

Developmental Differences in Cognitive Diatheses for Child Depression

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We studied developmental changes in the relation between cognitive style (i.e., attributional style and cognitive errors) and depression in children. Subjects included 409 fourth-, sixth-, and eighth-grade school children. We hypothesized (1) that evidence congruent with a cognitive diathesis model of depression would emerge with development across middle childhood, (2) that Event \times Cognitive Style \times Age interactions would be specific to some domains of stressful events but not others, and (3) that interactions would be especially prominent in domains that children regarded as personally important. Hierarchical multiple regressions indicated that cognitive style moderated the relation between events and self-reported depressive symptoms only in later childhood, and that such interactions were specific to certain domains of stressful events and cognitions. The importance of distinguishing among types of stress and cognitions in future tests of diathesis-stress models of childhood depression are discussed. Implications of developmental differences in the psychopathology of child depression also emerge.

The attributional reformulation of learned helplessness theory (Abramson, Seligman, & Teasdale, 1978) has generated an increasing number of studies of the causes and correlates of childhood depression. This theory predicts that children who tend to interpret failures and negative events in their lives in terms of internal, stable, and global causes will develop depression when such events occur. Conversely, those who are less inclined to make such cognitive errors will be less affected by negative events.

Although cast explicitly as a diathesis-stress model (Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982; Peterson & Seligman, 1984),

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this fundamental aspect of the theory has been tested in relatively few studies of children, with decidedly mixed results. In a longitudinal study of 8- to 11-year-old school children, Nolen-Hoeksema, Seligman, and Girgus (1986), assessed children's attributional style, major life events, and depressive symptoms on five occasions during a single school year. Attributional style \times Life events interactions significantly predicted depression at only two of the four times of measurement. In a second study Hammen, Adrian, and Hiroto (1988) examined a sample of 8- to 16-year-old children of mothers with bipolar and unipolar mood disorders. Hammen et al. found that only initial diagnosis and stress significantly predicted diagnosed depression 6 months later. Attributional style and the interaction of attributional style with stress were not significant predictors of depression. The Attributional style \times Stress interaction did, however, predict nonaffective diagnoses at follow-up. In a third study, Dixon and Ahrens (1992) used measures of attributional style and both daily and long-term negative life events, in a sample of 9- to 12-year-old children. Attributions by themselves did not predict changes in level of depression following negative events, but the interaction of attributional style with stress was a significant predictor of subsequent depression. In a fourth study, Cole and Turner (1993) used structural equation modeling in a cross-sectional investigation of the Cognitive diathesis \times Stress interaction in a large sample of elementary and high school children. Attributional style and negative cognitive errors partially mediated the effects of negative events on self-reported symptoms of depression; however, results did not support an interactive or moderator model. Taken together, these four studies provide mixed evidence regarding the role of cognitive style (either attributions or cognitive errors) as a cognitive diathesis for depression in children.

We propose that such inconsistent results derive from a failure to consider two crucial factors in the measurement of cognitive style and stress. First, the reformulated learned helplessness theory (Abramson et al., 1978) has been extrapolated to children without much, if any, consideration of developmental changes in children's causal explanations during middle childhood. Many applications of Abramson et al.'s theory to children have included a broad age range often without controlling for age differences or testing for Age \times Attributional style interactions. For example, Hammen et al. (1988) included children who ranged in age from 8 to 16; however, whether the relation of cognitive style and stress to depression differed across this age span was not examined.

Recent studies provide both empirical and theoretical grounds for examining developmental differences in the role of cognitive style (i.e., attributions and cognitive errors) as a diathesis of child depression. For example, Fincham and Cain (1986) noted that attributions become increas-

ingly important in the production of helplessness deficits during middle childhood. Until fifth- or sixth-grade children understand intelligence, for example, as an instrumental-incremental attribute, something that increases in response to practice or effort (Dweck & Elliot, 1983; Dweck & Leggett, 1988). Older children, however, understand ability as a capacity (or entity) that is distinct from effort (Miller, 1985; Nicholls, 1978, 1990; Nicholls & Miller, 1984). Fincham and Cain further noted that an actual attributional *style* is not likely to emerge until a more stable conception of self emerges in middle childhood. Indeed, Rholes, Blackwell, Jordan, and Walters (1980) found that attributional patterns associated with helplessness may not even be possible in younger children.

Cole (1989) predicted that, during the early elementary years, cognitive style will not function as a relatively stable vulnerability or diathesis that interacts with stressful events to produce depression. Young children's cognitions may actually reflect patterns of contemporaneous events and feedback that they experience. Indeed one's cognitive style may actually derive from such events. Interestingly, if cognitive style does not predate the stressful event, it cannot serve as a diathesis, nor can it interact (in the statistical sense) with negative events to produce depression. At later ages (late childhood and early adolescence), cognitive or attributional style may be established. If so, such cognitions will be less a reflection of concurrent events than they are at earlier ages. They may exist independently of negative events, and thus can conceivably moderate the effect of such events upon depression. More specifically, this model posits that the role of cognitions changes with developmental level from being a consequence of negative events to being a moderator of the effect of negative events upon depression (Cole, 1989; Cole & Turner, 1993).

The second possible problem with previous tests of cognitive vulnerability models in childhood involves the use of broad, comprehensive measures of negative events. Stress, however, is a multifaceted and complex construct (see reviews by Compas, 1987; and Rutter, 1981). Monroe and Simons (1991) pointed out that not all negative life events are likely to be equally important in activating particular kinds of diatheses, or precipitating specific disorders. For example, affiliative events are often distinguished from achievement events in the literature (see Abramson, Metalsky, & Alloy, 1989; Beck, 1987; Robins & Block, 1988). Attributions about affiliative events may not resemble attributions about achievement events. Indeed, adults' attributions appear to be consistent only across fairly narrowly defined types of situations (Anderson, Arnoult, & Jennings, 1988; Cutrona, Russell, & Jones, 1985). Distinguishing among types or domains of events may be critical in testing cognitive diathesis-stress theories of depression in children as well as adults.

The current study first incorporates developmental level (actually grade level) as a variable in a cross-sectional study of stress and cognition in a large sample of fourth-, sixth-, and eighth-grade school children. In line with the predictions of Cole's (1989) competency-based model and consistent with the literature on the development of children's attributions, an interaction between events and cognitive style in the prediction of depression was expected to emerge with age. More specifically, we hypothesized the existence of a Cognitive style \times Events \times Grade interaction. Second, the current study also examined whether the occurrence of such interactions were domain-specific. Thus, we utilized within-domain measures of events and cognitive style. We hypothesized that the emergence of interactions between events, cognitive style, and grade in the prediction of depression would differ from one domain to another. Such findings would indicate that specific cognitive diatheses for childhood depression pertain to specific domains of events. Finally, we expected interactions to be more prominent in domains that children regard as more important. Indeed, cognitions and events in less important domains were not expected to contribute as much to the prediction of depression.

METHODS

Subjects

Subjects were 149 fourth-grade, 131 sixth-grade, and 129 eighth-grade children (total $N = 409$) from two elementary schools and one junior high in a midsize, midwestern city. The sample included 206 boys and 203 girls. Children's ages ranged from 9 to 15 years ($M = 11.6$, $SD = 1.7$). The sample was 5% Asian-American, 32.6% black, 4.1% Hispanic, 57.3% Caucasian, and 1.1% other ethnic background. Demographic characteristics are presented in Table I. Grade levels were not significantly different on any of these variables except for Extended Family. Sixth graders were less likely to have an extended family member living at home.

Procedures

All fourth-, sixth-, and eighth-grade children in the classrooms of the schools selected were introduced to the study. Approximately 11% of the children did not participate in the study because they did not return permission forms, were absent on the day of administration, or produced invalid protocols leaving a total $N = 409$. The questionnaires (described

Table I. Demographic Characteristics Broken Down by Grade Level^a

Characteristic	Grade		
	4	6	8
Sex: Female (%)	49.1	53.7	48.6
Race: Caucasian (5%)	60.2	58.3	59.2
Black	34.5	33.9	35.4
Hispanic	3.9	5.0	4.1
Other	1.5	2.8	1.3
Family type:			
Two natural parents	49.1	46.3	36.6
Stepparent(s)	20.1	22.1	26.8
Single parents	30.8	31.6	36.6
Extended family member living at home ^b	20.8	9.6	21.1
Family size	4.7 (1.6)	4.4 (1.4)	4.3 (1.6)

^aGrade-level differences were tested by chi square for categorical variables and by ANOVA for continuous variables. Standard deviations are in parentheses.

^b $p < .05$.

below) were administered as a packet to the children one classroom at a time. A research assistant read all items aloud to all participating children. The order of questionnaires was counterbalanced by classroom to control for effects of order and possible fatigue. Administration took approximately 1 hour. Children who did not return completed assent and consent forms were given an alternative activity during this time.

Measures

Cognitive Style Questionnaires. A modified version of the Children's Attributional Style Questionnaire (CASQ; Kaslow, Tanenbaum, & Seligman, 1978; Seligman et al., 1984) was constructed to assess depressotypic attributions about negative social and academic events. The original inventory has relatively high stability ($r = .66$ to $.71$) among 8- to 13-year-olds, over a 6-month interval, and it has been shown to correlate significantly with depression by a number of studies (Kaslow, Rehm, & Siegel, 1984; Kaslow, Rehm, Pollack, & Siegel, 1988; Seligman et al., 1984). Although the CASQ can give separate scores for three attributional dimensions, reliability coefficients for these scales are relatively low (Robins & Hinkley, 1989; Seligman & Peterson, 1986).

We made modifications in the CASQ in order to construct two subscales measuring depressive attributions about negative social and academic events. First, we eliminated all items about positive events. Second,

we deleted all items that did not reflect internal *and* stable *and* global attributions about these negative events. This meant eliminating items such as "A person steals money from you. Is it because (a) that person is dishonest or (b) most people are dishonest," which presumes an *external* and *stable*, attribution in both answer options. (This item was designed to contribute to a Globality subscale, but globality in the context of externality would not be expected to correlated with depression.) The resultant social CASQ scale contained nine items, and the academic CASQ scale contained seven items. In the current study, the modified CASQ manifested moderately high reliability at all three grade levels (KR-20s ranged from .65 to .70).

The Children's Negative Cognitive Error Questionnaire (CNCEQ; Leitenberg, Yost, & Carroll-Wilson, 1986) is a self-report inventory designed to assess such negative cognitive errors as overgeneralized predicting of negative outcomes, catastrophizing about the consequences of negative events, incorrectly taking personal responsibility for negative outcomes, and selectively attending to negative features of an event. Respondents are asked to rate the degree to which statements regarding cognitive errors about cognitive events resemble their own thoughts (1 = *not at all like I would think* to 5 = *almost exactly like I would think*). The CNCEQ includes 24 items, and yields a total cognitive distortion score and subscale scores for each of three content domains: social, academic, and athletic events. Leitenberg et al. reported Cronbach's alpha coefficients ranging from .75 to .89, and test-retest correlations across a 4-week interval ranging from .56 to .65. In a recent confirmatory factor analysis of the CNCEQ items, Cole and Turner (1993) described a four-factor model with one general factor and three factors representing the specific content areas. In the current study, reliability for the CNCEQ was consistently high for all three grade levels (Cronbach's alphas ranged from .86 to .91).

Depression. The Children's Depression Inventory (CDI; Kovacs, 1983) is a 27-item self-report inventory designed to assess the presence and severity of depressive symptoms in children. Items cover the cognitive, affective and behavioral signs of depression, and are scored on a 0 to 2 scale. Scores between 0 and 54 are possible, with higher scores reflecting more severe symptoms. The CDI has a high degree of internal consistency, moderate test-retest reliability, and significant correlations with other measures of depression and depression-related constructs (Kazdin, 1990) especially in nonclinic populations. Recent studies establish normative data for the CDI (Finch, Saylor, & Edwards, 1985; Nelson, Politano, Finch, Wendel, & Mayhall, 1987; Smucker, Craighead, Craighead, & Green, 1986). In the

current study, the reliability of the CDI was high and consistent across grade levels (Cronbach's alphas ranged from .86 to .90). Furthermore, the CDI showed no grade differences with regard to mean level or variability: $M = 9.1$, $SD = 7.8$ for fourth graders; $M = 9.2$, $SD = 7.2$ for sixth graders; $M = 9.1$, $SD = 8.1$ for eighth graders.

Environmental Events. Recent occurrence of social, academic, and sports-related events was measured by a modified version of Shelton and Garber's (1987) Children's Activity Inventory (CAI). The original CAI lists 91 daily events and activities representing pleasant and unpleasant experiences in the lives of elementary and junior high school age children. Children first indicate the frequency with which each event occurred in the past two weeks (0 = *not at all*, 1 = *a few times*, and 2 = *often*). Then they rate how pleasant/unpleasant each event was, on 5-point scales (-2 to +2) with "smiley-face" illustrations representing the degree of pleasure or displeasure. Shelton and Garber reported that children with diagnosed depressive disorders experienced significantly more unpleasant CAI events than did members of a nondepressed psychiatric comparison group. Depressed children also reported significantly more unpleasant events associated with mastery and competence, and less enjoyment of pleasant and ambiguous events, than did members of both normal (nonclinic) and psychiatric control groups.

For the present study the CAI was modified in two ways. First, items were placed into three clusters, representing social, academic, and sports events. Second, nomothetic valences were computed for each event from the mean pleasant/unpleasant rating of all subjects for the event. These valences were multiplied by the frequency score for each item (for each subject). In this manner the potentially biasing effects any particular individual's ratings were minimized. Third, three subscales were derived by summing the item products according to the content of the event (social, academic, and sports).

Relative Importance. Children's appraisals as to the relative importance of doing well in the three domains were assessed via two methods. In one, we asked subjects to rank friends, sports, and grades in order of increasing importance by assigning each a number, 1 to 3. In the second assessment, children were presented with three pairs of statements contrasting each pair of domains (e.g., "Doing well in school" vs. "Having lots of friends"). Students first decided which was more important to them, and then decided whether the selected statement was "a little" or "a lot" more important. For each item, the score for a domain was incremented by 2 if it was regarded as a lot more important, by 1 if it was only a little more important, and by 0 if it was treated as less important.

RESULTS

Preliminary Analyses

To judge the comparability of these data to those reported in other studies, we first examined the distributional characteristics of the CDI. Scores on the CDI ranged from 0 to 44 ($M = 9.04$, $SD = 7.65$). These data closely corresponded to norms for this age group published elsewhere (Finch et al., 1985; Smucker et al., 1986). In the current study, 11.1% of the children scored 19 or above on the CDI, suggesting that severe depressive symptoms were a concern for a substantial portion of the sample.

Regression Analyses

In the academic and social domains, the two measures of cognitive style were standardized and summed, creating a social cognitive style and an academic cognitive style measure. (Correlations between the two social measures and between the two academic measures were statistically significant: $r = .46$ and $.31$, respectively, $p < .001$ for both.) A third measure, sports-related cognitive style, consisted only of the athletic subscale of the CNCEQ (because the CASQ contains no sports-related items). We treated all measures as continuous variables in hierarchical multiple regressions designed to test interactions between cognitive style, events, and grade. We tested higher-order effects while controlling for lower-order effects. When higher-order tests were nonsignificant, we tested lower-order effects while ignoring the higher-order effects. Separate analyses were conducted within each of the three domains: academic, social, and sports. Significant three-way interactions (Cognitive Style \times Events \times Grade) emerged in the academic and social domains, but not in the sports domain.

Academic Domain. The regression of depression scores onto academic events, academic cognitive style, grade level, and all two- and three-way interactions accounted for a significant proportion of the variance, $R^2 = .36$ ($p < .001$). The three-way interaction (Academic Events \times Academic Cognitive Style \times Grade) was significant, $F(1, 400) = 4.78$, $p < .03$. This effect indicated that the interaction between academic cognitive style and academic events differed as a function of grade level. Regressions at each grade level revealed R^2 values of .22 for fourth graders, .38 for sixth graders, and .50 for eighth graders (all $p < .001$). Examining the Academic Events \times Academic Cognitive Style interaction at each grade level revealed no apparent interaction for fourth or sixth graders ($F < 1$ for both); for the eighth graders, however, the expected interaction emerged, $F(1, 127) =$

16.79, $p < .0001$ (see Fig. 1). Among eighth graders, negative academic events were more strongly associated with depression for children who tended to have a depressotypic cognitive style regarding academic events. Negative academic events were less strongly related to depression among those eighth graders who made fewer cognitive errors and evinced a healthier attributional style.

Followup analyses were conducted in order to determine which components of the academic cognitive style composite were responsible for the three-way interaction. Three-way interactions were significant for scales

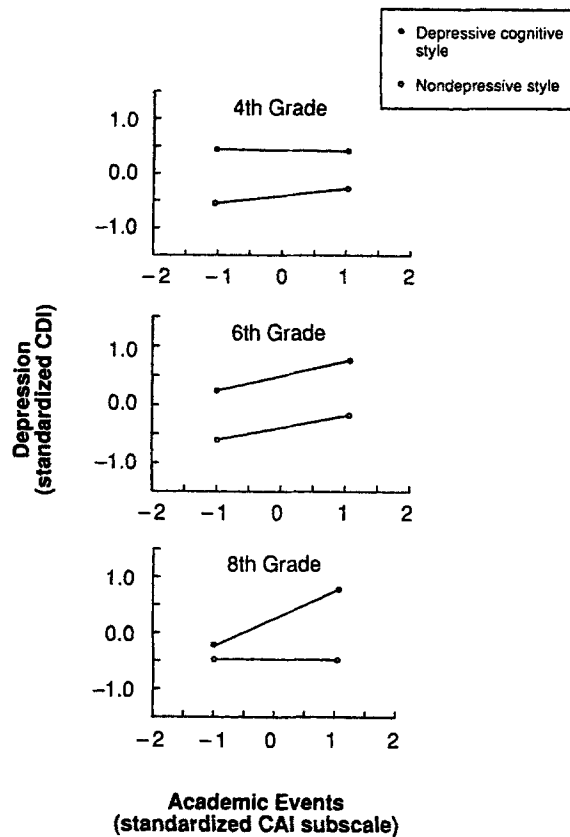


Fig. 1. Relation between events and depression broken down by level of grade and cognitive style for the academic domain. CDI = Children's Depression Inventory; CAI = Children's Activity Inventory.

measuring catastrophization [$F(1, 400) = 11.90, p < .001$], selective abstraction [$F(1, 400) = 3.85, p < .05$], and attributional style [$F(1, 400) = 10.96, p < .001$]. Three-way interactions involving subscales that measured personalization and overgeneralization approached statistical significance (all $p < .10$). Effects on all five scales reflected the same pattern of results as depicted in Fig. 1.

Social Domain. The regression of depression scores onto social events, social cognitive style, grade level, and all interactions was also highly significant, $R^2 = .40$ ($p < .001$). In this regression, we found a significant three-way (Social Events \times Cognitive Style \times Grade) interaction, $F(1, 400) = 5.75, p < .02$. Regressions at each grade level yielded R^2 values of .27 for fourth graders, .39 for sixth graders, and .54 for eighth graders. Graphing the interactions again revealed a strong Social Event \times Social Cognitive Style interaction for eighth graders, $F(1, 127) = 21.95$ ($p < .0001$), but no apparent interactions at the younger grade levels ($F < 1$ for both). For the eighth graders with depressotypic cognitive styles, negative social events related strongly to depression (see Fig. 2). Among those eighth graders with healthy cognitive styles, social events were essentially unrelated to depression.

Components of the social cognitive style composite were tested separately in order to describe more completely the nature of the three-way interaction. Three-way interactions were significant for three of the four CNCEQ social subscales: Catastrophization [$F(1, 400) = 12.39, p < .0005$], Selective Abstraction [$F(1, 400) = 12.89, p < .0004$], and Personalization [$F(1, 400) = 10.62, p < .002$]. Neither the Overgeneralization subscale nor the CASQ contributed to the three-way interaction. Effects on the three significant subscales reflected the same pattern of results shown in Fig. 2.

Sports Domain. The regression of depression scores onto sports events, sports cognitive errors (i.e., the athletic subscale of the CNCEQ), grade level, and all interactions produced a significant R^2 of .26 ($p < .001$). Unlike the previous analyses in this regression, we found no evidence of a three-way (Sports Cognitive Errors \times Sports Events \times Grade) interaction, $F < 1$. A significant two-way interaction between sports cognitive errors and grade did emerge, however, $F(1, 401) = 9.35, p < .002$. Followup analyses revealed that the strength of relation between sports-related negative cognitive errors and depression scores increased with grade level. Standardized betas (actually correlations) were .31 for fourth graders, .43 for sixth graders, and .64 for eighth graders ($p < .001$ for each). See the upper panel of Fig. 3.

A second two-way interaction also emerged between sports events and sports cognitive errors, $F(1, 401) = 4.75, p < .03$. In the lower panel of Fig. 3, the relation of sports-related events to depression scores is depicted

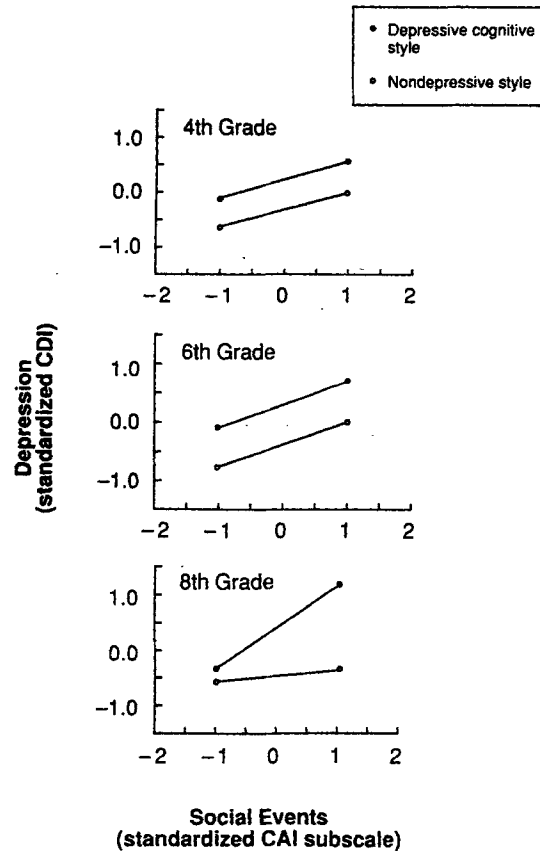


Fig. 2. Relation between events and depression broken down by level of grade and cognitive style for the social domain. CDI = Children's Depression Inventory; CAI = Children's Activity Inventory.

for high and low levels of sports-related cognitive errors (± 1 *SD* on the CNCEQ subscale). Sports-related events were more strongly associated with depression scores for children who had high levels of cognitive errors (standardized slope = .23), compared to children who had low levels of cognitive errors (standardized slope = $-.06$). Interestingly, however, the strength of the effect of sports-related negative events was relatively small when contrasted with comparable effects of academic or social cognitive events (standardized slopes = .62 and .81, respectively, for eighth graders).

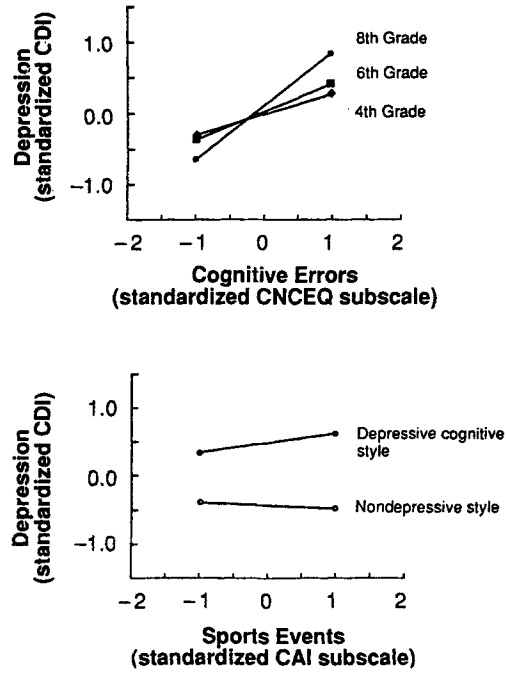


Fig. 3. Relation between cognitive errors and depression broken down by level of grade (above); relation between sports events and depression broken down by level of cognitive style (below). CDI = Children's Depression Inventory; CNCEQ = Children's Negative Cognitive Error Questionnaire; CAI = Children's Activity Inventory.

Domain Specificity. We hypothesized that cognitions regarding a specific class of negative events should moderate the effects of that specific class of negative events upon depression. To test this hypothesis, we examined the interactions between events and cognitions from different domains while controlling for same-domain Events \times Cognitions interactions. Neither the Academic Events \times Social Cognitive Style \times Age interaction nor the Social Events \times Academic Cognitive Style \times Age interaction were significant, controlling for same-domain interactions ($F < 1$ in each case). Conversely, both of the same-domain interactions were significant after controlling for cross-domain interactions. For the Academic Events \times Academic Cognitive Style \times Age interaction, $F(1, 396) = 7.31, p < .01$. For the Social Events \times Social Cognitive Style \times Age interaction, $F(1, 396) = 6.60,$

$p < .05$. (All lower-order effects of same- and cross-domain interactions were controlled in all analyses.)

Relative Importance. Children's ratings and rankings of the relative importance of the three domains were the dependent variables in a $3 \times 2 \times 3$ (Grade \times Sex \times Domain) split-plot MANOVA. Grade and sex were between-subjects factors; domain was a within-subjects factor. Using a multivariate approach, we found significant main effects for domain, $F(4, 404) = 215.13$, and for sex, $F(2, 406) = 7.01$ (all $p < .001$), as well as a significant Sex \times Domain interaction, $F(4, 404) = 15.76$ ($p < .001$). Followup tests revealed that girls and boys regarded the academic domain as more important than the social domain [girls: $F(2, 406) = 136.19$; boys: $F(2, 406) = 101.45$, all $p < .001$] and the sports domain [girls: $F(2, 406) = 321.35$; boys: $F(2, 406) = 102.06$, all $p < .001$]. Girls also tended to place more value on the social domain than the sports domain [$F(2, 406) = 33.71$, $p < .001$], although the difference was relatively small. Sex differences emerged in two domains. Girls valued the academic domain as somewhat more important than did boys, $F(2, 406) = 6.51$ ($p < .002$), and boys valued sports more highly than did girls, $F(2, 406) = 31.38$ ($p < .001$). Patterns of means are presented in Fig. 4.

DISCUSSION

Three major findings emerged from the current study. First, evidence supported the hypothesis that cognitive diatheses for depression emerge with age. By the eighth grade, the data were consistent with a cognitive diathesis-stress model; in the earlier grades, however, support for a cognitive diathesis-stress was weak to nonexistent. Second, evidence support-

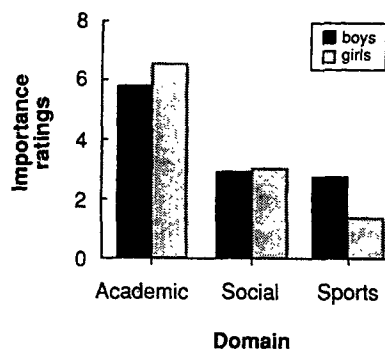


Fig. 4. Relative importance of domains broken down by sex.

ing a cognitive diathesis–stress model was stronger in some event domains than in others. Indeed, the possibility arises that cognitive diatheses in different domains may emerge at different developmental levels. Third, domains in which a stronger Cognitive Style \times Events interaction emerged were the domains that children typically regarded as more personally important to them.

In support of our first hypothesis, results of the current study provided evidence that qualitatively different relations among cognitive style, events, and depression emerge for older versus younger children. Indeed, events and cognitive style do not appear to interact in the prediction of depressive symptoms in the fourth and sixth grades; however, such a multiplicative relation does emerge by the eighth grade. These data are consistent with the hypothesis that the transition from late childhood to early adolescence marks a time during which cognitive appraisals begin to moderate the effects of stressful events. The fact that our ability to account for variance in depression scores with these measures increased dramatically from fourth to eighth grade further suggests that cognitive models of depression may be more relevant for older children. Such findings are also consistent with the research summarized above (Fincham & Cain, 1986; Rholes et al., 1980), indicating that stable attributional and cognitive styles may not be acquired until later in middle childhood or early in adolescence.

Such findings also lend support to Cole's (1989) prediction that a cognitive diathesis for depression does not exist in younger children, at least not in the same form that it does in adults. This theory proposes that, in younger children, cognitions are a direct consequence of the events and feedback that the child experiences. Only with the development of the capacity for formal-operational thought and abstract reasoning does a qualitatively different relation among these constructs begin to emerge. By the eighth grade, cognitive style can function as a relatively stable characteristic that moderates the effects of environmental events on the child's emotional functioning.

In support of our second hypothesis, three-way interactions emerged within some event domains, but not others. Interactions were obtained in the academic and social domains but not in the sports domain. These findings highlight the importance of content-related distinctions among types of negative events in tests of cognitive diathesis–stress models (Abramson, Alloy, & Metalsky, 1988; Robins & Block, 1988). For example, attributional style in a particular domain would be expected to moderate the effects of negative events in that same domain to produce symptoms of depression. When the content or type of the stressful event experienced by the individual matches that of the depressogenic attributions, and when the events

are of sufficient importance, intensity, and frequency, depression is more likely to result.

Our third hypothesis dealt with the relative importance of different domains. Abramson et al. (1989) did not specify which types of events are most likely to activate depressive diatheses, or whether event-cognition interactions in some domains are more depressogenic than others. Cole (1989), however, proposed that failure or negative feedback in domains where success is highly valued by children will be more closely associated with depression. The results of the current study indicate that children in the fourth, sixth, and eighth grades placed more importance upon the academic domain, and less importance on the sports domain. Consequently we conjecture that the emergence of strong Event \times Cognitive style interactions in the academic and social domains, in contrast to the rather weak interaction in the sports domain, may be a function of the relative importance children at this age place upon the various domains.

Whereas the current study provides some important steps toward understanding the role of cognitive style in child depression, several caveats must be issued, suggesting avenues for further investigation. First, our study focused upon qualitative aspects of negative events (i.e., whether events pertain to social, academic, or sports-related activities). Alternatively, such events could also be classified according to their onset and duration (e.g., chronic or acute) or according to their intensity (e.g., major life transitions or relatively minor, everyday hassles and pleasures; Compas, 1987).

Second, the CAI as a measure of positive and negative events may more accurately be described as a measure of perceived stress. Monroe and Simons (1991) pointed out that the measurement of stress by self-report instruments can be biased by respondents' idiosyncratic perception of events. Such a confound could artificially inflate correlations between the CAI and the measures of cognitive style. Although the current study used nomothetic item weightings for CAI items to minimize the role of individuals' subjective perceptions, an ideal assessment strategy would be to develop an explicit system of guidelines, standardized definitions, decision rules, and operational criteria for the assessment of various types of stress. Such methods have been developed for assessing major life events with adults (e.g., Brown & Harris, 1986). The assessment of children's stress awaits the development of similar methods.

Third, the current study relied upon a single self-report measure of depressive symptoms, albeit a highly reliable one. Followup studies might profitably implement interviews to test the generalizability of these findings to diagnosed depressive disorders. A related question concerns the specificity of the relation of events and cognitions to children's depression. Recent work identifying higher-order constructs such as negative affectivity

(Kendall & Watson, 1989; Watson & Clark, 1984) should lead to sophisticated studies designed to test the particular diatheses and the specific kinds of events that foster depression per se.

Finally, the current study was not designed to test the causal relations implicit in most diathesis–stress models. Such models posit that a preexistent cognitive style leads to depression when the individual experiences negative events. The regression model used in this cross-sectional study cannot test causal relations or rule out alternative putative models. Consequently, our results should be considered tentative. Failure to find the expected interaction effects (as in the fourth and sixth grades) may cast serious doubt upon the relevance of the diathesis–stress model for certain populations, but even this approach relies somewhat upon support of the null hypothesis. Among other things, longitudinal research is needed to verify the presumed causal linkages among these constructs.

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