

Peer Harassment, Psychological Adjustment, and School Functioning in Early Adolescence

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The relations between peer harassment, psychological adjustment, and school functioning were investigated with an ethnically diverse sample of middle school students. A conceptual model, which proposed that self-perceived peer harassment predicts psychological adjustment (loneliness, depression, and self-worth), which in turn predicts school outcomes (GPA and attendance), was tested using concurrent data ($n = 244$). Structural equation modeling supported the proposed model. Longitudinal analyses with a subsample ($n = 106$) of students revealed that subjective self-views of victimization were moderately stable across a 1-year period. Comparisons across stable and unstable victim groups suggested that concurrent (rather than earlier or chronic) perceptions of victimization predicted loneliness and self-worth. Finally, changes in subjective perceptions of victimization, self-worth, and loneliness across the 1-year period predicted subsequent GPA, absenteeism, and teacher-rated social adjustment. Findings are discussed in terms of the short- and long-term effects of peer harassment.

Humiliation, public ridicule, taunting, physical threats, and aggression by classmates are school experiences shared by many students. Survey data reveal that anywhere from 40% to 80% of American school-age respondents report that they personally have been the targets of such peer-directed harassment at school (e.g., Bonney-McCoy & Finkelhor, 1995; Hoover, Oliver, & Hazler, 1992). Furthermore, 60% of junior high students report using strategies to avoid harm at school, such as always staying in a group, deliberately avoiding certain places in the school, and even skipping school altogether (National Center for Education Statistics, 1995). Thus, accumulating evidence suggests that psychological and physical harassment are part of the reality of American schools and that a large proportion of the student body is feeling quite vulnerable.

This perceived vulnerability has been supported by a growing body of empirical research on the negative psychological consequences associated with being the victim of peer harassment (see review in Graham & Juvonen, 1998b). For example, children who are victimized tend to have low self-esteem and often feel lonely, anxious, and depressed (e.g., Boivin & Hymel, 1997; Crick & Grotpeter, 1996; Egan & Perry, 1998; Kochenderfer & Ladd, 1996a). There also is evidence that victims tend to blame themselves for their victim status, which might partly account for their negative self-views and depressed affect (Graham & Juvonen, 1998a). Moreover, because victims are exposed to negative peer experiences, they appear to withdraw socially from peers (Schwartz, Dodge, & Coie, 1993).

In addition to negatively impacting children's psychological functioning, peer victimization may place children at risk for school adjustment problems. Boulton and Underwood (1992) found that victims were less likely than nonvictims to report feeling happy during playtime at school. Similarly, Whitney and Smith (1993) discovered that children who were bullied perceived their school environment to be less supportive than did children who were not victims of peer aggression. Also, Kochenderfer and Ladd (1996a, 1996b) have linked peer harassment to negative attitudes about school.

Most of the aforementioned studies found significant relations between school outcomes and victim status when indicators of school adjustment tap student feelings or attitudes about school. However, when more objective measures of school performance have been employed, the linkages are less clear. For instance, Kochenderfer and Ladd (1996b) found that self-reported peer harassment predicted attitudes toward school but not objective measures of academic achievement (Kochenderfer & Ladd, 1996a). Furthermore, it is not clear how and why peer harassment would place students at risk for lower achievement and other school problems. Thus, further studies investigating the relations between peer harassment and school adjustment, and especially research that examines mechanisms that could account for this linkage, are clearly needed.

A Conceptual Model Linking Harassment, Psychological Adjustment, and School Outcomes

The studies examining the effects of peer harassment on psychological well-being as well as those focusing on harassment and school functioning have emerged as rather separate literatures with few attempts to examine how these constructs might be interrelated. It is unclear, for example, whether peer harassment has independent effects on both psychological and school adjustment, or whether school difficulties are consequences or causes of adjustment problems related to victim status. Specifying the mechanisms that link harassment experiences to school adjustment is

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important both for theory development and for designing effective school-based interventions.

In the research reported here, we tested a conceptual model that examines the linkages between peer harassment, psychological maladjustment, and school outcomes in a sample of middle school students. More generally, we asked the following question: Does peer harassment influence objective indicators of school performance—and if so, how? We proposed that the relation between self-perceived peer harassment and school performance is mediated by psychological adjustment. Thus, when examining the relations between harassment and school functioning, self-perceptions of victimization may not directly affect school outcomes such as grades or attendance. Instead, higher levels of self-perceived victimization should predict poorer psychological adjustment, and this poor adjustment ought to function as the more proximal determinant of problematic school outcomes. The proposed temporal sequence is harassment → psychological maladjustment → school problems.

There is some precedent in other research for viewing psychological adjustment as a mediator of the relations between social outcomes and school adjustment. For example, Wentzel (1998) reported that sixth graders' psychological distress mediated the relationship between perceived social support and school interest. Furthermore, over time, the link between middle school students' peer relations and academic performance was attenuated when social emotional variables were taken into account (Wentzel & Caldwell, 1997).

We used structural equation modeling (SEM) to test the mediational model described previously. SEM offers an advantage over more restricted statistical procedures because it allows model fit to be evaluated as a whole (Hoyle, 1995). In this study, each of the three constructs was assessed with multiple indicators. The latent construct of self-perceived peer harassment was indicated by subjective perceptions of being victimized, as well as by recollections of actual harassment incidents. The psychological adjustment latent construct was indicated by self-worth, self-reported depressive symptomatology, and loneliness at school. A latent construct of school adjustment represented students' overall grade point average (GPA) and total number of classroom hours missed during the semester of data collection. Although both grades and absenteeism are clearly affected by a number of factors that we could not control for, our goal was to use these important indicators of school functioning to test whether self-perceptions of peer harassment and the psychological adjustment problems typical of harassed students can predict school adjustment. We hypothesized that perceiving oneself as a victim would increase psychological problems, which in turn would predict poor school functioning (i.e., reflect lower GPA and higher absenteeism).

Other models of the relations between peer harassment, psychological adjustment, and school outcomes are also plausible. One alternative model suggests that self-perceived harassment can have indirect as well as direct effects on school adjustment, such that knowing the severity of a student's experiences with harassment will also independently predict school functioning. A second plausible model changes the temporal relations among the constructs to test whether psychological problems predict victimization and whether perceiving oneself as a victim is a more proximal determinant of school difficulties. This would be consistent with research suggesting that lonely or otherwise psychologically dis-

tressed children become easy targets for peer harassment (e.g., Egan & Perry, 1998; Hodges, Malone, & Perry, 1997). We tested these alternative models with SEM procedures.

Chronic Victimization and School Adjustment

Our model testing involves examination of concurrent relations among the three constructs at a single time point. However, this approach ignores the chronicity of self-perceived victimization and how repeated harassment may influence psychological and school adjustment over time. Longitudinal studies reveal that peer victimization predicts depression, loneliness, and social withdrawal anywhere from several months to several years later (Boivin, Hymel, & Bukowski, 1995; Boulton & Smith, 1994; Hawker & Boulton, 1997; Kochenderfer & Ladd, 1996a, 1996b; Matsui, Kakuyama, Tsuzuki, & Onglatco, 1996; Olweus, 1994; Slee, 1995). For example, Kochenderfer and Ladd (1996a) examined loneliness and victim status among kindergartners over time. They compared children who were victimized in the fall only, in the spring only, and in both the fall and spring. Children who were victimized at the fall assessment only felt just as lonely in the spring (when no longer victimized) as they did in the fall. Those students who emerged as new victims by spring reported stronger loneliness at the spring assessment than at the earlier assessment. Furthermore, the chronically victimized group experienced an increase in loneliness from fall to spring. These findings suggest that victimization not only elevates concurrent negative feelings, but that earlier victim status has carryover effects, and that chronic victimization magnifies negative feelings.

To explore the effects of the chronicity of peer harassment, we also conducted short-term longitudinal analyses. Specifically, for a subset of the participants, data gathered 1 year earlier (Time 1; T1) were available on self-perceived peer harassment, loneliness, and self-esteem. This allowed us to create stable and unstable victim groups analogous to those studied by Kochenderfer and Ladd (1996a). We then examined the effects of changes in self-perceptions of peer harassment on Time 2 (T2) adjustment and school functioning. We were particularly interested in the unstable groups (i.e., those who changed their perceptions of victimization between the first and the second year). If the negative effects of perceiving oneself as a victim persisted even when youngsters no longer viewed themselves as harassed, this would provide more compelling evidence for the long-term risks associated with peer harassment in school.

Most of the research that guided our thinking about the relations between peer harassment and adjustment has been conducted with elementary school-age students. However, as students transition to middle school, the implications of peer harassment may change. Given adolescents' heightened concerns about peer approval, perceptions of harassment may leave them particularly vulnerable to adjustment difficulties (Parkhurst & Asher, 1992). At the same time, academic problems may be exacerbated among adolescent victims because the structure of middle school provides more opportunities to avoid school (e.g., ditching classes). Because little is known about the effects of peer harassment on early adolescents, the present studies were conducted with a sample of middle school students.

In summary, two sets of analyses were conducted. The purpose of the first set of analyses was to test a conceptual model proposing

that the effect of peer harassment on school outcomes is mediated by poor psychological adjustment. In addition, descriptive data were collected on the types of harassment incidents that middle school youth experience. We used a short-term longitudinal design to conduct the second set of analyses, which examined how the stability and instability of self-perceived peer harassment affected changes in psychological and school adjustment across a 1-year time span.

Concurrent Analyses

Method

Participants

The 243 participants (109 boys and 134 girls) in this study were seventh and eighth graders from a large public middle school in Los Angeles, California. The students ranged in age from 12 to 15 years. According to their self-reported ethnic classification, the sample was 23% Chicano or Latino, 18% African American, 16% Middle Eastern (mainly Persian), 13% European American, 12% Asian American, and 11% multiracial or of other ethnicities. Seven percent of students did not provide information on their ethnicity.

Procedure

Students took home letters and consent forms that explained the study to their parents. In each classroom, students were encouraged to return their consent forms, which required a parent's signature either allowing or not allowing his or her child to participate. A relatively low response rate of about 60% was due mainly to unreturned parental consent forms. Only 1% of returned consent forms indicated that parents did not wish their child to participate in the study. Students who received parental consent, and who signed an assent form agreeing to participate, were given a questionnaire that included the five measures described later. Trained researchers, working in pairs (a faculty member or advanced graduate student accompanied by an undergraduate student), administered the questionnaires to students during their homeroom period. Because of the ethnic diversity of the student population, efforts were made to have an ethnically diverse team of researchers; that is, at least one member of each research pair was either African American, Asian American, or Chicano/Latino.

To maximize confidentiality, students were asked to use books or folders to create a private space between them and their fellow classmates. For each measure, one of the researchers explained the response scale, completed a practice item with the students, and read the first few items of the measure out loud. The students were then allowed to complete the rest of the measure on their own, while the researchers circulated to answer individual questions. Students were asked to stop at the end of each page and wait for further instructions from the researchers. The questionnaire contained two indicators of harassment and three measures of psychological adjustment.

All school record data were collected 3 weeks after the school year ended. By that point, some of the records had been transferred to other schools, resulting in missing school adjustment data for 22 students.

Measures of Self-Perceived Peer Harassment

Recollections of harassment incidents. A scale assessing past harassment experiences was developed for this study. Nine items depicting various forms of peer intimidation (e.g., name calling, social exclusion, threats, physical aggression) were included. The items were based on a study of open-ended descriptions of peer harassment incidents provided by sixth-grade middle school students (Nishina & Juvonen, 1998). For each item, children responded on a 4-point scale (0 = *has not happened this*

year and 3 = a couple times this week). A sum of the nine items was calculated. Higher scores on this scale reflect experiencing more recent and frequent harassment incidents. This scale had good internal consistency (Cronbach's $\alpha = .79$).

Subjective feelings of victimization. Four items from the Peer Victimization Scale (PVS; Neary & Joseph, 1994) were used to assess subjective feelings of victimization. The scale was developed to reduce social desirability effects by adopting a response format similar to the one used in the Self-Perception Profile for Children (Harter, 1987). Students are presented with two choices and asked to determine which type of person is most like them (e.g., "Some kids are often picked on by other kids" but "Other kids are not picked on by other kids"). After respondents have decided which type of person better describes them, they are instructed to rate whether the description is *somewhat true for me* or *really true for me*. This procedure creates a 4-point scale. A mean of the four items was computed, with higher scores indicating stronger feelings of victimization. The PVS has been found to be reliable and valid (see Callaghan & Joseph, 1995). The four items used in the present study (i.e., "getting picked on," "called bad names," "laughed at," "hit and pushed around") had good internal consistency (Cronbach's $\alpha = .82$).

Measures of Psychological Adjustment

Self-worth. A six-item subscale from Harter's (1987) Self-Perception Profile for Children was used to assess global self-worth. Students respond to two items, choosing which of the alternatives is most like them (e.g., "Some kids are often unhappy with themselves" but "Other kids are pretty pleased with themselves"). Similar to the PVS, after students choose the alternative that is more like them, they rate whether the depiction is *somewhat true for me* or *really true for me*. A mean of these six items was computed, with higher scores indicating higher levels of self-worth. The scale had good internal consistency (Cronbach's $\alpha = .84$) for the current sample.

Loneliness. Asher and Wheeler's (1985) loneliness scale contains 16 items. Items on the scale examine feelings of loneliness at school (e.g., "I have nobody to talk to in class"). For each item, the student indicates on a 5-point scale how true the statement is for him or her (1 = *that's not true at all for me* and 5 = *that's always true for me*). A mean score was calculated, with higher scores indicating more loneliness at school. Slight modifications were made to the scale to make it more age appropriate. For example, "I don't have anyone to play with" was changed to "I don't have anyone to hang out with." The reliability of the scale was high (Cronbach's $\alpha = .86$).

Depressive symptoms. Depressive symptomatology was measured with the Children's Depression Inventory (CDI; Kovacs, 1985). Students are presented with three sentences that describe how they might feel (e.g., "I do most things ok," "I do many things wrong," and "I do everything wrong") and are asked to indicate which of the three sentences best describes how they have been feeling during the past two weeks. Approximately 50% of the items list the sentences in increasing severity, whereas the others list the sentences in decreasing severity. We used 26 of the 27 items from the scale (the suicidal ideation item was omitted). The sum of the 26 items was computed for each respondent. Because CDI scores are clinically meaningful, the sum was prorated for the missing item. Thus, the possible scores range from 0 to 54, with higher scores indicating more depressive symptomatology. The internal consistency for the 26 items was high (Cronbach's $\alpha = .87$).

Measures of School Adjustment

To test the proposed mediational model, we used two indicators of school adjustment: GPA and absenteeism. On the basis of the spring report cards, GPAs and number of class hours absent from school during the semester of data collection were calculated. GPAs were computed by

averaging students' grades across their classes; scores were based on a 4-point scale, with As, Bs, Cs, Ds, and Fs worth 4, 3, 2, 1, and 0 points, respectively. Absenteeism was measured by summing the number of class hours missed during the term.

In sum, self-perception of peer harassment was measured by recollections of past harassment incidents and subjective feelings of being victimized. Psychological adjustment was assessed by using students' reports of general self-worth, loneliness at school, and depressive symptomatology. School adjustment was measured using students' semester GPA and the number of class hours missed during that term.

Results

Preliminary analyses of the data revealed no statistically significant ($ps > .01$) ethnicity main effects or Sex \times Ethnicity interactions for the predictor variables. The only significant gender differences pertain to subjective perceptions of victimization that are consistent with prior research (e.g., Olweus, 1993), with boys feeling more victimized than girls (similar difference was obtained for harassment incidents, $p < .05$). For subsequent analyses, in the absence of other differences, the data are combined across the ratings of all respondents.

The results presented here are divided into two sections. The first section provides a brief description of the student reports of specific harassment experiences. The second section presents the results of the SEM analyses, which tested the proposed as well as alternative models.

Harassment Incidents

Students were asked to rate whether they had experienced different types of harassment incidents during the school year. As noted previously, this measure was developed on the basis of sixth-graders' responses to open-ended queries about the types of victimization events they experience and witness on a daily basis in middle school (Nishina & Juvonen, 1998). The response options were *has not happened this year* (0), *a couple of times this year* (1), *a couple times this month* (2), and *a couple of times this week* (3). Table 1 shows the frequencies for each response category, with responses for *this month* and *this week* combined.

Table 1
Percentage of Seventh- and Eighth-Grade Students ($N = 244$)
Reporting the Frequency of Personally Experienced
Harassment Incidents in School

Harassment type	Frequency		
	None	Couple	Few
Nasty rumors	23	38	19
Name calling	34	31	17
Public ridicule and humiliation	34	32	17
Property damage and theft	37	39	8
Threatening	46	25	11
Physical force	49	24	10
Exclusion from a group	56	21	5
Inappropriate touching	59	11	12
Coersion	67	11	5

Note. None = has not happened this year; Couple = a couple of times this year; Few = a few times within the past month.

Of the nine incidents, the most common and most recent experiences were nasty rumors (only 23% reported such insults not happening to them during the school year). Name calling and public ridicule (e.g., "made fun of or humiliated in front of others") were also frequently reported. Thus, the most typical incidents involved either indirect or direct psychological intimidation. The least reported incidents were coercion ("made you do something you didn't want to do"), inappropriate touching, and explicit exclusion ("prevented you from being part of a group"). Because of a lack of time, of the 244 students in the sample, one entire class and a few students from other classes ($n = 41$) did not respond to this measure. There were additional unsystematically missing data ($ns = 2-10$) on specific items.

Gender differences were examined by treating the scale scores as continuous variables. T tests revealed significant differences between boys and girls for physical force, $t(199) = 3.67, p < .001$, threats, $t(199) = 2.67, p < .01$, and property damage or theft, $t(200) = 2.34, p < .05$. Boys were more likely than girls to report these three types of harassment. Composite scores were used in subsequent analyses to reflect the frequency of self-reported incidents of harassment summed across specific types of harassment.

Testing the Proposed Model

Structural equation modeling with the EQS (version 5.7) statistical program (Bentler, 1995) was used to assess the fit of the model predicting that psychological adjustment mediates the relation between peer harassment and school functioning. Because this version of EQS is not equipped to deal with missing data, all cases with missing data (about two thirds of the missing data were for harassment incidents and one third was for missing school record data, as described previously) were deleted prior to the analyses. This procedure left 179 cases for which all data were complete. The students with missing data did not differ from the students with complete data ($p < .01$) on any of the variables included in the model.

The correlations among the measured variables are presented in Table 2. The two peer harassment indices (subjective feelings of victimization and the sum of the recalled harassment incidents) were strongly correlated ($r = .60, p < .001$). The magnitude of the intercorrelations between the psychological adjustment indices (depressive symptomatology, loneliness at school, and self-worth) ranged from $r = .47$ to $r = .69$ ($ps < .001$). In addition, the two measures of school adjustment (GPA and absenteeism) were negatively correlated ($r = -.53, p < .001$), demonstrating that higher absenteeism is related to poorer grades. The two harassment indices were moderately correlated with the psychological adjustment indices and weakly associated with the two school adjustment indices.¹

¹ Correlations among the variables also were examined separately within gender. Of the 21 correlations presented in Table 2, only two differed significantly as a function of gender. The correlation between recollections of harassment incidents and absenteeism ($z = 2.32, p < .05$) and the correlation between subjective feelings and victimization and absenteeism ($z = 2.32, p < .05$) were stronger for boys than for girls. Because there were so few differences between boys and girls in the relation between variables, gender was not examined in the main analyses.

Table 2
Intercorrelations Between Measured Variables and Means and Standard Deviations
of Measured Variables ($N = 178$)

Variable	1	2	3	4	5	6	7
1. Perceptions of victimization	—						
2. Harassment incidents	.60***	—					
3. Self-worth	-.35***	-.36***	—				
4. Depression	.31***	.42***	-.69***	—			
5. Loneliness	.38***	.35***	-.42***	.47***	—		
6. GPA	-.26***	-.23**	.23***	-.36***	-.08	—	
7. Absenteeism	.16*	.18**	-.14	.20*	.14	-.53***	—
<i>M</i>	2.13	6.40	3.14	9.62	1.77	2.59	19.28
<i>SD</i>	0.86	4.90	0.74	7.37	0.54	0.86	20.64

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

Structural equation modeling assumes that the data have a multivariate normal distribution (West, Finch, & Curran, 1995). Although the skewness and kurtosis for most of the measures were not high, the univariate kurtosis for absenteeism was large (3.2). This high kurtosis suggests that the absenteeism variable was not normally distributed. Furthermore, the multivariate kurtosis for the sample was not small (Mardia's normalized coefficient = 10.20), which indicates that the assumption of normality was violated. Consequently, the maximum likelihood (robust) method of estimation was used for the analyses. This method of estimation has been shown to perform well under violations of normality (Chou & Bentler, 1995).

Four types of model evaluation were used to determine whether the model had a good fit: the chi-square statistic, the comparative fit index, the standardized residuals of the measured variables in the model, and the root mean square error of approximation (RMSEA). The chi-square test is the most commonly used measure of model fit and assesses the model's "badness of fit." That is, a high chi-square value with a significant p value suggests a poor fit of the model to the data. The comparative fit index (CFI; Bentler, 1990) assesses how much improvement the proposed model makes, relative to the model in which the variables are completely uncorrelated. The CFI ranges from 0 to 1, with values greater than .95 indicating good fit. The third type of model evaluation examines the standardized residuals resulting from fitting the model to the data. These residuals (ranging from -1 to 1) provide a measure of the discrepancy between the observed correlations and the correlations predicted by the model (Hu & Bentler, 1995). A large discrepancy (e.g., $\pm .4$) suggests that the model does not explain the data well. Both the largest standardized residual and the average absolute standardized residual were used to evaluate the model. The RMSEA, in turn, is a measure of fit that takes into consideration the model's complexity. McCallum, Browne, & Sugawara (1996) suggest that an RMSEA of 0.05 or less indicates a reasonable model fit.

In addition to these four methods of model evaluation, two additional indices of model fit are presented because the data violated the assumption of a multivariate normal distribution. The SCALED chi-square (Satorra & Bentler, 1994) and the Robust CFI are analogous to the chi-square statistic and CFI, but these particular indices are more resilient to violations of multivariate normality.

In the tested model, paths to subjective perceptions of victimization, self-worth, and GPA from their respective factors were fixed at 1.00 and were not estimated. Fixing one indicator for each latent variable allows the model to be properly identified. The parameters of interest that were left free to be estimated were the remaining factor loadings of the measured variables onto their latent variables, regression coefficients, and the less theoretically meaningful independent factor variances, disturbance variances, and error variances. As described earlier, psychological adjustment was hypothesized to mediate the relation between self-perceived peer harassment and school functioning. The results suggest that the proposed model had a relatively good fit, $\chi^2(12, N = 178) = 29.9, p < .004, CFI = .95, RMSEA = .09$ (90% confidence interval = .049 to .132); SCALED $\chi^2 = 23.4, p < .03$, Robust CFI = .96. For this model, the largest standardized residual of .16 and the average absolute standardized residual of .03 also indicated acceptable fit.

The Lagrange Multiplier (LM) Test revealed one unanticipated correlated error parameter between loneliness at school and GPA. The correlation between the two error variances (each composed of measurement error and unique variance) suggests that there is something unique about these two variables that is not accounted for in their respective factors. It could be that some children who are lonely cope with their loneliness by working particularly hard at school (cf. Luthar & McMahon, 1996). Given that there is a reasonable post hoc explanation for this correlated error term and that by including it in the model, the fit significantly improved (chi-square difference test for nested models, $\chi^2(1) = 7.9, p < .05$), we presume that this model best characterizes the relations among the constructs and variables in our model. The fit indices of this final model with the correlated error (see Figure 1) were $\chi^2(11, N = 178) = 22.0, p < .03, CFI = .97, RMSEA = .08$ (90% confidence interval = .03 to .12); SCALED $\chi^2 = 16.9, p > .10$, Robust CFI = .98. The largest standardized residual was .15, and the average absolute standardized residual was .03, indicating that the correlations in the sample were not substantially different from those postulated by the model.

Robust standardized parameter estimates for the modified model are shown in Figure 1. Consistent with the hypothesized model, standardized regression coefficients between self-perceived peer harassment and psychological adjustment ($\beta = -.59$), and psychological adjustment and school functioning ($\beta = .40$) were

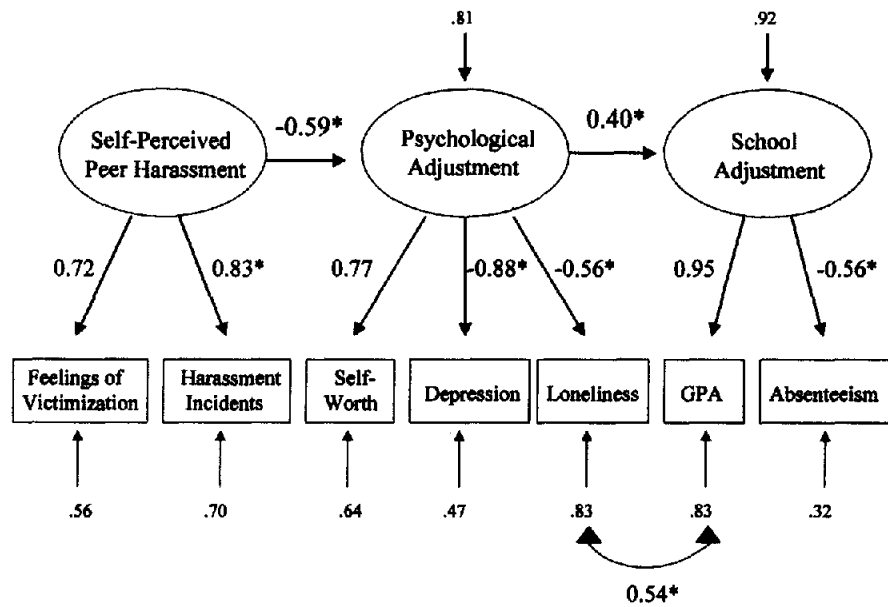


Figure 1. Model with standardized factor loadings, path coefficients, error terms, and a correlated error.
* $p < .05$.

significant ($ps < .05$) and in the expected direction, that is, higher self-perceived harassment predicted poorer psychological adjustment, which in turn predicted poorer school outcomes.

Mediation and Alternative Models

We used two procedures to test whether the relation between self-perceived harassment and school adjustment is indeed mediated by psychological adjustment. One procedure involved the test for an indirect effect (provided by EQS). This test (for the indirect effect between self-perceived harassment and school adjustment) failed to support mediation ($z = -0.02$, $p > .05$). The second procedure involved testing a model in which there is a direct path between self-perceived harassment and school adjustment, but where the two paths between self-perceived harassment and psychological adjustment and between psychological adjustment and school adjustment (i.e., portraying the indirect effect) were simultaneously dropped. This procedure allowed us to examine whether these two paths are needed in the model. This model yielded a poor fit, $\chi^2(12, N = 178) = 61.41$, $p < .00001$. The chi-square difference test for nested models between this model and the one presented in Figure 1 showed that our model had a significantly superior fit than the one without the two paths, $\chi^2(2) = 46.31$, $p < .01$. Furthermore, the LM test suggested that by adding the two paths, the fit of the model could be significantly improved. Thus, the nonsignificant test statistic of the indirect effect did not support mediation, whereas the test of nested models, which either included or did not include paths suggesting the indirect effect, supported mediation. In light of this conflicting evidence, we conclude that our data support the proposed model. However, a replication with a larger sample size is needed to further test the mediational nature of the relations depicted in Figure 1.

We also examined three alternative models. The first one depicted a partially mediated model in which peer harassment has

direct as well as indirect effects on school adjustment. Adding the direct path from peer harassment to school adjustment produced a statistically nonsignificant ($p > .05$) beta coefficient. Moreover, the chi-square difference test for nested models revealed that the fit of this alternative model was not significantly improved by adding this path, $\chi^2(1) = 3.00$, $p > .05$. Thus, the model depicted in Figure 1 provides a more parsimonious description of the relations between self-perceived harassment, psychological adjustment, and school functioning than does the model with an added direct path.

In addition, we tested two other alternative models that involve a change in the temporal relations between the predictor variable and the mediator. These models allowed us to examine whether psychological problems predict self-perceived peer harassment and whether perceiving oneself as harassed is a more proximal determinant of school difficulties. The test of this alternative model (psychological adjustment \rightarrow peer harassment \rightarrow school adjustment) yielded a relatively strong fit, $\chi^2(12, N = 178) = 32.5$, $p = .001$, CFI = .95, RMSEA = .10 (90% confidence interval = .06 to .14); SCALED $\chi^2 = 27.6$, $p = .006$, Robust CFI = .95. Also, a partially mediated model with the same temporal sequence of variables was tested by adding a direct path from psychological adjustment to school adjustment. Although this model had fewer degrees of freedom than the previous one, the fit indices did not yield a much stronger fit, $\chi^2(11, N = 178) = 27.1$, $p = .004$, CFI = .96, RMSEA = .09 (90% confidence interval = .05 to .13); SCALED $\chi^2 = 22.1$, $p = .02$, Robust CFI = .96. Furthermore, in this model, the path from peer harassment to school adjustment was no longer significant ($p > .05$).

Compared with these last two models, the model depicted in Figure 1 had the best fit based on the comparison of the Akaike Information Criterion (AIC) values. The AIC value takes into consideration both the goodness of fit and the number of parameters estimated, with lower scores indicating better fit. The AIC for

the model presented in Figure 1 was 0.005, whereas the AIC value was 8.52 for the first temporally modified model and 5.08 for the second (partially mediated) model. In summary, the analyses of concurrent data suggest that self-perceived peer harassment predicts psychological adjustment, and psychological adjustment in turn predicts school outcomes.

Longitudinal Analyses

Although concurrent data like those just presented are important for understanding the correlates of self-perceived peer harassment at any one time point, it is also crucial to determine the effects of such self-views over time. Thus, the goal of the longitudinal analyses was to examine how the stability of peer harassment across 1 school year influences psychological and school adjustment. In previous studies, it has been shown that stable victim status is especially detrimental to the psychological well-being of youth (e.g., Olweus, 1993). Students who continue to perceive themselves as harassed may also be the students who display the most severe psychological and school adjustment difficulties over time.

On the basis of data from two time points assessing students' subjective feelings of victimization, four groups were identified (cf. Kochenderfer & Ladd, 1996a): stable victims, stable nonvictims, and two groups of students whose perceptions of harassment changed from one year to the next. On the basis of the findings of the earlier analyses, victim status was expected to affect concurrent (T2) psychological and school adjustment, but it was unclear whether earlier (T1) victim status would have long-term effects.

Method

We had longitudinal data on 106 students (44 boys and 62 girls) who were included in the analyses of concurrent data presented earlier. A year prior to the data collection on concurrent correlates, these students had participated in a larger study ($n = 410$) on peer victimization when they were in the sixth or seventh grade (Graham & Juvonen, 1998a). The sample with the longitudinal data did not differ significantly from the original sample on variables included in the analyses ($ps > .01$). Consistent with the previously presented sample, the longitudinal sample was ethnically diverse: 25% African American, 21% Chicano or Latino, 18% Middle Eastern (mainly Persian), 12% European American, 9% Asian American, and 15% of mainly mixed ethnic backgrounds.

The permission and data collection procedures were the same as those described earlier. T1 measures included in the present analyses were subjective feelings of victimization, loneliness, and self-worth. In addition to the T2 variables described in the context of the concurrent analyses, an additional indicator of school adjustment was included in the last set of analyses. Teacher ratings of student cooperativeness, as recorded on their report cards, were used as a proxy for teacher-perceived social adjustment in the classroom. We presumed that negative interpersonal experiences such as peer harassment would have a stronger effect on this school adjustment variable than on the more objective behavioral measures of GPA and absenteeism. Each instructor rated the cooperativeness of students on a 3-point scale (1 = *unsatisfactory*, 2 = *satisfactory*, 3 = *excellent*). A mean of the ratings across academic subject areas was computed to reflect an overall index of cooperativeness for each student. Teacher ratings of cooperativeness were not included in the concurrent analyses because our goal was to test whether peer harassment is associated with school problems measured by student variables rather than social adjustment difficulties reported by other informants.

Results

The preliminary analyses showed that there were no statistically significant ($p < .01$) ethnic differences or Ethnicity \times Sex interaction effects for the variables included in the longitudinal analyses. The only gender differences in the predictor variables pertained to subjective feelings of victimization (boys scoring higher on the measure than girls).

Correlational analyses were first conducted to assess the stability of the three self-report measures (feelings of victimization, self-worth, and loneliness) between the spring of students' 6th- or 7th-grade year and the spring of their 7th- or 8th-grade year (T1 and T2, respectively). The correlational analyses were followed by planned contrasts designed to test the effects of duration and timing of harassment by comparing the four victim groups (see the *Stability and Change Over the 1-Year Period* section) on the psychological and school adjustment measures at T2. The final analyses focused on the effects of changes in subjective feelings of victimization, self-worth, and loneliness on school adjustment at T2.

Stability and Change Over the 1-Year Period

Correlation coefficients across the 1-year period were $r = .37$ for subjective perceptions of victimization, $r = .47$ for self-reported loneliness, and $r = .35$ for general self-worth (all $ps < .001$). Thus, each measure was moderately stable across the 1-year time span, suggesting that there is both continuity and change in students' self-views.

To assess the effects of the duration and timing of self-perceived victimization on subsequent psychological adjustment and school functioning, four victim groups were identified by using a mean split on the measure assessing subjective feelings of victimization ($M = 2.01$ and 2.00 on a 4-point scale, at T1 and T2, respectively; $Mdn = 1.74$ at both time points). Stable nonvictims ($n = 32$) scored below the mean at both years, old victims ($n = 25$) scored at or above the mean the 1st year but below the mean the 2nd year, new victims ($n = 21$) scored below the mean the 1st year but at or above the mean the 2nd year, and stable victims ($n = 28$) scored at or above the mean on the self-report scale at both time points.

Three sets of a priori contrasts were used to assess chronicity and timing of victimization as well as possible recovery effects. For these multiple group comparisons, we used a priori contrasts instead of post hoc analyses because they control for Type I error while maximizing statistical power (Hancock & Klockars, 1996).

First, we compared the two unstable victim groups (i.e., new and old victims) with the stable victims (Contrasts 1 and 2). We predicted that if the psychological adjustment problems at T2 were greater for stable victims than for the two unstable victim groups, then there would be support for chronicity effects. If, on the other hand, there were no differences in T2 psychological adjustment between the new and the stable victims (both of whom perceived to be harassed at T2), then there would be support for concurrent timing effects. To further examine the timing effects, the third contrast involved the comparison of old victims to stable nonvictims (i.e., the two groups who did not perceive themselves to be harassed at T2). We predicted that if these two groups did not differ from one another in psychological adjustment at T2, the finding would support the concurrent timing effect as well as

Table 3
Comparisons of Victim Groups on Time 2 (T2) Psychological Adjustment

T2 psychological adjustment	Stable nonvictims <i>n</i> = 32	Old victims <i>n</i> = 25	New victims <i>n</i> = 21	Stable victims <i>n</i> = 28	Contrast 1, <i>t</i> (102)	Contrast 2, <i>t</i> (102)	Contrast 3, <i>t</i> (102)
Loneliness	25.00 (8.48)	25.04 (8.00)	29.86 (8.28)	30.61 (9.03)	<i>ns</i>	2.38*	<i>ns</i>
Self-worth	3.34 (0.63)	3.34 (0.68)	2.64 (0.87)	3.00 (0.72)	<i>ns</i>	2.19*	<i>ns</i>
Depression	7.66 (6.22)	7.23 (6.63)	12.06 (7.59)	9.98 (7.00)	<i>ns</i>	<i>ns</i>	<i>ns</i>

Note. Standard deviations are presented in parentheses. Contrast 1 = new victims versus stable victims; Contrast 2 = old victims versus stable victims; Contrast 3 = old victims versus nonvictims.

* $p < .05$.

suggest that former victims can recover from their harassment-related psychological problems.

As shown in Table 3, the new victims did not differ ($p < .05$) from the stable victims on any of the three T2 psychological measures (see Table 3, Contrast 1). However, as shown by Table 3 (Contrast 2), the stable victims were more lonely, $t(102) = 2.38$, $p < .05$, and had lower self-worth, $t(102) = 2.19$, $p < .05$, than did the old victims. Finally, the old victims did not differ from the stable nonvictims on any T2 psychological measures, as shown in Table 3. Thus, these findings indeed support the concurrent timing effects and also provide evidence for recovery effects. Students who perceived themselves as harassed a year earlier but not presently showed no psychological adjustment difficulties at the present time when compared with those who never viewed themselves as victimized. There were no group differences in the school outcomes.

In sum, the planned contrasts indicated that it was the timing of harassment, rather than chronicity, that had negative effects on the psychological well-being of middle school students over a 1-year period. Furthermore, on the basis of two time-point assessments, there was evidence for recovery: At T2, youth who previously perceived themselves as victimized were phenotypically like their peers who had not viewed themselves as victims at either time point.

Changes in Victimization, Self-Worth, and Loneliness as Predictors of School Adjustment

To take into consideration the dynamic nature of self-perceived peer harassment and its psychological correlates, the final set of analyses focused on the effects of changes in harassment and psychological adjustment on T2 school functioning. Specifically, we examined the *combined* effects of changes in subjective feelings of victimization, self-worth, and loneliness on school adjustment. Considering our conceptual model and the findings regarding the changes in self-perceived victimization presented earlier, we expected that changes in subjective feelings of victimization, along with changes in psychological adjustment difficulties, would predict T2 school outcomes. Separate hierarchical regression analyses were conducted to predict GPA, absenteeism, and teacher-rated cooperativeness (cf. social adjustment) at T2.

Because our goal was to examine the change in subjective feelings of victimization, self-worth, and loneliness, unstandardized residual scores that indicate deviation from the expected score

were used to depict the change (cf. Boivin et al., 1995). For each analysis, the gender of the respondent was entered at the first step to covary out any gender differences before considering the contributions of the main predictors. At the second step, T1 scores were entered as a block to control for initial levels of victimization, self-worth, and loneliness. The residual scores for self-worth, loneliness, and victimization were entered simultaneously at the third step. The results of the three regression analyses are shown in Table 4.

For GPA, the regression equation explained 13% of the variance in students' grades at T2. Most of this variance was accounted for by the residual scores entered at Step 3: R^2 change = .10, $p < .05$. A similar regression analysis accounted for 9% of the variance in T2 absenteeism ($p < .05$), with all of the variance accounted for by the change scores. For teacher-rated cooperativeness, 17% of the variance was accounted for, 11% of which was due to the change scores, $p < .05$. In particular, increased perceptions of victimization predicted lower teacher ratings of cooperativeness ($\beta = -.27$, $p = .01$).

In sum, changes in subjective feelings of victimization, self-worth, and loneliness across the 1-year period together predicted all three school adjustment indicators. Although the amount of variance accounted for was modest for GPA and absenteeism, the findings underscore the fact that peer harassment, accompanied by psychological adjustment difficulties, does affect the school functioning of middle school students.

General Discussion

The two sets of analyses reported in this article offer new insights into self-perceived peer harassment and its relation to both psychological and school adjustment. The analyses of the concurrent data reveal that perceiving oneself as a victim predicts poor psychological adjustment, which in turn compromises school outcomes. Previous research has not always found consistent relations between peer harassment and school outcomes, perhaps because only direct linkages have been examined (e.g., Kochenderfer & Ladd, 1996b). The SEM approach adopted in the present study is particularly useful for assessing more complex sets of relations. Furthermore, SEM analyses are ideal because the tested factors, composed of multiple indicators, are more likely to be free of measurement error and to capture the theoretical constructs of interest.

Table 4
Hierarchical Regressions Predicting Time 2 (T2) School Adjustment

Variable	T2 variable					
	GPA		Absenteeism		Cooperation	
	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.00		.00		.04*	
Gender		-.02		.03		.15
Step 2	.03		.00		.02	
T1 victim status		.05		-.04		.09
T1 self-worth		.13		-.06		-.04
T1 loneliness		-.03		-.03		-.08
Step 3	.10*		.09*		.11*	
Change in self-perceived victimization		-.19		.12		-.27**
Change in self-worth		.21		-.10		.10
Change in loneliness		.02		.18		-.06
Total R^2	.13		.09		.17*	

Note. β = standardized regression coefficients at the final step of analysis. T1 = Time 1.
 * $p < .05$. ** $p < .01$.

In addition to testing a conceptual model based on concurrent assessments, we had longitudinal data on a subsample of our participants. The longitudinal findings regarding the effects of changes in self-perceived victimization across a 1-year interval were consistent with the concurrent data. According to our conceptual model, self-perceived peer harassment should be associated with psychological adjustment but should not necessarily directly predict school functioning. Indeed, our analyses show that changes in subjective feelings of victimization across the 1-year period predicted T2 psychological adjustment but not T2 school outcomes. Furthermore, the last set of regression analyses reveal that the combined changes in self-perceived victimization and its psychological correlates predicted GPA and absenteeism in addition to teacher-rated cooperativeness at T2.

Although we tested a model in which peer harassment is conceptualized as an antecedent to psychological adjustment difficulties and school problems, we recognize that these processes are cyclical and that, at times, school problems may be an antecedent to later psychological maladjustment. In other words, poor grades or high rates of absenteeism may increase feelings of loneliness, low self-worth, and depression. Such an effect may in turn place youngsters at risk for peer harassment (Egan & Perry, 1998). Given the timing of our data collection procedures (i.e., harassment and psychological adjustment data were collected in the middle of the T2 school year, and school outcome data were gathered at the end of the school year), we could not test this school difficulty \rightarrow adjustment \rightarrow harassment sequence. SEM analyses on longitudinal data with larger sample sizes than ours will provide the ultimate test for different models.

Peer Harassment and Psychological Adjustment

The model supported by the present data raises the larger question of why self-perceived peer harassment increases vulnerability to psychological adjustment difficulties. To address this question, it will be important to expand our conceptual model and to identify the processes or mechanisms that intervene between the onset of a harassment incident and psychological maladjustment.

We believe that one possible mechanism relates to how victims construe the reasons for their plight. For example, repeated harassment or the perception that one has been singled out by others may lead a youngster to ask, "Why me?" Some children might answer this question by blaming themselves for their peer relationship problems, as when they conclude, for example, that "I'm the type of kid who deserves to be picked on." Self-blame can then lead to a variety of negative outcomes, including depression, low self-esteem, and withdrawal (e.g., Nolen-Hoeksema, Girgus, & Seligman, 1992).

Consistent with this analysis, we documented in a prior study that victimized early adolescents who blamed their harassment on their character (an internal, stable, and uncontrollable cause) felt particularly lonely, anxious, and bad about themselves (Graham & Juvonen, 1998a). Furthermore, attributions mediated the relation between victim status and psychological maladjustment such that only characterological self-blaming victims displayed adjustment difficulties. Thus, a more expanded mediational model might be represented as harassment \rightarrow self-blaming attributions \rightarrow psychological maladjustment \rightarrow school difficulties.

Processes other than (or in addition to) attributional thinking surely influence how children cope with peer harassment. Future research will need to examine a more complete temporal sequence and the pathways by which perceiving oneself as a victim undermines psychological adjustment. Additional data are also needed to further test the mediational nature of the present model.

Continuous and Discontinuous Pathways

Although our data pertained to only two time points with a relatively small sample, the analyses reveal both continuity and discontinuity in the pathways from peer victimization to subsequent adjustment. On the basis of the present findings, we propose that there are (at least) four critical pathways. Two of them portray stable trajectories: youth who never perceive themselves as victims and those who do so consistently across time. The other two pathways depict discontinuous trajectories: those who subse-

quently come to see themselves as victims and those who no longer see themselves as victimized by their peers.

The comparisons among groups with continuous and discontinuous pathways (cf. Compas, Hinden, & Gerhardt, 1995) can provide important information, as suggested by the present data. The finding that there is discontinuity in self-perceived peer harassment and its psychological correlates is particularly important, inasmuch as most studies on peer harassment focus only on persistently victimized children and presume that chronic harassment has cumulative effects over time (e.g., Olweus, 1993). Furthermore, if the current status predicts adjustment difficulties more so than the stability or chronicity of harassment, researchers need to further study the two discontinuous trajectories. Consider, for example, youth who come to see themselves as victims. Some youngsters may experience acute but relatively isolated encounters with hostile peers that have immediate impact but that dissipate over time. Situational factors such as being new to a school, changing classrooms, or joining a new team may temporarily exacerbate children's vulnerability to peer harassment. When they become integrated into social networks of their new environment, such youth are no longer "easy marks." Thus, the nature and consequences of peer victimization may be more situational or context-limited than cumulative.

The opposite type of discontinuous trajectory is equally (if not even more) important to consider. Why is it that some young adolescents stop viewing themselves as victims? Do they get used to peer intimidation and gain a higher threshold for harassment? Or do they change their behavioral response strategies so that they no longer get harassed by their schoolmates (see Kochenderfer & Ladd, 1997)? Although we concluded that the old victims in our study were phenotypically similar to stable nonvictims at T2, it is unknown whether there may be re-occurrences of harassment and its negative consequences over time. Longitudinal studies with more than two data points would allow researchers to examine whether the apparently recovered group would be more vulnerable to subsequent harassment than their peers who never perceived themselves as victims. Prospective studies across multiple time points and analysis strategies that can track growth and decline over time (e.g., Nishina & Juvonen, 1998) are clearly needed to provide insights into the dynamic nature of peer harassment and its effects.

Although we adopted the comparison of stable and unstable victim groups from the study conducted by Kochenderfer and Ladd (1996a), our findings with middle school youth differ from those they obtained with kindergartners. In contrast to the findings of Kochenderfer and Ladd, we found that (a) the stability of self-perceived harassment did not magnify poor adjustment, (b) concurrent feelings of victimization mattered the most, and (c) earlier feelings of victimization did not have any carryover effects. Whether these differences in results are developmental in nature or whether they can be attributed to differences in the time span studied (1 calendar year vs. 1 academic year from fall to spring) or differences in the stability in classroom compositions remains to be seen.

Both our concurrent and longitudinal analyses showed that the present mattered more to middle school students than their past. The loneliness and self-worth of these youth were only related to their concurrent perceptions of being a victim of peer harassment. Our time frame (1 calendar year) may have been too wide to

capture any carryover effects. However, it is also possible that a reasonable time frame for early adolescents is indeed quite short. Anecdotally, what matters most in middle school is what happened today, not what happened 2 days or a week ago (Nishina & Juvonen, 1998). This present-oriented focus can be quite adaptive. After all, rumination about negative events is associated with the severity of depression (see Nolen-Hoksema, 1999). Thus, the results of this study are not as bleak as initially suggested by the high reports of peer harassment (about 50% of the students). Adolescents may be blamed for being too focused on the present, yet that might be their strength when they have to deal with negative social experiences.

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