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Emotional Maltreatment From Parents, Verbal Peer Victimization, and Cognitive Vulnerability to Depression[1]

Brandon E. Gibb,[2,5] Lyn Y. Abramson,[3] and Lauren B. Alloy[4]

Although a number of studies have examined possible developmental antecedents of cognitive vulnerability to depression, most have focused on parental variables. In contrast, the current studies examined the relation between reports by college students of peer victimization during childhood and cognitive vulnerability to depression, as defined by hopelessness (L. Y. Abramson, G. I. Metalsky, & L. B. Alloy, 1989) and Beck's theories (A. T. Beck, 1967, 1987) of depression. Results from both studies supported the hypothesis that peer victimization contributes unique variance to the prediction of cognitive vulnerability beyond that accounted for by parent variables. The implications of these results for "third variable accounts" involving general parental factors (e.g., genetic transmission of cognitive vulnerability) of the relationship between peer victimization and cognitive vulnerability are discussed.

KEY WORDS: abuse; attributions; dysfunctional attitudes; depression.

Both the hopelessness theory (Abramson, Metalsky, & Alloy, 1989) and Beck's theory (Beck, 1967, 1987; Clark, Beck, & Alford, 1999) of depression include the hypothesis that individuals' characteristic ways of interpreting events in their lives (i.e., their cognitive styles) may contribute vulnerability to the development of symptoms and episodes of depression. Specifically, according to the hopelessness theory, individuals who tend to attribute negative events to stable and global causes, and who infer negative consequences and self-characteristics following the occurrence of negative life events are hypothesized to be vulnerable to developing a cognitively-mediated subtype of depression, hopelessness depression. Similarly, according to

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[2] Department of Psychology, Binghamton University (SUNY), Binghamton, New York.
[3] Department of Psychology, University of Wisconsin, Madison, Wisconsin.
[4] Department of Psychology, Temple University, Philadelphia, Pennsylvania.
[5] Correspondence should be directed to Brandon E. Gibb, Department of Psychology, Binghamton University (SUNY), P.O. Box 6000, Binghamton, New York 13902-6000; e-mail: bgibb@binghamton.edu.

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Beck's theory, the presence of dysfunctional beliefs, representing maladaptive self-schemata centering around themes of helplessness or unlovability, contribute vulnerability to the development of depression, particularly nonendogenous unipolar depression, in the face of negative life events.

A number of studies have supported the cross-sectional and predictive relations between negative cognitive styles and both symptoms and diagnoses of depression (for reviews, see Abramson et al., 2002; Abramson, Alloy, & Metalsky, 1995; Alloy et al., 1999; Clark et al., 1999; Haaga, Dyck, & Ernst, 1991; Joiner & Wagner, 1995; Peterson & Seligman, 1984). Of particular relevance to the current study are recent findings from the Temple–Wisconsin Cognitive Vulnerability to Depression (CVD) project (Alloy & Abramson, 1999). In the CVD project, college freshmen with no current Axis I diagnoses were selected for inclusion based on the presence versus absence of cognitive vulnerability to depression as specified by *both* the hopelessness theory and Beck's theory. Consistent with the predictions of both theories, students at high cognitive risk (HR) for depression were significantly more likely to have a history of Major Depressive Disorder (MDD), but not anxiety or substance use disorders, than were individuals at low cognitive risk (LR) for depression (Alloy et al., 2000). In addition, HR participants were more likely to experience both first onsets and recurrences of MDD than were LR participants across the first 2.5 years of the study's prospective follow-up period (Abramson et al., 1999; Alloy et al., 1999, 2004).

Given evidence that negative cognitive styles do, indeed, contribute vulnerability to the onset of depression, it becomes important to explore their developmental antecedents. Theorists within the depression literature (e.g., Beck, 1987; Clark et al., 1999; Rose & Abramson, 1992) have suggested that experiences in childhood may contribute to the development of negative cognitive styles. To date, studies examining this hypothesis have focused almost exclusively on the influence of parents (for reviews, see Garber & Flynn, 1998; Haines, Metalsky, Cardamone, & Joiner, 1999). These studies have suggested a link between children's negative cognitive styles and maternal history of depression (e.g., Abramson et al., 1998; Garber & Flynn, 2001; Jaenike et al., 1987), parenting styles characterized by low levels of acceptance/warmth and high levels of psychological control (e.g., Alloy et al., 2001; Garber & Flynn, 2001), parents' attributions and inferences for their children's negative life events (e.g., Alloy et al., 2001; Garber & Flynn, 2001; Turk & Bry, 1992) and, to a lesser extent, parents' own cognitive styles (e.g., Alloy et al., 2001; Seligman et al., 1984; however, see also Garber & Flynn, 2001; Kaslow, Rehm, Pollack, & Siegel, 1988; Oliver & Berger, 1992).

Despite the strengths of these studies, they also have two important limitations. First, they do not address the possible role of individuals other than one's parents in the development of negative cognitive styles. Second, it is difficult to determine whether the observed links between parent behavior and their offspring's negative cognitive styles are due to the parents' behavior specifically rather than to other factors (e.g., genetic influences or a negative family environment more generally). Thus, for example, it is difficult to determine whether the identified factors are really deleterious or whether they are third-factor variables whose relationship to cognitive styles is better explained by other familial influences. One way of reducing these

limitations is to examine, in a single study, the behavior of participants' parents as well as that of unrelated individuals (e.g., peers). If the association between certain experiences and cognitive styles is due to the harmful behavior specifically, then the behavior of peers should be significantly related to cognitive styles, even when the influence of parents is statistically controlled.

One candidate for this type of examination is maltreatment/victimization, which can include parent as well as peer perpetrators. To date, studies have suggested significant relations between histories of either childhood emotional or sexual, but not physical, maltreatment and individuals' cognitive styles (for a review, see Gibb, 2002). Although none of these studies have focused specifically on victimization from peers, research has suggested that peer victimization may have a strong influence on other forms of psychosocial maladjustment. For example, results from a recent meta-analysis suggest that verbal and physical victimization from peers is significantly related to levels of depression, anxiety, loneliness, and low self-esteem (Hawker & Boulton, 2000). Of particular interest, peer victimization was more strongly related to levels of depression than to any of the other outcomes. Studies have also supported the relation between peer rejection, a key component of verbal victimization, and depressive symptom levels (e.g., Dumas, Neese, Prinz, & Blechman, 1996; Patterson & Stoolmiller, 1991), and have suggested that the effect of peer rejection may be specific to depression as opposed to anxiety (Rudolph, Hammen, & Burge, 1994) or drug use disorders (Reinherz, Giaconia, Hauf, Wasserman, & Paradis, 2000). In addition to these cross-sectional findings, researchers also have found that experiences of peer rejection prospectively predict future levels of depressive symptoms, as well as depressive cognitions such as low self-esteem (for reviews, see Boivin, Hymel, & Hodges, 2001; McDougall, Hymel, Vaillancourt, & Mercer, 2001; Rudolph & Asher, 2000). No study of which we are aware, however, has examined the relation between verbal peer victimization and negative cognitive styles.

Previous studies from our laboratory have supported the hypothesis that childhood maltreatment, particularly childhood emotional maltreatment, is associated with the presence of negative cognitive styles in adulthood. Specifically, we found that high risk participants in the CVD project reported significantly more childhood emotional, but not physical or sexual, maltreatment than did low-risk participants, even when depressive symptom levels were statistically controlled (Gibb et al., 2001). In addition to being related to cognitive vulnerability defined generally, we also found that, in an unselected sample of undergraduates, reports of childhood emotional maltreatment were related specifically to both negative inferential styles (Gibb, Alloy, Abramson, & Marx, 2003), the cognitive vulnerability featured in the hopelessness theory, and dysfunctional attitudes (Gibb, Alloy, & Abramson, 2003), the cognitive vulnerability featured in Beck's theory of depression. A limitation of these studies, however, is that all perpetrators of emotional maltreatment and verbal victimization (e.g., parents, peers, and nonfamily adults) were grouped together. Therefore, the influence of victimization by peers remains unclear. It is also unclear whether the observed associations were due to emotional maltreatment per se or to some third variable (e.g., genetic influence or negative family environment).

In the current studies, we sought to extend our previous findings in two ways. First, we wanted to address the dearth of research examining the contribution of

nonparental factors to the development of negative cognitive styles. Second, we wanted to evaluate whether a relation between verbal victimization and cognitive styles exists independently of parental factors. Given this, we did not include victimization by nonparent relatives (e.g., siblings and extended family members) because we wanted to minimize the possibility of genetic explanations for any obtained findings of a relation between victimization by nonparents and participants' cognitive vulnerability to depression. We also wanted to focus specifically on peer victimization as a way of linking the line of research on childhood antecedents of negative cognitive styles to the extensive body of extant research on peer victimization.

STUDY 1

Using data from the CVD project, we examined the unique relation between verbal peer victimization and participants' cognitive styles, statistically controlling for the influence of a number of parent variables previously found to be related to cognitive styles. Specifically, we examined the relation between students' cognitive risk group status and reports of verbal peer victimization, statistically controlling for the influence of mothers' and fathers' cognitive styles and histories of MDD as well as students' reports of emotional maltreatment by parents. We hypothesized that high risk students would report more verbal peer victimization than would low risk students, even after statistically controlling for the influence of these parental variables. Although we had no specific hypothesis, we also examined whether reports of emotional maltreatment by parents and peer victimization would interact to significantly predict students' cognitive risk group status.

METHOD

Participants

Student Sample

Student participants in this study were a subset of those selected for inclusion in the Temple–Wisconsin Cognitive Vulnerability to Depression (CVD) project (Alloy & Abramson, 1999). Student participants in the CVD project were recruited from the freshmen classes of Temple University (TU) and the University of Wisconsin—Madison (UW) in a two-phase screening process. First, 5,378 freshmen (2,438 at TU and 2,940 at UW) completed the Cognitive Style Questionnaire (CSQ; Alloy et al., 2000) and a modified version of the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978). To be included in the high cognitive risk (HR) group, participants had to score in the highest (most negative) quartile on *both* the DAS (high-risk item score cut point ≥ 3.69 at TU and ≥ 3.81 at UW) and the composite of the stability, globality, consequences, and self-characteristics components for negative events on the CSQ (high-risk item score cut point ≥ 4.43 at TU and ≥ 4.50 at UW). To be included in the low cognitive risk (LR) group, participants had to score in the lowest (most positive) quartile on *both* the DAS (low-risk item score cut point ≤ 2.60 at TU and ≤ 2.86

at UW) and the CSQ composite for negative events (low-risk item score cut point ≤ 3.30 at TU and ≤ 3.47 at UW). Thus, our HR student participants exhibited high cognitive vulnerability to depression as specified by *both* the hopelessness theory and Beck's theory, and our LR student participants exhibited low cognitive vulnerability to depression as specified by both theories.[6] A total of 619 HR and 585 LR potential participants were identified in this way.

In the second phase of the screening process, a randomly selected subsample of 313 potential HR and 236 potential LR freshmen, who were less than 30 years old, were administered an expanded version of the Schedule for Affective Disorders and Schizophrenia-Lifetime (exp-SADS-L) diagnostic interview (Endicott & Spitzer, 1978). The SADS-L was expanded to allow *Diagnostic and Statistical Manual-III Edition-Revised* (*DSM-III-R*; American Psychiatric Association, 1987) and Research Diagnostic Criteria (RDC; Spitzer, Endicott, & Robins, 1978) diagnoses. Participants were excluded from participation in the study if they had any of the following diagnoses based on RDC or *DSM-III-R* criteria (1) current diagnosis of any episodic mood disorder (e.g., major [MDD] or minor [MiD] depressive disorder, bipolar [Bi] disorder with a current episode of either MDD, mania [Ma] or hypomania [Hyp] or any chronic mood disorder (e.g., dysthymia [Dys] intermittent depressive disorder [IDD] or cyclothymia [Cyc]; (2) current diagnosis of any other psychiatric disorder (e.g., anxiety disorder, alcohol or drug use disorder); (3) current psychotic symptoms; (4) past history of Ma, Hyp, Bi, or Cyc; or (5) serious medical illness that would preclude participation in a longitudinal study. Freshmen who met RDC or *DSM-III-R* criteria for past unipolar depressive disorder (e.g., past MDD, MiD, Dys, IDD), but who had remitted for a minimum of 2 months, were retained in the final sample so as not to be left with an unrepresentative sample of HR participants (for more details and rationale, see Alloy & Abramson, 1999 and Alloy et al., 2000).

A total of 209 HR (114 at TU and 95 at UW) and 207 LR (110 at TU and 97 at UW) participants remained eligible for participation after Phase II of screening. Of these, 173 HR (83 at TU and 90 at UW) and 176 LR (87 at TU and 89 at UW) individuals agreed to participate in the prospective phase of the study. One hundred fifty-four HR (72 at TU and 82 at UW) and 159 LR (72 at TU and 87 at UW) student participants remained in the study through the first 2.5 years of follow-up and completed the measure of maltreatment.

Parent Sample

In the first year of the follow-up phase, student participants were asked for written permission to contact one or both of their parents (biological, step, adoptive, or other primary caretakers) to invite the parents to complete a questionnaire- and interview-assessment. Other than a parent's refusal to participate, inability to speak English, or inability to be contacted, there were no exclusion criteria for parents. Of

[6]When the CVD project was first conceptualized, there was limited support for the cognitive vulnerability-stress hypotheses of the hopelessness theory (Abramson et al., 1989) and Beck's (1967, 1987) theory of depression. Because both theories, despite their differences, are quite similar, participants were selected based on the presence versus absence of cognitive vulnerability as defined by *both* theories. The rationale for this was to provide the strongest test possible of the cognitive theories of depression, generally (for a further discussion of this point, see Alloy & Abramson, 1999).

approximately 400 contacted parents, 335 (217 mothers and 118 fathers) agreed to participate and completed at least some of the study measures.

Representativeness of the Current Sample

Only those student participants 18 years or older at the start of the study who completed the maltreatment assessment and whose mothers completed the parent assessment were included in this study ($N = 188$; HR = 85; LR = 103). One hundred fathers of these students completed at least some of the study measures and were also included in this study. Of the students, 129 (68.6%) were women and their mean age upon entering the study was 18.95 ($SD = 2.12$). In addition, 158 (84.0%) were Caucasian, 19 (10.1%) were African American, 4 (2.1%) were Hispanic, 2 (1.1%) were Asian, and 5 (2.7%) were either from other ethnic groups or did not report their ethnicity.

Among the students, there were no significant risk group differences in terms of age, gender, or parental income. However, HR participants were more likely to be Caucasian than were LR participants (91.7% vs. 79.4%; $\chi^2[1, N = 186] = 5.41$, $p = .02$, $r_{effect\ size} = .17$). Given that only a subsample of total CVD project participants were included in this study, analyses were also conducted to determine how representative participants in this sample were of those participating in the CVD project. There were no significant differences between students included in this study and those excluded because of missing data in terms of sex, age, parental income, cognitive style, or reports of emotional maltreatment from parents or verbal victimization from peers. However, students included in this study were significantly more likely to be Caucasian than were excluded students, (85.5% vs. 72.8%; $\chi^2[1, N = 346] = 7.22$, $p = .007$, $r_{effect\ size} = .14$). Finally, there were no significant differences in terms of inferential styles, dysfunctional attitudes, or histories of past MDD between parents included in this sample and those excluded because of missing data.

Measures

Cognitive Styles

The Cognitive Style Questionnaire (CSQ; Alloy et al., 2000) and the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) were used to assess students' cognitive vulnerability to depression as specified by the hopelessness theory (Abramson et al., 1989) and Beck's theory (Beck, 1967, 1987) of depression, respectively, as well as parents' cognitive vulnerability to depression. The CSQ, a revised version of the Attributional Style Questionnaire (ASQ; Peterson et al., 1982), is a self-report measure used to assess individuals' tendency to make internal, stable, and global attributions and to infer negative consequences and negative characteristics about themselves following the occurrence of negative life events. The CSQ was modified when administered to parents to make the hypothetical situations presented more appropriate for adults. A composite mean item score was created for inferences (average ratings for the stability, globality, consequences, and self-characteristics dimensions) generated in response to hypothetical negative events, with higher scores

indicating more negative inferential styles. In the CVD project, the CSQ composite for negative events exhibited good internal consistency ($\alpha = .88$) and retest reliability over 1 year ($r = .80$). In addition, the CSQ composite for negative events, in combination with the DAS, has demonstrated both retrospective (Alloy et al., 2000) and prospective (Abramson et al., 1999; Alloy et al., 1999, 2004) predictive validity for diagnoses of MDD. The CSQ exhibited excellent internal consistency in this study (αs = .97, .93, and .92 for students, mothers, and fathers, respectively).

The DAS is a 40-item self-report inventory used to assess maladaptive attitudes, including sensitivity to social criticism, perfectionistic performance standards, and rigid ideas about the world. Participants rate a series of statements using a 7-point Likert-type scale with response options ranging from "totally disagree" to "totally agree." In the CVD project, a revised version of the DAS was used in which 24 items were added to the original 40 to assess dysfunctional attitudes in interpersonal and achievement domains, for a total of 64 items. The content of some of these additional items was modified to make them more applicable for students' parents in the version administered to the parents. Although the DAS is traditionally scored by summing participants' responses to each item, responses to this revised version of the DAS were averaged, given the inclusion of additional items. Higher scores on this variable indicate more dysfunctional attitudes. This expanded form of the DAS demonstrated good internal consistency ($\alpha = .90$) and retest reliability over 1 year ($r = .78$) in the CVD project. As mentioned above, the DAS, in combination with the CSQ composite for negative events, has also demonstrated both retrospective (Alloy et al., 2000) and prospective (Abramson et al., 1999; Alloy et al., 1999, 2004) predictive validity for diagnoses of MDD. The DAS exhibited excellent internal consistency in this study (αs = .98, .94, and .96 for students, mothers, and fathers, respectively).

Emotional Maltreatment

Participants' histories of emotional maltreatment by parents were assessed using the Life Experiences Questionnaire (LEQ; Gibb et al., 2001), a self-report measure developed for use in the CVD project. For each event listed in the LEQ, participants indicate if they experienced the event before age 18, the age of onset and offset for the event described, its frequency of occurrence, and who was the perpetrator. The LEQ was modeled on Cicchetti's Child Maltreatment Interview (Cicchetti, 1989). The LEQ, however, is both more comprehensive and specific with respect to the events it assesses. Consistent with the suggestions made by Brewin, Andrews, and Gotlib (1993), the LEQ assesses a broad range of specific events rather than asking individuals for global estimates of maltreatment and neglect.

The emotional maltreatment subscale of the LEQ has been shown to correlate highly with levels of emotional maltreatment reported by undergraduates in a structured maltreatment interview ($r = .78$) and has demonstrated predictive validity for episodes of depression (Gibb et al., 2001). In addition, levels of specific maltreatment experiences endorsed on the LEQ are related to depressive symptoms and cognitions whether or not participants label those experiences as maltreatment, suggesting that the relations are not due simply to a recall bias (Gibb, Alloy, & Abramson, 2003).

Inasmuch as participants are not asked to indicate how old they were when each perpetrator maltreated them, we could not focus specifically on childhood maltreatment (e.g., before age 15) as we have done in previous studies (e.g., Gibb et al., 2001). The current study, therefore, includes all emotional maltreatment reported as occurring before age 18. Forms of emotional maltreatment assessed included derogation, humiliation, rejection, extortion, and teasing. Examples of items from the emotional maltreatment subscale include "Did any of your caretakers ever say they wished they were not parents or that you had never been born?"; and "Did anyone ever try to get you to do what he/she wanted by threatening you or someone you loved with physical harm?"

Histories of emotional maltreatment were determined by summing the number of different maltreatment experiences endorsed as having been committed by parents (i.e., biological, step, adoptive, or other primary caretakers). Levels of emotional maltreatment by parents (EM-parents) could range from 0 to 51, with higher scores indicating more maltreatment. In this study, the EM-parents subscale exhibited good internal consistency ($\alpha = .82$).

Verbal Peer Victimization

Responses to the LEQ were also used to calculate levels of verbal peer victimization occurring before age 18. Although victimization from peers, boy/girlfriends, strangers, and nonfamily adults was assessed, only reports of victimization from peers and boy/girlfriends were included in this study, to make these results more comparable to those from the existing peer victimization literature. Scores on the peer victimization variable were calculated by summing the number of experiences endorsed on the LEQ as having been committed by either peers or boy/girlfriends. Except for the few items referring specifically to the behavior of parents, these were the same items used to calculate levels of emotional maltreatment by parents. The difference lies in the perpetrator of the victimization rather than in the type of experiences endorsed. Scores on this variable had a possible range of 0–45, with higher scores indicating more verbal victimization from peers. This subscale exhibited good internal consistency ($\alpha = .79$).

Episodes of Depression

As mentioned above, students were administered an expanded version of the SADS-L diagnostic interview (Endicott & Spitzer, 1978), which was expanded to allow *DSM-III-R* as well as RDC diagnoses, during the second phase of screening for the CVD project. During the first and second years of the prospective follow-up, parents of student participants were also administered the exp-SADS-L. Data from these interviews were used to assess mothers' and fathers' lifetime histories of MDD. The duration of their lifetime histories of MDD (in years) was used in all analyses.

Diagnostic interviewers completed an intensive training program for administering the exp-SADS-L interviews and for assigning *DSM-III-R* and RDC diagnoses that was modeled after ideal programs (Amenson & Lewinsohn, 1981; Gibbon, McDonald-Scott, & Endicott, 1981). The training program consisted of

approximately 200 hr of didactic instruction and homework, training on case vignettes and videotaped interviews, role-playing, extensive practice conducting live interviews, and regular exams that had to be passed. Throughout the project, interviewers received extensive individual feedback. In addition, we calibrated our diagnoses across interviewers within and between sites (see Alloy & Abramson, 1999, for further details regarding diagnostic training). We conducted an interrater reliability study on approximately 15% ($n = 80$) of the student exp-SADS-L interviews. On the basis of joint ratings of these 80 randomly selected interviews, the kappa coefficient (Cohen, 1960) was > .95 for diagnoses of MDD across both sites.

Procedure

During the first phase of screening, student participants were administered the DAS and CSQ. During the second phase of screening, a random subset of students scoring in the upper or lower quartile on both the DAS and CSQ were administered the exp-SADS-L. Students meeting inclusion criteria were invited to participate in the prospective phase of the study. At the end of the first 2.5 years of follow-up, students completed the LEQ. During the first and second years of follow-up, students' parents were invited to complete a questionnaire- and interview-assessment, including the exp-SADS-L, DAS, and CSQ. All participants were paid for their time.

RESULTS

Means and standard deviations for the study variables are presented in Table I. To test for possible gender and/or ethnic differences in reported levels of emotional maltreatment by parents and peer victimization as well as mothers' and fathers' inferential styles, dysfunctional attitudes, and histories of MDD, a series of 2 (Gender: Male vs. Female) × 2 (Ethnicity: Caucasian vs. Non-Caucasian) ANOVAs was conducted. None of the main effects or interactions was significant. However, as reported above, HR students were more likely to be Caucasian than were LR participants.

Table I. Sample Characteristics—Study 1

	HR ($n = 85$)	LR ($n = 103$)
CSQ-student	5.13 (0.48)	2.78 (0.39)
DAS-student	4.44 (0.55)	2.21 (0.32)
CSQ-mother	3.67 (0.85)	3.60 (0.84)
DAS-mother	2.97 (0.66)	2.70 (0.67)
MDD-mother (years)	1.01 (4.37)	0.32 (1.28)
CSQ-father	4.02 (0.82)	3.94 (0.97)
DAS-father	3.06 (0.87)	2.91 (0.70)
MDD-father (years)	0.34 (1.31)	0.20 (0.79)
EM-parents	2.56 (3.28)	2.41 (3.57)
Peer victimization	2.79 (2.99)	1.90 (2.73)

Note. HR = high cognitive risk, LR = low cognitive risk; CSQ = Cognitive Style Questionnaire—negative events composite mean item score; DAS = Dysfunctional Attitude Scale—mean item score; MDD = duration of major depressive disorder(s); EM = emotional maltreatment.

Table II. Correlations Among Variables—Study 1

	1	2	3	4	5	6	7	8
1. Risk	—							
2. CSQ-mother	.04	—						
3. DAS-mother	.21**	.35***	—					
4. MDD-mother	.11	.05	.05	—				
5. CSQ-father	.05	.05	.12	.00	—			
6. DAS-father	.09	.18	.15	−.04	.36***	—		
7. MDD-father	.07	−.14	−.04	.00	.15	.20*	—	
8. EM-parents	.02	.01	−.06	−.05	.05	.08	.10	—
9. Peer victimization	.15*	.05	−.01	.10	.11	.25**	.29***	.44***

Note. CSQ = Cognitive Style Questionnaire—negative events composite mean item score; DAS = Dysfunctional Attitude Scale—mean item score; MDD = duration of major depressive disorder(s); EM = emotional maltreatment.
*$p < .05$.** $p \leq .01$.*** $p < .001$.

Correlations among the variables included in this study are presented in Table II. As predicted, students' cognitive risk group status was significantly related to mothers' dysfunctional attitudes and reports of peer victimization. HR students, therefore, had mothers with more dysfunctional attitudes and reported significantly more peer victimization than did LR students. In addition, inferential styles and dysfunctional attitudes were significantly related for both mothers and fathers. Further, fathers' dysfunctional attitudes were significantly related to their lifetime duration of major depression. Finally, reports of peer victimization were significantly related to fathers' dysfunctional attitudes and histories of major depression, as well as reports of emotional maltreatment by parents.

Using dependent samples t tests, we examined the relations between mothers' and fathers' CSQ and DAS scores and histories of major depression. We found that fathers, compared to mothers, had significantly more negative inferential styles (M = 3.98 [$SD = 0.89$] vs. 3.58 [$SD = 0.73$]), $t(96) = 3.50$, $p = .001$, $r_{effect\ size} = .24$, and marginally more dysfunctional attitudes (M = 2.98 [$SD = 0.79$] vs. 2.82 [$SD = 0.58$]), $t(96) = 1.82$, $p = .07$, $r_{effect\ size} = .13$. In contrast, fathers and mothers did not differ significantly in terms of lifetime duration of major depression (M = 0.27 years [$SD = 1.07$] vs. 0.62 [$SD = 3.48$], respectively), $t(99) = 0.96$, $p = .34$, $r_{effect\ size} = .07$.

We next tested the hypothesis that verbal peer victimization would contribute unique variance to the prediction of students' cognitive risk group status beyond that accounted for by parent variables. Given the large sample size discrepancy between mothers and fathers in this study, the analyses were first conducted using only mothers' data. Students' ethnicity was entered in the first step of a hierarchical logistic regression analysis to statistically control for its effect upon students' cognitive risk group status and was significant (see Table III). In the second step, mothers' CSQ and DAS scores and histories of MDD were entered. Although, considered together, these variables accounted for a significant amount of variance in students' cognitive risk, only mothers' DAS scores, considered individually, were significant.[7]

[7]The negative B value in Step 2 of the logistic regression for mothers' CSQ scores suggests the presence of a suppressor effect (for a discussion of suppressor variables, see Cohen & Cohen, 1983; Tabachnick & Fidell, 1996). Therefore, we also conducted the logistic regression analysis excluding this variable. The results of this analysis were virtually identical to those reported here.

Table III. Summary of Hierarchical Logistic Regression Analysis Predicting Students' Cognitive Risk Group Status

Variable	*B*	*SE*	Wald test	OR	95% CI	$\Delta\chi^2$
Step 1						5.68*
Ethnicity	1.05	0.47	5.09*	2.85	1.15–7.09	
Step 2						13.04**
CSQ-mother	−0.13	0.20	0.42	0.88	0.59–1.31	
DAS-mother	0.75	0.27	8.23**	2.11	1.27–3.52	
MDD-mother	0.12	0.08	2.22	1.12	0.96–1.31	
Step 3						0.10
EM-parents	0.02	0.05	0.11	1.02	0.93–1.11	
Step 4						4.54*
Peer victimization	0.13	0.06	4.19*	1.14	1.01–1.30	
Step 5						0.04
EM-parents × Peer victimization	0.00	0.02	0.04	1.00	0.98–1.03	

Note. OR = odds ratio; CI = confidence interval; CSQ = Cognitive Style Questionnaire—negative events composite mean item score; DAS = Dysfunctional Attitude Scale—mean item score; EM = emotional maltreatment.
*$p < .05$.** $p \leq .01$.

In the third step, reported emotional maltreatment by parents was entered and was not significant. In the fourth step, reported peer victimization was entered and was significant. Thus, as hypothesized, reports of verbal peer victimization contributed significant unique variance to the prediction of students' cognitive risk group status beyond that accounted for by the parent variables. Finally, in the fifth step, the interaction of emotional maltreatment by parents and peer victimization was entered and was not significant.

Next, analyses were conducted on the subgroup of participants with complete data from their mothers and fathers ($n = 93$). This analysis was identical to that reported above except that fathers' CSQ and DAS scores and histories of major depression were entered in Step 2 along with the mother variables. In Step 2 of this analysis, none of the father variables were significant. As before, however, reports of peer victimization remained significantly related to students' cognitive risk group status even after statistically controlling for students' ethnicity, mothers' and fathers' CSQ and DAS scores and histories of major depression, and reports of emotional maltreatment by parents, Wald = 4.93, $p = .03$, OR = 1.24 (95% CI = 1.03–1.51).

Given that we had grouped peers and boy/girlfriends together in creating our peer victimization variable, we repeated the analyses on the full sample focusing on victimization from each source separately. Therefore, we conducted two additional hierarchical logistic regression analyses, one focusing on peers and the other focusing on boy/girlfriends. Steps 1 through 3 of these analyses were identical to those presented in Table III. The only difference was that in Step 4, we entered reports of verbal victimization from either peers or boy/girlfriends. In these analyses, reports of victimization from boy/girlfriends, Wald = 10.68, $p = .001$, OR = 1.71 (95% CI = 1.24–2.36), but not peers, Wald = 0.47, $p = .50$, OR = 1.06 (95% CI = 0.91–1.23), were significantly related to students' cognitive risk group status. Evaluating the zero-order correlations, we found that the magnitude of the correlation between students' cognitive risk group status and their reports of verbal victimization from

boy/girlfriends was significantly stronger than the correlation between cognitive risk and victimization from peers (rs = .22 vs. .08, $Z = 1.80$, $p = .04$). We also evaluated whether students' gender moderated the effect of verbal victimization from peers and boy/girlfriends, considered together and individually, but none of the analyses was significant.[8]

DISCUSSION

These results support the hypothesis that a relationship between verbal peer victimization and young adults' cognitive vulnerability to depression exists independently of parental variables. Specifically, students at high cognitive risk for depression reported more verbal peer victimization than did students at low cognitive risk for depression, even after statistically controlling for their mothers' and fathers' inferential styles, dysfunctional attitudes, and histories of major depressive disorder, as well as reports of emotional maltreatment by parents. Interestingly, emotional maltreatment by parents did not interact with peer victimization to predict students' cognitive risk group status. This nonsignificant interaction, combined with the significant main effect of peer victimization supports the importance of assessing the source of maltreatment and victimization rather than focusing simply on the overall level. Providing further support for this conclusion, we found that when we looked more closely at the peer victimization variable, reports of verbal victimization from boy/girlfriends, but not other peers, significantly predicted students' cognitive risk group status.

In addition to the contribution of this study's finding of a significant relationship between peer victimization and cognitive vulnerability, the results are also interesting in that a number of predictors were not significantly related to students' cognitive risk status. First, although students at high cognitive risk for depression reported significantly more verbal peer victimization than did low-risk students, there were no risk group differences in reports of emotional maltreatment by parents. Although intriguing, this result should be interpreted with caution pending replication. Given that these results apply to all maltreatment before age 18 and cognitive styles during young adulthood, it is possible that when children are young, their cognitive styles are strongly influenced by their parents. As the children age, however, the influence of parents may diminish, and the influence of peers may become stronger. Another possibility, give our reliance on participants' self-reports of maltreatment and victimization, is that participants were simply more willing to report victimization by peers. To fully address this possibility, studies are needed in which maltreatment and victimization are assessed through other means (e.g., direct observation or reports from others such as teachers). In addition, longitudinal studies are needed to

[8]Although, to be consistent with the peer victimization literature, we focused on victimization committed by peers and boy/girlfriends, we also conducted analyses on victimization from strangers and nonfamily adults (e.g., doctors, teachers, ministers, etc.). We found that HR participants, compared to LR participants, reported higher levels of victimization from nonfamily adults, $t(186) = 2.53$, $p = .01$, $r_{effect\ size} = .18$, but not strangers, $t(186) = 0.71$, $p = .48$, $r_{effect\ size} = .05$. The effect for nonfamily adults was maintained even after statistically controlling for students' ethnicity and reports of emotional maltreatment from parents as well as mothers' CSQ and DAS scores and histories of major depression, Wald = 6.79, $p = .01$, OR = 1.53 (95% CI = 1.11–2.10).

determine whether there are developmental differences in the impact of emotional maltreatment from parents versus verbal victimization from peers.

These results also add to the growing body of research finding no significant relation between children's and parents' attributional styles (e.g., Alloy et al., 2001; Garber & Flynn, 2001; Kaslow et al., 1988; however, see also Seligman et al., 1984). The current results did suggest, however, that mothers of HR students exhibited more dysfunctional attitudes than did mothers of LR students (cf. Alloy et al., 2001; however, see also Oliver & Berger, 1992). Thus, although there does not appear to be a significant relation between children's cognitive styles and mothers' inferential styles, there is some evidence for a relation between children's cognitive styles and mothers' dysfunctional attitudes, which should be explored further in future studies.

Study 2

Despite the contributions of Study 1, there were also two limitations that we attempted to overcome in Study 2 with a new sample of undergraduates. First, given that students were chosen for inclusion in the CVD project based on their responses to both the CSQ and DAS, it is unclear whether the significant relation between cognitive vulnerability and reports of peer victimization was due to a significant relationship with inferential styles, dysfunctional attitudes, or both. Specifically, both the hopelessness theory (Abramson et al., 1989) and Beck's theory (Beck, 1967, 1987, Clark et al., 1999) include the hypothesis that individuals' characteristic ways of interpreting negative events in their lives may contribute vulnerability to the development of depression. Despite this conceptual similarity, however, studies have suggested that the vulnerabilities featured in these theories (inferential styles and dysfunctional attitudes, respectively) are distinct constructs (for a review, see Abramson et al., 2002; see also Haeffel et al., 2003). Indeed, Clark et al. (1999) suggested that whereas dysfunctional beliefs represent the content of maladaptive self-schemata (reflecting global themes of helplessness or unlovability), the attributional component of inferential styles (stable, global causal attributions) is more reflective of selective encoding and interpretation of information in the environment. To provide a more detailed examination of possible developmental precursors to the cognitive vulnerabilities featured in the hopelessness theory and Beck's theory, therefore, we examined the relations between peer victimization and both inferential styles and dysfunctional attitudes in this second study.

A second limitation of Study 1 was that levels of emotional maltreatment and verbal peer victimization included all experiences occurring before age 18, which may have reduced the relationship between emotional maltreatment by parents and cognitive risk. This is because the influence of parents appears to be strongest when children are younger, whereas the influence of peers increases with age (Cole, Maxwell, & Martin, 1997; Furman, & Buhrmester, 1985, 1992). In addition, we wanted to focus specifically on maltreatment and victimization occurring during childhood, when children's cognitive styles exhibit the greatest developmental changes (cf. Nolen-Hoeksema, Girgus, & Seligman, 1992) rather than adolescence or young adulthood. In this second study, therefore, only emotional maltreatment and peer victimization reported as having occurred before age 15 was included. We predicted that reports

of verbal peer victimization would add significant unique variance to the prediction of inferential styles and dysfunctional attitudes, examined separately, beyond that accounted for by reports of childhood emotional maltreatment by parents. As in Study 1, we also examined whether childhood emotional maltreatment by parents interacted with verbal peer victimization to predict either inferential styles or dysfunctional attitudes.

METHOD

Participants

Two hundred twenty undergraduates (164 women and 56 men) participated in this study. Of these, 126 (57.3%) were Caucasian, 53 (24.1%) were African American, 21 (9.5%) were Asian, 8 (3.6%) were Hispanic, and the remaining 12 (5.5%) participants were either from other ethnic groups or did not report their ethnicity. The mean age of the participants was 18.79 years (SD = 1.40).

Measures

Childhood Emotional Maltreatment and Verbal Peer Victimization

As in Study 1, the LEQ (Gibb et al., 2001) was used to assess participants' histories of childhood emotional maltreatment from parents and verbal peer victimization. Although the same maltreatment items were administered as in Study 1, participants were asked to report only those experiences that occurred before age 15. Both subscales exhibited good internal consistency (EM-parents $\alpha = .86$; peer victimization $\alpha = .80$).

Cognitive Styles

Students' inferential styles and dysfunctional attitudes were assessed using the CSQ (Alloy et al., 2000) and the DAS (Weissman & Beck, 1978), respectively. In contrast to Study 1 in which scores on both measures were used to assign participants to the high versus low cognitive risk groups, scores on each measure in this study were examined independently. As before, responses on the CSQ were averaged to create a composite mean item score (stability, globality, consequences, and self-characteristics) for negative events. This composite exhibited excellent internal consistency ($\alpha = .94$). The DAS, which was scored by summing participants' responses to each of the 40 original items, also exhibited excellent internal consistency ($\alpha = .90$).

Procedures

Participants completed each of the questionnaires in groups ranging in size from 1 to 20 people. Students received course credit for their participation.

Table IV. Means, Standard Deviations, and Correlations Among Variables—Study 2

Variables	1	2	3	*M*	*SD*
1. CSQ	—			3.32	1.08
2. DAS	.46***	—		122.05[a]	29.82
3. EM-parents	.25***	.32***	—	2.97	4.18
4. Peer victimization	.26***	.25**	.65***	2.07	2.89

Note. CSQ = Cognitive Style Questionnaire-negative events composite mean item score; DAS = Dysfunctional Attitude Scale; EM = emotional maltreatment.

[a]For ease of comparison with the results of Study 1, the DAS mean item score was 3.11 ($SD = 0.73$).

$^{*}p < .01$. $^{***}p < .001$.

RESULTS

To test for possible gender and/or ethnic differences in inferential styles and dysfunctional attitudes as well as in reports of childhood emotional maltreatment by parents and verbal peer victimization, a series of 2 (Gender: Male vs. Female) × 2 (Ethnicity: Caucasian vs. Non-Caucasian) ANOVAs was conducted. The only significant effect was that Caucasians reported more verbal peer victimization than did non-Caucasians, $F(1, 213) = 5.68$, $p = .02$. Correlations among the variables, as well as means and standard deviations for each variable, are presented in Table IV. As can be seen in the table, all of the variables were significantly intercorrelated.

We next tested the hypothesis that reports of verbal peer victimization would contribute significant unique variance to the prediction of inferential styles and dysfunctional attitudes beyond that accounted for by childhood emotional maltreatment by parents. Therefore, separate hierarchical regression analyses were conducted with inferential styles and dysfunctional attitudes serving as the criterion variables. Reports of emotional maltreatment by parents and verbal peer victimization were entered in the first step of these analyses. As can be seen in Table V, our hypothesis was supported for the prediction of inferential styles but not dysfunctional attitudes.

Table V. Summary of Hierarchical Linear Regression Analyses Predicting Inferential Styles and Dysfunctional Attitudes

	Predicting CSQ scores			Predicting DAS scores		
Variable	*B*	*SE B*	*β*	*B*	*SE B*	*β*
Step 1						
EM-parents	0.03	0.02	.13	1.97	0.62	.28**
Peer victimization	0.06	0.03	.18*	0.74	0.90	.07
Step 2						
EM-parents × Peer victimization	0.00	0.00	−.18	0.00	0.11	−.06

Note. CSQ = Cognitive Style Questionnaire—negative events composite mean item score; DAS = Dysfunctional attitude scale; EM = emotional maltreatment.

$^{*}p < .05$.$^{**}p < .01$.

When the interaction term was entered in the second step of these analyses, it was not significant.

As in Study 1, we also conducted analyses examining victimization from peers and boy/girlfriends separately. Consistent with the results of Study 1, victimization from boy/girlfriends, $t(217) = 2.20$, $p = .03$, $\beta = .17$, but not peers, $t(217) = 1.10$, $p = .27$, $\beta = .09$, significantly predicted inferential styles even after statistically controlling for the effects of emotional maltreatment by parents. In contrast to the results from Study 1, however, the magnitude of the correlation between inferential styles and reports of emotional victimization from boy/girlfriends did not differ significantly from that between inferential styles and victimization from peers (rs = .25 vs. .20, $Z = 0.74$, $p = .23$). Statistically controlling for emotional maltreatment by parents, reports of victimization from neither boy/girlfriends, $t(209) = 0.82$, $p = .41$, $\beta = .06$, nor peers, $t(209) = 0.52$, $p = .61$, $\beta = .04$, significantly predicted dysfunctional attitudes. As in Study 1, we also evaluated whether students' gender moderated the effect of verbal victimization from peers and boy/girlfriends, considered together and individually, but none of the analyses were significant.[9]

DISCUSSION

The results of this study replicated, in large part, those obtained in Study 1. Considered individually, reported levels of childhood emotional maltreatment by parents and verbal peer victimization were positively correlated with both inferential styles and dysfunctional attitudes. In addition, reports of peer victimization remained significantly related to inferential styles even after statistically controlling for reports of childhood emotional maltreatment by parents. As in Study 1, this result appeared to be primarily because of victimization from boy/girlfriends, though the magnitude of the correlation between inferential styles and victimization from boy/girlfriends did not differ significantly from that between inferential styles and victimization from peers. Also, consistent with the results of Study 1, the interaction of childhood emotional maltreatment by parents and peer victimization did not significantly predict inferential styles or dysfunctional attitudes. An intriguing finding from this study is that, statistically controlling for the overlap between childhood emotional maltreatment by parents and peer victimization, peer victimization was related to inferential styles but not dysfunctional attitudes, whereas maltreatment by parents demonstrated the opposite effect. It may be that victimization from different sources influences different forms of depressotypic thinking. This possibility should be explored in future studies.

[9] As in Study 1, we also conducted analyses for reports of victimization from strangers and nonfamily adults. Statistically controlling for reports of childhood emotional maltreatment by parents, reports of victimization by nonfamily adults were significantly related to participants' DAS, $t(209) = 3.20$, $p = .002$, $\beta = .26$, but not CSQ, $t(217) = 1.21$, $p = .23$, $\beta = .10$, scores. Similarly, statistically controlling for reports of childhood emotional maltreatment by parents, reports of victimization by strangers were significantly related to participants' DAS, $t(209) = 2.10$, $p = .04$, $\beta = .15$, but not CSQ, $t(217) = 0.14$, $p = .89$, $\beta = .01$, scores.

GENERAL DISCUSSION

Taken together, the results of both studies suggest that at least part of the relation between verbal peer victimization and cognitive vulnerability to depression may be independent of parent variables. Specifically, reports of verbal peer victimization contributed significant unique variance to the prediction of negative cognitive styles in both studies above that accounted for by parent variables. Although no causal conclusions can be drawn from these results, they are consistent with the hypothesis that verbal peer victimization itself contributes to the development of cognitive vulnerability to depression rather than simply reflecting the operation of a third-factor variable. This hypothesis should be evaluated in future longitudinal studies.

An interesting finding from these studies was that the relationship between verbal peer victimization and negative cognitive styles appeared in large part, to be due to victimization in romantic, rather than platonic, relationships, particularly in Study 1. Although this finding should be interpreted with caution given that the magnitude of the correlations differed significantly in only one of our two studies, it is consistent with findings from previous studies suggesting that victimization within romantic relationships may have a unique impact upon youth functioning beyond that accounted for by victimization within platonic peer relationships (see also Crick et al., 2001). Although longitudinal studies are needed to determine whether victimization from boy/girlfriends actually predicts changes in cognitive styles, these results reinforce the importance of focusing on the source of the victimization when evaluating its effects.

Another finding meriting discussion was that emotional maltreatment by parents was significantly correlated with negative cognitive styles in Study 2, but not Study 1. This difference in findings may have been due to a difference in the assessment of maltreatment between the two studies. Specifically, Study 1 included all maltreatment reported as having been committed before age 18, whereas Study 2 focused only on maltreatment before age 15. It may be that emotional maltreatment by parents has the greatest effect when children are younger at the time of parental maltreatment, whereas victimization by peers becomes more salient as children enter adolescence and young adulthood. Another possibility is that emotional maltreatment by parents contributes, in some way, to future peer victimization. Supporting this possibility, studies have suggested that early experiences with parents (e.g., maltreatment) may contribute to future dysfunctional relationships with peers (see Cicchetti, Toth, & Maughan, 2000; Rudolf & Asher, 2000). Future studies, providing a more fine-grained analysis of the timing of maltreatment in relation to developmental levels, are needed to explore both possibilities.

Although our results do not rule out a genetic explanation for finding a relation between maltreatment and cognitive vulnerability to depression, they are a step in that direction. Specifically, reports of verbal peer victimization remained significantly related to students' cognitive risk status in Study 1 and inferential styles in Study 2, even after controlling for a number of parental variables. Although the argument can be made that genetic factors predispose some individuals to elicit victimization from peers, these factors should have been equally strong in eliciting childhood emotional maltreatment from parents. However, verbal peer victimization significantly

predicted cognitive risk group status (Study 1) and inferential styles (Study 2), even after statistically controlling for emotional maltreatment by parents. These findings argue against a purely genetic influence for the peer victimization effect and provide further support for the impact of environmental factors in the development of psychopathology. In this way, these results are consistent with those of Kendler et al. (2000) who found that the relation between childhood sexual abuse and major depression was maintained even after statistically controlling for familial factors (e.g., quality of parental relationship and parental disciplinary practices) and parents' histories of major depression. A limitation of Kendler et al., however, is that all perpetrators were grouped together in the assessment of childhood maltreatment. It remains unclear, therefore, whether the relation observed by Kendler et al. was due to sexual maltreatment by parents, sexual maltreatment by unrelated perpetrators, or both. In contrast, the current results were specific to victimization by peers. Future studies, therefore, should continue to explore the impact of peers in an effort to better understand the role of the environment in shaping individuals' risk for various psychological disorders.

Despite the contributions offered by these studies, their limitations should be noted. First, given the retrospective nature of the maltreatment assessment, no causal conclusions can be drawn. Specifically, although our results are consistent with the hypothesis that verbal peer victimization contributes to the development of negative cognitive styles, future studies utilizing longitudinal designs are needed to support causal conclusions. The results do suggest, however, that researchers should continue to explore the potential impact of peer victimization upon children's cognitive styles. A second limitation is the reliance upon participants' self-reports. Future studies, therefore, would benefit from multimethod assessments. This is especially important in the assessment of maltreatment and victimization, which could be subject to recall biases, particularly since participants were asked to recall the perpetrator of each maltreatment and victimization experience. This said, however, studies have suggested that adults' recall of specific childhood events is relatively accurate (for a review, see Brewin et al., 1993). In addition, we have found that reports of emotional maltreatment assessed using the LEQ are significantly related to participants' cognitive styles, whether or not participants report believing that they were emotionally maltreated as a child, providing further support for the hypothesis that the results are not due simply to a recall bias (Gibb, Alloy, & Abammson, 2003). Nonetheless, future studies would benefit from assessments of maltreatment and victimization that do not rely upon participants' self-reports (e.g., observational methods or teacher reports). Third, it is difficult to determine what impact the setting of the study had on parents' responses during the questionnaire and interview assessments of Study 1. Specifically, they may have been hesitant to share negative thoughts and feelings with interviewers associated with their children's universities. Fourth, given that college students served as participants in both studies, the results may not be generalizable to other samples. Future studies should seek to replicate the current findings in other samples (e.g., psychiatric inpatients or outpatients, or individuals with more severe histories of maltreatment).

In summary, these studies addressed a gap in the literature by examining the relation between cognitive styles and reports of verbal peer victimization. In doing

so, the results provide preliminary evidence that a relation between students' cognitive styles and their reports of verbal peer victimization may exist independently of parental influences. Longitudinal studies are needed, however, to determine whether reports of verbal victimization from peers (in either platonic or romantic relationships) actually contributes to the development of negative cognitive styles.

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