



Published in final edited form as:

Child Dev. 2014 January ; 85(1): 124–139. doi:10.1111/cdev.12112.

Peer Victimization and Social Alienation: Predicting Deviant Peer Affiliation in Middle School

Karen D. Rudolph, Jennifer E. Lansford, Anna Monica Agoston, Niwako Sugimura, David Schwartz, Kenneth A. Dodge, Gregory S. Pettit, and John E. Bates

Abstract

Two prospective studies examined a theoretical model wherein exposure to victimization, resulting from early behavioral risk, heightens children's social alienation and subsequent deviant peer affiliation (DPA). Across Study 1 (298 girls, 287 boys; K – 7th grade; 5 – 12 years) and Study 2 (338 girls, 298 boys; 2nd – 6th grade; 7 – 11 years), children, parents, peers, and teachers reported on children's externalizing behavior and internalizing symptoms, peer victimization, social alienation, and DPA. Path analyses supported the proposed pathway: Peer victimization predicted social alienation, which then predicted DPA. Early externalizing behavior set this path in motion and made an independent contribution to DPA. This research identifies an important pathway through which externalizing behavior and consequent peer victimization launch children onto a risky social trajectory.

Peer Victimization and Social Alienation: Predicting Deviant Peer Affiliation in Middle School

Exposure to peer victimization is a salient stressor in the lives of school children (Solberg & Olweus, 2003). This victimization can take the form of physical (e.g., hitting), verbal (e.g., name-calling), or relational (e.g., social ostracism) abuse. Research indicates that peer victimization is not an innocuous part of growing up, but rather can exert adverse effects on multiple aspects of development (Card & Hodges, 2008; Hanish & Guerra, 2002). However, relatively little research has investigated the long-term social consequences of peer victimization. The aim of this research was to examine one such consequence in the form of affiliation with deviant peers (those who engage in antisocial behaviors, such as fighting, stealing, and cheating). Affiliating with deviant peers is a significant concern because adolescents are much more likely to engage in antisocial behavior in the company of peers than alone (Dodge, Lansford, & Dishion, 2006). Such affiliations also are a risk factor for a range of adjustment problems, including early and high-risk sexual behavior, violent offenses, and substance use (Dishion & Skaggs, 2000), making it critical to determine developmental precursors. We tested the hypothesis that early peer victimization would predict social alienation, as reflected in both a subjective sense of loneliness and social dissatisfaction as well as behavioral indicators of helplessness; in turn, this social alienation would predict children's affiliation with deviant peers. We further examined early behavioral characteristics that may set children onto a trajectory of victimization and subsequent social risk.

Social Consequences of Peer Victimization

Our first goal was to identify one pathway through which early peer victimization leads to affiliation with deviant peers in middle school. We drew from Social Network Theory (Lazarsfeld & Merton, 1954; Veenstra & Dijkstra, 2011) to conceptualize one such pathway. According to this theory, children select into peer groups via different processes. *Homophily selection* (Dishion, Ha, & Véronneau, 2012; Sijtsema, Lindenberg, & Veenstra, 2010) occurs when children actively seek affiliations due to perceived similarity with peers. *Default selection* (Sijtsema et al., 2010) occurs when children passively enter affiliations with peers due to their lack of viable alternatives. We theorized that exposure to peer victimization may undermine children's engagement with the mainstream peer group such that they are more likely to affiliate with deviant peers.

Short-term longitudinal research reveals that peer victimization predicts a range of adverse outcomes, including anxiety and depressive symptoms (Snyder et al., 2003), aggression and delinquency (Ostrov, 2010), and school maladjustment (Schwartz, Gorman, Dodge, Pettit, & Bates, 2008). Far less is known about its social consequences. Being the target of victimization may force children out of conventional peer groups for several reasons. Children who are frequently victimized may lose their social standing and be marked as outcasts (Bukowski & Sippola, 2001); peers may avoid associating with victimized children to protect their own reputation or the cohesiveness of their social networks (Bukowski & Sippola, 2001; Kochel, Ladd, & Rudolph, 2012). Just as being friends with a popular peer enhances one's own social status (Dijkstra, Cillessen, Lindenberg, & Veenstra, 2010), being friends with a victimized peer may compromise one's status, causing victimized children to be viewed as undesirable friends. Indeed, research suggests that victimization predicts lower acceptance and more rejection in the peer group (Kochel et al., 2012), as well as more difficulty forming new friendships (Ellis & Zabatany, 2007) and more conflict and less support in best friendships (You & Bellmore, 2012).

Given their low status and compromised friendships, victimized children may become alienated from the mainstream peer group. This social alienation may be reflected in a subjective sense of loneliness and social dissatisfaction (e.g., feeling left out, perceiving trouble making friends) as well as behavioral indicators of social helplessness (e.g., being easily frustrated or discouraged, disengaging from peer interactions, taking little social initiative). Consistent with this idea, victimization predicts loneliness (Kochenderfer & Ladd, 1996), social anxiety (Siegel, La Greca, & Harrison, 2009), and social withdrawal (Oh et al., 2008) over time. In turn, children who are alienated from the conventional peer group either may actively seek affiliations with deviant peers who are perceived similarly as social outcasts or may passively gravitate toward such affiliations given their loss of other options for friendships.

In sum, our first hypothesis was that exposure to peer victimization early in elementary school would contribute to subsequent social alienation, which would then predict deviant peer affiliation in middle school. Across two studies, we captured two different aspects of social alienation, both of which reflect a tendency to be disaffected or estranged from the mainstream peer group. In the first study, we examined children's subjective sense of social alienation in the form of self-reported loneliness and social dissatisfaction. In the second study, we examined behavioral indicators of social alienation in the form of teacher-reported socially helpless behavior. We also allowed for the possibility that peer victimization could contribute directly to deviant peer affiliation even after adjusting for social alienation.

Behavioral Precursors of Peer Victimization

Our second goal was to identify early behavioral characteristics that set in motion this risky social trajectory. We drew from Patterson and colleagues' (Patterson, Capaldi, & Bank, 1991) early-starter theory of aggression to conceptualize one such pathway. According to this theory, children with early behavior problems trigger coercive cycles of increasingly problematic social interactions. These cycles, which often begin within parent-child relationships, result in social skill deficits that create problems in peer relationships, particularly rejection. Our study extends this theory to examine early externalizing behaviors as precursors to peer victimization and subsequent social alienation. We also considered whether early internalizing symptoms can serve as a starting point for the proposed pathway of risk.

Consistent with these ideas, research suggests that both externalizing behavior (Schwartz, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1999) and internalizing symptoms (Snyder et al., 2003) predict subsequent peer victimization. Externalizing behavior (Dishion, Veronneau, & Myers, 2010) and internalizing symptoms (Feiring, Miller-Johnson, & Cleland, 2007) also predict affiliation with deviant peers. It is therefore plausible that children with early risk are more likely to be victimized over time; both their initial predispositions and their exposure to victimization and subsequent social alienation may prompt them to affiliate with peers who engage in antisocial behavior, creating a self-perpetuating cycle of social risk.

In sum, our second hypothesis was that early externalizing behavior and internalizing symptoms would contribute to subsequent peer victimization, which would then predict social alienation (and subsequent deviant peer affiliation). We also allowed for the possibility that early risk could contribute directly to social alienation and/or deviant peer affiliation even after adjusting for peer victimization.

Study Overview

Despite research documenting adverse short-term behavioral and emotional consequences of victimization, relatively little is known about its long-term social consequences. To advance theory and empirical inquiry in this field, the present research examined whether (a) social alienation served as one process linking victimization in elementary school with deviant peer affiliation in middle school; and (b) early behavioral characteristics launched children onto this risky social trajectory. Moreover, because both gender and ethnicity have been linked with exposure to victimization (Dhimi, Hoglund, Leadbeater, & Boone, 2005; Peskin, Tortolero, & Markham, 2006) and deviant peer affiliation (Fergusson & Horwood, 1999; Padilla-Walker, Bean, & Hsieh, 2001), we examined whether the proposed risk pathway occurred independent of (i.e., adjusting for) these demographic characteristics.

These hypotheses were investigated in the context of two separate longitudinal studies that followed children's development from early to mid elementary school through the middle school transition. This transition reflects a crucial stage of development during which children negotiate significant disruptions in their social networks and form new social bonds (Eccles, Wigfield, & Schiefele, 1998), and experience physiological changes that may motivate them to seek some form of rewarding peer associations (Dishion et al., 2012). This natural reorganization of peer networks may provide an impetus for children with a history of victimization and consequent social alienation to (actively or passively) begin affiliating with deviant peers.

A two-study design was used to take advantage of complementary methodological strengths. Whereas Study 1 included peer nominations of victimization and incorporated data from kindergarten – 7th grade, Study 2 included assessments of victimization and social alienation

at two waves, allowing us to adjust for the earlier effects of these variables and thus to examine change over time. Moreover, Study 1 included a subjective indicator of social alienation whereas Study 2 included a behavioral indicator of social alienation, allowing us to examine whether the model generalized across these indexes. The two studies also used different informants to assess early externalizing behavior and internalizing symptoms, peer victimization, and deviant peer affiliation; moreover, the samples differed somewhat demographically, allowing for better generalization of the findings. Thus, this research provided a robust test of the hypotheses by allowing for replication of the findings across different samples, informants, and methods.

Study 1

Method

Participants and Procedures—Participants included 585 families (298 girls, 287 boys) participating in the Child Development Project (CDP; Dodge, Bates, & Pettit, 1990). Participants were from various ethnic groups (81% White, 19% minority) and were diverse in socioeconomic class [Hollingshead (1979) index ranged from 8 to 66 ($M = 39.03$, $SD = 14.01$)]. The participants were recruited when the children entered kindergarten in 1987 (cohort 1) or 1988 (cohort 2) at three sites: Knoxville and Nashville, TN and Bloomington, IN. Parents were approached at random during kindergarten preregistration and asked if they would participate in a longitudinal study of child development. About 15% of children at the targeted schools did not preregister. These participants were recruited on the first day of school or by letter or telephone. Of those invited to participate, approximately 75% consented. Parents signed statements of informed consent, and children provided verbal assent. The present analyses include data from kindergarten - 7th grade (age 5 to 13 years). In 7th grade, 431 (74%) children provided data. Missing data across waves reflected temporary loss of contact, failure to complete measures at that wave, or withdrawal from the study (Table 1 provides specific N s for each wave). Compared to the 154 participants in the original sample of 585 who did not participate in 7th grade, the 431 participating children were more likely to be White, $\chi^2(2) = 8.28$, $p = .016$, and to be girls, $\chi^2(1) = 4.25$, $p = .039$, but participants and nonparticipants did not differ in socioeconomic status, $F(1, 550) = 3.80$, ns , mothers' reports of kindergarten and 2nd/3rd externalizing behaviors, $F(1, 573) = .14$, ns , or internalizing symptoms, $F(1, 573) = 2.34$, ns , or 3rd/4th grade peer-reported victimization, $F(1, 386) = .14$, ns .

Following recruitment, mothers were interviewed in their homes by a research staff member. During the interview, mothers provided demographic information and completed a questionnaire about their children's externalizing behaviors and internalizing symptoms. Families participated in annual assessments. To obtain peer nominations of victimization, sociometric interviews were conducted in school classrooms when children were in 3rd grade (cohort 2) or 4th grade (cohort 1). In 6th grade, children completed an extensive telephone interview with a trained research assistant; this interview included a measure of loneliness and social dissatisfaction. In 7th grade, children participated in a structured, face-to-face interview at either their home or school; this interview included an assessment of best friend antisocial behavior. About 15% of the sample who had moved out of state was interviewed over the telephone. Mothers and children were provided with modest financial compensation.

Measures—Table 1 provides descriptive statistics and psychometrics for all of the measures at the wave in which they were included in the analyses. Table 2 provides intercorrelations among the measures. Note that measures of peer victimization, loneliness and social dissatisfaction, and best friend antisocial behavior were only available at a single wave during K - 7th grades.

Externalizing behavior and internalizing symptoms: In kindergarten and 2nd (cohort 2) or 3rd (cohort 1) grade, mothers completed the Child Behavior Checklist (CBCL; Achenbach, 1991). Mothers rated 33 items on the externalizing scale (e.g., whether the child gets in fights and is disobedient at school) and 31 items on the internalizing scale (e.g., whether the child is too fearful and anxious). For each item, mothers indicated whether the statement was Not True (0), Somewhat or Sometimes True (1), or Very or Often True (2) of the child. Items were summed within subscale to create indexes of child externalizing behavior and internalizing symptoms each year. The kindergarten externalizing scale was then averaged with the 2nd grade externalizing scale for cohort 2 ($r = .58, p < .001$) and the 3rd grade externalizing scale for cohort 1 ($r = .62, p < .001$) to create a composite early externalizing score. Likewise, the kindergarten internalizing scale was averaged with the 2nd grade internalizing scale for cohort 2 ($r = .54, p < .001$) and the 3rd grade internalizing scale for cohort 1 ($r = .53, p < .001$) to create a composite early internalizing score. The CBCL is one of the most widely used measures of children's externalizing behavior and internalizing symptoms, with established reliability and validity in much previous research (e.g., Achenbach & Rescorla, 2001).

Peer victimization: In the winter of the 3rd (cohort 2) or 4th (cohort 1) grade, children's classroom peers completed sociometric interviews. In each classroom, all peers whose parents consented (> 80%) participated in a group-administered sociometric interview. A trained research assistant read standardized instructions and items aloud. Each child was given a copy of a class roster and was asked to nominate up to three peers who fit each of three victimization descriptors (i.e., "gets picked on," "gets teased," and "gets hit or pushed;" Schwartz, Dodge, Pettit, & Bates, 1997). For each child, a victimization score was calculated from the sum of the nominations received for the three victimization items. Following procedures described by Coie, Dodge, and Coppotelli (1982), all scores were standardized within classroom. Sociometric nominations of victimization using these procedures have demonstrated reliability and validity in previous research (e.g., Schwartz et al., 1997).

Loneliness and social dissatisfaction: In 6th grade, children reported on their loneliness and social dissatisfaction using a measure designed by Asher, Hymel, and Renshaw (1984) and revised by Asher and Wheeler (1985). Youth rated each of 16 items (e.g., "I feel left out of things." "I don't have anyone to play with." "It's easy for me to make new friends at school.") on a 5-point scale (*Always True* to *Not at All True*) with some items reverse-scored as needed, such that higher scores reflect more loneliness. Scores were computed as the mean of the items. Previous research supports the reliability and validity of this measure (e.g., expected patterns of association with peer rejection; Asher & Wheeler, 1985). For simplicity, this construct will be referred to as loneliness.

Deviant peer affiliation: In 7th grade, children completed a measure of best friend antisocial behavior (Dishion, Patterson, Stoolmiller, & Skinner, 1991). Children rated on a 3-point scale (*Not True* to *Very/Often True*) each of four items assessing how often their best friend engaged in antisocial behavior (e.g., gets in trouble at school, gets into fights with other children). Scores were computed as the mean of the items. Previous research reveals good test-retest reliability and construct validity for these items (Dishion et al., 1991).

Analysis Plan—Path analyses were conducted with AMOS 17 (Arbuckle, 2008). AMOS uses the full information maximum likelihood (FIML) estimation method to handle missing data (Arbuckle, 2008), which results in parameter estimates that are generally superior to those obtained with listwise deletion or other *ad hoc* methods (Schafer & Graham, 2002). Thus, parameters were estimated using all available data. All constructs were represented by

manifest variables. To assess model fit, we examined the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square Error of Approximation (RMSEA). Good model fit is reflected in CFI and TLI values $\geq .95$ and RMSEA values $\leq .06$ (Hu & Bentler, 1999).

We conducted our model testing in several steps. We first evaluated the fit of the full proposed model (*Model 1*). This model included: (a) the hypothesized paths from early risk (externalizing behavior and internalizing symptoms) \rightarrow peer victimization \rightarrow loneliness \rightarrow deviant peer affiliation (DPA); (b) the direct path from peer victimization to DPA; (c) the direct paths from early risk to both loneliness and DPA; (d) the error covariance between externalizing behavior and internalizing symptoms; and (e) paths between gender (0 = boys; 1 = girls) and ethnicity (0 = white; 1 = minority) and each of the other constructs. We originally conducted a multi-group comparison analysis to determine whether the pathways of interest differed across gender. Because we found no significant gender differences, results are reported across the whole sample. To test our two central hypotheses, we examined the fit of the overall model as well as the significance of the hypothesized indirect effects and the paths comprising these effects. To test our exploratory hypotheses about additional direct effects, we used chi-square difference tests to compare our full proposed model (*Model 1*) with several alternative models: (a) a model that dropped the direct path from peer victimization to DPA (*Model 2*); (b) models that dropped the direct paths from externalizing behavior to loneliness (*Model 3*) and DPA (*Model 4*); and (c) models that dropped the direct paths from internalizing symptoms to loneliness (*Model 5*) and DPA (*Model 6*). If the models with the direct paths did not fit significantly better than those without the direct paths, we concluded that the direct paths were not an integral part of the model.

Results

We first report the results from our full hypothesized model and then report results from a series of model comparisons that determined the relative fit of models including versus excluding the direct paths of interest.

Full hypothesized model—The full model (*Model 1*) fit the data, $\chi^2(1) = .21, p = .651$, CFI = 1.00, TLI = 1.00, RMSEA = .000 (this model has 1 df because the correlation between gender and ethnicity, not depicted in the figure for clarity, was not included in the model). Consistent with the hypothesized pathway (reflecting both *Hypotheses 1* and 2), early externalizing symptoms (averaged across K and 2nd/3rd grade) significantly predicted 3rd/4th grade victimization; victimization significantly predicted 6th grade loneliness, which in turn significantly predicted 7th grade DPA (Figure 1). The following direct paths also were significant: (a) early externalizing behavior to 7th grade DPA; (b) early internalizing symptoms to loneliness; (c) gender to DPA; and (d) ethnicity to victimization. The other direct paths were nonsignificant (β s = $-.02 - .11$, *ns*) and are not depicted in Figure 1. Sobel tests (1982) revealed a significant indirect effect (IE) of early externalizing behavior on 6th grade loneliness via 3rd/4th grade peer victimization (unstandardized IE = .005, *SE* = .042, $z = 3.17, p = .002$; *Hypothesis 2*). There also was a marginal indirect effect of 3rd/4th grade peer victimization on 7th grade DPA via 6th grade loneliness (unstandardized IE = .010, *SE* = .076, $z = 1.84, p = .066$; *Hypothesis 1*).

Model comparisons—Table 3 summarizes the results of the model comparisons. Including the paths between victimization and DPA (*Model 1* vs. *Model 2*), externalizing behavior and loneliness (*Model 1* vs. *Model 3*), and internalizing symptoms and DPA (*Model 1* vs. *Model 6*) did not significantly improve the model fit, suggesting that the direct effect of victimization on DPA, the direct effect of externalizing behavior on loneliness, and

the direct effect of internalizing symptoms on DPA could be dropped from the model. Including the paths between externalizing behavior and DPA (Model 1 vs. Model 4) and between internalizing symptoms and loneliness (Model 1 vs. Model 5) did significantly improve the model fit, suggesting that externalizing behavior had a significant unique effect on DPA, and internalizing symptoms had a significant unique effect on loneliness. The significance levels remained unchanged after adjusting for multiple comparisons using the Holm (1979) Bonferroni method.

Study 2

Method

Participants and Procedures—Participants included 636 children (338 girls, 298 boys; M age at Wave 1 = 7.97, SD = .37) and their teachers participating in the Social Health and Relationship Experiences (SHARE) Project (e.g., Rudolph, Abaied, Flynn, Sugimura, & Agoston, 2011; Rudolph, Troop-Gordon, Hessel, & Schmidt, 2011). Participants were from various ethnic groups (66.7% White, 21.7% African American, 7.1% Asian American, 4.5% other) and were diverse in socioeconomic class (34.7% received subsidized school lunches). For the initial recruitment, consent forms were distributed to families of 724 eligible 2nd graders across schools in several Midwestern towns. Of the eligible families, 80% (576) consented to participate. An additional 60 children who were classmates of the original participants were added in 3rd grade, resulting in a total of 636 participants. Parents provided written consent and children provided verbal assent. Participants and nonparticipants at Wave 1 did not differ in gender, $\chi^2(1) = .15$, *ns*, age, $t(723) = .63$, *ns*, ethnicity (white vs. minority), $\chi^2(1) = .59$, *ns*, or lunch status (full pay vs. subsidized), $\chi^2(1) = .35$, *ns* (schools provided de-identified data on nonparticipants, allowing us to make these comparisons). The present analyses include data from 2nd – 6th grade (age 8 to 12 years). In 6th grade, 554 (87%) of children had either self-report or teacher data on the DPA measure. Missing data across waves reflected temporary loss of contact, failure to complete measures at that wave, or withdrawal from the study (Table 1 provides specific N s for each wave). Youth with 6th grade self-report or teacher-report data did not differ from those without data in gender, $\chi^2(1) = .02$, *ns*, age, $t(574) = 1.33$, *ns*, ethnicity, $\chi^2(1) = 1.37$, *ns*, lunch status, $\chi^2(1) = .35$, *ns*, or 2nd grade victimization, $t(574) = -.40$, *ns*, overt aggression, $t(574) = 1.03$, *ns*, or internalizing symptoms, $t(574) = .32$, *ns*.

During annual assessments, questionnaires were administered in two classroom sessions to small groups (3–4 students) in elementary school and larger groups (15–20 students) in middle school. Teacher surveys were distributed and returned to a locked box at the school. Children who moved out of state either completed telephone surveys (children wrote their responses while research staff read the questionnaires aloud) or completed surveys at their schools. Youth received small gifts and teachers received monetary reimbursements. Each participating elementary school classroom received a monetary honorarium, and middle schools received a school-wide honorarium.

Measures—Table 1 provides descriptive statistics and psychometrics for all of the measures at the wave in which they were included in the analyses. Table 2 provides intercorrelations among the measures.

Aggression: In 2nd grade, teachers completed the Children's Social Behavior Scale (Crick, 1996). We focused on the overt aggression subscale to create an index of externalizing symptoms that was comparable to that used in Study 1, which did not include relational aggression. Teachers rated each of four items (e.g., "This child hits or kicks peers.") on a 5-point scale (*Never True* to *Almost Always True*). Scores were computed as the mean of the items. Previous research supports the reliability and validity of this measure and reveals high

correspondence with peer reports of aggression (Crick, 1996). Validity of teacher reports of aggression is well-established (Monks, Smith, & Swettenham, 2003).

Internalizing symptoms: In 2nd grade, children completed two measures to assess internalizing symptoms. First, children completed the Revised Child Manifest Anxiety Scale (Reynolds & Richmond, 1978). Youth checked a box (*Yes* or *No*) indicating whether they experienced each of 28 symptoms (e.g., “I worry about what is going to happen.”). Scores were computed as the sum of the items. This measure has strong psychometric properties (Reynolds & Richmond, 1978) and well-established validity (e.g., Topolski et al., 1999). Second, children completed the Short Mood and Feelings Questionnaire (Angold, Costello, Messer, & Pickles, 1995), which includes 13 items assessing depressive symptoms (e.g., “I felt unhappy or miserable.”). The response format was modified from a 3- to 4-point scale (*Not at All* to *Very Much*) to provide a format similar to other study questionnaires. Scores were computed as the mean of the items. This measure correlates significantly with other measures of depressive symptoms (e.g., Children’s Depression Inventory and the Diagnostic Interview Schedule for Children; Angold et al., 1995), and differentiates depression from other psychiatric disorders (Thapar & McGuffin, 1998). Anxiety and depressive symptoms were significantly correlated, $r(576) = .55, p < .001$. To create an index of internalizing symptoms that was parallel to that used in Study 1, a composite score was created by standardizing and averaging scores on these two measures.

Peer victimization: In 2nd and 3rd grade, children and teachers completed a revised version (Rudolph et al., 2011) of the Social Experiences Questionnaire (Crick & Grotpeter, 1996). The revised measure includes 22 items assessing children’s exposure to overt victimization (being the target of behaviors intended to harm others through physical damage or the threat of such damage; e.g., “How often do you get hit by another kid?”) and relational victimization (being the target of behaviors intended to harm others through manipulation of peer relationships; e.g., “How often does another kid say they won’t like you unless you do what they want you to do?”). To provide a more comprehensive assessment of victimization, six items assessing overt victimization (e.g., “How often do you get teased by another kid?”) and five items assessing relational victimization (e.g., “How often does a friend spread rumors about you because they are mad at you?”) were added to the original measure. Children checked a box and teachers provided a rating indicating how often children experienced each type of victimization on a five-point scale (*Never* to *All the Time*). Scores were computed as the mean of the items.

Research suggests that self-reports of victimization provide valid information that corresponds to reports by peers (e.g., Graham & Juvonen, 1998), parents (Bollmer, Harris, & Milich, 2006), and observations (e.g., Kochenderfer & Ladd, 1997). Teacher reports of victimization also have established reliability and validity (Ladd & Kochenderfer-Ladd, 2002). A dual-informant index of victimization was created by standardizing and averaging the child and teacher reports (average $r = .25, p < .001$). Composite scores increase reliability and reduce the impact of measurement error (Ladd & Kochenderfer-Ladd, 2002). Moreover, this composite score provided a more comprehensive picture of victimization by incorporating both child and teacher perspectives, which may provide both overlapping and distinct information about victimization experiences. Indeed, research shows that self and teacher reports of victimization are uniquely associated with children’s adjustment, and a multi-informant composite of victimization is a better predictor of adjustment than mono-informant assessments (Ladd & Kochenderfer-Ladd, 2002).

Social helplessness: In 3rd and 4th grade, teachers completed the Social Helplessness Questionnaire (Nolen-Hoeksema, Girgus, & Seligman, 1992). This measure assesses children’s tendency to show low initiative and persistence in peer relationships. Teachers

rated each of twelve items (e.g., “This child takes little independent initiative in making friends.” “This child is easily discouraged in his/her attempts to get along with other children.”) on a 5-point scale (*Not True* to *Very True*). Scores were computed as the mean of the items. This measure has well-established validity in past research (Nolen-Hoeksema et al., 1992).

Deviant peer affiliation: In 6th grade, children and teachers completed a revised version of the Peer Behavior Inventory (PBI; Prinstein, Boergers, & Spirito, 2001), which is derived from a measure developed by Dishion and colleagues (1991) to assess children’s involvement with antisocial peers. For the child report, six items from the PBI (Prinstein et al., 2001) and three items from the original measure (Dishion et al., 1991) were combined to create a nine-item measure. For the teacher report, four items from the original teacher report (Dishion et al., 1991) were used. The response format was modified from a 3- to 5-point scale (*Never* to *Very Often*) to provide a format similar to other study questionnaires. Children were asked to list the initials of their closest friends and then check a box indicating how often these friends engaged in antisocial behaviors (e.g., “cheated on school tests,” “gotten into fights”). Teachers were asked to rate how often children hung out with peers who had engaged in antisocial behaviors (e.g., “gotten into fights,” “gotten into trouble”). Scores were computed as the mean of the items. Research has established the reliability and validity of self- and teacher reports of deviant peer affiliation (Colwell, Pettit, Meece, Bates, & Dodge, 2001), and significant correlations are found between the two informants (e.g., Dishion et al., 1991). A dual-informant index of deviant peer affiliation was created by standardizing and averaging the child and teacher reports ($r = .33, p < .001$).

Analysis Plan—The same strategy was used as in Study 1 to test the models except that the Study 2 models included victimization and social helplessness at two waves, along with the relevant covariances and directional paths (Figure 2). The construct of loneliness was replaced with social helplessness, and externalizing behavior was replaced with overt aggression.

Results

We first report the results from our full hypothesized model and then report results from a series of model comparisons that determined the relative fit of models including versus excluding the direct paths of interest.

Full hypothesized model—The full model (Model 1) fit the data, $\chi^2(3) = 6.28, p = .099$, CFI = .997, TLI = .949, RMSEA = .041. Consistent with the hypothesized pathway (reflecting both *Hypotheses 1* and 2), 2nd grade overt aggression and 2nd grade internalizing symptoms significantly predicted 3rd grade victimization; victimization significantly predicted 4th grade social helplessness, which in turn significantly predicted 6th grade DPA (Figure 2). These results are consistent with Study 1, with the exception of the additional path from internalizing symptoms to victimization. The following direct paths also were significant: (a) 2nd grade overt aggression to 3rd grade social helplessness and 6th grade DPA; (b) 2nd grade internalizing symptoms to 3rd grade social helplessness; (c) 3rd grade victimization to 6th grade DPA; (d) gender to 2nd grade overt aggression and 4th grade social helplessness; and (e) ethnicity to 2nd grade overt aggression, 2nd grade victimization, 4th grade social helplessness, and 6th grade DPA. The other direct paths were nonsignificant ($\beta = |.00 - .08|, ns$) and are not depicted in Figure 2. Sobel tests (1982) confirmed all three hypothesized indirect effects: (a) 2nd grade overt aggression on 4th grade social helplessness via 3rd grade peer victimization (unstandardized IE = .025, SE = .102, $z = 2.39, p = .017$; *Hypothesis 2*); (b) 2nd grade internalizing symptoms on 4th grade social helplessness via 3rd grade peer victimization (unstandardized IE = .039, SE = .117, $z = 2.88, p = .004$;

Hypothesis 2); and (c) 3rd grade peer victimization on 6th grade DPA via 4th grade social helplessness (unstandardized IE = .017, *SE* = .092, *z* = 2.01, *p* = .044; *Hypothesis 1*). These results also are consistent with Study 1, with the exception of the additional significant indirect effect for internalizing symptoms.

Model comparisons—Table 3 summarizes the results of the model comparisons. Including the paths between overt aggression and social helplessness (Model 1 vs. Model 3), internalizing symptoms and social helplessness (Model 1 vs. Model 5), and internalizing symptoms and DPA (Model 1 vs. Model 6) did not significantly improve the model fit, suggesting that the direct effect of overt aggression on social helplessness and the direct effects of internalizing symptoms on social helplessness and DPA could be dropped from the model. Including the paths between victimization and DPA (Model 1 vs. Model 2) and between overt aggression and DPA (Model 1 vs. Model 4) did significantly improve the model fit, suggesting that victimization and overt aggression had a significant unique effect on DPA. These results are consistent with Study 1 in terms of the unique effect of overt aggression on DPA and the absence of a unique effect of internalizing symptoms on DPA. However, victimization had a unique effect on DPA in Study 2 but not Study 1. Internalizing symptoms had a unique effect on social alienation in Study 1 but not Study 2 (although internalizing symptoms did predict social helplessness from 2nd to 3rd grade in Study 2). The significance levels remained unchanged after adjusting for multiple comparisons using the Holm (1979) Bonferroni method.

Discussion

Despite burgeoning evidence for the adverse short-term effects of peer victimization on children's adjustment, little research has examined its long-term social consequences. To address this gap, this research examined whether peer victimization served as an early precursor to deviant peer affiliation. Consistent with predictions derived from Social Network Theory (Lazarsfeld & Merton, 1954; Veenstra & Dijkstra, 2011), two studies supported an unfolding pathway from peer victimization during elementary school to subsequent social alienation to deviant peer affiliation during middle school. Moreover, consistent with predictions derived from Patterson and colleagues' (Patterson et al., 1991) early-starter theory of aggression, both studies identified early externalizing behavior as a potentiator of this developmental pathway. This research expands on prior theory and research by documenting how early behavioral risk along with consequent peer victimization can launch children on a risky social trajectory, potentially setting the stage for long-term engagement in antisocial behavior. Providing a novel process-oriented perspective, this research also elucidates the role of children's social alienation as one factor explaining emerging social risk across the school years.

Social Consequences of Peer Victimization

Over time, peers form negative attitudes about victimized children and avoid associating with them (Bukowski & Sippola, 2001; Kochel et al., 2012). As a result, these children may become alienated from the mainstream peer group, reflected in these studies in both a subjective sense of loneliness as well as behavioral signs of helplessness. More specifically, victimization led children to feel alone, excluded, and dissatisfied with their peer relationships, to show little social initiative and persistence, and to become easily discouraged and withdraw from peers in the face of social challenges. These findings are consistent with a few studies showing short-term effects of victimization on loneliness (Kochenderfer & Ladd, 1996), social anxiety (Siegel et al., 2009) and social withdrawal (Oh et al., 2008). Building on prior work, we found that social alienation, in turn, predicted affiliation with antisocial peers during middle school. This pathway was consistent across

the two studies. We cannot determine from this research specifically how deviant peer affiliations evolved. Victimized children who felt estranged from mainstream peers and helpless to improve their situation may have drifted toward deviant peers through a default selection process or may have actively sought out these affiliations through a homophily selection process (Sijtsema et al., 2010). It would be informative for future research to examine more explicitly how and why victimized children enter into relationships with deviant peers. However, these results clearly document the long-term social risk following from early exposure to victimization, thus contributing a novel perspective beyond prior research revealing short-term effects on emotional, behavioral, and school adjustment. Unfortunately, it is likely that affiliating with deviant peers only intensifies the unhealthy trajectory these children follow as they move through middle and high school.

Behavioral Precursors of Peer Victimization

Early externalizing behavior—The present research also revealed that early externalizing behavior helped to launch children onto this risky developmental pathway. In both studies, externalizing behavior predicted exposure to peer victimization and, indirectly, more social alienation; moreover, externalizing behavior made a unique contribution to deviant peer affiliation beyond the indirect path through victimization and social alienation. Thus, consistent with the early-starter theory of aggression (Patterson et al., 1991) and prior empirical research (for a review, see Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006), children who engage in early aggressive and disruptive behavior help to shape their subsequent adverse peer environments. Much of this prior research has focused on peer rejection as a consequence of children's early aggressive behavior. Moving beyond prior work, our research implicated exposure to peer victimization and social alienation as key components of this process. Collectively, these findings suggest one viable process underlying a persistent and perhaps escalating cycle of violence, wherein children with a tendency toward aggression become targets of peer victimization; both their initial predisposition and their exposure to victimization cause them to become disengaged from mainstream peer groups and enter affiliations with antisocial peers. Unfortunately, these affiliations likely reinforce future deviant and risky behavior (Dodge et al., 2006). A fruitful direction for future research would be to examine how peer rejection and peer victimization intersect both as consequences of early behavior problems and as predictors of subsequent trajectories of social alienation and affiliation with deviant peers.

This observed pathway is consistent with recent developmental theory and research on developmental cascades (Burt, Obradovi , Long, & Masten, 2008; Masten & Cicchetti, 2010). In this case, externalizing behavior and consequent peer victimization begin a cascade leading to maladaptive cognitions, emotions, and behaviors in the form of loneliness and social helplessness, which in turn contribute to subsequent association with deviant peers. One of the key advances of developmental cascade models is that they go beyond an examination of predictors in relation to outcomes by trying to explain processes through which development unfolds over time. Understanding such processes is especially important to intervention work that has the potential to disrupt developmental cascades at different junctures. Specifically, early intervention holds the most promise of long-term success because it can interrupt the cycle before an early risk factor cascades into further, perhaps more severe, risk (Burt et al., 2008). Interventions also may be particularly indicated during stages of transition, such as entrance into middle school, when reorganization of peer networks offers flexibility and opportunity for redirecting children's social trajectories.

Early internalizing symptoms—The role of early internalizing symptoms in this developmental cascade is less clear. In Study 2, there was a significant zero-order correlation between internalizing symptoms and deviant peer affiliation. Moreover,

internalizing symptoms predicted heightened peer victimization and there was a significant indirect effect of internalizing symptoms on social helplessness via peer victimization, suggesting that these symptoms also could set in motion a cascade toward deviant peer affiliation. In Study 1, however, internalizing symptoms did not predict victimization and were not associated with deviant peer affiliation. This difference may arise from variability in the measure of internalizing symptoms across studies. The Study 1 internalizing index, the CBCL, was more heavily weighted toward anxiety than depressive symptoms, whereas the Study 2 internalizing index (a composite of anxiety and depressive symptom measures) contained a higher proportion of depressive symptoms than the CBCL. Depressive symptoms may be more likely to elicit victimization and to predict deviant peer affiliation than anxiety symptoms. Further research is needed to better understand the role of internalizing symptoms in this developmental pathway. Insight may be gained from using person-centered analyses that consider the different trajectories of aggressive versus internalizing/passive victims, particularly given evidence that aggressive victims are the most rejected and dysfunctional children in the peer group (Schwartz, 2000).

Conclusions, Limitations, and Future Directions

Overall, this research makes a significant novel contribution to the field of peer victimization by identifying one pathway linking behavioral precursors of victimization to long-term social outcomes. Moreover, replication of the hypothesized pathway across two studies using different samples (one more ethnically heterogeneous and of lower average socioeconomic status than the other), informants, and methods provides converging support. Despite these strengths, several limitations should be noted. In Study 1, the key constructs were measured at a single wave. This issue was partially addressed in Study 2 by adjusting for earlier victimization and social helplessness. Across both studies, we were unable to adjust for earlier deviant peer affiliation (a construct that is most relevant once children enter middle school). Although including externalizing behavior and internalizing symptoms in the models did provide us some degree of control over earlier maladjustment, it would be beneficial for future research to consider whether victimization predicts increasing trajectories of deviant peer affiliation across middle and high school. Including multiple waves of data for each construct and examining cross-lagged associations also would provide a more complete test of a cascade model of development as well as alternative models of association among the constructs of interest.

Of note, this study identified only one possible pathway from peer victimization to deviant peer affiliation. It is possible, and indeed likely, that other pathways also contribute to this link. For example, children exposed to peer victimization may develop feelings of anger and resentment concerning their maltreatment (Kochenderfer-Ladd, 2004). Affiliating with antisocial peers may serve as an expression of these hostile feelings and, perhaps, even as a direct means of trying to seek revenge on maltreating peers. It also is important to consider that the magnitude of the effects was small. This pattern is consistent with research suggesting significant individual variation in the consequences of peer victimization (Hanish & Guerra, 2002). It may be that victimization triggers an antisocial pathway only in children with certain predisposing characteristics, such as low levels of inhibitory control (Sugimura & Rudolph, 2012). Alternatively, the social consequences of victimization may vary according to characteristics of the victimization (e.g., duration, type). Understanding individual differences in social pathways following victimization will be critical for identifying children at risk for particular outcomes and for creating targeted intervention programs.

As in all long-term studies, some attrition occurred by the final wave of data collection. Of note, participating and nonparticipating children in both studies were quite similar, suggesting the final sample was generally representative. There was some selective attrition

by gender and ethnicity in Study 1. However, given that there were no significant gender differences in the pathway of interest and the results held after adjusting for gender and ethnicity, it is likely that our results were not unduly affected by attrition. Of note, it would be useful in future research to determine directly whether these processes are comparable across different ethnic groups.

In sum, this work advances theory and prior research by identifying one damaging long-term social consequence of victimization and by elucidating one explanatory pathway linking early behavioral risk and victimization with social risk during middle school. Moreover, this research suggests critical points of intervention for at least some victims of bullying. Specifically, helping victimized children to avoid a sense of social alienation and to remain engaged in mainstream peer groups may be a key to preventing them from entering into antisocial peer affiliations that ultimately will exacerbate pre-existing social difficulties. For example, interventions may benefit from the incorporation of peer mediation efforts that pair socially assertive, well-adjusted peers with victimized children such that they do not become socially detached and vulnerable to risky affiliations. Of course, intervening even earlier in the cascade, using prevention programs that target early aggressive and disruptive behaviors (e.g., Conduct Problems Prevention Research Group, 2011), may help to protect children from peer victimization in the first place. Such interventions have the potential to interrupt an escalating cycle of violence and risky behavior through adolescence and adulthood.

Acknowledgments

SHARE Project: We would like to thank the families and schools who participated in the study. We are grateful to Jamie Abaied, Hannah Banagale, Molly Bartlett, Lauren Bohn, Alison Dupre, Megan Flynn, Sarah Kang, Cathy Koerber, Nicole Llewelyn, and Jennifer Schmidt for their assistance in data collection and management. This research was funded by a University of Illinois Arnold O. Beckman Award and National Institute of Mental Health Grant MH68444 awarded to Karen D. Rudolph.

CDP: The Child Development Project has been funded by grants MH42498, MH56961, MH57024, and MH57095 from the National Institute of Mental Health, HD30572 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, and DA016903 from the National Institute on Drug Abuse. Kenneth A. Dodge is supported by Senior Scientist award 2K05 DA015226 from the National Institute on Drug Abuse.

References

- Achenbach, T.M. Manual for Teacher's Report Form and 1991 profile. Burlington, VT: University of Vermont; 1991.
- Achenbach, T.M.; Rescorla, L.A. Manual for the ASEBA school-age forms & profiles. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families; 2001.
- Andrade BF, Waschbusch DA, King S, Thurston C, McNutt L, Terrio B. Teacher-classified peer social status: Preliminary validation and associations with behavior ratings. *Journal of Psychoeducational Assessment*. 2005; 23:279–290.
- Angold A, Costello EJ, Messer SC, Pickles A. Development of a short questionnaire for use in epidemiological studies of depression in children and adolescents. *International Journal of Methods in Psychiatric Research*. 1995; 5:237–249.
- Arbuckle, J.L. AMOS 17.0 [Computer Software]. Chicago: Small Waters Corp.; 2008.
- Asher S, Hymel S, Renshaw PD. Loneliness in children. *Child Development*. 1984; 55:1456–1464.
- Asher SR, Wheeler VA. Children's loneliness: A comparison of rejected and neglected peer status. *Journal of Consulting and Clinical Psychology*. 1985; 53:500–505. [PubMed: 4031205]
- Bollmer JM, Harris MJ, Milich R. Reactions to bullying and peer victimization: Narratives, physiological arousal, and personality. *Journal of Research in Personality*. 2006; 40:803–828.
- Bukowski, W.M.; Sippola, L.K. Groups, individuals, and victims: A view of the peer system. In: Juvonen, J.; Graham, S., editors. *Peer harassment in school: The plight of the vulnerable and the victimized*. New York: Guilford; 2001. p. 355-377.

- Burt KB, Obradovi J, Long JD, Masten AS. The interplay of social competence and psychopathology over 20 years: Testing transactional and cascade models. *Child Development*. 2008; 79:359–374. [PubMed: 18366428]
- Card NA, Hodges EVE. Peer victimization among school children: Correlations, causes, consequences, and considerations in assessment and intervention. *School Psychology Quarterly*. 2008; 23:451–461.
- Coie JD, Dodge KA, Coppotelli H. Dimensions and types of social status: A cross-age perspective. *Developmental Psychology*. 1982; 18:557–570.
- Colwell MJ, Pettit GS, Meece D, Bates JE, Dodge KA. Cumulative risk and continuity in nonparental care from infancy to early adolescence. *Merrill-Palmer Quarterly*. 2001; 47:207–234. [PubMed: 20046544]
- Conduct Problems Prevention Research Group. The effects of the Fast Track preventive intervention on the development of conduct disorder across childhood. *Child Development*. 2011; 82:331–345. [PubMed: 21291445]
- Crick NR. The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child Development*. 1996; 67:2317–2327. [PubMed: 9022243]
- Crick NR, Grotpeter JK. Children's treatment by peers: Victims of relational and overt aggression. *Development and Psychopathology*. 1996; 8:367–380.
- Dhami MK, Hoglund WL, Leadbeater BJ, Boone EM. Gender-linked risks for peer physical and relational victimization in the context of school-level poverty in first grade. *Social Development*. 2005; 14:532–549.
- Dijkstra JK, Cillessen AHN, Lindenberg S, Veenstra R. Basking in reflected glory and its limits: Why adolescents hang out with popular peers. *Journal of Research on Adolescence*. 2010; 20:942–958.
- Dishion TJ, Ha T, Véronneau M. An ecological analysis of the effects of deviant peer clustering on sexual promiscuity, problem behavior, and childbearing from early adolescence to adulthood: An enhancement of the life history framework. *Developmental Psychology*. 2012; 48:703–717. [PubMed: 22409765]
- Dishion TJ, Patterson GR, Stoolmiller M, Skinner ML. Family, school and behavioral antecedents to early adolescent involvement with antisocial peers. *Developmental Psychology*. 1991; 27:172–180.
- Dishion T, Skaggs N. An ecological analysis of monthly “bursts” in early adolescent substance use. *Applied Developmental Science*. 2000; 4:89–97.
- Dishion TJ, Veronneau M, Myers MW. Cascading peer dynamics underlying the progression from problem behavior to violence in early to late adolescence. *Development and Psychopathology*. 2010; 22:603–619. [PubMed: 20576182]
- Dodge KA, Bates JE, Pettit GS. Mechanisms in the cycle of violence. *Science*. 1990; 250:1678–1683. [PubMed: 2270481]
- Dodge, KA.; Lansford, JE.; Dishion, TJ. The problem of deviant peer influences in intervention programs. In: Dodge, KA.; Dishion, TJ.; Lansford, JE., editors. *Deviant peer influences in programs for youth*. New York: Guilford; 2006. p. 3-13.
- Eccles, JS.; Wigfield, A.; Schiefele, U. Motivation to succeed. In: Damon, W.; Eisenberg, N., editors. *Handbook of child psychology*. 5th ed. Vol. Vol III. New York: Wiley; 1998. p. 1017-1095.
- Ellis WE, Zarbatany L. Explaining friendship formation and friendship stability. The role of children's and friends' aggression and victimization. *Merrill-Palmer Quarterly: Journal of Developmental Psychology*. 2007; 53:79–104.
- Feiring C, Miller-Johnson S, Cleland CM. Potential pathways from stigmatization and internalizing symptoms to delinquency in sexually abused youth. *Child Maltreatment*. 2007; 12:220–232. [PubMed: 17631622]
- Fergusson DM, Horwood LJ. Prospective childhood predictors of deviant peer affiliations in adolescence. *Journal of Child Psychology and Psychiatry*. 1999; 40:581–592. [PubMed: 10357164]
- Graham S, Juvonen J. Self-blame and peer victimization in middle school: An attributional analysis. *Developmental Psychology*. 1998; 34:538–587.

- Hanish LD, Guerra NG. A longitudinal analysis of patterns of adjustment following peer victimization. *Development and Psychopathology*. 2002; 14:69–89. [PubMed: 11893095]
- Hollingshead, AB. Four-factor index of social status. New Haven, CT: Yale University; 1979. Unpublished manuscript
- Holm S. A simple sequentially rejective multiple test procedure. *Scandinavian Journal of Statistics*. 1979; 6:65–70.
- Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*. 1999; 6:1–55.
- Kemp C, Carter M. The social skills and social status of mainstreamed students with intellectual disabilities. *Educational Psychology*. 2002; 22:391–411.
- Kochel KP, Ladd GW, Rudolph KD. Longitudinal associations among youth depressive symptoms, peer victimization, and low peer acceptance: An interpersonal process perspective. *Child Development*. 2012; 83:637–650. [PubMed: 22313098]
- Kochenderfer BJ, Ladd GW. Peer victimization: Cause or consequence of school maladjustment? *Child Development*. 1996; 67:1305–1317. [PubMed: 8890485]
- Kochenderfer BJ, Ladd GW. Victimized children's responses to peers' aggression: Behaviors associated with reduced versus continued victimization. *Development and Psychopathology*. 1997; 9:59–73. [PubMed: 9089124]
- Kochenderfer-Ladd B. Peer victimization: The role of emotions in adaptive and maladaptive coping. *Social Development*. 2004; 13:329–349.
- Ladd GW, Kochenderfer-Ladd B. Identifying victims of peer aggression from early to middle childhood: Analysis of cross-informant data for concordance, estimation of relational adjustment, prevalence of victimization, and characteristics of identified victims. *Psychological Assessment*. 2002; 14:74–96. [PubMed: 11911051]
- Leadbeater BJ, Hoggins WLG. The effects of peer victimization and physical aggression on changes in internalizing from first to third grade. *Child Development*. 2009; 80:843–859. [PubMed: 19489907]
- Masten AS, Cicchetti D. Developmental cascades. *Development and Psychopathology*. 2010; 22:491–495. [PubMed: 20576173]
- Monks CP, Smith PK, Swettenham J. Aggressors, victims, and defenders in preschool: Peer, self-, and teacher reports. *Merrill-Palmer Quarterly*. 2003; 49:453–469.
- Nolen-Hoeksema S, Girgus JS, Seligman ME. Predictors and consequences of childhood depressive symptoms: A 5-year longitudinal study. *Journal of Abnormal Psychology*. 1992; 101:405–422. [PubMed: 1500598]
- Oh W, Rubin KH, Bowker JC, Booth-LaForce C, Rose-Krasno L, Laursen B. Trajectories of social withdrawal from middle childhood to early adolescence. *Journal of Abnormal Child Psychology*. 2008; 36:553–566. [PubMed: 18193479]
- Ostrov JM. Prospective associations between peer victimization and aggression. *Child Development*. 2010; 81:1670–1677. [PubMed: 21077855]
- Padilla-Walker LM, Bean RA, Hsieh AL. The role of parenting and personal characteristics on deviant peer association among European American and Latino adolescents. *Children and Youth Services Review*. 2011; 33:2034–2042.
- Parker, JG.; Rubin, KH.; Erath, SA.; Wojslawowicz, JC.; Buskirk, AA. Peer relationships, child development, and adjustment: A developmental psychopathology perspective. In: Cicchetti, D.; Cohen, DJ., editors. *Developmental psychopathology*. 2nd ed.. Hoboken, NJ: Wiley; 2006. p. 419–493.
- Patterson, GR.; Capaldi, D.; Bank, L. An early starter model for predicting delinquency. In: Pepler, DJ.; Rubin, KH., editors. *The development and treatment of childhood aggression*. Hillsdale, NJ: Erlbaum; 1991. p. 139–168.
- Peskin MF, Tortolero SR, Markham CM. Bullying and victimization among Black and Hispanic adolescents. *Adolescence*. 2006; 41:467–484. [PubMed: 17225662]
- Prinstein MJ, Boergers J, Spirito A. Adolescents' and their friends' health-risk behavior: Factors that alter or add to peer influence. *Journal of Pediatric Psychology*. 2001; 26:287–298.

- Reynolds CR, Richmond BO. What I think and feel: A revised measure of children's manifest anxiety. *Journal of Abnormal Psychology*. 1978; 6:271–280.
- Rudolph KD, Clark AG. Conceptions of relationships in children with depressive and aggressive symptoms: Social-cognitive distortion or reality? *Journal of Abnormal Child Psychology*. 2001; 29:41–56. [PubMed: 11316334]
- Rudolph KD, Abaied J, Flynn M, Sugimura N, Agoston AM. Developing relationships, being cool, and not looking like a loser: Social goal orientation predicts children's responses to peer aggression. *Child Development*. 2011; 82:1518–1530.
- Rudolph KD, Troop-Gordon W, Hessel ET, Schmidt JD. A latent growth curve analysis of early and increasing peer victimization as predictors of mental health across elementary school. *Journal of Clinical Child and Adolescent Psychology*. 2011; 40:111–122. [PubMed: 21229448]
- Schafer JL, Graham JW. Missing data: Our view of the state of the art. *Psychological Methods*. 2002; 7:147–177. [PubMed: 12090408]
- Schwartz D. Subtypes of victims and aggressors in children's peer groups. *Journal of Abnormal Child Psychology*. 2000; 28:181–192. [PubMed: 10834769]
- Schwartz D, Dodge KA, Pettit GS, Bates JE. The early socialization of aggressive victims of bullying. *Child Development*. 1997; 68:665–675. [PubMed: 9306645]
- Schwartz D, Gorman AH, Dodge KA, Pettit GS, Bates JE. Friendships with peers who are low or high in aggression as moderators of the link between peer victimization and declines in academic functioning. *Journal of Abnormal Psychology*. 2008; 36:719–730.
- Schwartz D, McFadyen-Ketchum SA, Dodge KA, Pettit GS, Bates JE. Early behavior problems as a predictor of later peer group victimization: Moderators and mediators in the pathways of social risk. *Journal of Abnormal Child Psychology*. 1999; 27:191–201. [PubMed: 10438185]
- Siegel RS, La Greca AM, Harrison HM. Peer victimization and social anxiety in adolescents: Prospective and reciprocal relationships. *Journal of Youth and Adolescence*. 2009; 38:1096–1109. [PubMed: 19636774]
- Sijtsema JJ, Lindenberg SM, Veenstra R. Do they get what they want or are they stuck with what they can get? Testing homophily against default selection for friendships of highly aggressive boys. The TRAILS study. *Journal of Abnormal Child Psychology*. 2010; 38:803–813. [PubMed: 20336362]
- Snyder J, Brooker M, Patrick MR, Snyder A, Schrepferman L, Stoolmiller M. Observed peer victimization during early elementary school: Continuity, growth, and relation to risk for child antisocial and depressive behavior. *Child Development*. 2003; 74:1881–1898. [PubMed: 14669902]
- Sobel, ME. Asymptotic confidence intervals for indirect effects in structural equation models. In: Leinhardt, S., editor. *Sociological Methodology*. Vol. 1982. Washington, DC: American Sociological Association; 1982. p. 290–312.
- Solberg ME, Olweus D. Prevalence estimation of school bullying with the Olweus Bully/Victim Questionnaire. *Aggressive Behavior*. 2003; 29:239–268.
- Sugimura N, Rudolph KD. Temperamental differences in children's reactions to peer victimization. *Journal of Clinical Child and Adolescent Psychology*. 2012; 41:314–328. [PubMed: 22420650]
- Thapar A, McGuffin P. Validity of the shortened Mood and Feelings Questionnaire in a community sample of children and adolescents: A preliminary research note. *Psychiatry Research*. 1998; 81:259–268. [PubMed: 9858042]
- Topolski TD, Hewitt JK, Evans L, Meyer JM, Silberg JL, Siminoff E, et al. Genetic and environmental influences on ratings of manifest anxiety by parents and children. *Journal of Anxiety Disorders*. 1999; 13:371–397. [PubMed: 10504108]
- You J-I, Bellmore A. Relational peer victimization and psychosocial adjustment: The mediating role of best friendship qualities. *Personal Relationships*. 2012; 19:340–353.

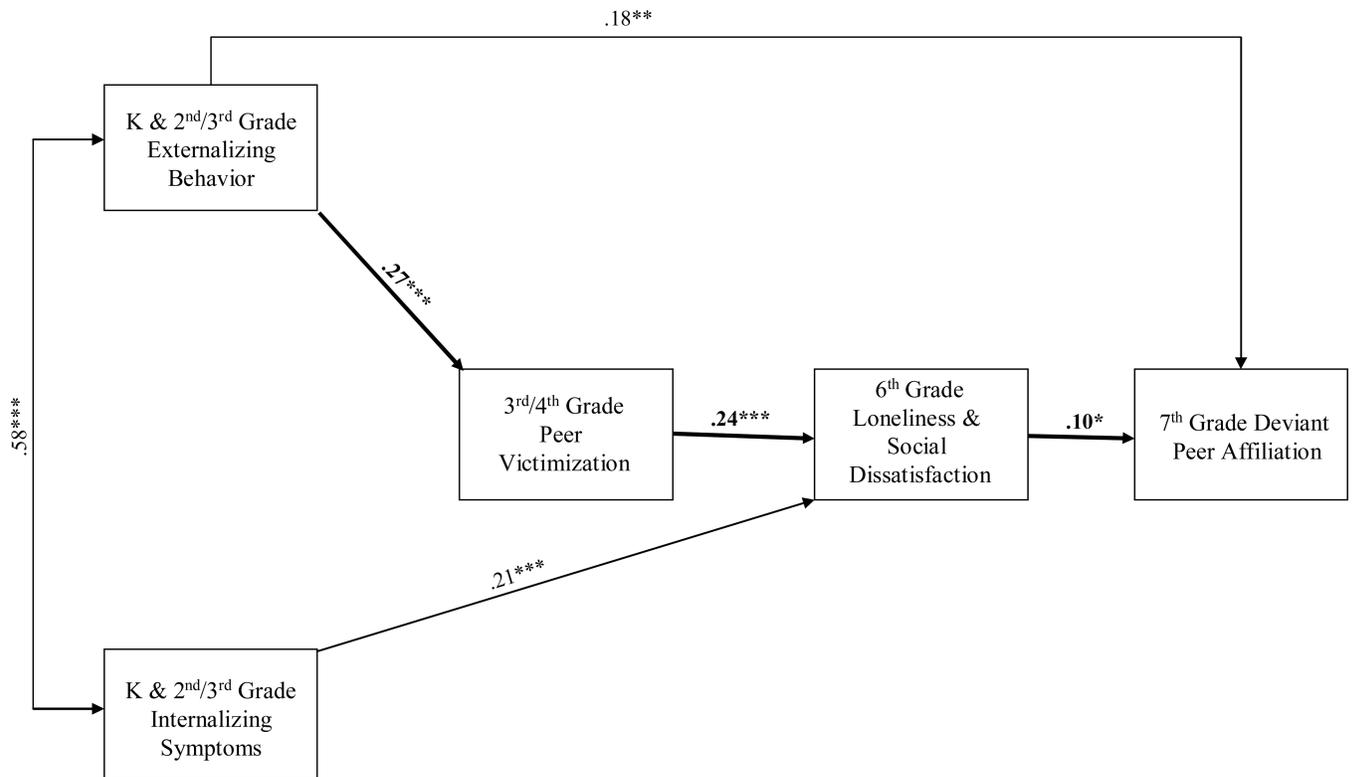


Figure 1.

Path model results with standardized coefficients for Study 1. $*p < .05$. $**p < .01$. $***p < .001$. Bolded paths reflect components of the hypothesized pathway. Not displayed are nonsignificant paths and paths between both gender and ethnicity and each of the variables in the model. Of those paths, the following were significant: gender to DPA ($\beta = -.13**$); ethnicity to victimization ($\beta = -.11*$).

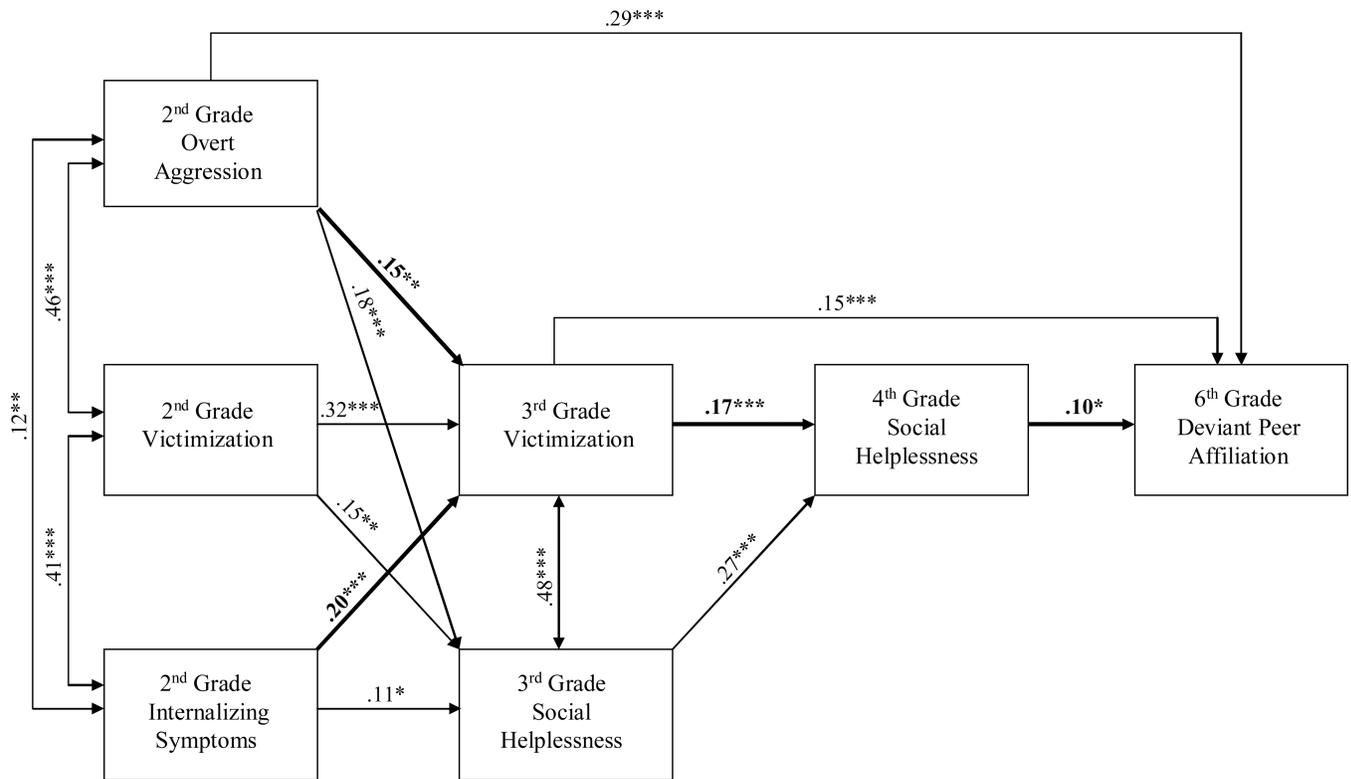


Figure 2. Path model results with standardized coefficients for Study 2. * $p < .05$. ** $p < .01$. *** $p < .001$. Bolded paths reflect components of the hypothesized pathway. Not displayed are nonsignificant paths and paths between both gender and ethnicity and each of the variables in the model. Of those paths, the following were significant: gender to 2nd grade overt aggression ($\beta = -.20^{***}$) and 4th grade social helplessness ($\beta = -.08^*$); ethnicity to 2nd grade overt aggression ($\beta = .29^{***}$), 2nd grade victimization ($\beta = .16^*$), 4th grade social helplessness ($\beta = .10^*$), and 6th grade deviant peer affiliation ($\beta = .21^{***}$).

Table 1

Summary of Measures

| Construct | Study 1 | | | | | Study 2 | | | | | | |
|---|---------|----------------|----------------|-------|------|---------|-----|----------------|----------------|-------|------|-----|
| | N | Possible Range | Observed Range | M | SD | α | N | Possible Range | Observed Range | M | SD | α |
| Externalizing Behavior | | | | | | | | | | | | |
| K (mother) | 567 | 0–66 | 0–39 | 11.51 | 7.02 | .88 | | | | | | |
| 2 nd /3 rd (mother) | 462 | 0–66 | 0–43 | 9.34 | 7.24 | .89 | | | | | | |
| 2 nd (teacher) | | | | | | | 576 | 1–5 | 1–5 | 1.48 | .92 | .96 |
| Internalizing Symptoms | | | | | | | | | | | | |
| K (mother) | 567 | 0–62 | 0–25 | 6.52 | 4.93 | .80 | | | | | | |
| 2 nd /3 rd (mother) | 462 | 0–62 | 0–31 | 6.33 | 5.73 | .86 | | | | | | |
| Anxiety 2 nd (self) | | | | | | | 576 | 0–28 | 0–28 | 11.38 | 6.75 | .89 |
| Depression 2 nd (self) | | | | | | | 576 | 1–4 | 1–4 | 1.71 | .68 | .88 |
| Peer Victimization | | | | | | | | | | | | |
| 3 rd /4 th (peers) | 388 | z-scores | –1.93–4.34 | –.01 | .98 | .82 | | | | | | |
| 2 nd (self) | | | | | | | 576 | 1–5 | 1–4.52 | 2.13 | .78 | .91 |
| 2 nd (teacher) | | | | | | | 576 | 1–5 | 1–4.57 | 1.69 | .59 | .96 |
| 3 rd (self) | | | | | | | 597 | 1–5 | 1–4.71 | 1.97 | .71 | .93 |
| 3 rd (teacher) | | | | | | | 596 | 1–5 | 1–4.05 | 1.72 | .61 | .97 |
| Social Alienation | | | | | | | | | | | | |
| 6 th (self) | 439 | 1–5 | 1–3.63 | 1.75 | .52 | .87 | | | | | | |
| 3 rd (teacher) | | | | | | | 596 | 1–5 | 1–4.50 | 1.80 | .66 | .90 |
| 4 th (teacher) | | | | | | | 571 | 1–5 | 1–3.92 | 1.78 | .61 | .88 |
| Deviant Peer Affiliation | | | | | | | | | | | | |
| 7 th (self) | 431 | 0–2 | 0–2 | .36 | .39 | .69 | | | | | | |
| 6 th (self) | | | | | | | 527 | 1–5 | 1–5 | 1.44 | .75 | .91 |
| 6 th (teacher) | | | | | | | 548 | 1–5 | 1–5 | 1.47 | .62 | .88 |

Table 2

Bivariate Correlations

| Construct | 1 | 2 | 3 | 4 | 5 |
|-----------------------------|--------|------------------|--------|--------|-------|
| 1. Externalizing Behavior | -- | .57*** | .21*** | .16** | .14** |
| 2. Internalizing Symptoms | .10* | -- | .06 | .21*** | -.01 |
| 3. Peer Victimization | .30*** | .34*** | -- | .24*** | .06 |
| 4. Social Alienation | .20*** | .08 [^] | .33*** | -- | .11* |
| 5. Deviant Peer Affiliation | .42*** | .17*** | .31*** | .25*** | -- |

Note. Study 1 correlations are above the diagonal; Study 2 correlations are below the diagonal.

[^] $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

In Study 1, scores are from the following waves: Externalizing Behavior and Internalizing Symptoms (Kindergarten and 2nd/3rd grade), Peer Victimization (3rd/4th grade), Social Alienation (6th grade), and Deviant Peer Affiliation (7th grade). In Study 2, scores are from the following waves: Externalizing Behavior and Internalizing Symptoms (2nd grade), Peer Victimization (3rd grade), Social Alienation (4th grade), and Deviant Peer Affiliation (6th grade).

Table 3
Model Fit Statistics and Chi-Square Difference Tests Comparing Fit of Model 1 With Alternate Models

| Model | χ^2 (df) | p | CFI | RMSEA | $\Delta\chi^2$ (df) | p |
|--|---------------|------|------|-------|---------------------|-------|
| Study 1 | | | | | | |
| Model 1 (Full Model) | 00.21 (1) | .651 | 1.00 | .000 | -- | -- |
| Model 2 (Victimization → DPA) | 00.45 (2) | .798 | 1.00 | .000 | 00.24 (1) | .624 |
| Model 3 (Externalizing → Loneliness) | 00.32 (2) | .850 | 1.00 | .000 | 00.11 (1) | .740 |
| Model 4 (Externalizing → DPA) | 08.95 (2) | .011 | .977 | .077 | 08.74 (1) | .003 |
| Model 5 (Internalizing → Loneliness) | 13.14 (2) | .001 | .964 | .098 | 12.93 (1) | <.001 |
| Model 6 (Internalizing → DPA) | 03.73 (2) | .155 | .994 | .038 | 03.52 (1) | .061 |
| Study 2 | | | | | | |
| Model 1 (Full Model) | 06.28 (3) | .099 | .997 | .041 | -- | -- |
| Model 2 (Victimization → DPA) | 19.05 (4) | .001 | .984 | .077 | 12.77 (1) | <.001 |
| Model 3 (Aggression → Social Help.) | 07.58 (4) | .108 | .996 | .038 | 01.30 (1) | .254 |
| Model 4 (Aggression → DPA) | 46.56 (4) | .000 | .956 | .129 | 40.28 (1) | <.001 |
| Model 5 (Internalizing → Social Help.) | 06.47 (4) | .167 | .997 | .031 | 00.19 (1) | .663 |
| Model 6 (Internalizing → DPA) | 09.65 (4) | .047 | .994 | .047 | 03.37 (1) | .066 |