in classroom disengagement is stronger for one gender, thus this aim was addressed as an empirical question. The model was estimated from both gender group data sets under the most restrictive constraint possible—that the model structure and all model parameters were equal across groups. If this estimation/comparison indicated an adequate or better fit to the data, then it would support the conclusion that the hypothesized model (identical sets of linkages) fit the data equally well for both groups.

#### *Alternative Hypotheses*

As an additional test of validity for the hypothesized model, two additional pathways were estimated. These pathways were included to represent a counter argument to the hypothesized model, namely, that chronic peer maltreatment, regardless of form or type, has similar rather than distinct (i.e., unique) effects on changes in children's classroom engagement. Pathways representing this alternative conceptualization were added; that is, paths from peer exclusion to school avoidance and from peer abuse to classroom participation were estimated. Support for this alternative hypothesis would consist of evidence indicating that, as mediators, chronic peer exclusion and chronic peer abuse were each significantly associated with classroom participation and school avoidance (i.e., both forms of peer maltreatment make unique contributions to both forms of classroom disengagement).

### Method

#### *Participants*

The data used in this investigation were gathered from a total sample of 380 children (190 girls) who were part of a larger investigation of children's psychological and school adjustment. These children were followed longitudinally from age 5 (kindergarten) to age 11 (fifth grade). In the initial year of data collection, children were in 31 kindergarten classrooms

across 10 schools, and by the fifth-grade data collection period, children were in 162 different classrooms across 32 schools. Written, informed parental consent was obtained from all participants prior to the investigation's inception. The sample contained nearly equal proportions of families from urban, suburban, or rural midwestern communities, and the sample's ethnic composition was 17.4% African American, 77.1% Caucasian, 1.6% Hispanic, and 3.9% "other." Family socioeconomic scores (SEI; Entwisle & Astone, 1994) ranged from 0 (unemployed) to 97.16, with a mean of 49.14 (SEI scores of 50 are assigned to administrative support staff, health technicians, and electronic sales personnel). Family incomes were distributed as follows: 10.9% of the sample reported total household incomes from \$0 to \$10,000, 10.9% reported incomes from \$10,000 to \$20,000, 12.6% reported incomes from \$20,000 to \$30,000, 12.6% from \$30,000 to \$40,000, 12.9% from \$40,000 to \$50,000, and 40.3% reported incomes above \$50,000.

### Measures

#### *Peer Acceptance/Rejection*

The extent to which children were accepted versus rejected by their classmates was assessed in kindergarten by using a rating scale measure of peer acceptance (Asher, Singleton, Tinsley, & Hymel, 1979; Cassidy & Asher, 1992). Previous evaluations of this instrument have shown it to be both reliable and valid (see Cillessen & Bukowski, 2000; Ladd, Herald, & Andrews, 2006). During an individual interview, children rated each classmate on a 3-point scale, indicating the extent to which they liked to play with that person in school. Ratings were made on a 3-point scale (1 = *not much*, 2 = *kind of*, and 3 = *a lot*) using a picture-sort procedure (see Asher et al., 1979) and were standardized and averaged within classrooms to create an acceptance score for each child (scores ranged from -2.58 to 2.10). Variable means and standard deviations for all variables included in these analyses are presented in Table 1 (note that Table 1 statistics for school avoidance, classroom participation, and achievement variables were calculated from residual scores—see sections below for complete details).

#### *Negative Peer Treatment: Chronic Exclusion and Victimization, Fifth-Grade Exclusion and Victimization*

*Chronic peer exclusion.* During the spring of kindergarten through fifth grade, children's teachers rated each participant on four items (see Table 2 for sample items from all measures) that were drawn from the Excluded by Peers (EP) subscale of the Child Behavior Scale (CBS; Ladd & Profilet, 1996). Three items from the EP subscale were eliminated so as to reduce shared variance with other constructs (e.g., the items "not much liked by other children," "peers refuse to let this child play with them," and "ridiculed by peers" were deleted because they were semantically similar to indicators of peer acceptance and victimization). Ratings were obtained on a 3-point scale (0 = *doesn't apply*, 1 = *applies sometimes*, 2 = *certainly applies*) and, at each time of assessment, were averaged over items to obtain a score for each child (alphas ranged from .90 to .95). Children's scores exhibited modest stability across the 5-year period (stability coefficients ranged from .20 to .50,  $M = .36$ ). Chronic exclusion scores were created by summing the number of years across the 5-year period of Grades K-4 that each child's exclusion score exceeded a value of .25 (this score placed them at or above the 66th percentile within the distribution of scores that were obtained at each measurement occasion).

*Peer exclusion: Concurrent measure.* The concurrent, single time point measure of the peer exclusion construct was created using children's fifth grade scores (only) from the EP (Ladd & Profilet, 1996) subscale described above (see Table 1 for means and standard deviations).

*Chronic peer abuse.* This construct was measured with four self-report items found on the multi-informant peer victimization scales developed by Ladd and Kochenderfer-Ladd (2002). These items were administered during the spring of each school year (from kindergarten to fifth grade), and

Table 1  
*Bivariate Correlations, Means, and Standard Deviations for Structural Model Variables*

Variable	1	2	3	4	5	6	7	8	9	10
1. Peer acceptance/rejection+	—									
2. Chronic peer abuse	-.32**	—								
3. Peer abuse (concurrent)	-.27**	.34**	—							
4. Chronic peer exclusion	-.65**	.36**	.35**	—						
5. Peer exclusion (concurrent)	-.39**	.26**	.30**	.52**	—					
6. School avoidance++	-.19**	.24**	.19**	.17**	.23**	—				
7. Classroom participation++	.40**	-.18**	-.15**	-.39**	-.31**	-.28**	—			
8. Achievement++	.35**	-.14**	-.10*	-.30**	-.17**	-.23**	.50**	—		
9. Aggression	-.45**	.31**	.18**	.47**	.17**	.08	-.29**	-.27**	—	
10. Withdrawn behavior	-.19**	.08	.08	.28**	.17**	.03	-.10	-.09	.12*	—
<i>M</i>	0.12	0.83	0.59	1.50	1.31	0.00	0.01	0.11	0.35	0.24
<i>SD</i>	0.96	1.07	0.48	1.50	0.53	0.30	1.04	9.12	0.47	0.37
<i>R</i> <sup>2</sup>		.14		.48		.05	.27	.26		

Note. One “plus” sign represents standardized scores; two “plus” signs represent residual scores (see Method section for complete description).  
 \*  $p < .05$ . \*\*  $p < .01$ .

children rated the frequency with which they had experienced verbal, physical, general, and indirect forms of peer abuse (see Table 2) on a 3-point scale (1 = *no, never*, 2 = *sometimes*, 3 = *a lot*). Each year, item ratings were averaged to create an abuse score, and these scores were found to be reliable (alphas ranged from .73 to .80). The scale’s validity has been established previously (see Ladd & Kochenderfer-Ladd, 2002). Children’s scores exhibited modest stability across the 5-year period (stability coefficients ranged from .13 to .52,  $M = .26$ ). Chronic abuse scores were created by summing the number of years across the 5-year period of Grades K–4 that children’s abuse scores exceeded a criterion of 2.25; thus, the resulting score indicated how many years (scored 0–5) that participants had reported being abused more than “sometimes” (i.e., received an averaged score that was above the scale’s midpoint; see Kochenderfer & Ladd, 1996). The 2.25 cutoff score was comparable to that used by Olweus (1991) and other investigators to identify children who have experienced moderate levels of peer abuse (see also Kochenderfer & Ladd, 1996).

*Peer abuse: Concurrent.* The concurrent, single time point measure of the peer abuse construct was created using children’s fifth grade scores (only) from the four self-report items of the Multi-Informant Peer Victimization Scales (Ladd & Kochenderfer-Ladd, 2002) described above (see Table 1 for means and standard deviations).

### *Classroom Behavioral Participation and School Avoidance*

*Change in classroom participation.* To obtain a measure of this construct, teachers rated six items from the Cooperative (three items) and the Autonomous (three items) Participation subscales of the Teacher Rating Scale of School Adjustment (TRSSA; Birch & Ladd, 1997; Ladd, Kochenderfer, & Coleman, 1996) during the spring of Grades 3–5. Items were rated on a 3-point scale (0 = *doesn’t apply*, 1 = *applies sometimes*, 2 = *certainly applies*), and ratings were averaged over items to create a score for each child at each time of measurement (alphas ranged from .89 to .91). Because scores for the two subscales were highly correlated (correlations ranged from .62 to .71), they were summed to create a composite participation score (see Ladd et al., 1999) for each measurement occasion. Children’s raw scores on these subscales ranged from 0 to 4, and scale means (and standard deviations) were as follows:  $M = 2.91$  (1.03) for third grade;  $M = 2.82$  (1.02) for fourth grade; and  $M = 2.92$  (0.98) for fifth grade.

In order to measure change in children’s classroom participation, the scores obtained in fifth grade were regressed onto those obtained in third grade, and the unstandardized residuals (range =  $-2.70$ – $1.90$ ) were used

Table 2  
*Selected Scale Items for Model-Observed Variables (Except WRAT Achievement Scales)*

Scale	Item
Peer Acceptance Ratings	How much do you like to hang out with ___ at school?
Exclusion	Not chosen as playmate by peers. Excluded from peers’ activities.
Peer Abuse	How often do the kids in your class pick on you at school?
Classroom Participation	How often do the kids in your class say bad things about you to other kids at school?
Cooperative form	Follows teacher’s directions. Accepts responsibility for a given task.
Autonomous form (combined w/cooperative form)	Seeks challenges. Is a self-directed child.
School Avoidance	Makes up reasons to go home from school. Asks to leave the classroom.
Aggression	Threatens other children. Bullies other children.
Withdrawn	Prefers to play alone. Withdraws from peer activities.

Note. WRAT = Wide Range Achievement Test.

as an index of relative change in children's participation across Grades 3–5. Whereas lower scores on this variable corresponded to declines in children's classroom participation over time, relative to peers, higher scores signified gains in classroom participation over the same interval (Table 1 statistics refer to the residual scores).

*Change in school avoidance.* Each year during Grades 3–5, teachers rated five items from the TRSSA (see Table 2; Birch & Ladd, 1997; Ladd et al., 1996) that indexed the extent to which children expressed a desire to avoid school or attempted to avoid school. Ratings were made on a 3-point scale (0 = *doesn't apply*, 1 = *applies sometimes*, 2 = *certainly applies*) and were averaged over items to obtain a score for each child. The raw scores children received on this measure ranged from 0 to 2, and scale means (and standard deviations) were as follows:  $M = .14 (.28)$  for third grade;  $M = .16 (.33)$  for fourth grade; and  $M = .13 (.29)$  for fifth grade. To obtain a measure of relative change in school avoidance over time, residual scores were created using the same approach described for the measure of change in children's classroom participation (range =  $-.40$ – $1.85$ ). Lower residual scores indexed declines in children's school avoidance over time, relative to peers, and higher scores denoted relative increases in avoidance over Grades 3–5 (Table 1 statistics refer to the residual scores).

*Changes in achievement.* An index of this construct was obtained by individually administering the reading, spelling, and math subtests of the Wide Range Achievement Test (WRAT; Wilkinson, 1993) to all participants during the spring of Grades 3–5. At each time of measurement, children's scores on the three WRAT subtests were averaged to obtain an overall academic achievement composite. The WRAT possesses adequate psychometric properties and has been normed and validated on national samples (alphas ranged from .69 to .97; validity estimates are acceptable for children and adults, including third through fifth graders; Reinehr, 1984). In this sample, the range, means, and standard deviations for the composite scores were, respectively, third graders: 459.33–521.00, 494.46, 8.78; fourth graders: 469.00–529.33, 500.03, 8.63; fifth graders: 475.33–531.67, 506.06, 9.14.

Change in achievement scores (residuals) were created using the same procedures described for the classroom participation and school avoidance measures. Residuals ranged from  $-30.46$  to  $25.80$ , and the sample standard deviation was 9.12. Lower residual scores indexed declines in children's achievement over time, relative to peers, and higher scores signified gains in achievement over Grades 3–5.

### Kindergarten Classroom Behavior

*Aggression.* To obtain a measure of children's aggressive behavior during kindergarten, teachers rated participants on the seven-item Aggression (AG) subscale of the CBS (Ladd & Profilet, 1996). Teachers rated seven items that described distinct acts of verbal and physical aggression (see Table 2 for sample items) using a 3-point scale (0 = *doesn't apply*, 1 = *applies sometimes*, 2 = *certainly applies*). Past research has shown that the AG subscale of the CBS has adequate reliability and validity with this age group (see Ladd & Burgess, 1999; Ladd & Profilet, 1996). The ratings children received for each of the seven items were averaged, and the resulting scores ranged from 0 to 2 and were found to be internally consistent ( $\alpha = .93$ ).

*Withdrawn behavior.* The Asocial subscale of the CBS (CBS-AS; Ladd & Profilet, 1996) was used as an index of kindergarten's passive-withdrawn behavior. Teachers rated children on six items (see Table 2 for sample items) using a 3-point scale (0 = *doesn't apply*, 1 = *applies sometimes*, 2 = *certainly applies*). The ratings assigned to these items were averaged for each participant. Scores ranged from 0 to 2 and were found to be internally consistent ( $\alpha = .93$ ).

### Procedure

Children's classmates completed the peer acceptance measure in the spring of kindergarten, and the self- and teacher-report measures of chil-

dren's exposure to peer exclusion and abuse, respectively, were obtained yearly during Grades K–5. Teachers completed the CBS-AG and CBS-AS during the spring of participants' kindergarten year and the measures of classroom participation and school avoidance during the spring of Grades 3–5. The WRAT was administered to participants in the spring of Grades 3–5. Prior to the administration of all measures, participants, classmates, and teachers were trained to use the rating scale that accompanied the items they were asked to complete. Children and their classmates were thanked for their participation and given a small gift (e.g., pencil, stickers). Teachers received a small cash honorarium for participating in the study.

## Results

### Analytic Plan

Prior to inclusion in structural equations modeling (SEM) analyses, the distributions of all variables were examined for conformity to parametric and multivariate assumptions. Bivariate correlations were calculated to assess multicollinearity and determine whether relations among the predictors and criteria conformed to expectations. Relations among the predictors were not multicollinear and conformed to a priori assumptions.

The models presented here were estimated using SEM to provide a confirmatory evaluation of the hypothesized structural models (see Table 1 for bivariate correlations, means, and standard deviations). As a preliminary step, bivariate correlations were examined in order to confirm significant relationships between the exogenous (peer acceptance) and outcome (i.e., achievement) variables as a condition of mediation (Baron & Kenny, 1986). For the hypothesized model, all of the structural paths presented in Figure 2 were initially modeled. LISREL software (Jöreskog & Sörbom, 2001) was used (maximum-likelihood method, pairwise deletion of missing data) to estimate the fit of the hypothesized model to the data and, given indication of adequate fit, to obtain parameter estimates for the structural paths.

### Model Fit

The criteria and standards used to judge model fit (see Hu & Bentler, 1999) included the Steiger's root-mean-square error of approximation (RMSEA values below .05 indicate a very good fit and those below .10 indicate a reasonable fit; Steiger, 1990) and two other common fit indices: the comparative fit index ( $CFI > .95$ ; Bentler, 1990) and the standardized root-mean-square residual ( $SRMR < .05$ ; Hu & Bentler, 1999). This constellation of fit statistics conforms to recommended strategies for evaluating the fit of structural models (Hu & Bentler, 1999). The obtained fit indices for all tested models are shown in Table 3. Whereas initial model

Table 3  
Fit Statistics for All Models

Model	df	$\chi^2$	CFI	SRMR	RMSEA
Hypothesized model (all paths)	22	43.70	.97	.05	.06
Reduced model ( <i>ns</i> paths removed)	27	50.74	.97	.06	.05
Gender groups	76	82.87	.99		.02

*Note.* CFI = comparative fit index; SRMR = standardized root-mean-square error residual; RMSEA = root-mean-square error of approximation.

fit estimates for the hypothesized model were judged to be acceptable (below), conceptual and empirical considerations indicated that minor modifications of the hypothesized model were appropriate (e.g., parsimony was enhanced via dropping nonsignificant pathways from the model; see Saris & Stronkhorst, 1984).

### *Hypothesized Model*

We estimated the fit of the model (as presented in Figure 2) using LISREL (Jöreskog & Sörbom, 2001) and obtained indices of an acceptable fit of the model to the data. The values for this model were,  $\chi^2(20, \text{minimum } N = 320) = 43.70, p < .001, CFI = .97, SRMR = .05$ . Steiger's (1990) RMSEA was .06, indicating that the errors of approximation for fitting the model to the population were acceptable, and the model was a reasonable fit to the data (Browne & Cudeck, 1993).

### *Reduced Model*

Several nonsignificant pathways were eliminated from the model (see the gray arrows in Figure 2: Removed were paths from aggression and social withdrawal to academic achievement, the path from social withdrawal to chronic exclusion, the path from chronic peer abuse to exclusion, both of the alternatively hypothesized paths from chronic peer abuse to participation and from chronic exclusion to school avoidance, and the path from school avoidance to academic achievement) to improve parsimony (MacCallum, 1986). The resulting reduced model was estimated. This reduced model also demonstrated acceptable fit to the data,  $\chi^2(27, \text{minimum } N = 320) = 50.74, p < .001, CFI = .97, SRMR = .06$ . Steiger's (1990) RMSEA was .05, indicating that the errors of approximation for fitting the model to the population were small and that the model was a good fit to the data (Browne & Cudeck, 1993).

### *Structural Path Estimates: Relationships Among the Variables*

Given that the hypothesized structural model and the resulting reduced model (see Figure 3) exhibited an acceptable fit to the data, estimates of the structural relationships among the model variables may be interpreted. Estimated path coefficients were largely consistent with our predictions and are presented below (all coefficients reported below are significant at a level of  $p < .01$  or smaller, except as indicated). Path coefficient estimates presented below were obtained from the estimation of the model, with the nonsignificant paths removed (i.e., see the *Reduced model* section).  $R^2$  values, where appropriate, for the endogenous variables are also reported in Table 1 (also drawn from the reduced model estimation).

The path estimates from peer acceptance to the chronic victimization and chronic exclusion variables were significant. Children who were more accepted in kindergarten were less likely to be chronically abused from kindergarten to fourth grade ( $-.22$ ) and less likely to be chronically excluded over the same time period ( $-.52$ ). The direct path from peer acceptance to achievement was also significant (.18) and indicated that children rated as more accepted in kindergarten were likely to display relative increases in residualized achievement scores. Kindergarten ratings of aggres-

sion also predicted chronic peer abuse and chronic exclusion (.22 and .21, respectively), thus indicating that more aggressive children were more likely to be chronically abused and excluded by classmates. Social withdrawal predicted chronic exclusion only (.15) and indicated that children exhibiting socially withdrawn behavior were more likely to be excluded by peers across grades.

Chronic abuse and chronic exclusion were also significantly linked to the single time point measurements (i.e., fifth grade) of the peer maltreatment variables, indicating they were predictive of the concurrent (fifth grade) ratings of peer maltreatment. Children who were more abused from kindergarten to fourth grade were also more likely to be abused in fifth grade (.24; the path from chronic peer abuse to exclusion was nonsignificant). Children who were more chronically excluded were also more likely to be abused and excluded in fifth grade (path estimates of .27 and .52, respectively).

Chronic peer abuse was, in turn, predictive of residualized school avoidance (.23), indicating that children who were chronically abused by peers were likely to exhibit increased school avoidance behaviors. A significant path estimate ( $-.37$ ) indicated that chronically excluded children were also more likely to exhibit an increase in classroom disengagement. Pathways representing the alternative hypothesis that chronic peer abuse also predicts decreased classroom participation and that chronic exclusion predicts school avoidance were estimated as nonsignificant in the initial model estimation.

Paths from school avoidance and classroom participation to change in academic achievement were also estimated. Although the path estimate from school avoidance to classroom achievement was nonsignificant, the coefficient from participation to achievement was estimated at .43, indicating that children who displayed a relative increase in participation were also more likely to show an increase in achievement. The error covariances between chronic victimization and exclusion, between fifth grade peer abuse and exclusion, and between school avoidance and classroom participation were set free to vary as discussed above and were estimated at .12 and .10 ( $p < .05$ ) and  $-.21$ , respectively.

### *Further Evidence Regarding Mediation and Significant Effects: Estimates of Indirect Effects*

Although the significant path estimates for the hypothesized mediating processes represented above satisfied many of the conditions for mediation, further evidence indicating the degree to which the mediating pathways of the model explained the association between the peer rejection variable and the mediators/outcomes is obtained from estimates of indirect effects (Bollen, 1989). Estimates of significant indirect relationships among the different sets of mediating linkages were consistent with the contention that the effects of the peer rejection and the peer maltreatment variables on the outcomes were mediated by the intervening linkages included.

Pathways associated with peer acceptance produced estimates of significant indirect relationships with both of the primary mediating variables (i.e., avoidance and disengagement; see Figure 3). Higher peer acceptance scores were indirectly associated with increases in classroom participation (.19), decreases in school avoidance ( $-.05$ ), and increases in achievement scores (.08). In the presence of a significant estimate for the direct path from peer



acceptance to achievement, these findings provide additional support for the contention that the included mediating variables and paths partially mediate the relationship between peer acceptance and the residualized avoidance, disengagement, and achievement variables.

Another set of indirect effects estimates is also pertinent to an evaluation of the properties of the model estimated here—those of the mediating, chronic peer maltreatment variables that were a central focus of the model (i.e., chronic peer abuse and chronic exclusion) on the achievement outcome. Children who were more chronically excluded tended to score lower on the achievement measure ( $-.16$ ). Because there was no significant link between school avoidance and achievement, and this path was thus dropped from the reduced model evaluation (see description above), chronic peer abuse ratings could not be significantly associated with children's achievement levels within that model. However, indirect effects estimates from the initial model estimate (that included the nonsignificant paths later removed) also indicated that there were no significant indirect effects for chronic peer abuse on achievement. This finding indicates that chronic abuse, although significantly linked to residualized school avoidance scores, did not make an independent contribution to achievement within the paths included in these models.

#### *Comparison of Model Fit Across Gender Groups and Examination of the Role of Aggression and Withdrawal*

##### *Gender*

An estimation of the fit of the reduced model (nonsignificant pathways removed) was conducted using a separate set of analyses for gender subgroups (Bollen, 1989; Jöreskog & Sörbom, 2001). Analyses for the subgroups (boys vs. girls) indicated that the model fit the data well under the most restrictive set of assumptions possible—that is, that all parameter matrices are constrained to be equal across both groups (see Table 2 for fit statistics from this comparison). Group sample sizes for the subgroup scores included in this analysis were as follows: boys (minimum  $n = 156$ ), girls (minimum  $n = 160$ ). This finding was consistent with the assumption that the same model fit the data drawn from both subgroups well. Within the estimated model, the effects of peer rejection on the specified mediating processes and the adjustment outcome were identical across gender groups, both in terms of form (i.e., model structure) and parameter magnitude.

##### *Children's Kindergarten Behavior Patterns*

Following the above described premises regarding possible moderating roles for aggression and socially withdrawn behaviors, pathways controlling for these effects were included in the structural model. Aggression was linked to chronic exclusion and chronic abuse, and the structural paths representing these premises were estimated at  $.21$  and  $.22$ , respectively, indicating that children rated as more aggressive in kindergarten were also more likely to be chronically excluded and abused. Prior theory and evidence also suggested that social withdrawal increases the likelihood of chronic maltreatment and later achievement difficulties. Social withdrawal was linked to chronic exclusion ( $.15$ ), indicating that children who were more withdrawn in kindergarten were also

more likely to be socially excluded across kindergarten through fourth grade. The estimates for the paths from withdrawal to chronic peer abuse and to achievement were not significant, nor was the coefficient for the direct path from aggression to achievement. In summary, these results indicate that the above discussed effects for peer acceptance and the chronic peer maltreatment variables occurred independently of effects because of ratings of children's behavioral styles.

Further examination of the results from the model estimation also indicated that the kindergarten peer behavior variables displayed relevant significant indirect effects on mediating and outcome variables. More aggressive children were more likely to display increases in school avoidance ( $.05$ ), decreased participation ( $-.08$ ), and decreased achievement ( $-.03$ ). Children who were more socially withdrawn also tended to display relative decreases in participation ( $-.06$ ) and decreases in achievement ( $-.02$ ). These significant estimates of indirect effects for the kindergarten behavior variables were consistent with the interpretation that the linkages and indirect effects among peer rejection, the chronic peer maltreatment variables, and disengagement and achievement were significant, independent of effects attributable to children's behavioral styles.

## Discussion

Several questions were addressed in the present study that are central to research efforts aimed at furthering researchers' understanding of the role that peer relationships play in children's school adjustment. The results corroborate and extend the premises advanced by Coie (1990) and Buhs and Ladd (2001) by showing that the attitudinal construct of peer rejection is associated not only with concurrent peer maltreatment but also with distinct forms of peer maltreatment that may endure over many school years, and with later emerging, adverse school adjustment outcomes. To be specific, it was discovered that (a) children who were less well accepted by their kindergarten classmates were at greater risk for peer maltreatment in subsequent grades; (b) chronic peer maltreatment throughout the primary school years, including sustained peer exclusion and peer abuse, forecasted later school disengagement; and (c) the association between peer group rejection in kindergarten and children's achievement during the middle-grade school years was mediated principally by their exposure to chronic peer exclusion and decelerating classroom participation. These observed linkages support the view that early peer rejection is a precursor of at least two forms of chronic peer maltreatment (exclusion, abuse), that these forms of chronic maltreatment differentially influence children's school engagement, and that chronic peer exclusion is more detrimental to children's scholastic progress. No prior empirical work has presented support for this sequence of linkages within a single model or set of analyses.

The theoretical significance of these findings is substantial and can be understood in relation to frameworks that investigators have developed to guide research on the adaptive significance of children's peer relationships within school contexts (see Buhs & Ladd, 2001; Connell & Wellborn, 1991; Ladd, 1999, 2003). In particular, the obtained data pattern lends support to the contention that peers' dislike of individuals in their kindergarten classrooms becomes a motive for maltreatment or an impetus for behavioral expressions of rejection. These data were also congruent with the tenet that

peer maltreatment becomes more probable when feelings of dislike become consensual or shared among classmates. In this study, children who received lower scores on the kindergarten acceptance/rejection rating measure were, by definition, disliked by larger proportions of their classmates, and these scores were predictive of subsequent peer maltreatment. Perhaps, under such conditions, peers infer that such treatment is justifiable or warranted because many others in the group harbor similar sentiments or because disliked children lack allies and, therefore, can be mistreated with impunity.

These findings significantly extend prior postulates by illustrating that peers' dislike of individuals in their kindergarten classrooms anteceded not only incipient forms of maltreatment (e.g., the extent to which disliked children were excluded or abused in kindergarten; see also Buhs & Ladd, 2001) but also sustained or chronic peer maltreatment. As Coie (1990) observed, early forms of peer maltreatment, which appear to have their origins in peer's negative sentiments, may serve as a visible marker of rejection for the larger peer group. Our findings extend this premise by suggesting that peers' rejecting behaviors not only confirm children's status in kindergarten classrooms (as disliked or rejected peers) but also function as a precursor of continued or chronic peer maltreatment. It may well be the case that early patterns of rejection and maltreatment become self-perpetuating or dynamic systems in which peers' feelings of dislike of individuals motivates maltreatment, and the display of these rejecting behaviors in current or subsequent peer group contexts signals to others that maltreated children are (or should be) disliked. Although such cycles may begin in kindergarten, as children jockey for position in new peer groups, several mechanisms may play a role in the persistence of these patterns over time. First, peers' feelings of dislike of particular individuals may persevere or be maintained via reputational biases from grade to grade, thereby creating continuity in their motivation to engage in peer maltreatment (see Hymel, Wagner, & Butler, 1990). Second, for these or other reasons (e.g., established scripts, reinforcement histories, and the like), peers may reinstitute old interaction patterns when they encounter previously disliked children during subsequent school years. Third, by reestablishing old behavior patterns at subsequent grade levels (e.g., in new or reconstituted classroom peer groups), peers may, through their behavior, communicate to classmates that previously disliked and maltreated children are (or should continue to be) disliked and therefore deserving of further maltreatment. To the extent to which these processes are operative, it seems likely that they may function conjointly or collectively to incite and sustain peer maltreatment. In light of our present findings, further investigation of these processes seems warranted.

The hypothesis that different forms of classroom disengagement evolve from chronic peer exclusion versus chronic peer abuse was corroborated by results showing that whereas chronically excluded children were more likely to become disengaged from classroom activities (relative to peers) during the middle-grade school years, chronically abused children were more likely to avoid the school context. These findings were consistent with the hypothesis that peer maltreatment, depending on its form, has distinct effects on children's classroom disengagement. Moreover, the differential predictive linkages that emerged in our data corroborated the inference that peer exclusion functions as an impediment to children's classroom participation and that children who are chronically

exposed to this form of maltreatment become increasingly disengaged from classroom activities as they progress through grade school. The significance of this form of disengagement was further illustrated by the fact that decreasing classroom participation, more than increasing school avoidance, predicted changes in children's achievement. Thus, our findings suggest that, although disliked children often become the targets of enduring peer maltreatment, the form of maltreatment they are exposed to has different consequences for their classroom engagement and achievement.

In light of these results, it becomes important to consider why chronic peer exclusion, more than chronic peer abuse, emerged as a stronger predictor of decrements in children's classroom participation and, ultimately, decelerating scholastic progress. Exclusion was conceptualized as a process that restricts children's access to the social and instrumental resources that may be found in classroom peer activities. Following Coie's (1990) model, it may be the case that chronic exclusion functions not only as an enduring deterrent to children's access to and participation in classroom activities but also as a persistent signal to classmates that rejected children are not integral members of the classroom peer group. Such treatment may reduce or threaten rejected children's already tenuous position in their peer groups and further restrict their interactions with peers. After experiencing this kind of treatment, rejected children may respond by devaluing their relationships with group members and increasing their attempts to withdraw from classroom activities and interactions in which exclusion tends to occur (see also Baumeister & Leary, 1995; Leary, 2001). This pattern of avoidance may also create more serious complications for rejected children's school adjustment, such as a trajectory toward underachievement.

The fact that chronic peer abuse was not as strongly predictive of classroom disengagement or implicated in a mediated linkage (through changes in classroom participation or school avoidance) with changes in achievement deserves further consideration. Consistent with past research, chronic peer abuse was predicted by children's peer rejection in kindergarten, and this form of maltreatment did predict increased school avoidance during grade school. However, contrary to expectations, the gains in school avoidance that were attributable to chronic peer abuse did not appear to mediate changes in children's achievement when the contributions of chronic peer exclusion were also estimated. This result implies that chronic peer abuse may escalate children's attempts to avoid school but that, compared with chronic peer exclusion, this form of maltreatment is not as influential in shaping children's classroom participation and achievement. It may be the case, however, that chronic peer abuse takes a greater toll on children's emotional as compared with scholastic adjustment (e.g., loneliness at school, internalizing outcomes, and so forth; see Hawker & Boulton, 2001). This finding, when viewed within a constellation of previous results that have linked peer abuse with school adjustment, may mean that children who are targeted for peer abuse are able to selectively participate in a subset of classroom or school activities in which they receive sufficient support to learn and achieve.

The predictive efficacy of kindergarten peer rejection was examined in conjunction with children's aggressive and withdrawn behavioral orientations to evaluate the strength and direction of the hypothesized paths from early rejection to chronic maltreatment in

the context of other, plausible causes of chronic peer maltreatment and to estimate the extent to which the hypothesized mediated paths between rejection, chronic peer maltreatment, and classroom disengagement accounted for changes in achievement that were not attributable to children's deviant behavioral styles. Results showed that, in conjunction with peer rejection, kindergartners' propensity to engage in aggressive interactions increased the likelihood that they would experience chronic peer abuse and exclusion and that kindergartners' penchant toward withdrawn behavior increased the probability that they would experience chronic peer exclusion. Consistent with expectations, however, our findings indicated that early peer rejection made an independent contribution to the prediction of both forms of chronic peer maltreatment. This result lends support to the premise that classmates' rejecting sentiments (among other factors) are a significant determinant of chronic peer exclusion and chronic peer abuse. Other tests of the predictive contributions of children's early behavioral orientations revealed that aggression and withdrawal were indirectly associated with later achievement. The meaning of these findings must be considered in the context of the significant indirect links found between peer rejection and both forms of chronic maltreatment and the significant indirect links found from peer rejection to chronic exclusion to achievement. Here again, these findings are consistent with the contention that, although aggressive and withdrawn orientations predict later peer maltreatment, peer rejection and chronic maltreatment make independent contributions to changes in disengagement and achievement. Evidence of additive predictive associations between rejection and peer maltreatment may also be viewed as consistent with evidence indicating that many aggressive and withdrawn children (especially at early ages) are not rejected by their peers (e.g., Coie, 1990; Rodkin, Farmer, & Pearl, 2000; Younger, Gentile, & Burgess, 1993).

The design and methodology of this study posed certain limitations that require attention in future investigations. First, the relative magnitude of the path estimates linking the indicators of peer maltreatment with changes in (residualized) classroom engagement and achievement were moderate in magnitude. In part, this may be attributable to the fact that the adjustment patterns of participating children at upper elementary grades were relatively stable, and, because of this, there was somewhat restricted variability in the scores that were used to represent relative change in children's classroom participation and achievement. However, it should be recognized that the strength of the obtained associations and the proportion of variance explained meet or exceed those levels reported in other published studies in which similar constructs and variable linkages designed to indicate change in children's adjustment were examined (e.g., Juvonen, Nishina, & Graham, 2000; Wentzel, 2003; though note that, in these studies, investigators used hierarchical multiple regression analyses that precluded the calculation of effect size estimates for single variables or sets of variables that are directly comparable to those used in this study).

It may also be the case that additional factors or processes, other than those measured here, are responsible for changes in children's school engagement and achievement patterns. It is likely that the components of our model tap only some of the factors that are associated with children's early school engagement and achievement patterns and that the reported linkages should be examined in the context of other theoretically relevant predictors. Our own

research (e.g., Ladd et al., 1999) has indicated that the teacher-child relationship may also be an important relational context linked to children's later school adjustment. Some researchers have also suggested that self-system beliefs or motivation, for example, may mediate the links between peer group acceptance/rejection and children's school performance (e.g., Connell & Wellborn, 1991; Harter, 1996; Juvonen et al., 2000; Wentzel, 2003). Recently, Juvonen and colleagues (2000) found that changes in children's reports of self-worth predicted aspects of children's school and psychological adjustment. Wentzel (2003) reported that motivational processes predict children's school adjustment above and beyond children's behavior patterns (e.g., withdrawal and aggression). These and other potential predictors and mediators warrant consideration in future longitudinal studies.

Results from this investigation provide additional support for chronic stress models (see Dohrenwend & Dohrenwend, 1981; Johnson, 1988; Mechanic, 1983) by indicating that children exposed to chronic, or extended periods of peer maltreatment (exclusion, abuse) are at risk for later developing school adjustment problems such as classroom disengagement and decelerating achievement. Furthermore, evidence indicating that chronic peer exclusion was a distinct mediator of the association between peer rejection and children's classroom participation and achievement supports present conceptions about the processes through which peer adversity influences children's scholastic competence (see Buhs & Ladd, 2001; Coie, 1990). Our findings are also consistent with the premise that peer abuse and peer exclusion function as distinct forms of peer maltreatment that have unique effects on children's subsequent engagement and adjustment patterns. These findings temper, to some extent, the recent emphasis that has been placed on peer abuse and victimization as a cause or mediator of children's academic adjustment problems and illustrate the potential importance of other forms of peer maltreatment. Peers' sustained acts of exclusion, although perhaps not as visibly harmful as verbal or physical forms of abuse, may be particularly detrimental to children's participation, foster disengagement from learning activities, and, thus, have a greater impact than peer abuse on their progress in the academic domain.

In summary, data from this investigation suggest that peer group rejection is predictive of a range of chronic, negative peer behaviors that may alter both the social environment of the classroom and children's adaptive responses within that context across the elementary school years. In particular, the inference that peer exclusion reduces children's classroom participation, and ultimately delays their achievement, merits additional study. Moreover, a more complete understanding of the many forms of peer maltreatment that transpire in school contexts, and their potential effects on children's long-term school adjustment, is essential for the development of empirically based, effective intervention programs.

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Received December 4, 2003

Revision received June 27, 2005

Accepted August 8, 2005 ■