Self-Perceived Competence and the Relation Between Life Events and Depressive Symptoms in Adolescence: Mediator or Moderator?

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In a 2-wave longitudinal study, 9th-grade students (N = 468) completed self-report measures of stressful life events, depressive symptoms, and 5 domains of self-perceived competence (i.e., academic competence, social acceptance, physical appearance, behavioral conduct, and athletic competence). Teachers and peers also reported about the participants' depressive symptoms. In longitudinal analyses, negative (but not positive) events related to depressive symptoms. Results suggested that self-perceived competence served as a mediator (but not a moderator) of this relation. Negative events predicted changes in self-perceived competence. Self-perceived competence predicted changes in depressive symptoms. Also, the direct effect of negative events on depressive symptoms diminished after controlling for self-perceived competence.

Stressful life events and depression are inextricably related. In adults and in young people, studies report consistent and significant correlations between negative life events and depressive symptoms (Compas, 1987; Johnson, 1986; Kessler, 1997). In adults, longitudinal research suggests that acute stressful events can lead to the recurrence of depression (Kessler, 1997). In children and adolescents, longitudinal studies demonstrate that stressful life events predict the onset or exacerbation of depression even after controlling for prior levels of emotional and behavioral problems (Compas, Howell, Phares, Williams, & Giunta, 1989; Glyshaw, Cohen, & Towbes, 1989; Siegel & Brown, 1988).

Nevertheless, estimates of the magnitude of this relation have rarely been as large as expected. Documented effects, although statistically significant, have often been only small to moderate in size (Compas, 1987). Especially in younger populations, the resilience of children and adolescents to the effects of stressful life events has been frequently reported (Cowen, Work, & Wyman, 1992, 1997; Cummings, 1997; Egeland, Carlson, & Sroufe, 1993; Joseph, 1994). Attempts to explain such resilience have focused on a host of potential moderator variables (e.g., Cowen et al., 1997; Masten, Best, & Garmezy, 1990). Baron and Kenny (1986) defined moderators as characteristics or conditions that partition the effects of a dependent variable on a particular outcome. For some individuals, the effect of stress on depression may be considerable; for others, it may be negligible. The difference depends on the level of the moderator variable. Ignoring a moderator is tantamount to averaging the weak with the strong, potentially resulting in the misestimation of effects.

Competence-related factors such as self-efficacy, self-esteem, self-confidence, negative attributional style, and self-perceived competence have often been proposed as potential moderator variables (Bandura, 1994; Hilsman & Garber, 1995; Glyshaw et al., 1989; Masten et al., 1990; Metalsky & Joiner, 1992; Metalsky, Joiner, Hardin, & Abramson, 1993; Rutter, 1983; Werner, 1990). Such factors presumably facilitate effective coping and inhibit maladaptive response to stressful life events. Consider, for example, a negative academic event such as getting a bad grade on a test. On the one hand, individuals who believe that they are academically competent may attribute the negative event to a lack of effort (rather than lack of ability), which in turn may motivate hard work in the future. On the other hand, individuals who believe that they are not academically competent may interpret the negative event as confirmation of their belief, which in turn may engender hopelessness, reduce motivation, and potentially promote depression. According to this conceptualization, self-perceived competence serves as a moderator of the relation between negative events and depressive symptoms.

In childhood, however, this theoretical chain of events is complicated by developmental issues. The construction of competence-related beliefs is itself a major developmental task (Garber, 1984; Harter, 1985). Young people construct such beliefs using the information that is inherent in or inferred from a wide variety of events. Successful or unsuccessful outcomes (Bandura, 1994), positive or negative feedback from others (Cole, 1991; Cole, Martin, & Powers, 1997; Cole, Maxwell, & Martin, 1997; Seroczynski, Cole, & Maxwell, 1997), and even pleasant or unpleasant life circumstances (Cole & Turner, 1993) represent major classes of events that can convey competency information. In other words, the very events that purportedly interact with self-perceived competence (according to a moderational model) may be partially responsible for the development of self-perceived competence in
the first place. Furthermore, the failure to establish such beliefs in childhood can result in a variety of problematic outcomes, including the emergence of depressive symptoms (Cole, 1990; Cole, Martin, & Powers, 1997; Jordan & Cole, 1996). According to this conceptualization, the belief in one's self-competence may function as a mediator of the relation between life events and depressive symptoms, especially in young people (Baron & Kenny, 1986).

Mediation and meditational processes are not necessarily mutually exclusive. On the one hand, evidence already exists that self-competence meets three of the four criteria for being a mediator (Kenny, Kashy, & Bolger, 1998). First, negative events relate to depression in young people (Cole & Turner, 1993; Compas et al., 1989; Compas, Slavin, Wagner, & Vannatta, 1986; Turner & Cole, 1994). Second, negative events relate to self-perceived competence (Cole, Maxwell, & Martin, 1997). Third, low levels of perceived competence relate to depressive symptoms (Cole, Martin, & Powers, 1997; Cole, Martin, Powers, & Truglio, 1996; Turner & Cole, 1994). The final criterion, however, has yet to be tested well. No one has demonstrated that the effect of negative events on depressive symptoms diminishes after controlling for self-perceived competence. Research has shown, however, that closely related variables (i.e., attributional style and negative cognitive errors) do account for part of the relation between negative events and depressive symptoms (Cole & Turner, 1993).

On the other hand, as self-competence develops in the child or adolescent, it may begin to serve as a moderator of the relation between negative events and depression. The interaction between negative events and self-competence has not been formally tested; however, a number of similar tests suggest that such an interaction might well exist, especially in later childhood or adolescence. In longitudinal studies with college students, Metalsky and Joiner (1992; Metalsky et al., 1993) reported interactions between negative events and explanatory style, personal hopelessness, and self-esteem in the prediction of self-reported depression in late adolescence (i.e., college students). In a 5-year longitudinal study of children and adolescents, Nolen-Hoeksema, Girgis, and Seligman (1992) noted that the interaction between explanatory style and negative events did not predict depressive symptoms in younger children but that the interaction was significant at older ages. Similarly, Robinson, Garber, and Hillsman (1995) described significant interactions between stressful events and measures of explanatory style and self-esteem during the transition from elementary to middle school. Evidence of such interactions has been weak or inconsistent at younger age levels (Cole & Turner, 1993; Dixon & Ahrens, 1992; Hammann, 1988; Hammann, Adrian, & Hiroto, 1988; Nolen-Hoeksema, Girgis, & Seligman, 1986; cf. Conley, Haines, Hilt, & Metalsky, 1999; Hillsman & Garber, 1995).

The purpose of the present study was to examine the role of self-competence beliefs as mediators and moderators of the relation between life events and depressive symptoms in adolescence. Mindful of the fact that mediational and meditational models describe causal relations, we implemented a longitudinal design and statistically controlled for prior levels of our dependent variables. Aware of the multidimensional nature of self-concept (Wylie, 1974), we assessed five different domains of self-perceived competence. Cognizant of the problems inherent in assessing life events in children, we focused on age-appropriate life events and used a nomothetic system for evaluating the valence of such events (Cole & Turner, 1993; Compas, 1987; Johnson, 1986).

Method

Participants

The participants in this study were part of a larger longitudinal study of child and adolescent depression (Cole et al., 1996; Cole, Martin, & Powers, 1997; Cole, Peck, Dolerzal, Murray, & Cannomiero, 1999). When the participants reached ninth grade, we began to administer a life events inventory, making the present study possible. (Earlier administration of the events inventory was not possible because of time constraints and school administrative concerns.) The participants in this study were tested twice, once in the Fall and once in the Spring of the 1996–1997 school year. The participants were 468 ninth graders from two public high schools in a midsize Midwestern city. This sample derived from a larger pool of 512 students. Loss of participants was due to parental nonconsent (n = 32) and to student attrition (n = 12). Nonparticipants did not differ from the participants with regard to race, gender, age, family size, family income, or (when available) scores on the instruments administered at the onset of the study (ps > .10). The participants' ages ranged from 13 to 17 years (M = 14.5, SD = 0.6). The sample was 55% male, 46% female, and ethnically diverse (estimates: 3% Hispanic, 0.5% Asian American, 2% Native American, 18% African American, 73% Caucasian, 3% multiracial, and 1.0% other). Other demographics are available in Cole et al. (1996, 1999; Cole, Martin, & Powers, 1997).

Measures

Depressive symptoms. We obtained information about depressive symptoms from three different sources: children, peers, and teachers. The children's self-report was the Children's Depression Inventory (CDI; Kovacs, 1985), a 27-item questionnaire that measures cognitive, affective, and behavioral symptoms of depression. The suicide item was not included in the present study because of concerns by the school administration. The CDI is the most widely used self-report measure of childhood depression, and it has acceptable levels of internal consistency, test-retest reliability, and convergent validity (Carey, Faulistch, Gresham, Ruggiero, & Enyart, 1987; Kazdin, French, & Unis, 1983; Saylor, Finch, Spirito, & Bennett, 1984). Cronbach's alpha for the CDI in this study was .89.

To peers, we administered the Peer Nomination Index of Depression (PNID; Lefkowitz & Tessey, 1984). The PNID consists of 13 questions about depressive symptoms (e.g., "Who often looks sad?") requesting that classmates nominate peers from the same classroom. In the present study, students made their nominations by shading in "bubbles" next to classmates' names on a computer scan sheet. Scores for each item consisted of the proportion (ranging from 0 to 1) of classmates who nominated a given student for a particular depressive characteristic. Summing the items created full scale scores that ranged from 0 (no nominations from any classmate on any item) to 13 (all classmates nominated the participant for every item). For more details and psychometric data, see Cole and Carpenter (1990) and Lefkowitz and Tessey (1985). In the present study, Cronbach's alpha was .89.

From teachers, we obtained the Teacher's Rating Index of Depression (TRID; Cole et al., 1996). The TRID consists of the same 13 items as in the PNID, reworded for use by teachers about their students. Teachers rate each item on a 4-point scale (1 = never to 4 = often). The TRID manifested good convergent and discriminant validity (Cole et al., 1996; Cole, Martin, Peck, Henderson, & Harwell, 1998; Seroczyński et al., 1997). In the present study, the TRID had a Cronbach's alpha of .92.

In the spirit of multioperationism (Cook & Campbell, 1979), we combined the teacher, peer, and self-reports of depressive symptoms into a
single index. Forming a composite was justified (a) by our interest in minimizing the effects of any given method on the results and (b) by the moderate to large correlations between the three measures (.49 between CDI and TRID, .59 between CDI and PNIID, and .72 between TRID and PNIID). First, we standardized each of these three measures. Then we summed them to form the composite. According to Nunnally and Bernstein’s (1994, p. 269) formula for the reliability of a linear composite of standardized scores, the reliability of this index was .82.

Self-perceived competence. We assessed five domains of self-perceived competence (academic competence, social acceptance, athletic competence, physical appearance, and behavioral conduct) using five subscales from Harter’s (1988) Self-Perception Profile for Adolescents (SPPA). On the SPPA, 45 items are scored on 4-point rating scales with higher scores reflecting greater self-perceived competence. Correlations between subscales ranged from .25 to .49 in the present study. Psychometric properties of the SPPA are excellent (Harter, 1988; Wichstrom, 1995). In the present study, Cronbach’s alphas for the subscales ranged from .76 to .88. At the request of reviewers of this article, we standardized and combined these five subscales into a single composite index of self-perceived competence.

Negative life events. To measure the occurrence of positive and negative life events, we used a 72-item modified version of the high school form of the Adolescent Perceived Events Scale (APES; Compas, Davis, Fosythe, & Wagner, 1987). Modification to the original APES involved both the selection and the weighting of items. From the original APES, we dropped a subset of items that overlapped in content with our measure of self-perceived competence. Examples of deleted items included “worry about school performance” (i.e., academic competence), “negative feelings or worry about your appearance” (i.e., physical appearance), “success or failure in sports” (i.e., sports competence), “having few or no friends” (i.e., social acceptance), and “getting in trouble or being suspended” (i.e., behavioral conduct).

As per Cole and Turner (1993), participants responded to each item in two steps. First, they indicated whether the event occurred in the last 6 months. Then they rated the valence of the event on a 7-point Likert scale that ranged from −3 (extremely bad) to 3 (extremely good). To score the inventory, we regarded each event as either positive or negative based on the sign of the average valence of all participants who had experienced the event. In this manner, we minimized the influence of any one person’s mood on the valence of the events. Because two waves of data were examined in this study, we based the aggregate ratings on both waves of data. According to this scheme, we obtained 36 positive and 36 negative events, which we combined into two separate indices.

Procedure
Prior to the onset of the study, parents signed informed-consent statements and completed brief demographic questionnaires as part of a larger longitudinal study. As part of the larger investigation, each parent had the option of receiving $10 for each wave of participation or donating this money to the child’s school for the purchase of educational materials. Each teacher received $30 for each wave of participation. Participating students and teachers completed questionnaire packets twice (once in the Fall semester and once in the Spring semester). Fall assessments occurred approximately 6 to 8 weeks after the beginning of the school year. Spring assessments occurred 6 to 8 weeks prior to the end of the school year. Assessment times were scheduled approximately 6 months apart (give or take 2 weeks because of conflicting school activities). The actual average duration of the time span was 25.80 weeks (SD = 1.48). At the extremes, 34 students (7%) had time spans of only 23 weeks, and 10 participants (2%) had time spans of 29 weeks. All of these exceptions were due to participant absenteeism on either the Fall or Spring assessment day, requiring a makeup session 1 week later.

Doctoral psychology students and advanced undergraduates administered the questionnaires to participating students and their teachers one classroom at a time during the regular school day. They administered the questionnaires in random order by classroom, to minimize the effects of order and fatigue on any particular instrument. Two or three additional research assistants circulated among the students answering questions before, during, and after questionnaire administration. Teachers completed questionnaires at approximately the same time and returned them to the lab in preaddressed envelopes. Nonparticipating students worked quietly at their desks. The test procedure took approximately 45 min.

Results

Descriptive Statistics
Means and standard deviations of all measures appear in Table 1, broken down by wave. Descriptive statistics for the CDI and for the self-perceived competence subscales are similar to normative values (Harter, 1988; Smucker, Craighead, Craighead, & Green, 1986), suggesting that our sample was representative. Approximately 5% of the sample exceeded a sometimes recommended clinical cutoff for depression on the CDI (Kazdin, 1989), and about 4% obtained scores higher than 2 standard deviations above the mean on the composite index of depression. Epidemiological studies suggest that the incidence of major depression among nonclinical child and adolescent populations is between 2% to 5% (Lewinsohn, Clarke, Seeley, & Rohde, 1994; Kavashi & Simonds, 1979), lending further evidence to the generalizability of our results. The distribution of self-perceived competence scores also revealed that our sample contained a relatively large number of individuals who regarded themselves as relatively incompetent in one or more domains. Between 18% and 20% of our participants scored 1 standard deviation below the mean on at least one of these measures.

In the following analyses, we examined negative and positive life events separately. In these analyses, negative events frequently emerged as significant predictors of depressive symptoms, as discussed below. Positive events were rarely significant in any test. Out of 15 cross-sectional and longitudinal tests, the main effect of

<table>
<thead>
<tr>
<th>Measure</th>
<th>Wave 1 (Fall)</th>
<th>Wave 2 (Spring)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Depressive symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDI</td>
<td>7.92</td>
<td>7.46</td>
</tr>
<tr>
<td>PNIID</td>
<td>0.56</td>
<td>0.39</td>
</tr>
<tr>
<td>TRID</td>
<td>9.82</td>
<td>8.86</td>
</tr>
<tr>
<td>Competence domain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Academic</td>
<td>12.84</td>
<td>4.21</td>
</tr>
<tr>
<td>Social</td>
<td>14.43</td>
<td>3.63</td>
</tr>
<tr>
<td>Sports</td>
<td>12.12</td>
<td>5.15</td>
</tr>
<tr>
<td>Appearance</td>
<td>12.25</td>
<td>5.11</td>
</tr>
<tr>
<td>Behavior</td>
<td>11.64</td>
<td>4.31</td>
</tr>
<tr>
<td>Life events</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>−7.32</td>
<td>6.83</td>
</tr>
<tr>
<td>Positive</td>
<td>6.39</td>
<td>5.32</td>
</tr>
</tbody>
</table>

Note. CDI = Children’s Depression Inventory; PNIID = Peer Nomination Index of Depression; TRID = Teacher Rating Index of Depression.
positive events on depressive symptoms was never significant at the .05 level. Out of 45 tests of two- and three-way interactions involving positive events, only 1 was significant (p < .053). Noting that this is less than would be expected by chance alone, we regarded it as a Type I error and did not pursue it further. Consequently, we only report analyses of negative events.

Moderational Model

In accordance with Baron and Kenny's (1986) recommendation, we tested the moderator model by examining the interaction between negative events and self-competence. In particular, we regressed our Time 2 index of depression onto the interaction between Time 1 self-competence and our index negative events (which occurred between Time 1 and Time 2). In this regression, we controlled for the main effects associated with our Time 1 depression index, our Time 1 index of self-competence, negative life events, and gender.

As shown in Table 2, several main effects were significant. The main effect for prior levels of depression (p < .001) indicates substantial stability of depressive symptoms over this 6-month interval. The significant main effects for negative events and self-competence (ps < .001) reveal that individuals with more negative events and individuals with lower levels of self-perceived competence had higher levels of depression, even after controlling for prior levels of depression. The interaction between prior self-competence and prior negative events was not significant (p > .20), lending no support for the moderational model.

Concerned about concluding in favor of the null hypothesis, we tested our power to detect a significant interaction. Before the entry of the interaction term into the equation, the average multiple \( R^2 \) due to prior level of depression, competence, negative events, and gender was approximately .29. With our sample size of 468 and an alpha level of .05, we had a power of .95 to detect a moderate effect size for an Events \( \times \) Competence interaction (i.e., a change in \( R^2 \) of .02). The actual effect size for this interaction in our study was only .002. Our interpretation is that we had sufficient power to detect a moderately large interaction if it had existed in our study. The actual effect was small and nonsignificant.

Mediation Model

In keeping with Kenny et al. (1998), we examined the mediational model by conducting four tests. Test 1 establishes that the predictor (i.e., negative events) has some overall effect on the outcome (i.e., level of depressive symptoms). Given the longitudinal nature of the present study, we executed this test by regressing our Time 2 index of depression onto Time 1 depression, negative life events, and gender. As shown in Table 3, negative events was significantly related to our Time 2 depression index over and above Time 1 depression and gender (p < .001). Participants who reported more negative events between Time 1 and Time 2 experienced higher levels of depression at Time 2, even after controlling for Time 1 depression and gender.

Test 2 establishes that the predictor (i.e., negative events) has an effect on the mediator (i.e., self-perceived competence). Thus we regressed our Time 2 index of self-competence onto our index of prior negative events, gender, and the Time 1 index of self-competence. As shown in Table 3, negative events was significantly and negatively related to self-perceived competence (p < .001). Participants who reported more negative life events experienced lower levels of self-perceived competence at Time 2, even after controlling for self-perceived competence at Time 1 and gender.

Tests 3 and 4 must be conducted as part of the same analysis. Test 3 establishes that the outcome (i.e., depressive symptoms) covaries with the mediator (i.e., self-competence), even after controlling for the original predictor (i.e., negative events). Test 4 establishes that the relation between the predictor and the outcome either disappears (complete mediation) or substantially diminishes (partial mediation) when the mediator is statistically controlled.

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1 We also conducted three reanalyses of these data in which we replaced the composite index of depression with one of its three component parts. When we used the PNNIS or the TRID, the pattern of results was identical to those reported for the composite measure of depression. When we used the CDI, the results were the same except that the interaction between negative events and self-competence was marginally significant after correcting for Type I error (α = .05/3, p < .02). Post hoc examination of this effect revealed that the relation of negative events to self-reported depressive symptoms was stronger for participants with relatively low levels of self-perceived competence.

2 We repeated these analyses using the composite measure of depression but replacing the composite index of competence with one of the five specific domains of self-perceived competence. In none of these five reanalyses was the interaction between negative events and self-competence significant (p > .20).
conduct these tests, we regressed our Time 2 depression index onto our index of Time 1 self-competence and negative life events. As before, we controlled for Time 1 depression and gender. The result of Test 3 is shown in Table 5. The mediator, self-competence, significantly and negatively related to Time 2 depression even after controlling for negative life events, Time 1 depression, and gender (p < .001). The result of Test 4 is also shown in Table 5. The beta weight associated with prior negative life events was substantially less than it was in Test 1 (.12 vs. .20). Nevertheless, this beta weight was still statistically significant (p < .05). In other words, Time 1 self-competence had a significant direct effect on Time 2 depression, which accounted for part (but not all) of the relation between negative life events and depressive symptoms. The latter point was confirmed by a test of the indirect effect of negative events on depression (Baron & Kenny, 1986). In this analysis, we tested the product of two beta weights: the direct effect of negative events on self-competence (from Test 2) and the direct effect of self-competence on depression (from Test 4). This product was significant (p < .01), suggesting that self-competence indeed accounted for a significant portion of the relation between negative events and subsequent depressive symptoms.

Discussion

Two major findings emerge from this study. First, relatively little support emerged for a moderational model, in which self-perceived competence qualified the relation between negative events and depressive symptoms. Second, support consistently emerged for a partial mediational model, in which self-perceived competencies constituted a mechanism whereby negative events lead to depressive symptoms. That is, negative events predicted changes in self-perceived competence, self-perceived competence predicted changes in depressive symptoms, and the relation between negative events and depressive symptoms was partially explained by self-perceived competence. We elaborate on each of these findings below.

Our first major finding was that essentially no longitudinal support emerged for the moderational model. We elaborate on these findings with caution, as they represent conclusions in support of the null hypothesis. We note, however, that our sample sizes were relatively large, that we had good power to detect a moderate effect size, and that the results were almost perfectly consistent across various measures of depression and various domains of self-perceived competence. Cautiously, then, we note that these findings are compatible with our previous point (Cole & Turner, 1993) that strong evidence of cognitive diatheses may not emerge until later adolescence or adulthood. A diathesis for any disorder (by definition) is a preexisting state or condition. In other words, certain developmental, experiential, or genetic events must have occurred before a diathesis can exist. Prior to its existence, a diathesis is unlikely to moderate the effects of negative life events on problems such as depression. We speculate that self-perceived competencies are still under construction during middle childhood and early adolescence. As such, their moderating effects may not be consistent until later adolescence or early adulthood (see Nolen-Hoeksema et al., 1986, 1992; Turner & Cole, 1994).

Arguing against this developmental hypothesis is the fact that a few researchers have found evidence of an Events X Cognitive Style interaction in children (e.g., Conley et al., 1999; Hilsman & Garber, 1995). Several features of these studies deserve special consideration. One feature is that a relatively brief period of time elapsed between the negative events and the assessment of depression (i.e., 19–26 days in Conley et al.'s study and only 4 days in Hilsman and Garber's, as compared with the 4- to 6-month interval that has characterized most of the previous work with children and adolescents). An intriguing possibility is that the effects of the Cognitive Style X Negative Events interaction are shorter lived in younger individuals than they are in college students or adults. Brief longitudinal designs may represent better the time interval over which such effects unfold.

Another interesting possibility is that the moderating effects may be domain specific. Several studies have focused on negative events that are highly congruent with the content of the negative cognitive schema. In studies by Hilsman and Garber (1995) and by Robinson et al. (1995), self-cognitive style and competence in academics interacted with negative academic events to predict depressive symptoms. The interesting possibility arises that depressosyntopic cognitive schemas are relatively domain specific in

Table 5
Mediation Model (Tests 3 and 4): Direct Effects of Self-Competence and Negative Events on Depressive Symptoms at Time 2, Controlling for Gender and Prior Depressive Symptoms

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1 (control variables)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-competence (Time 1)</td>
<td>.47</td>
<td>.04</td>
<td>.49**</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.05</td>
<td>.06</td>
<td>.04</td>
<td>.24**</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression (Time 1)</td>
<td>.37</td>
<td>.05</td>
<td>.38**</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.03</td>
<td>.06</td>
<td>-.02</td>
<td></td>
</tr>
<tr>
<td>Negative events (Time 1 to 2)</td>
<td>.07</td>
<td>.03</td>
<td>.12*</td>
<td></td>
</tr>
<tr>
<td>Self-competence (Time 1)</td>
<td>-.22</td>
<td>.05</td>
<td>-.22**</td>
<td>.29**</td>
</tr>
</tbody>
</table>

Note. All interactions involving gender were nonsignificant. *p < .05. **p < .001.

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3 We repeated all four of the mediational tests, after replacing the composite index of depression with one of its component parts and after replacing the composite index of self-competence with one of its component parts. In every instance, the pattern of results was the same as that reported here.
youth and become more generalized later in life. Thus, counter-examples such as these may not argue so much against the developmental hypothesis as they suggest avenues for its modification.

Still another possibility is that Diathesis × Stress interactions may be evident only when depression is measured by self-report. Previous reports of such interactions by Conley et al. (1999), Hilsman and Garber (1995), and Robinson et al. (1995) were all based on self-report inventories of depressive symptoms. In the present study, we also found marginally significant support for an interaction between negative events and self-competence when we restricted ourselves to a self-report measure of depression. Competing interpretations are possible. On the one hand, one might assume that self-report methods are particularly sensitive measures of depression and that subtle interaction effects may only be detectable using highly sensitive measures. On the other hand, one might be concerned that the complete reliance on self-report measures in the assessment of all constructs could pave the way for problems involving shared method variance and nonlinear relations, which could masquerade as interaction effects. It is clear that more research is needed to disentangle these intriguing possibilities.

Our second major finding was that self-perceived competence mediates at least part of the relation between negative life events and depressive symptoms. Our longitudinal results supported all of the conditions that Kenny et al. (1998) established for the existence of mediational effects. Two of these criteria are that the predictor must predict both the mediator and the outcome. Our results revealed that negative events predict subsequent self-perceived competence in five different domains, even after controlling for previous levels of self-perceived competence. We believe that this is the first rigorous longitudinal demonstration that negative events affect adolescents' self-perceived competence. Our results also revealed that negative events predict the depressive symptoms, even after controlling for prior levels of depression.

Another criterion for mediation is that the mediator or mediators must predict the outcome variable. In our analyses, self-perceived competence predicted depressive symptoms, after controlling for prior levels of depressive symptoms and previous negative events. These results extend our previous findings with younger children. In an independent sample, Cole (1990, 1991) showed that perceived competence was inversely related to depressive symptoms in elementary school children. In previous waves of the present study (before we were able to include a life events measure), we demonstrated that multiple domains of self-perceived competence have cumulative and predictive effects on depressive outcomes in children (Sroczynski et al., 1997). The present results suggest that self-perceived competence continues to predict depressive symptoms in early adolescence.

The final criterion for mediation is that the effect of the predictor on the outcome must diminish or disappear when controlling for the mediator. In our longitudinal analyses, self-perceived competence accounted for some, but not all, of the covariation between negative events and depressive symptoms, even after controlling for prior levels of depressive symptoms. In keeping with Kenny et al.'s (1998) criteria, we concluded that these five domains of self-perceived competence partially mediated the relation between negative events and depressive symptoms.

Support for the mediational model is consistent with our previous speculations (Cole, 1991; Cole & Turner, 1993) that self-perceived competence is still under construction in early adolescence, and experiencing negative events during this developmental period has a substantial negative effect on this process. We conjecture that negative events (perhaps more than positive events) convey real or imagined competency-related information to young people. During middle childhood and even in early adolescence, such negative information can disrupt a major developmental task: the construction of a sense of self-competence. Other findings are consistent with these hypotheses. For example, Williamson, Birmaier, Anderson, Al-Shabbout, and Ryan (1995) divided negative events into those that were dependent on or independent of adolescents' own behavior or personal characteristics. Dependent negative events were more strongly related to depressive symptoms. Along similar lines, adolescents' attributions of negative events to internal, stable, and global causes have been (somewhat irregularly) related to depressive outcomes (cf. Cole & Turner, 1993; Dixon & Ahrens, 1992; Hammen, 1988; Hammen, Adrian, & Hiroto, 1988; Nolen-Hoeksema et al., 1986, 1992; Panak & Garber, 1992; Turner & Cole, 1994). Children's causal attributions may be partially responsible for the extraction of negative self-information from negative life events. In keeping with a competency-based model of depression (Cole, 1991) and aspects of the hopelessness model of depression (Abramson, Metalsky, & Alloy, 1989), we speculate, however, that self-perceived competence has multiple determinants and ultimately is more proximately related to the emergence of depression in young people than is attributional style.

Several caveats regarding the present study deserve mention and suggest directions for future research. The first concerns the measurement of life events. Our measure assessed the occurrence and valence of the events that occur in the lives of adolescents; however, our measure did not assess the frequency with which these events occur. Greater fidelity could derive from the use of a more precise measure of life events. Furthermore, as Monroe and Simons (1991) observed, self-report measures of life events can also be affected by the respondent's mood, a particularly pernicious problem in the study of depression. In the present study, we used nomothetic (not idiographic) weights for each event to reduce the effect of any individual's mood on the ratings. We also controlled for prior depressive symptoms (including mood) in our longitudinal analyses. Nevertheless, potential problems in the assessment of life events still exist. In future research, implementing interview-based assessments of life events (e.g., Brown & Harris, 1978, 1986) or ecological momentary assessment techniques (Stone & Shiffman, 1994) could further reduce the confound between current mood and the appraisal of life events.

Second, we have no diagnostic information about depression per se. In this study, we were fortunate to obtain measures of depressive symptoms from three different sources (i.e., self, peers, and teachers), which we combined into a single multi-informant index. Although this strategy enabled us to reduce the probable impact of monomethodism on our results, we still do not know how negative events and self-perceived competence would relate to depressive illness per se. Future studies of clinical populations and interview-based diagnostic information would be valuable next steps. Finally, despite its longitudinal nature, this study involved only one cohort in middle school, thus precluding the examination of developmental and cohort effects. Testing hypotheses about emergence of cognitive diatheses over time will require longer longi-
tudinal designs. Indeed, the continuation of the current project should provide such opportunities over the next several years.

References


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