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

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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; 8–12 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.

Exposure to peer victimization is a salient stressor in the lives of schoolchildren (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

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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, & Ve'ronneau, 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 & Zarbatany, 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, deviant peer affiliation, or both, 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 (Dhami, Hoglund, Leadbeater, & Boone, 2005; Peskin, Tortolero, & Markham, 2006) and deviant peer affiliation (Fergusson & Horwood, 1999; Padilla-Walker, Bean, & Hsieh, 2011), 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 to seventh 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 (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, Tennessee, and Bloomington, Indiana. 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

Table 1
Summary of Measures

	Study 1						Study 2					
Construct	*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						
2nd or 3rd (mother)	462	0–66	0–43	9.34	7.24	.89						
2nd (teacher)							576	1–5	1–5	1.48	.92	.96
Internalizing symptoms												
K (mother)	567	0–62	0–25	6.52	4.93	.80						
2nd or 3rd (mother)	462	0–62	0–31	6.33	5.73	.86						
Anxiety 2nd (self)							576	0–28	0–28	11.38	6.75	.89
Depression 2nd (self)							576	1–4	1–4	1.71	.68	.88
Peer victimization												
3rd or 4th (peers)	388	*z*-Scores	−1.93–4.34	−.01	.98	.82						
2nd (self)							576	1–5	1–4.52	2.13	.78	.91
2nd (teacher)							576	1–5	1–4.57	1.69	.59	.96
3rd (self)							597	1–5	1–4.71	1.97	.71	.93
3rd (teacher)							596	1–5	1–4.05	1.72	.61	.97
Social alienation												
6th (self)	439	1–5	1–3.63	1.75	.52	.87						
3rd (teacher)							596	1–5	1–4.50	1.80	.66	.90
4th (teacher)							571	1–5	1–3.92	1.78	.61	.88
Deviant peer affiliation												
7th (self)	431	0–2	0–2	.36	.39	.69						
6th (self)							527	1–5	1–5	1.44	.75	.91
6th (teacher)							548	1–5	1–5	1.47	.62	.88

verbal assent. The present analyses include data from kindergarten to seventh grade (ages 5–13 years). In seventh 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 seventh 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 early externalizing behaviors, $F(1, 573) = .14$, *ns*; or internalizing symptoms, $F(1, 573) = 2.34$, *ns*; or 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 third grade (Cohort 2) or fourth grade (Cohort 1). In sixth grade, children completed an extensive telephone interview with a trained research assistant; this interview included a measure of loneliness and social dissatisfaction. In seventh 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 were 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

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. In Study 1, scores are from the following waves: externalizing behavior and internalizing symptoms (kindergarten and second or third grade), peer victimization (third or fourth grade), social alienation (sixth grade), and deviant peer affiliation (seventh grade). In Study 2, scores are from the following waves: externalizing behavior and internalizing symptoms (second grade), peer victimization (third grade), social alienation (fourth grade), and deviant peer affiliation (sixth grade).
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

behavior were only available at a single wave during kindergarten through seventh grades.

Externalizing behavior and internalizing symptoms. In kindergarten and second (Cohort 2) or third (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 second-grade externalizing scale for Cohort 2 ($r = .58$, $p < .001$) and the third-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 second-grade internalizing scale for Cohort 2 ($r = .54$, $p < .001$) and the third-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 third (Cohort 2) or fourth (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 sixth 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 seventh 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 or 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 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) → peer victimization → loneliness → 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 multigroup 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 and Discussion

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 kindergarten and second or third grade) significantly predicted third- or fourth-grade victimization; victimization significantly predicted sixth-grade loneliness, which in turn significantly predicted seventh-grade DPA (Figure 1). The following direct paths also were significant: (a) early externalizing behavior to seventh-grade DPA, (b) early internalizing symptoms to loneliness, (c) gender to DPA, and (d) ethnicity to victimization. The other direct paths were nonsignificant (βs = |.02–.11|, *ns*) and are not depicted in Figure 1. Sobel (1982) tests revealed a significant indirect effect (IE) of early externalizing behavior on sixth-grade loneliness via third- or fourth-grade peer victimization (unstandardized IE = .005, *SE* = .042, z = 3.17, $p = .002$; Hypothesis 2). There also was a marginal indirect effect of third- or fourth-grade peer victimization on seventh-grade DPA via sixth-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.

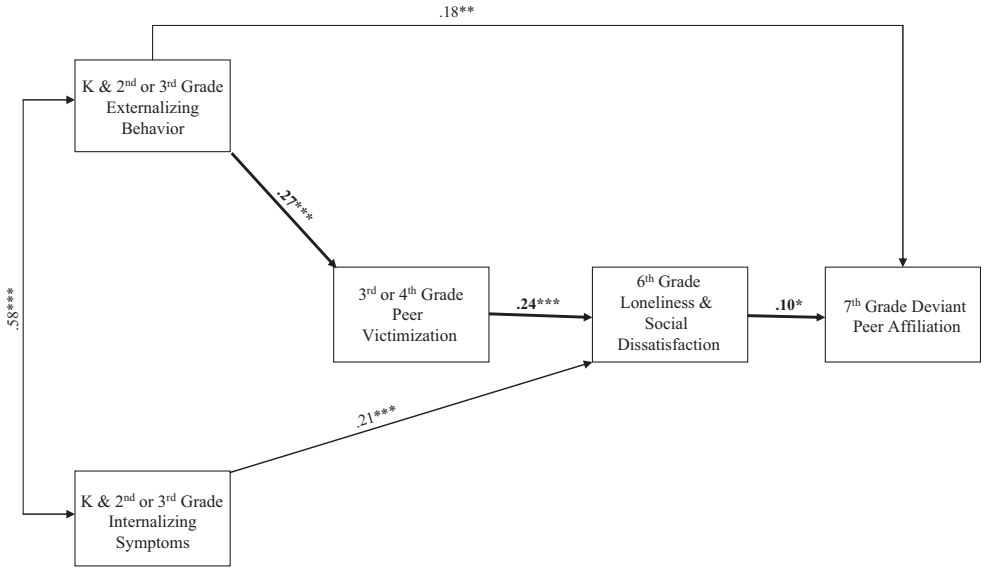

Figure 1. Path model results with standardized coefficients for Study 1. Bolded paths reflect components of the hypothesized pathway. Not displayed are nonsignificant paths and paths between both gender and ethnicity and each of the variables in the model. Of those paths, the following were significant: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

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

Model	$\chi^2(df)$	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

Note. CFI = comparative fit index; RMSEA = root mean square error of approximation; DPA = deviant peer affiliation.

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 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, and 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 second 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 third 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 deidentified data on nonparticipants, allowing us to make these comparisons). The present analyses include data from second to sixth grades (ages 8–12 years). In sixth 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 sixth-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 second-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 second 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 second 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 second and third grades, children and teachers completed a revised version (Rudolph, Abaied, et al., 2011; Rudolph, Troop-Gordon, 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, 6 items assessing overt victimization (e.g., "How often do you get teased by another kid?") and 5 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 5-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 multiinformant composite of victimization is a better predictor of adjustment than mono-informant assessments (Ladd & Kochenderfer-Ladd, 2002).

Social helplessness. In third and fourth grades, 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 12 items (e.g., "This child takes little independent initiative in making friends," "This child is easily discouraged in his or 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 sixth 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 et al. (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 and Discussion

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), second-grade overt aggression and second-grade internalizing symptoms significantly predicted third-grade victimization; victimization significantly predicted fourth-grade social helplessness, which in turn significantly predicted sixth-grade DPA (Figure 2). These results are consistent with Study 1, with the exception of the additional path from

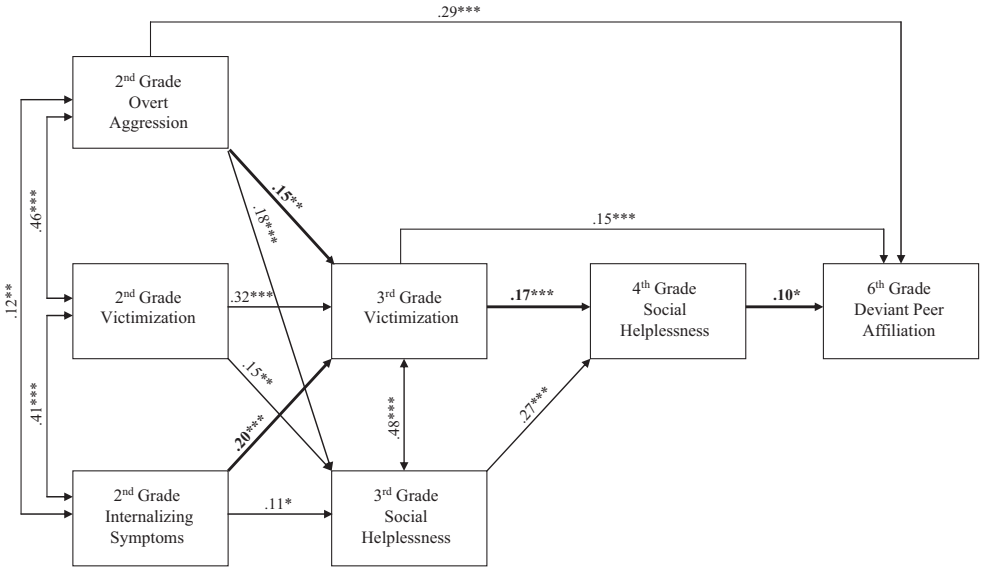

Figure 2. Path model results with standardized coefficients for Study 2. Bolded paths reflect components of the hypothesized pathway. Not displayed are nonsignificant paths and paths between both gender and ethnicity and each of the variables in the model. Of those paths, the following were significant: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

internalizing symptoms to victimization. The following direct paths also were significant: (a) second-grade overt aggression to third-grade social helplessness and sixth-grade DPA, (b) second-grade internalizing symptoms to third-grade social helplessness, (c) third-grade victimization to sixth-grade DPA, (d) gender to second-grade overt aggression and fourth-grade social helplessness, and (e) ethnicity to second-grade overt aggression, second-grade victimization, fourth-grade social helplessness, and sixth-grade DPA. The other direct paths were nonsignificant (βs = |.00–.08|, *ns*) and are not depicted in Figure 2. Sobel (1982) tests confirmed all three hypothesized indirect effects: (a) second-grade overt aggression on fourth-grade social helplessness via third-grade peer victimization (unstandardized IE = .025, *SE* = .102, z = 2.39, p = .017; Hypothesis 2), (b) second-grade internalizing symptoms on fourth-grade social helplessness via third-grade peer victimization (unstandardized IE = .039, *SE* = .117, z = 2.88, p = .004; Hypothesis 2), and (c) third-grade peer victimization on sixth-grade DPA via fourth-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 second to third grade in Study 2). The significance levels remained

unchanged after adjusting for multiple comparisons using the Holm (1979) Bonferroni method.

General 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 and 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, Obradović, 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 or 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 preexisting 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.

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