Early Behavior Problems as a Predictor of Later Peer Group Victimization: Moderators and Mediators in the Pathways of Social Risk

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Abstract

This study is a prospective investigation of the predictive association between early behavior problems (internalizing, externalizing, hyperactivity–impulsiveness, immaturity–dependency) and later victimization in the peer group. Teacher ratings of the behavioral adjustment of 389 kindergarten and 1st-grade children (approximate age range of 5 to 6 years-old) were obtained, using standardized behavior problem checklists. These ratings predicted peer nomination scores for victimization obtained 3 years later even after the prediction associated with concurrent behavior problems was statistically controlled. Further analyses suggested that the relation between early behavior problems and later victimization is mediated by peer rejection and moderated by children's dyadic friendships. Behavior problems appear to play an important role in determining victimization within the peer group, although the relevant pathways are complex and influenced by other aspects of children's social adjustment.

Keywords

Bullying; aggression; victimization

There is growing evidence that children who are frequently targeted for physical and verbal abuse by their peers are at high risk for psychosocial maladjustment (e.g., Boivin, Hymel, & Bukowski, 1995; Schwartz, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1998). Accordingly, researchers have begun to examine the factors that potentially lead to such difficulties in the peer group. Within this domain, one area of frequent focus has been the association between children's own social behavior and subsequent victimization by peers (e.g., Olweus, 1993; Schwartz, Dodge, &Coie, 1993).

Research on the behavioral antecedents of peer group victimization has generally emphasized the role of withdrawn or submissive aspects of children's social behavior (e.g., Boivin *et al.*, 1995; Olweus, 1993). Investigators have hypothesized that children who frequently display

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such behaviors are at high risk for victimization by peers (e.g., Schwartz *et al.*, 1993). Although this work has proved to be quite informative, the focus has been almost exclusively on individual differences in normative social behavior (i.e., withdrawn or submissive behaviors that occur with some degree of frequency in the normative population). Relatively little is known about the predictive association between more clinically significant "internalizing" dimensions of children's behavior problems (i.e., highly maladaptive behaviors that occur rarely in normative populations and may warrant clinical attention when displayed; e.g., somatization, obsessiveness, anxious or unusually fearful behavior; see Achenbach, 1991) and victimization by peers. Cross-sectional analyses have suggested that there are moderate concurrent associations between such behaviors and peer group victimization (e.g., Schwartz *et al.*, 1998), but relevant longitudinal research has yet to be conducted.

Even less is known regarding the association between early displays of disruptive or aggressive behavior and later victimization by peers. There is consistent evidence that a subgroup of victims are characterized by behavior that is aggressive in nature (e.g., Olweus, 1978; Perry, Kusel, & Perry, 1988; Schwartz, Dodge, Pettit, & Bates, 1997). Investigators have also described cross-sectional relations between victimization and global indices of externalizing behavior (Schwartz *et al.*, 1998), as well as molecular assessments of aggression (e.g., Kupersmidt, Patterson, & Eickholt, 1989; Schwartz *et al.*, 1997) and hyperactivity–impulsiveness (Schwartz *et al.*, 1998). Longitudinal research has been more limited, and has been restricted largely to short-term designs. Egan and Perry (1998), for example, reported predictive associations between aggressive behavior and increases in victimization during a single school year (also see Egan, Monson, & Perry, 1998; Hodges, Boivin, Vitaro, & Bukowski, 1999).

The current article reports a 4-year prospective investigation of the association between early externalizing and internalizing behavior problems and later victimization. Standard behavior problem checklists were utilized to assess aggressive acting-out behavior and hyperactivity–impulsiveness, the two subclasses of externalizing behavior for which a moderate degree of divergent validity has been established (Hinshaw, 1987). Anxious inhibited internalizing behavior and dependent–immature behavior problems were also assessed. Our goal was to determine whether displays of these subclasses of behavioral maladjustment increase a child's risk for future victimization by peers.

Moderators and Mediators in the Behavioral Pathways to Peer Group Victimization

We expected that behavioral pathways to peer group victimization would be influenced by other aspects of children's social relationships with peers. Ladd, Kochenderfer, and Coleman (1997) have described a multilevel conceptualization of children's peer relationships that incorporates bully–victim interactions, global acceptance or rejection by peers, and dyadic friendship. Each of these aspects of social interaction within the peer group is hypothesized to predict unique aspects of child outcomes.

Past investigators have viewed rejection by peers as a process that mediates the relation between socially incompetent behavior and victimization in the peer group (e.g., Boivin *et al.*, 1995). From this perspective, behaviors that are negatively evaluated by the peer group are hypothesized to result in social rejection. This rebuff is, in turn, manifested in maltreatment by peers. Moreover, negative peer responses to a child's initial behavioral tendencies could predict long-term vulnerability to victimization through reputational processes. A child who develops an unfavorable social reputation during the first years of elementary school is likely to encounter further difficulties with rebuff and maltreatment by peers (for a relevant review, see Hymel, Wagner, & Butler, 1990). In the present investigation, we conducted analyses

examining peer rejection as a mediational process in the developmental pathways between early behavioral maladjustment and later peer victimization.

Dyadic friendships, in contrast, have been viewed as relationships that mitigate the social risk associated with maladaptive behavioral propensities. Hodges, Malone, and Perry (1997) have suggested that friends may buffer behaviorally vulnerable children against potential victimizers. In the Hodges *et al.* (1997) study, dyadic friendship moderated the relation between victimization and behavioral risk factors (also see Hodges *et al.*, 1999). Consistent with Rutter (1989), we conceptualized a protective factor as one that significantly interacts with, or moderates, the effect of a risk factor on an outcome. Thus, we hypothesized that the predictive association between early behavior problems and later peer victimization would be of lower magnitude for children who have numerous dyadic friendships than for children who have few friendships.

We were focused particularly on the buffering influence of friendship during the initial transition to the elementary school peer group (see Ladd & Kochenderfer, 1996). In the course of early peer group interactions, a small subgroup of children emerges as vulnerable targets for later victimization (Schwartz *et al.*, 1993). The support afforded by dyadic friendship during these formative interactions might play a central role in determining future bully–victim outcomes. By facilitating the social integration of behaviorally vulnerable children, early friendship could exert a protective influence over relatively long periods.

In addition to focusing on multiple aspects of children's social adjustment, we also considered gender as a potential moderating variable. Gender differences in the topography and function of peer group aggression have been explored in previous investigations (e.g., Crick & Grotpeter, 1995). However, relatively little is known about gender differences in the social processes that increase children's risk for victimization by peers. We did not hypothesize different correlational patterns for boys and girls, but we sought to explore this possibility carefully.

The Current Investigation

These research questions were investigated using a multiinformant approach. As in previous studies (e.g., Hodges *et al.*, 1997), victimization, peer rejection, and dyadic friendship were assessed using peer informants. Behavior problems, on the other hand, were assessed using standardized checklists (i.e., the Teacher Report Form [TRF] of the Child Behavior Checklist; see Achenbach, 1991) developed for clinical assessment of behavior problems. Predictive relations between behavior problems and victimization were examined over a 4-year period in early to middle childhood, the developmental period during which individual differences in aggression (Eron, 1987; Olweus, 1979), and perhaps victimization (Perry *et al.*, 1988), stabilize.

Method

Overview

This study was completed within the context of the Child Development Project (CDP), a multisite longitudinal investigation of children's social development and adjustment (Pettit, Bates, & Dodge, 1997). Two separate cohorts, recruited in consecutive years, participate in this project. Data collection is ongoing and began in the summer before the participating children entered kindergarten. Assessment of the children's social and behavioral adjustment, at home and in school, has been obtained annually. The current study examined relations between behavior problems and victimization over a 4-year period ("T1" to "T4"). At T1, cohort 1 was in first grade (mean age of 6 years-old) and cohort 2 was in kindergarten (mean

age of 5 years-old). At T4, cohort 1 was in fourth grade and cohort 2 was in third grade (mean age of 8 and 9 years-old).

Participant Recruitment and Retention

The initial sample was recruited just prior to kindergarten enrollment in three geographic regions (Bloomington, IN; Knoxville, TN; Nashville, TN). Parents were approached by research staff and asked to participate in a longitudinal study of child development. About 75% of the parents consented.

A total of 585 children (304 boys, 281 girls) participated in the study (308 in cohort 1, 277 in cohort 2). At T4, 530 of these children (91%) were retained in the study and assessed by either teachers, mothers, or peers. However, due to difficulties interviewing peers of those participants who had moved to remote sites, we obtained peer nomination data for only 389 of these children (comparable data were collected from teachers for the remaining children but those data will not be examined in the current report). These 389 children did not differ from the remaining 196 children in the initial CDP sample on T1 assessments of friendship, social acceptance or rejection by peers, or behavior problems. The number of children varied across analyses, due to missing values (39 of the 389 children had missing values for at least one variable).

In the final subsample, 22% of the children were from minority racial or ethnic backgrounds (almost all African American). Most of the children were from lower to middle socioeconomic class backgrounds (assessed by the Hollingshead four-factor method; Hollingshead, 1979). The demographic composition of this subsample was similar to the composition of the initial sample (see Pettit *et al.*, 1997).

Measures

Behavior Problems—Each year of the study, teachers completed the well-validated TRF of the Child Behavior Checklist (Achenbach, 1991). The TRF contains eight internally consistent subscales. Three of these subscales (Withdrawn, Anxious/Depressed, and Somatic Complaints) are summed to generate the Internalizing scale, and two of the subscales (Delinquency and Aggression) are summed to generate the Externalizing scale. The Externalizing and Internalizing scales were derived through second-order factor analysis.

Two additional subscales, which are not components of the Internalizing and Externalizing scales (as indicated by the factor analysis; see Achenbach 1991), were also of interest in the current investigation: Attention Problems and Social Problems. The Attention Problems subscale contains 11 items that assess impulsiveness and attention regulation difficulties (e.g., "Can't concentrate, pay attention for long," "Can't sit still"). The Social Problems subscale contains eight items that assess immature, dependent, or socially incompetent behavior with adults and peers (e.g., "Clings to adults or too dependent," "Prefers playing with younger children"). Three of these eight items assess peer group attitudes toward the child rather than the child's behavioral difficulties (i.e., "Doesn't get along with peers," "Gets teased by peers," "Not liked by peers"). These items, which are conceptually similar to the predictor variables, were not included in the final calculation of the Social Problems subscale sum (alpha = .66 for the remaining five items).

Peer Rejection–Acceptance and Dyadic Friendship—Peer rejection–acceptance and dyadic friendship were assessed each year of the study using a peer nomination interview. All peers whose parents consented participated in the interview. The interview was administered individually when the children were in kindergarten through second grade, and in a group format during the later years of the study. During the individual interviews, kindergarten

children were shown a series of photographs of the other children in their classroom and asked to identify three liked peers and three disliked peers, and then to rate each peer on a 1–3 liking rating scale (higher scores indicated greater liking). First- and second-grade children were given a roster of the other children in their classroom and asked to identify three liked peers and three disliked peers, and then to rate each peer on a 1–5 liking rating scale. During the group administrations (i.e., the interviews conducted with third- and fourth-grade children), each child was given a copy of a class roster and asked to nominate up to three liked peers and three disliked peers, and to rate each peer on a 1–5 liking rating scale.

The total number of like and dislike nominations received by each child was calculated and standardized within each classroom. A social preference score, which served as an index of peer group acceptance–rejection, was then calculated as the standardized difference between the like and dislike scores (as per Coie, Dodge, & Coppotelli, 1982). In addition, children who reciprocally rated each other with the highest possible liking rating (e.g., mutual ratings of "5" on the 1–5 liking scale) were classified as friends, and the total number of friendships that each child had was calculated Our assessment of friendship differed somewhat from assessments used by previous investigators, who have relied primarily on reciprocal "best friend" nominations (e.g., Parker & Asher, 1993). The reciprocal nomination approach has been well validated in past research (Asher, Parker, & Walker, 1996), but indices generated in this manner can suffer from constrained variability (for a relevant discussion, see Furman, 1996). We choose to utilize reciprocal liking ratings so that a wider pool of potential friends could be considered (i.e., the entire classroom instead of only three nominees; see George & Hartmann, 1996). This approach also allowed us to utilize distinct items for estimation of group acceptance-rejection and dyadic friendship (see Parker & Asher, 1993). Separate friendship and social preference scores were calculated for each year of the study.

Victimization—At T4, the peer nomination interview was expanded to include three victimization descriptors (i.e., "gets picked on," "gets teased," "gets hit or pushed"). Children were asked to nominate up to three peers who fit each of these descriptors. Victimization scores were then calculated by summing the nominations received by each child for the three victimization items and standardizing this sum within class (alpha = .82). The reliability and validity of this assessment of peer victimization has been extensively documented in past investigations (e.g., Schwartz *et al.*, 1997; Schwartz *et al.*, 1998). T4 victimization was negatively correlated with T4 social preference, $r = -.58$, $p \leq .0001$, and T4 total number of friends, $r = -.27$, $p \leq .0001$. T4 victimization was also negatively correlated with T1 social preference, $r = -.33$, $p \leq .0001$, and T1 total number of friends, $r = -.22$, $p \leq .0001$.

Results

Overview

Analyses were conducted using the scale sum scores from the TRF, normalized with square-root transformations (see Neter, Wasserman, & Kunter, 1989). The effect of gender was statistically controlled in all analyses, and all variables were standardized within cohort. We also examined cohort by predictor interactions in a series of exploratory analyses, but no significant effects emerged. All interaction terms were calculated using mean-centered scores, as recommended by Jaccard, Turrisi, and Wan (1990).

In order to model the effects of interest fully, we adopted a strategy that involved both simultaneous and hierarchical regression analyses. The specific predictors included in each model were selected according to our hypotheses. However, we also conducted fully specified models (e.g., models including the relevant main effects and all possible interaction effects), and the overall pattern of results was nearly identical.

Correlations among the predictor variables are summarized in Table I. As depicted, behavior problems were moderately stable from T1 to T4. Thus, associations between T1 behavior problems and T4 victimization may be confounded by the association between T4 behavior problems and T4 victimization. Accordingly, the prediction associated with T4 behavior problems was statistically controlled in all analyses.

Relations Between Behavior Problems and Peer Group Victimization

A multiple regression analysis was conducted predicting T4 victimization from gender and each of four T1 behavior-problem variables. The full model yielded a significant effect, $F(5, 374) = 8.18$, $p \leq .0001$, $R^2 = .10$. As depicted in Table II, there were significant bivariate correlations between T4 victimization and T1 Externalizing, T1 Social Problems, and T1 Attention Problems. The correlation between T4 victimization and T1 Internalizing was marginally significant. In addition, there was a significant independent effect for T1 Social Problems, $\beta = .185$, $sr^2 = .017$, $p \leq .01$; and marginal independent effects for T1 Externalizing, $\beta = .108$, $sr^2 = .007$, $p \leq .10$, and T1 Internalizing, $\beta = -.099$, $sr^2 = .007$, $p \leq .10$ (where sr^2 is the squared semipartial correlation coefficient, the percentage of variance in the outcome predicted independently by each parameter). The marginal negative parameter for T1 Internalizing is potentially noteworthy, but "suppressor" effects of this nature should be interpreted with great care.

A similar analysis was then conducted predicting T4 victimization from gender and the four T4 behavior problem variables. This model also yielded a significant overall effect, $F(5, 366) = 15.20$, $p \leq .0001$, $R^2 = .172$. Each T4 behavior problem score was concurrently correlated with T4 victimization (see Table II). Examination of the standardized regression parameters indicated that there were significant independent effects for T4 Social Problems, $\beta = .286$, $sr^2 = .033$, $p \leq .0001$, and T4 Externalizing, $\beta = .127$, $sr^2 = .008$, $p \leq .0001$, and a marginal effect for T4 Attention Problems, $\beta = .134$, $sr^2 = .008$, $p \leq .075$.

Finally, partial correlations were generated, predicting T4 victimization from each of the T1 behavior problem scores, with the corresponding T4 behavior problem score controlled (see Table II). These analyses yielded significant effects for Externalizing, Attention Problems, and Social Problems.

Social Preference as a Mediator

The mediational role of social preference (i.e., peer rejection–acceptance) was examined using procedures specified by Baron and Kenny (1986). According to these authors, the following criteria must be met to establish mediation (as modeled by regression analysis): (a) the mediator must be significantly associated with the outcome, (b) the predictor must be significantly associated with the outcome, (c) the mediator must account for variance in the outcome beyond the variance associated with predictor, and (d) entry of the mediator into the model should result in a reduction in variance accounted for by the predictor.

We examined each of these criteria in a multivariate hierarchical regression analysis in which the combined variance from the T1 behavior problem scores (with gender and T4 behavior problems statistically controlled) served as the predictor, the combined variance from the social preference scores at T2 and T3 served as the mediator, and T4 victimization served as the outcome. On the first step, we entered gender, T4 Externalizing, T4 Attention Problems, and T4 Social Problems simultaneously. On the second step, we entered T1 Externalizing, T1 Attention Problems, and T1 Social Problems simultaneously. On the third step, we entered the T2 and T3 social preference scores. On the fourth and final step, we entered the social preference score for T4 (in order to examine the mediations role of T2 and T3 social preference with concurrent social preference controlled). We did not consider the Internalizing scores in

these analyses because the bivariate relation between T1 Internalizing and T4 victimization was not significant. As depicted in Table III, T1 behavior problems (line 2, step 2) significantly incremented the prediction in T4 victimization associated with gender and T4 behavior problems (line 1, step 1). However, T1 behavior problems (line 2, step 3) did not significantly predict T4 victimization once T2 and T3 social preference were entered into the model. Moreover, T2 and T3 social preference (line 3, step 4) predicted variance in T4 victimization independent of T1 behavior problems and T4 social preference. Thus, each of the criteria for mediation specified by Baron and Kenny (1986) were *met*.[7]

Dyadic Friendship as a Moderator

In order to examine the moderating role of friendship in the prediction of victimization, a separate hierarchical regression analysis was conducted for each of the behavior problem clusters. On the first step of each of these analyses, we entered the main effects for gender, the T4 behavior problem score, the T1 behavior problem score, and T1 total number of friends. On the second step, we entered the interaction between the T1 behavior problem score and T1 total number of friends. Significant T1 behavior problem Score × T1 Friendship interactions were conceptualized as indicators of moderation (Baron & Kenny, 1986; Holcombe, 1997). As shown in Table IV, there was a significant interaction term for T1 Externalizing × T1 friendship and a marginal term for T1 Attention Problems × T1 friendship.

Analyses were then conducted to clarify the nature of these interactions, guided by the recommendations of Aiken and West (1991). First, T4 victimization was predicted from gender, T4 Externalizing, and T1 Externalizing with T1 friendship fixed at low (one standard deviation below the mean), medium (the mean), and high (one standard deviation above the mean) levels. As the fixed value of friendship increased, the slope of the relationship between T1 Externalizing and T4 victimization declined from $\beta = .233$, $p \leq .005$ (low friendship) to $\beta = .046$, *ns* (mean friendship), and $\beta = -.141$, *ns* (high friendship).

Next, T4 victimization was predicted from gender, T4 Attention Problems, and T1 Attention Problems with friendship fixed at low, medium, and high levels (as described above). As the fixed value of friendship increased, there was a marginal decline in the slope of the relationship between T1 Attention Problems and T4 victimization from $\beta = .176$, $p \leq .05$ (low) to $\beta = .082$, *ns* (mean) and $\beta = -.014$, *ns* (high).

Because rejection–acceptance by the peer group as a whole and dyadic friendship are hypothesized to predict unique variance in social outcomes (see Ladd *et al.*, 1997), we also conducted a series of analyses examining the protective influence of friendship independent of the variance in victimization predicted by social preference (i.e., group social acceptance). A secondary goal of these analyses was to examine the moderating role of social preference. Although we conceptualized social preference as a mediator, some past researchers have viewed social preference as an important moderator in the pathways to victimization (e.g., Hodges *et al.*, 1997). A separate hierarchical regression was conducted for each behavior problem cluster, with T4 victimization predicted from the main effects of gender and the T4 behavior problem score (Step 1); the main effects of T1 social preference, T1 friendship, and the T1 behavior problem score (Step 2); the interaction term for T1 social preference × the T1 behavior problem score (Step 3); and the interaction terms for T1 friendship × T1 social preference and T1 friendship × the T1 behavior problems score (Step 4).

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[7]Alternative mediational model might posit that low T1 social preference leads to T4 victimization through the mediation of T2 and T3 behavior problems. However, this model is not supported in the current data set. T1 social preference predicts variance in T4 victimization independent of T2 and T3 behavior problems, $\beta = -.219$, $sr^2 = .037$, $p \leq .0001$.

As shown in Table V, there were no significant T1 Social Preference $\times$ behavior problem interactions. That is, social preference did not moderate the predictive relation between any of the behavior problem clusters and T4 victimization. Consistent with our earlier analyses, however, there was a significant T1 Externalizing $\times$ T1 friendship interaction. This effect was significant even though the variance associated with T1 social preference had been controlled.

Gender as a Moderator

A series of regression analyses was then conducted to examine the moderating role of gender in the prediction of victimization. A separate analysis was conducted for each behavior problem cluster with the main effects for the T4 behavior problem, the T1 behavior problem score, and gender entered on Step 1 and the T1 Behavior Problem Score $\times$ Gender interaction term entered on Step 2. There was a significant T1 Attention Problems $\times$ gender interaction, $\beta = .101$, $sr^2 = .010$, $p \leq .05$. Regression models conducted separately for each gender indicated that T1 Attention Problems (with T4 Attention Problems controlled) was more predictive of T4 victimization for girls, $\beta = .228$, $sr^2 = .048$, $p \leq .005$, than boys, $\beta = .075$, $sr^2 = .004$, *ns*.

Next, we conducted a series of analyses to determine whether the moderating role of friendship differs as a function of gender. A separate analysis was conducted for each behavior problem cluster with the main effects for the T4 behavior problem, the T1 behavior problem score, T1 friendship, and gender entered on Step 1; the two-way interaction terms for T1 Behavior Problem Score $\times$ gender, T1 Behavior Problem Score $\times$ T1 friendship, and T1 friendship $\times$ gender entered on Step 2; and the three-way interaction term for T1 Behavior Problem $\times$ T1 friendship $\times$ gender entered on Step 3. These analyses yielded a significant three-way interaction effect for T1 Social Problems $\times$ T1 friendship $\times$ gender, $\beta = -.123$, $sr^2 = .014$, $p \leq .05$.

Regression models conducted separately for each gender indicated that there was a significant T1 Social Problems $\times$ T1 friendship effect for boys, $\beta = -.159$, $sr^2 = .022$, $p \leq .05$, but not for girls, $\beta = .115$, $sr^2 = .012$, *ns*. Analyses guided by Aiken and West's (1991) suggestions showed that the slope of the relation between T1 Social Problems (with T4 Social Problems controlled) and T4 victimization declined for boys as their level of T1 friendship moved from low, $\beta = .519$, $p \leq .001$, to medium, $\beta = .111$, *ns*, and then to high, $\beta = -.207$, *ns*.

Discussion

The results of this investigation extend current understanding of the behavioral predictors of peer group victimization during early childhood. Past researchers have convincingly demonstrated that children who display submissive or withdrawn social behavior are at risk for victimization by peers (e.g., Boivin *et al.*, 1995; Olweus, 1993). Our findings suggest that other aspects of children's behavioral difficulties are also associated with such risk (e.g., attention problems–impulsivity, immature–dependent behavior, anxious–depressive behavior, aggressive acting-out). Moreover, we found that early behavior problems predict later victimization by peers, even when concurrent behavior problems are statistically controlled. These findings are consistent with the hypothesis that behavior problems play a causal role in the emergence of victimization, although alternative hypotheses remain viable.

Our findings also complement past research on the association between passive or submissive behavior and victimization by demonstrating that early disruptive, aggressive, and hyperactive–impulsive behavior problems are associated with risk for later victimization by peers. Short-term predictive associations between related behavioral difficulties and victimization have been examined in past studies (Egan & Perry, 1998; Egan *et al.*, 1998). The current results indicate that externalizing behavior is predictive of victimization over longer

periods and highlight the social risk associated with displays of such behaviors in the early years of elementary school.

Social Rejection–Acceptance as a Mediating Process

What processes underlie the association between early behavior problems and later victimization by peers? The current empirical findings offer some clues. Analyses guided by existing conceptualizations of statistical mediation (e.g., Baron & Kenny, 1986) suggested that behavior problems might predict victimization through the mediation of social preference (i.e., peer rejection–acceptance). It seems likely that peers find frequent displays of these classes of behavior quite aversive. As a result, children who engage in such behaviors are at high risk for rejection by peers. This social rebuff may, in turn, be manifested in frequent verbal and physical abuse by peers. Boivin *et al.* (1995) have offered a similar hypothesis in reference to the relation between withdrawal and victimization.

Relations between rejection–acceptance by the peer group and victimization are also likely to unfold over time. In the current study, the relation between behavior problems in the first years of elementary school and victimization in the third and fourth grades was mediated by social preference in the intervening years. Reputational processes may foster an ongoing dynamic of negative evaluation and maltreatment by peers (for a relevant review, see Hymel *et al.*, 1990). Children who encounter rebuff in the peer group early in development, as a result of behavioral maladjustment or through other mechanisms, would then be at long-term risk for peer victimization.

There are also likely to be reciprocal relations between victimization and rejection. Our findings suggest that social rejection is manifested in bullying and other forms of negative treatment by peers. This social experience could, in turn, result in some children being devalued by peers. That is, children may come to dislike frequent victims of bullying. The limited pathways examined in this study probably do not fully capture the complexity of relations among these different aspects of social adjustment.

Dyadic Friendship as a Protector Against Behavioral Risk for Victimization

Previous authors have argued for a multidimensional conceptualization of the social processes that influence peer group victimization, incorporating a focus on both group social processes and dyadic interactions (e.g., Ladd *et al.*, 1997), and our findings are consistent with such a perspective. Even after we statistically controlled the variance in victimization predicted by group social acceptance–rejection, dyadic friendship still moderated the predictive relation between early externalizing behavior problems and later victimization. Dyadic friendship seems to mitigate the risk for victimization associated with frequent displays of externalizing behavior. As Hodges *et al.* (1997) have argued, it may be the case that friends can help provide support to behaviorally vulnerable children against potential victimizers.

A noteworthy aspect of these findings is that friendship in kindergarten and first grade served as a buffer against victimization by peers several years later. Past researchers have focused primarily on the short-term protective effects of friendship (e.g., Hodges *et al.*, 1997; Hodges *et al.*, 1999), and our results represent an important extension of the existing findings. The social processes that predict, and mitigate, risk for victimization may emerge over relatively long periods of time. There are also likely to be critical developmental transitions during which friendship, and other dyadic peer relationships, exert a particularly strong influence on children's social adjustment (Ladd & Kochenderfer, 1996). In the current investigation, we focused primarily on the role of friendship during the initial transition to the elementary school peer group. Friendship, at this point in development, could serve an important role in facilitating

the social integration of behaviorally vulnerable children. Through such mechanisms, dyadic friendship might mitigate long-term risk for victimization.

An alternative hypothesis is that friendship does not have a direct effect on bully–victim outcomes but, instead, is a marker of other relevant processes (Schwartz *et al.*, 1998). For example, there was a positive association between externalizing and victimization for children with few friends, whereas the corresponding association for children with numerous friends was negative (but not significant). One explanation for this somewhat surprising pattern of findings might be that there are different subtypes of externalizing behavior displayed by children who are able to establish friendships and children who have difficulties in this domain. Some children may display angry or irritable externalizing behaviors that are predictive of multiple aspects of social maladjustment (Dodge & Coie, 1987; Schwartz, Dodge, Coie, Hubbard, Cillessen, Lemerise, Bateman, 1998). The same subtypes of externalizing behavior that predict victimization may also be predictive of friendlessness and social rebuff. In contrast, children who are able to establish friendships may tend to display a more organized or goal-oriented subtype of externalizing behavior that may be less closely associated with difficulties in the peer group (Dodge, 1991). These children may also be characterized by other attributes, such as assertiveness, which decrease the probability of victimization by peers (Schwartz, Dodge *et al.*, 1998). Thus, friendship may not have a direct protective influence on the pathways to victimization but instead could be a marker of particular behavioral tendencies. Clearly, further research on the specific mechanisms through which friendship moderates the risk for victimization is needed.

Gender as a Moderator

Our exploratory analyses focusing on gender differences in the predictors of peer group victimization also yielded potentially informative results. The findings suggested that hyperactive–impulsive behavior problems are more strongly predictive of peer victimization for girls than boys. Although there were no other significant gender by behavior problem moderator effects, the conservative nature of interactions in quasi-experimental designs should be kept in mind (McClelland & Judd, 1994). Moreover, we suspect that a more consistent pattern of gender differences would have emerged if we had examined "relational" subtypes of aggression in addition to more the more overt dimensions of victimization (see Crick & Grotpeter, 1995).

We also found some evidence that the protective role of friendship differs as a function of gender. Friendship mitigated the risk for victimization associated with early immature–dependent problems for boys, but not for girls. It may be difficult to draw conclusions based on these preliminary results, but further research on the role of gender in the pathways to peer-group victimization does seem warranted.

Caveats and Future Directions

Several caveats should be kept in mind when considering the findings of the current investigation. In this study, we conceptualized peer-group victimization as a dimensional construct, so that we could examine mediational process and moderator variables in the relevant developmental pathways. However, other investigators have viewed victimization from a categorical perspective, focusing more specifically on extreme groups of chronically bullied children (e.g., Olweus, 1978; Schwartz *et al.*, 1993). Analyses conducted from both perspectives are needed to provide a complete picture of the social mechanisms that contribute to, and maintain, bully–victim problems in school peer groups.

A focus on peer-group victimization as a categorical phenomenon is particularly necessary, given emerging evidence that there are distinct subtypes of victims. The available data indicate

that a small subgroup of victimized children are characterized by an aggressive, irritable behavioral pattern (Schwartz *et al.*, 1997), whereas the majority of victimized children are characterized by behavior that is more passive or submissive in nature (Olweus, 1978). There is a critical need for research examining the unique pathways to each of these outcomes. Because aggressive victims are few in number (Perry *et al.*, 1988), such investigations may be difficult to conduct.

There is also a need for consideration of the social and environmental contexts in which bullying takes place. Bully–victim problems are likely to develop as consequence of an interaction between a child's attributes and factors specific to particular social situations or dyadic relationships (see Coie *et al.*, in press). The behavioral vulnerabilities examined in this study have been probabilistically linked to the development of peer-group victimization. However, contextual factors are likely to influence the degree of risk or protection associated with particular child characteristics.

In summary, this investigation extends the existing research by demonstrating that there are linkages between early displays of behavior problems (e.g., externalizing and attention problems–impulsivity), and later victimization by peers. These classes of behavior were predictive of victimization over a 4-year period in early to middle childhood. Behavior problems appear to play an important role in the phenomenon of victimization within the peer group.

Acknowledgments

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Table I

Correlations Among Predictor Variables

Predictor	Externalizing T1	T4	Internalizing T1	T4	Social problems T1	T4	Attention problems T1	T4	Social preference T1	T4	Number of friends T1	T4
Behavior problems												
Externalizing												
T1	—	.52***	.30***	.13*	.46***	.31***	.60***	.36***	−.39***	−.33***	−.28***	−.06
T4	—	—	.09	.45***	.24***	.56***	.39***	.65***	−.33***	−.35***	−.17**	−.15**
Internalizing												
T1	—	—	—	.16**	.56***	.20***	.45***	.20***	−.19***	−.20***	−.07	−.02
T4	—	—	—	—	.23***	.69***	.26***	.52***	−.18**	−.13*	−.06	−.08
Social Problems												
T1	—	—	—	—	—	.37***	.63***	.35***	−.37***	−.29***	−.17**	−.01
T4	—	—	—	—	—	—	.40***	.64***	−.32***	−.28***	−.16**	−.14*
Attention Problems												
T1	—	—	—	—	—	—	—	.50***	−.49***	−.35***	−.23***	−.08
T4	—	—	—	—	—	—	—	—	−.35***	−.34***	−.16***	−.19***
Social adjustment												
Social preference												
T1	—	—	—	—	—	—	—	—	—	.43***	.39***	.20***
T4	—	—	—	—	—	—	—	—	—	—	.32***	.41***

*
Indicates a significant effect at the .05 level.

**
Indicates a significant effect at the .005 level.

***
Indicates a significant effect at the .0005 level.

Table II

Predictive and Concurrent Correlations Between Behavior Problems and Peer Group Victimization

Behavior problem	Correlation with Time 4 peer-nominated victimization		
	Time 1	Time 4	Time 1 with Time 4 controlled
Externalizing	.23***	.32***	.11*
Internalizing	.09[a]	.22***	.03
Attention Problems	.25***	.33**	.12*
Social Problems	.25***	.37***	.15*

Note. Effects are partial correlations coefficients, with gender controlled in all analyses.

[a]Indicates a marginal effect at the .10 level.

*Indicates a significant effect at the .05 level.

**Indicates a significant effect at the .005 level.

***Indicates a significant effect at the .0005 level.

Table III

Summary of Analyses of the Mediational Role of T2 and T3 Social Preference in the Prediction of T4 Victimization by T1 Behavior Problems

Step	Effects in model	sr^2	F	df
1	Gender, T4 behavior problems	.160	14.77***	4,311
2	Gender, T4 behavior problems	.069	6.51***	4,308
	T1 behavior problems	.040	5.14**	3,308
3	Gender, T4 behavior problems	.042	4.69**	4,306
	T1 behavior problems	.013	1.94	3,306
	T2 social preference, T3 social preference	.099	21.55***	2,306
4	Gender, T4 behavior problems	.028	3.65*	4,305
	T1 behavior problems	.007	1.14	3,305
	T2 social preference, T3 social preference	.019	5.00*	2,305
	T4 social preference	.119	62.42***	1,305
	Full model	.418	21.88***	10,305

Note. Behavior problem scores entered for Time 1 (T1) and Time 4 (T4) include externalizing, social problems, and attention problems. sr^2 is the squared semipartial correlation coefficient, the percent of variance in T4 victimization predicted independently by the variable set, at each step of the model. Terms were entered simultaneously at each step, and steps were entered sequentially. All terms in the model at each step are depicted, including those terms entered on earlier steps. Thus, in the sequential (i.e., hierarchical) analysis, sr^2 for the last term in each step shows additional variance accounted for beyond that shown by the last term(s) in the previous step(s).

*Indicates a significant effect at the .05 level.

**Indicates a significant effect at the .005 level.

***Indicates a significant effect at the .0005 level.

Table IV

Summary of Analyses of the Moderating Role of T1 Friendship in the Prediction of T4 Victimization from T1 Behavior Problems

Behavior problem	Step	Effects entered on step	β	sr^2
Externalizing	1	Gender	.003	.000
		T4 EXTERNALIZING	.236	.038[***]
		T1 friendship	−.150	.021[*]
		T1 EXTERNALIZING	.160	.006[*]
	2	T1 EXTERNALIZING by T1 friendship	−.178	.027[**]
Internalizing	1	Gender	−.068	.005
		T4 INTERNALIZING	.199	.039[***]
		T1 friendship	−.201	.040[***]
		T1 INTERNALIZING	.063	.004
	2	T1 INTERNALIZING by T1 friendship	−.044	.002
Social problems	1	Gender	−.032	.001
		T4 SOCIAL PROBLEMS	.276	.063[***]
		T1 friendship	−.149	.021[**]
		T1 SOCIAL PROBLEMS	.142	.017[*]
	2	T1 SOCIAL PROBLEMS by T1 friendship	−.050	.002
Attention problems	1	Gender	.035	.001
		T4 ATTENTION PROBLEMS	.273	.050[***]
		T1 friendship	−.153	.022[*]
		T1 ATTENTION PROBLEMS	.097	.007
	2	T1 ATTENTION PROBLEMS by T1 friendship	−.094	.009[a]

Note. Terms were entered simultaneously at each step, and steps were entered sequentially. T = time.

[a] Indicates a marginal effect at the .075 level.

[*] Indicates a significant effect at the .05 level.

[**] Indicates a significant effect at the .005 level.

[***] Indicates a significant effect at the .0005 level.

Table V

Hierarchical Analyses of T1 Friendship as a Moderator in the Predictive Association Between T1 Behavior Problems and T4 Victimization With T1 Social Preference Controlled

Behavior problem	Step	Effects entered on step	β	sr^2
Externalizing	1	Gender	.000	.000
		T4 EXTERNALIZING	.297	.083[***]
	2	T1 EXTERNALIZING	.049	.001
		T1 social preference	−.219	.036[***]
		T1 friendship	−.078	.005
	3	T1 EXTERNALIZING by T1 social preference	.009	.000
	4	T1 social preference by T1 friendship	.112	.007
		T1 EXTERNALIZING by T1 friendship	−.165	.017[*]
Internalizing	1	Gender	−.063	.004
		T4 INTERNALIZING	.219	.048[***]
	2	T1 INTERNALIZING	.030	.001
		T1 social preference	−.255	.053[***]
		T1 friendship	−.095	.008
	3	T1 INTERNALIZING by T1 social preference	−.045	.002
	4	T1 social preference by T1 friendship	.114	.017[*]
		T1 INTERNALIZING by T1 friendship	.013	.000
Social problems	1	Gender	−.027	.001
		T4 SOCIAL PROBLEMS	.360	.127[***]
	2	T1 SOCIAL PROBLEMS	.083	.005
		T1 social preference	−.182	.024[**]
		T1 friendship	−.080	.005
	3	T1 SOCIAL PROBLEMS by T1 social preference	−.050	.002
	4	T1 social preference by T1 friendship	.082	.005
		T1 SOCIAL PROBLEMS by T1 friendship	.054	.001
Attention problems	1	Gender	.041	.002
		T4 ATTENTION PROBLEMS	.341	.104[***]
	2	T1 ATTENTION PROBLEMS	.012	.000
		T1 social preference	−.207	.029[***]
		T1 friendship	−.086	.006
	3	T1 ATTENTION PROBLEMS by T1 social preference	−.007	.000
	4	T1 social preference by T1 friendship	.085	.005
		T1 ATTENTION PROBLEMS by T1 friendship	−.035	.001

Note. Terms were entered simultaneously at each step, and steps were entered sequentially. T = time.

[*]
Indicates a significant effect at the .05 level.

[**]
Indicates a significant effect at the .005 level.

[***]
Indicates a significant effect at the .0005 level.