

The Children's Attributional Style Interview: Developmental Tests of Cognitive Diathesis-Stress Theories of Depression

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This paper presents an initial assessment of the Children's Attributional Style Interview (CASI), a newly designed measure for assessing attributional style in young children (age 5 and up). The CASI was used to conduct prospective tests of the reformulated helplessness (L. Y. Abramson, M. Seligman, & J. Teasdale, 1978) and the integrated hopelessness/self-esteem (G. I. Metalsky, T. E. Joiner, Jr., T. S. Hardin, & L. Y. Abramson, 1993) theories of depression in a sample of 147 5–10-year-old children. For comparison, the same tests were also conducted with the Children's Attributional Style Questionnaire-Revised (CASQ-R; N. J. Kaslow & S. Nolen-Hoeksema, 1991), a commonly used measure for assessing attributional style in older children (age 8 and up). The CASI evidenced support of the reformulated helplessness theory and partial support of the integrated hopelessness/self-esteem theory. The CASI also demonstrated good internal consistency. Thus, our findings provide initial support for the CASI as a methodologically sound measure of attributional style for children as young as 5 years old. Although preliminary, our findings also suggest possible developmental differences in how attributional style interacts with self-esteem and negative life stress. The CASI should prove to be a useful tool in furthering the understanding of the origins and development of attributional style in childhood, as well as its contribution to the understanding of the development and prevention of depressive symptomatology in children.

KEY WORDS: attributional style; depression; helplessness/hopelessness; children; assessment.

INTRODUCTION

Cognitive diathesis-stress theories of depression propose that a negative cognitive diathesis, in combination with a stressor, will predict increases in depressive symptoms. For example, the reformulated helplessness theory of depression (Abramson, Seligman, & Teasdale, 1978; Seligman, Abramson, Semmel, & von Baeyer, 1979) indicates that a tendency to make internal, stable, global attributions for negative outcomes, and external, unstable, specific attributions for positive outcomes, is a cognitive vulnerability factor (or diathesis) that interacts with life stress to predict increases in depressive symptoms. The

hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989), which evolved out of the reformulated helplessness theory, proposes the same diathesis-stress interaction predicting depression, but focuses specifically on the depressogenic tendency to attribute negative outcomes to stable and global causes. Metalsky and colleagues (Metalsky, Joiner, Hardin, & Abramson, 1993) integrated the hopelessness theory of depression with the self-esteem theories of depression (e.g., Brown & Harris, 1978), postulating that high self-esteem acts as a buffer against depression among people who have a negative attributional style and who are experiencing high levels of negative life stress. In other words, the Negative Attributional Style \times Stress interaction is predicted to be more pronounced for people with low self-esteem than for those with high self-esteem.

Most studies testing these theories in children examine the *cross-sectional correlation* between attributional style and depression (which tends to be robust; see

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Gladstone & Kaslow, 1995, for a meta-analytic review), but they frequently do not test the *prospective interaction* of attributional style and stress in predicting depression, as the theories predict. In their comprehensive meta-analytic review of studies which bear on the helplessness or hopelessness theories of depression in children, Joiner and Wagner (1995) found support for a *cross-sectional* relation (i.e., correlation or concurrent prediction) between depression and negative attributional style, both for negative events (i.e., internal, stable, global attributions for negative events; Seligman et al., 1984; Turner & Cole, 1994), and for positive events (i.e., external, unstable, specific attributions for positive events; Benfield, Palmer, Pfefferbaum, & Stowe, 1988; Curry & Craighead, 1990; Friedlander, Traylor, & Weiss, 1987; McCauley, Mitchell, Burke, & Moss, 1988). Although these findings show a robust relationship between attributional style and depression, they do not explain the nature or direction of this relationship (Gladstone & Kaslow, 1995; Rodriguez & Pehi, 1998). In fact, Rodriguez and Pehi (1998) used concurrent regressions and found that attributional style predicted depression, but also that depression predicted attributional style. Furthermore, although the concurrent association between attributional style and depression is well-established in many studies, Gladstone and Kaslow (1995) state, "the bulk of the research fails to examine the manner in which attributional styles in children and adolescents mediate [or moderate] the association between negative life events and depression, as predicted by the diathesis-stress model[s]" (p. 603). Similarly, Joiner and Wagner (1995) emphasize that very few studies test the two essential components of the cognitive diathesis-stress theories: The *interaction* of attributional style with negative life stress in predicting depressive symptoms, and the *prospective* relation between the diathesis-stress interaction and increased depressive symptoms over time. The present study tested both of these components.

Of the handful of studies that have tested the postulated prospective diathesis-stress interaction (i.e., Attributional Style \times Life Stress) in predicting depression in children or adolescents, support in line with the theories is mixed. Dixon and Ahrens (1992), the only study to test the *hopelessness* theory by using a *generality* (i.e., stability and globality) subscale for negative events, found that, as predicted, stable, global attributional styles for negative events interacted with negative life stress in predicting increases in depressive symptoms in a sample of 9–12-year-olds. Robinson, Garber, and Hilsman (1995) performed a prospective test of the *integrated* hopelessness/self-esteem theory in a young sample (12-year-olds), and found the predicted interaction between negative attributional style, low self-esteem, and high levels of stress in predicting

depressive symptoms over time. Of the remaining prospective studies, which tested the reformulated helplessness theory, one found full support of the theory's predicted interaction in a sample of 10–12-year-olds (Hilsman & Garber, 1995), two found partial support in a sample of third, fourth, and fifth graders over a 5-year period (predominantly as the children grew older; Nolen-Hoeksema, Girgus, & Seligman, 1986, 1992), and two did not find support for the prospective interaction, though the correlation between attributional style and depression was significant (Bennett & Bates, 1995, 11–13-year-olds; Hammen, Adrian, & Hiroto, 1988, 8–16-year-olds). Research examining the *concurrent interaction* between attributional style and life stress in predicting depression is also mixed. Turner and Cole (1994) found the predicted interaction in a sample of 9–15-year-olds (i.e., attributional style *moderated*, or qualified, the stress–depression relationship; see Baron & Kenny, 1986), but in a similar study using the same age group, Cole and Turner (1993) failed to find this interaction, and reported that instead, attributional style *mediated* (i.e., accounted for) the relationship between adverse life events and depressive symptoms among adolescents. Although these initial tests of the theories show promise, further developmental tests of the theories' specific predictions are needed to delineate the basis of the mixed results.

Developmental Issues in Attributional Style and Depression

Although the link between attributional style and depression has been tested in child samples, the developmental nature and course of this relationship have not been thoroughly examined. Because current measures of attributional style are designed for children 8 years and older (Gladstone & Kaslow, 1995), most tests of the helplessness and hopelessness theories in children have used a fairly attenuated age range in which young children (i.e., less than 8 years old) are rarely represented. Furthermore, broad age ranges of children are often analyzed together in these tests. Thus, they have not tested developmental hypotheses regarding age differences or changes in the diathesis-stress interaction over time (e.g., Kaslow, Rehm, & Sigel, 1984; Nolen-Hoeksema et al., 1992). Of the limited studies that have examined developmental hypotheses, a few found that the attribution–depression relationship becomes stronger with age (e.g., McCauley et al., 1988; Nolen-Hoeksema et al., 1992; Turner & Cole, 1994), whereas other studies have found no age differences (e.g., Cole & Turner, 1993; Kaslow et al., 1984). Assessing developmental differences (cross-sectionally)

and changes (prospectively or longitudinally) is essential for determining how cognitive development and social experience affect attributional style, and how it operates in relationship to depression. For example, Cole and colleagues (Cole & Turner, 1993; Tram & Cole, 2000; Turner & Cole, 1994) suggest that attributional style is not as well-developed in childhood as it is in adulthood, and consequently, children's attributional style may *result from* negative experiences, which may be more indicative of a mediational model than of a moderational model, contrary to the postulates of the diathesis-stress theories. A developmental framework in the child attribution–depression literature would examine developmental trends in cognitive diathesis-stress models of depression, with particular attention to whether social experience (e.g., negative life stress) and cognitive factors (e.g., self-esteem) moderate or mediate the attribution–depression relationship at various points throughout development.

Furthermore, given the abundant literature linking attributions and depression in children, developmental research on attributional style may have implications for prevention and early intervention in childhood depression. In order to allow for early intervention, though, research must first uncover the developmental origins of attributional style—that is, how attributional style develops, changes, becomes ingrained over time, or is a combination of these—and this can only be done by examining attributional style from a young age (e.g., Burhans & Dweck, 1995; Fincham & Cain, 1986; Friedberg & Dalenberg, 1991; Haines, Metalsky, Cardamone, & Joiner, 1999; Kaslow et al., 1984; Nolen-Hoeksema et al., 1992). In addition, based on evidence of depression in very young children (e.g., Frommer, Mendelson, & Reid, 1972), many researchers have noted the need for exploring developmental models of children's attributional style, starting with very young children (e.g., Friedberg & Dalenberg, 1991; Garber & Flynn, 1998; Haines et al., 1999; Kaslow et al., 1984; Metalsky & Abramson, 1981; Nolen-Hoeksema et al., 1992). Thus, an adequate tool for assessing attributional style in young children is not only critical for understanding the origins and early development of attributional style, but also for uncovering developmental relationships between attributional style and depression, thus contributing to early prevention programs for childhood depression.

Examining attributional style in young children raises important questions of whether attributional style is stable and well-developed in young children. A similar question regarding the stability of attributional style has been raised and debated in the adult literature with mixed evidence of stability in adults' attributional style (see Garber & Flynn, 1998). There is very little empirical work that

attempts to address the stability of attributional style in childhood. Friedberg and Dalenberg (1991) argue that methodological problems (e.g., task complexity) in assessing attributional style have impaired our understanding of young children's attributional processes. They point out that when simple, engaging pictorial tasks are used, a great deal of literature demonstrates that even young children make causal attributions (also see Palmer & Rholes, 1989, for a review). In fact, some recent developmental research suggests that very young children do show attributional patterns or styles. For example, Dweck and colleagues (Burhans & Dweck, 1995; Heyman, Dweck, & Cain, 1992; Ruble & Dweck, 1995) found that some children as young as 3 years already showed helpless tendencies based on negative self-attributions of badness, which are internal, stable, and global attributions. Other developmental research on theory of mind suggests that 5-year-olds' model of mind is unified and representational in such a way that would allow them to make predictions, explanations, and interpretations (such as attributions) that accurately reflect their inner states (Gopnik & Wellman, 1992). Furthermore, some clinical research has documented a relationship between attributional style and depressive symptoms in children as young as 7 years old (Asarnow & Bates, 1988; Kaslow et al., 1984), suggesting that attributional style is a meaningful cognitive variable in young children. Clearly, then, it is important for future research to be able to assess attributional style in young children, in order to establish whether children's attributional style is stable over time and across domains, as well as whether and how it operates as a cognitive diathesis for depression throughout development (cf. Tram & Cole, 2000).

Methodological Goals in Assessing Children's Attributional Style

Most studies assessing attributional style in the child depression literature have used the Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984) or its revised version (CASQ-R; Kaslow & Nolen-Hoeksema, 1991), which were designed to test attributional style in children ages 8 and above (Gladstone & Kaslow, 1995). The CASQ-R is a short, simple, easy-to-administer measure, consisting of 24 hypothetical events (12 negative and 12 positive) that children imagine are happening to them. For a given event, children are asked to choose between two causes that vary only one dimension of attributional style (for example, one *internal*, stable, specific cause and one *external*, stable, specific cause). The CASQ-R has been used in most tests of the helplessness

and hopelessness theories of depression in school-aged children and adolescents, and has provided partial support for these theories, as reviewed earlier. However, a comparably useful measure does not exist for young children.

We set out to develop a measure of attributional style appropriate for younger children and school-age children that would complement the CASQ-R. That is, while the CASQ-R asks children to choose among two attributions for a given event, the CASI was designed with an open-ended format, thus identifying the *spontaneous* attributions that children themselves make for events. Comparable to the Attributional Style Questionnaire (ASQ; Peterson et al., 1982; Seligman et al., 1979), a well-established measure of attributional style in adults, the CASI allows children to generate their own causal attributions and then rate each attribution on continuous scales of internality, stability, and globality. To make the CASI appropriate for young children, we: (a) designed a hands-on, developmentally minded interview to interest and engage children; (b) illustrated each event pictorially and allowed children to rate their attributions using a sliding pointer on large, colorful scales with icons representing the concepts of internality, stability, and globality; and (c) presented developmentally appropriate instructions and practice items to children, in order to orient them to the CASI's format and to check their understanding of the questions and rating scales, allowing for additional training if necessary.

The CASI includes a balance of both interpersonal events (involving parents and peers) and achievement events (dealing with cognitive tasks, classroom situations, sports, and art), which are noted as significant realms in children's lives (Ames, Ames, & Garrison, 1977) and important domains for attributions (Dodge, 1993; Dweck & Leggett, 1988; Dweck & Reppucci, 1973; Quiggle, Garber, Panak, & Dodge, 1992). We conducted a pilot test to identify events that were particularly relevant to children in both domains (see Appendix for CASI events).⁴ The balance of interpersonal and achievement events enables researchers to test for attributions by domain as well as for general attributional style, an important step in assessing for specific vulnerabilities to depression (Metalsky, Halberstadt, & Abramson, 1987).

Predictions of the Current Study

The present study offers an initial evaluation of the CASI, and compares it to the CASQ-R, the most com-

monly used measure of children's attributional style. Because the CASI was designed with a particular interest in assessing the attributional style in young children, and the CASQ-R was intended as a school-age measure, we predicted that, for younger children, the CASI would be more reliable (i.e., internally consistent). To test the cognitive diathesis-stress theories, we employed a prospective design in which attributional style and self-esteem, along with negative life events occurring over a 3-week period, were used to predict changes in depressive symptoms over the same 3-week period. Furthermore, using a sample of children ages 5–10 years, we explored the possible role of age within these theories, with the goal of addressing the much-cited need for ascertaining the developmental nature and process of these relationships over time (Haines et al., 1999; Joiner & Wagner, 1995; Kaslow et al., 1984).

In line with the reformulated helplessness theory of depression, we predicted that negative attributional style for negative events (internal, stable, global attributions for negative events) and negative attributional style for positive events (external, unstable, specific attributions for positive events) would each interact with negative life stress to predict increases in depressive symptoms. Because of the need for developmental tests of these interactions, we used age as a continuous variable in our regression analyses.

Despite the limited number of studies of the integrated hopelessness/self-esteem theory of depression in children, we predicted, in line with the theory, a three-way interaction between negative attributional style (stable, global attributions for negative events only), low self-esteem, and stress, such that the Attributional Style \times Stress interaction would be more pronounced for those with low self-esteem than for those with high self-esteem. As with the helplessness tests, we explored age effects in testing the integrated theory.

METHOD

Participants

One hundred forty-seven children participated in the study. Participants in a midsize Midwestern city were recruited through a parent information and consent letter. Younger children (ages 5–7) were recruited from three childcare centers and older children (ages 8–10) were recruited from six third- and fourth-grade classes at a parochial school. Sixty-six percent of potential participants took part. One hundred thirty-two of these children (90%) also returned, approximately 3 weeks later, for the second testing session (Time 2). Attrition was mainly due to inclement weather and school absences. Children

⁴We piloted potential CASI events with children ages 5–12 and selected only those events that averaged 3 or above on a 5-point scale of importance.

ranged in age from 5 to 10 years old with a mean age of 8.2 years ($SD = 1.8$). In the main analyses, we used age as a continuous variable to test for age effects. However, for clarity we will refer to a group of "younger children" (M age = 6.64; $n = 73$) and a group of "older children" (M age = 9.76; $n = 74$) when making age comparisons.

The majority (98.5%) of participants were Caucasian. Average annual family income was \$76,339 ($SD = 31,293$). A MANOVA revealed that children who did not return for Time 2 (T2) did not differ from children who remained in the study on depression, self-esteem, and attributional style measures at Time 1 (T1); $F(4, 141) = 1.18, p = ns$. Each child received a small prize for each session of participation.

Measures

Children's Attributional Style Interview (CASI)

The CASI is an interactive interview consisting of 16 events, which are divided equally between positive and negative events (8 of each), and between interpersonal and achievement events (8 of each), thus yielding 4 events for each combination (see Appendix for CASI events). Each event is followed by a prompt for the child's attribution for the event, and then three questions assessing the dimensions of internality, stability, and globality for his/her particular attribution. The three questions for each of the 16 events yield a total of 48 items.

The interview begins with a short, interactive instruction session in which children practice generating causes for events and rating them on internality, stability, and globality dimensions. The instructions allow for additional training if children should need it. In the present study, all subjects were able to follow the instructions. After the instructions, an experimenter reads each event to the child while showing the accompanying illustration, asks the child for a reason why the event happened, and then prompts the child to rate the internality, stability, and globality of his/her attribution on continuous sliding scales (i.e., the child can place a sliding pointer anywhere along the 10" triangular rating scale). For example, to assess internality, the experimenter refers to the child's attribution and asks, "How much of that is because of you [*points to large end of triangle with a large picture of a child pointing at self*], not because of you [*points to small end of triangle with a tiny picture of a child*], or somewhere in between [*runs finger up and down middle of triangle*]?" The child then slides the pointer to the spot on the triangle which indicates his or her rating of internality for the attribution. The experimenter records

where the child placed the pointer, on a scoring sheet with a numbered scale viewable only to the experimenter (scores of 0–10, with .5 increments, indicate the distance in inches along the triangular rating area of the scales). Thus, the scores reflect the children's own ratings of the degree of internality, stability, and globality for their given attributions.

Including the instructions, the CASI took between 30 and 45 min to administer. For younger children, the CASI was typically administered in two sessions, approximately 20 min each. The children, younger and older alike, seemed to have no difficulty utilizing these scales. In fact, the internal consistencies for the various CASI subscales were very similar for younger (α range = .73–.82) and older (α range = .77–.82) children. Although younger children tended to use the extremes of the stability and globality scales somewhat more than older children ($t_s = 5.86$ and 4.41 , respectively, $p_s < .01$), they did not differ from older children in their extreme ratings on the internality scale ($t = 1.54, p = ns$). Furthermore, young children were not more likely to use the extreme on one end of the scale to the exclusion of the other (i.e., they were not biased toward either extreme).

To create the CASI materials, an artist drew 8-1/2" \times 11" illustrations depicting each event featuring a "main character" child (a boy for male participants and a girl for female participants), with the stipulation that each picture be neutral in expressions and free of causally leading information. For example, for the event, "You run a race at school and you win," the accompanying illustration depicts a child crossing the finish line while several other children observe the race with neutral expressions. We assembled the colorful drawings into storybook format, with separate books for boys and girls, and showed the illustrations to each participant while reading the accompanying CASI events. To illustrate our rating scales for the attributional dimensions of internality, stability, and globality, we created 11" \times 17" charts with bright colors and iconic illustrations, each with a large isosceles triangle to represent the continuous scale of potential ratings.

Five subscales can be derived from the CASI: (a) the *full positive subscale* (sum of 24 ratings on a 10-point scale—8 internality, 8 stability, and 8 globality—for positive events); (b) the *full negative subscale* (sum of 24 ratings—8 internality, 8 stability, and 8 globality—for negative events); (c) the *full composite subscale*, (subtraction of the full negative score from the full positive score); (d) the *generality negative subscale* (sum of 16 ratings—8 stability and 8 globality—for negative events); and (d) the *generality positive subscale* (sum of 16 ratings—8 stability and 8 globality—for positive events). Our tests of

the reformulated helplessness theory use the full negative and full positive subscales (as is typically done in tests using the CASQ-R and ASQ; Peterson et al., 1982; Seligman et al., 1979); these scores on the CASI range from 0 to 240. Our tests of the integrated hopelessness/self-esteem theory use the generality negative subscale (Metalsky et al., 1993); this score on the CASI ranges from 0 to 160.

Children's Attributional Style Questionnaire-Revised (CASQ-R; Kaslow & Nolen-Hoeksema, 1991)

The CASQ-R is a 24-item forced choice measure of children's attributional style. The questionnaire consists of 12 positive and 12 negative events, each followed by two possible causes for the event, varying on one dimension of attributional style (internality, stability, or globality) while holding the other two constant. The CASQ-R includes 2 positive and 3 negative events that assess internality, 7 positive and 6 negative events that assess stability, and 3 positive and 3 negative events that assess globality (Thompson, Kaslow, Weiss, & Nolen-Hoeksema, 1998). Children are told to imagine that they are in a given situation, and are then asked to choose between the two reasons for why the event would have happened to them. Scores from the CASQ-R can form the same five subscales as described for the CASI.

Children's Depression Inventory (CDI; Kovacs, 1985)

The CDI is a 27-item, paper and pencil, self-report measure appropriate for children ages 7–17 years. Each item contains three statements of common symptoms of depression, varying in severity. Children are asked to mark the response that has been most true for them during the past 2 weeks. Based on feedback from school personnel, we modified “kill(ing) myself” to “hurt(ing) myself” in Item 9. In addition, based on pilot testing, for younger subjects we changed “schoolwork” to “work” in Item 15 (i.e., “I have to push myself all the time to do my work,” etc.), as young children said they did not have hard or lengthy schoolwork to do. Also based on pilot testing, for younger children, the last choice of Item 23 (“I do very badly in subjects I used to be good in”) was changed to, “I do very badly on my schoolwork and I used to do well,” as young children were unfamiliar with the concept of different subjects, although they understood the concept of doing well or poorly on schoolwork. For younger children (5–7-year-olds), the CDI was illustrated and made into a picture-book format. For example, the item, “I am sad once in a while/I am sad many times/I am sad all the time,” was illustrated by icons of three sad faces, increasing in

size.⁵ With this format, younger children had no problem using the scale, as they were simply able to point to their response choices in the illustrated book after each item was read. Higher scores on the CDI indicate greater levels of depressive symptoms.

Self-Perception Profile for Children (Harter, 1985)

Children completed the Self-Perception Profile for Children. In this study, the general self-worth scale was used to assess children's self-esteem. For each item, children are presented with two choices—e.g., “Some kids are often *unhappy* with themselves, BUT other kids are pretty *pleased* with themselves”—and are asked to decide which group of children he or she is most like. Then, they decide how true the statement is for them, “sort of true for me,” or “really true for me.” The 6 items are scored on a 24-point scale, with higher scores indicating higher self-esteem. For younger children, we illustrated the items and put them in book format, in a way similar to Harter's Pictorial Scale of Perceived Competence and Social Acceptance for young children (Harter & Pike, 1984; see also Harter, 1999).⁶ For example, the item quoted earlier is illustrated by two sad faces on the left to represent “unhappy with themselves” (a small one for “sort of true” and a large one for “mostly true”), and two happy faces on the right to represent “pleased with themselves” (a large one for “very true” and a small one for “sort of true”). Based on pilot testing with younger children, we rephrased “Some kids don't like the way they are leading their life” in Item 12 to “Some kids don't like the way they act.”

Daily Hassles Questionnaire (Little & Garber, 2000)⁷

As a measure of life stress, the children completed a version of the Daily Hassles Questionnaire, consisting of 36 common hassles that a child may face, such as, “You were given new rules or chores at home.” In the

⁵We obtained permission to make these modifications to the CDI. We thank Maria Kovacs for her input. Insofar as the pictorial version is new, and because participants were younger than those included in the normative sample of the original CDI, it was not appropriate to use the normative CDI data for scoring. Thus, we used scores continuously in relation to one another, which allowed us to test our hypotheses concerning changes in symptoms over time.

⁶We obtained permission to make these changes to the Self-Perception Profile for Children.

⁷As will be explained hereunder, we needed to use a relatively short time lag in the present study. Because ongoing daily hassles are more likely to occur in a short time period than are major life stressors, we assessed daily hassles, thereby reducing the likelihood of a floor effect in our assessment of stress.

present study, the children were asked to circle *Yes* or *No*, indicating whether the events happened to them since the T1 session. One school item was omitted for the younger children in this sample because it was not relevant ("You had to make a speech or class presentation"), and thus overall scores for younger children were adjusted (i.e., multiplied by 36/35) to be on the same scale as older children's scores.

Procedure

Children were interviewed at their school or child-care center by research assistants.⁸ For the older children, T1 (baseline) included a group administration of the CASQ-R, the Self-Perception Profile for Children, and the CDI. Group administration start dates were staggered over a 3-week period to accommodate classroom schedules. All instructions and items were read aloud to the older children, who followed along on their paper versions and indicated their responses. Children completed the CASI in one-on-one interviews within 5 days of their group administration.⁹ For the younger children, all T1 measures were administered within a 5-day period, in one-on-one sessions with an experimenter.

Time 2 measures included the Daily Hassles Questionnaire for Children and a second assessment of the CDI. The T2 assessments were administered in small groups for the older children, who followed along with their paper versions as an experimenter read the instructions and items, and in one-on-one sessions with an experimenter for the younger children. We designed the time lag between T1 and T2 to be short enough so that the children could clearly remember the events they experienced in that period, while still allowing us to examine the interaction of attributional style and self-esteem with negative life stress over time. Accordingly, T2 measures were administered 19–26 days after T1 measures for most children (i.e., 89.4%). A MANOVA revealed that children within this time lag did not differ from children outside this lag on any of the T1 or T2 measures, $F(5, 56) = 2.21$, $p = ns$. We were therefore successful at minimizing differences in the number of days between T1 and T2, despite challenges posed by school absences, illnesses, inclement weather, field trips, school holidays, teacher

conferences, and the like. Also during T2, children's parents completed questionnaires that are not pertinent to the present study.

RESULTS

Means, standard deviations, coefficient alphas, and correlations between all measures were examined separately for younger and older children, and were found to be similar. Thus, we present these statistics for all participants together in Table I. Reliability of linear combinations, as described by Nunnally (1978, p. 248), yielded acceptable coefficient alpha reliabilities for the five subscales of the CASI (range = .78–.83), moderately acceptable alpha reliabilities for the CASQ-R positive event subscales (range = .55–.59), and low alpha reliabilities for the CASQ-R composite and negative event subscales (range = .24–.43). Low alpha reliabilities have been found with the CASQ-R, particularly for negative event subscales, in previous studies as well (e.g., Dixon & Ahrens, 1992; Hilsman & Garber, 1995; Nolen-Hoeksema et al., 1992; Robins & Hinkley, 1989; Robinson et al., 1995; Turner & Cole, 1994; see also Thompson et al., 1998, for a psychometric examination of the CASQ-R). Means and standard deviations for T1 and T2 CDI, negative life stress, and CASQ-R are comparable to those obtained in other studies with children (Cole & Turner, 1993; Harter, 1985; Nolen-Hoeksema et al., 1992; Robinson et al., 1995; Tems, Stewart, Skinner, Hughes, & Emslie, 1993). As can be seen in Table I, the CASI negative event subscales correlated with self-esteem, as expected by the integrated hopelessness/self-esteem theory (e.g., Metalsky et al., 1993), whereas CASQ-R negative event subscales did not. Also of interest, the CASI and CASQ-R positive and composite subscales were significantly correlated, although the negative subscales were not. Both the CASI and CASQ-R subscales were significantly correlated with concurrent (T1) depressive symptoms, consistent with previous work using the CASQ-R (e.g., Cole & Turner, 1993; Kaslow et al., 1984; McCauley et al., 1988; Nolen-Hoeksema et al., 1986, 1992). It is worth noting that correlations between depressive symptoms and CASI subscales averaged in the low .20s, whereas correlations between depressive symptoms and CASQ-R subscales averaged in the high .30s. One of the crucial hypotheses from the cognitive diathesis-stress theories is that attributional style is associated with depression in the *presence but not the absence* of negative life events (i.e., the theory predicts a low correlation under low levels of stress but a high correlation under high levels of stress; Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982; Metalsky et al., 1987, 1993), and therefore, the low but significant correlations

⁸Research assistants were psychology students from an undergraduate liberal-arts college. Two of the authors, a developmental psychologist (BAH) and a clinical psychologist (GIM), provided approximately 20 hr of training in the way of intensive instructional and practice sessions, model interviews by the psychologists, and supervised practice interviews by the research assistants.

⁹Because of school absences, one child took the CASI 6 days after taking the other T1 measures.

Table 1. Means, Standard Deviations, Alpha Reliabilities, and Intercorrelations of Attributional Style, Self-Esteem, Depressed Symptoms, and Stress Measures

Measure	<i>M</i>	<i>SD</i>	α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. CASI-Gen-Neg	59.39	26.41	.80	—														
2. CASI-Full-Neg	104.10	32.37	.78	.87***	—													
3. CASI-Gen-Pos	121.63	23.89	.80	.03	.02	—												
4. CASI-Full-Pos	186.33	30.60	.83	.01	.02	.93***	—											
5. CASI-Comp	82.23	44.00	.81	-.64***	-.72***	.63***	.68***	—										
6. CASQ-Gen-Neg	1.88	1.46	.43	.10	.01	-.15	-.13	-.10	—									
7. CASQ-Full-Neg	2.69	1.73	.39	.21*	.14	-.18*	-.17*	-.22**	.87***	—								
8. CASQ-Gen-Pos	5.63	1.72	.55	-.14	-.09	.25**	.28***	.26**	-.28**	-.34***	—							
9. CASQ-Full-Pos	8.29	2.23	.59	-.12	-.07	.21*	.24**	.21**	-.33***	-.37***	.90***	—						
10. CASQ-Comp	5.60	3.29	.24	-.19*	-.12	.24**	.25**	.26**	-.68***	-.78**	.79***	.87***	—					
11. Self Esteem	3.42	.54	.75	-.28***	-.30***	.11	.20*	.36***	.07	.02	.42***	.37***	.24**	—				
12. Time 1 CDI	7.18	6.66	.85	.21*	.20*	-.18*	-.22**	-.30***	.30***	.39***	-.46***	-.44***	-.51***	-.45***	—			
13. Time 2 CDI	5.79	6.22	.86	.14	.10	-.27**	-.32***	-.30***	.34***	.34**	-.36***	-.36***	-.42***	-.45***	.67***	—		
14. Stress	11.41	7.31	.84	-.08	-.05	-.12	-.11	-.04	.22*	.20*	-.22*	-.26**	-.29***	-.16	.25**	.32***	—	
15. Age (years)	8.2	1.8	—	.01	.21*	-.10	-.04	-.18*	-.37***	-.25**	.04	.17*	.25**	-.22**	-.07	-.18*	-.24**	—

Note. For all CASI subscales, $n = 147$. For all CASQ-R subscales, $n = 145$. For Time 1 CDI data, $n = 146$. For Stress data, $n = 131$. For Time 2 CDI and Self-Esteem data, $n = 130$. CASI-Gen-Neg = Children's Attributional Style Interview (CASI), generality negative subscale; CASI-Full-Neg = CASI, full negative subscale; CASI-Gen-Pos = CASI, generality positive subscale; CASI-Full-Pos = CASI, full positive subscale; CASI-Comp = CASI, full composite subscale. CASQ-Gen-Neg = Children's Attributional Style Questionnaire-Revised (CASQ-R), generality negative subscale; CASQ-Full-Neg = CASQ-R, full negative subscale; CASQ-Gen-Pos = CASQ-R, generality positive subscale; CASQ-Full-Pos = CASQ-R, full positive subscale; CASQ-Comp = CASQ-R, full composite subscale. Self-Esteem = Self-Perception Profile for Children, general self-worth subscale; Time 1 CDI = Children's Depression Inventory (CDI) taken at Time 1; Time 2 CDI = CDI taken at Time 2; Stress = Daily Hassles Questionnaire For Children.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

Table II. Test of the Reformulated Helplessness Theory: CASI Full Positive Subscale, Stress, Age, and Interactions Predicting Residual Changes in Depression (CDI) Scores from Time 1 to Time 2

Order of entry of set	Predictors	Cumulative R^2	Increment in R^2	F for increment in R^2	t for within-set predictors	df	Partial correlation
1.	Time 1 CDI	.402	.402***	84.558***		1,126	.634***
2.	Main effects	.460	.059**	4.476**		3,123	.314**
	CASI				-2.547*	123	-.224*
	Stress				1.683	123	.150
	Age				-1.425	123	-.127
3.	Two-way interactions	.517	.056**	4.674**		3,120	.322**
	CASI × Stress				0.118	120	.011
	CASI × Age				-3.360**	120	-.293**
	Stress × Age				1.132	120	.103
4.	CASI × Stress × Age	.533	.016*	4.012*		1,119	-.182*
	Three-way interaction						

Note. CDI = Children's Depression Inventory. CASI = Children's Attributional Style Interview, full positive subscale. Stress = Daily Hassles Questionnaire for Children.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

between CASI and depressive symptoms are not at odds with the diathesis-stress theories.

To test our theoretical predictions, we used a set-wise hierarchical multiple regression procedure, Analysis of Partial Variance (APV), as described by Cohen and Cohen (1983, pp. 402–422). In the present context, APV allowed us to predict residual changes in depressive symptoms from T1 to T2. In a given analysis, the dependent measure was the T2 CDI. The T1 CDI was entered first into the regression equation, thereby creating the residual change scores. This, of course, also controls for baseline depressive symptoms. Consistent with Cohen and Cohen (1983), individual variables within a given set were entered simultaneously and were not interpreted unless the set as a whole was significant, thereby reducing the risk of Type I errors. In addition, the homogeneity-of-covariance assumption associated with APV was met in every case.

For purposes of brevity, in this section we refer to the CASI and CASQ-R subscales (depending on which is being tested, as indicated here under) as CASI and CASQ-R, respectively. Similarly, we refer to the general self-worth scale of the Self-Perception Profile for Children as SE and to the Daily Hassles Questionnaire for Children as Stress.

Tests of the Reformulated Helplessness Theory

In line with previous research (e.g., Nolen-Hoeksema et al., 1986, 1992), we tested predictions from the reformulated helplessness theory (i.e., an Attributional Style × Stress interaction, with possible age effects) using both the full positive and the full negative subscales. Using the APV procedure, after entering T1 CDI at Step 1, the main effect variables (i.e., Attributional Style, Stress, and Age)

were entered at Step 2, followed at Step 3 by entry of the two-way interactions (i.e., Attributional Style × Stress, Attributional Style × Age, and Stress × Age), and finally followed by the three-way interaction (i.e., Attributional Style × Stress × Age) at Step 4.

First, we performed the APV analysis using the CASI full *negative* subscale, but failed to find significance for any of the main effects or interactions ($PRs < .23$, $p = ns$).¹⁰ Thus, consistent with Cohen and Cohen (1983) we did not interpret any of the individual effects within the sets. Next, we performed the APV analysis using the CASI full *positive* subscale. As can be seen in Table II, the main-effect, two-way, and three-way interaction sets were significant ($PRs > .18$, $ps < .05$). Within the main-effect set, the only significant main effect was for attributional style ($pr = -.22$, $p < .05$), in that children with more negative (external, unstable, specific) attributional style for positive events had greater increases in depressed symptoms from T1 to T2 than did children with more positive (internal, stable, global) attributional style for positive events. A two-way interaction between CASI and Age ($pr = -.29$, $p < .01$) was superseded by a three-way interaction of CASI × Age × Stress ($pr = -.18$, $p < .05$) in predicting increases in depressive symptoms. For descriptive purposes, to depict the form of this interaction, we computed residual change scores from T1 to T2 for participants in the various conditions (e.g., younger children with a negative attributional style and

¹⁰Partial correlations for a single variable (i.e., main effect or interaction) are indicated by the symbol "*pr*." The partial correlation for an entire set (i.e., multiple partial correlation) is indicated by the symbol "*PR*," consistent with Cohen and Cohen (1983).

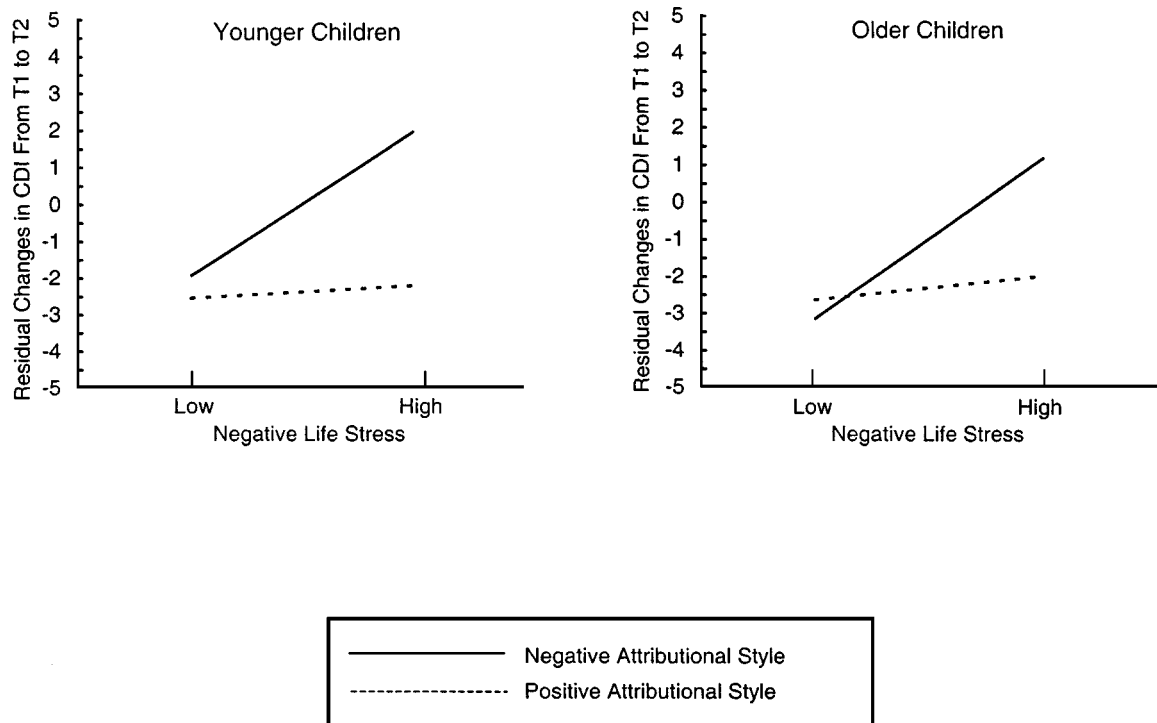


Fig. 1. Residual changes in depression (CDI scores) from Time 1 to Time 2 as a function of age, negative life stress, and attributional style for positive events as measured by the Children's Attributional Style Interview, full positive subscale.

high levels of stress). An ANCOVA using median splits on each of the independent variables (i.e., CASI, Stress, and Age) allowed us to generate adjusted T2 CDI scores, and thus, residual change scores for participants in the various conditions. As can be seen in Fig. 1, the results for the CASI were consistent with the reformulated helplessness theory, in that the only participants to exhibit increases in depressed symptoms from T1 to T2 were those who had a negative (external, unstable, specific) attributional style for positive events and who experienced high levels of stress. The three-way interaction with age is quite subtle. As shown in Fig. 1, for both younger and older children, the pattern is consistent with the prediction of the reformulated helplessness theory. Among children with negative attributional style, there was a slightly greater difference in mean CDI change scores between low- and high-stress groups for older children than for younger children. In contrast, among children with positive attributional style, the mean CDI change scores between low- and high-stress groups were about the same for older and younger children.

The corresponding APV analysis using the CASQ-R full *negative* subscale revealed no significance in any of the steps ($PRs = .23, .13, .12$ for main effect, two-way,

and three-way steps; $ps = ns$). Thus, we did not interpret any of the individual effects. Using the CASQ-R full *positive* subscale revealed a significant two-way interaction set only ($PR = .36, p < .05$) with a significant CASQ-R \times Age interaction ($pr = -.24, p < .01$), in which older children with positive attributional style for positive events experienced the largest decreases in depressive symptoms from T1 to T2. No other main effects or interactions were significant for either of these scales.

In sum, tests of the reformulated helplessness theories were consistent with the theory when using the CASI full positive subscale, but not when using the CASI full negative subscale, or either of the two CASQ-R subscales.

Tests of the Integrated Hopelessness/Self-Esteem Theory

In line with previous research with children and adults (e.g., Metalsky et al., 1993; Robinson et al., 1995), we tested predictions from the integrated hopelessness/self-esteem theory (i.e., Attributional Style \times SE \times Stress interaction, with possible age effects) using the CASI's generality (stability, globality) subscale for negative events. Following the APV procedure, after entering

T1 CDI at Step 1, the main effect variables (i.e., Attributional Style, SE, Stress, and Age) were entered at Step 2, followed at Step 3 by entry of the two-way interactions (i.e., Attributional Style × SE, Attributional Style × Stress, Attributional Style × Age, SE × Stress, SE × Age, and Stress × Age). The three-way interactions (i.e., Attributional Style × SE × Stress, Attributional Style × SE × Age, Attributional Style × Stress × Age, SE × Stress × Age) were entered at Step 4 followed by entry at Step 5 of the four-way interaction (i.e., Attributional Style × SE × Stress × Age).

Table III presents results from the APV analysis using the CASI generality negative subscale. As can be seen in the table, the main-effect set was significant ($PR = .37, p < .001$). A main effect for self-esteem ($pr = -.30, p < .001$) revealed that children with lower self-esteem tended to experience more increases in depression than did children with high self-esteem, and a main effect for age ($pr = -.18, p < .05$) indicated that younger children tended to experience greater increases in depression over time than did older children. The 3-way step was also significant ($PR = .30, p < .05$). In line with the integrated hopelessness/self-esteem theory, the predicted CASI × SE × Stress interaction was significant ($pr = .22, p < .05$) in predicting changes in depressive symptoms. Because of our a priori interest in developmental differences,

we depict the interaction separately for younger and older children in Fig. 2. To depict the nature of the interaction, we performed an ANCOVA using median splits on each of the independent variables (i.e., CASI, SE, and Stress) to generate residual change scores (in depression) from T1 to T2.

As can be seen in Fig. 2, our findings for younger children are consistent with the integrated theory and in line with our predictions, in that the only participants to exhibit increases in depressed symptoms from T1 to T2 were those who had a *negative* attributional style for negative events, low self-esteem, and who experienced high levels of stress. Among older children, in contrast, only those who were low in self-esteem, high in stress, and who had a *positive* attributional style for negative events showed increases in depressed symptoms.

The corresponding APV analysis using the CASQ-R yielded a significant main-effect set ($PR = .40, p < .001$), with a significant main effect for attributional style (children with more negative attributional style, as measured by the generality scale for negative events, tended to experience more increases in depressive symptoms; $pr = .19, p < .05$), and for self-esteem (children with lower self-esteem tended to experience more increases in depressive symptoms over time; $pr = -.32, p < .001$). The two-way and four-way interaction sets were not significant

Table III. Test of the Integrated Hopelessness/Self-Esteem Theory: CASI Generality Negative Subscale, Self-Esteem, Stress, Age, and Interactions Predicting Residual Changes in Depression (CDI) Scores from Time 1 to Time 2

Order of entry of set	Predictors	Cumulative R^2	Increment in R^2	F for increment in R^2	t for within-set predictors	df	Partial correlation
1.	Time 1 CDI	.402	.402***	84.558***		1,126	.634***
2.	Main effects	.484	.082***	4.844***		4,122	.370***
	CASI				-0.068	122	-.006
	SE				-3.412***	122	-.295***
	Stress				1.457	122	.131
	Age				-2.063*	122	-.184*
3.	Two-way interactions	.518	.034	1.375		6,116	.257
	CASI × SE				0.701	116	.065
	CASI × Stress				-0.231	116	-.021
	CASI × Age				-0.717	116	-.066
	SE × Stress				-2.213*	116	-.201*
	SE × Age				-0.087	116	-.008
	Stress × Age				-0.166	116	-.015
4.	Three-way interactions	.561	.043*	2.757*		4,112	.299*
	CASI × SE × Stress				2.420*	112	.223*
	CASI × SE × Age				-1.781	112	-.166
	CASI × Stress × Age				1.639	112	.153
	SE × Stress × Age				1.981*	112	.184*
5.	CASI × SE × Stress × Age	.561	.000	.000		1,111	-.001
	Four-way interaction						

Note. CDI = Children's Depression Inventory. CASI = Children's Attributional Style Interview, generality negative subscale. SE = Self-Perception Profile for Children, general self-worth subscale. Stress = Daily Hassles Questionnaire for Children.

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

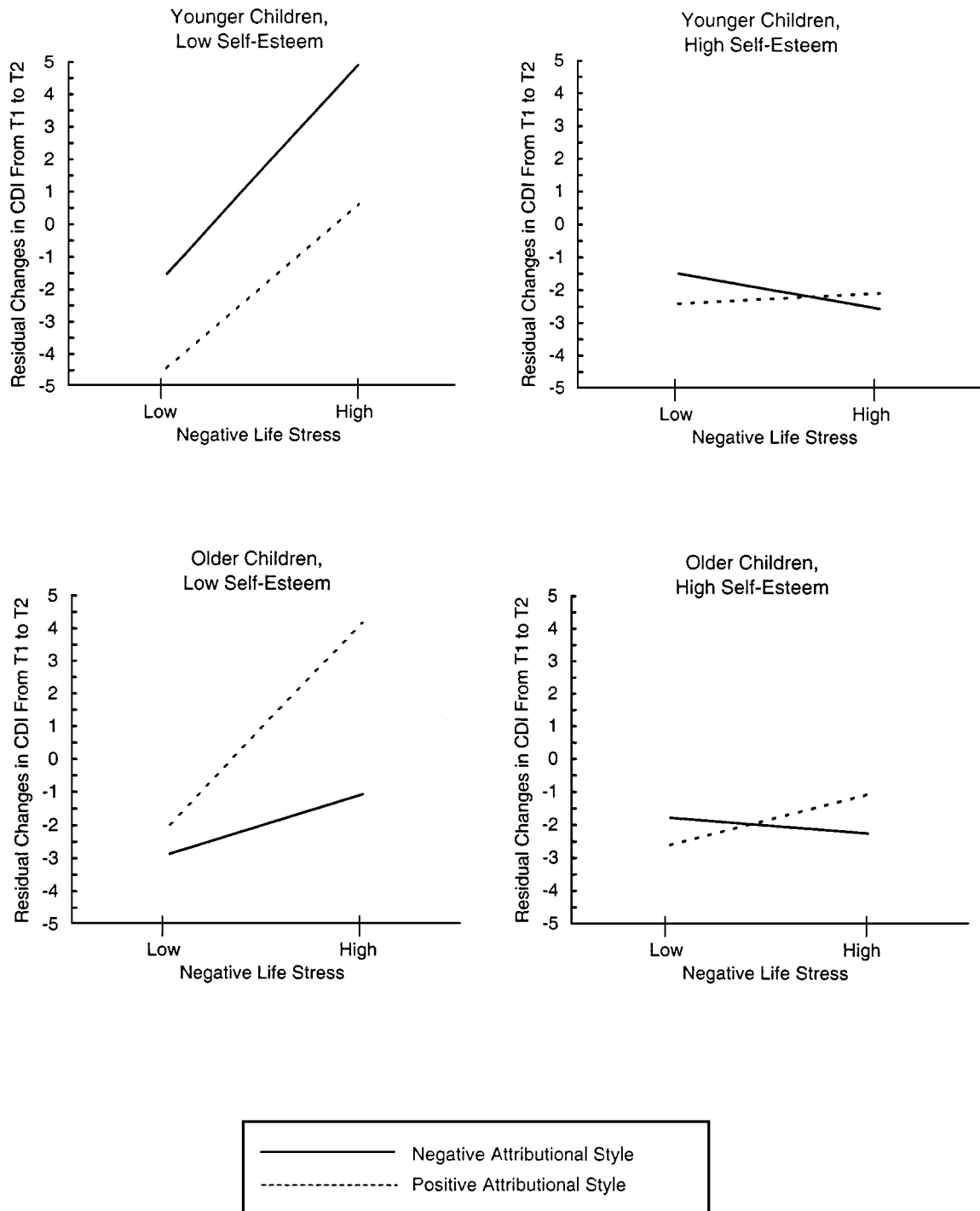


Fig. 2. Residual changes in depression (CDI scores) from Time 1 to Time 2 as a function of self-esteem, negative life stress, and attributional style as measured by the Children's Attributional Style Interview, generality negative subscale.

($PRs < .25$, $ps = ns$). In contrast, the three-way interaction set was significant ($PR = .30$, $p < .05$). Although a CASQ-R \times SE \times Age interaction was found to be significant ($pr = -.27$, $p < .01$), the theory's predicted CASQ-R \times SE \times Stress interaction was not ($pr = -.12$, $p = ns$).

In sum, the CASI findings supported the reformulated helplessness theory of depression using the full positive subscale but not the full negative subscale, and partially supported the integrated theory of depression using the generality negative subscale. The CASQ-R findings did not support either of these theories.

DISCUSSION

This study presents preliminary tests of the reliability and validity of the CASI. Prospective tests of the cognitive diathesis-stress theories of depression showed partial support for the reformulated helplessness theory and the integrated hopelessness/self-esteem theory of depression. Consistent with the reformulated helplessness theory, the combination of negative attributional style (for positive events), as measured by the CASI, and the occurrence of negative life stress predicted increases in depressive symptoms. Most previous tests of the helplessness theory in children have only investigated the concurrent relationship between attributional style and depression, and found consistent support for the attribution-depression correlation (Joiner & Wagner, 1995). Interestingly, some of these studies have found this pattern for *positive* event attributions only (e.g. Asarnow & Bates, 1988; Benfield et al., 1988; Curry & Craighead, 1990; Friedlander et al., 1987; McCauley et al., 1988), others have found it for *negative* event attributions only (e.g., Cole & Turner, 1993), and others for both positive and negative attributions (e.g., Nolen-Hoeksema et al., 1986, 1992; Robins & Hinkley, 1989). Of the few *prospective* tests of the reformulated helplessness theory's predictions in children or adolescents (Bennett & Bates, 1995; Hammen et al., 1988; Hilsman & Garber, 1995; Nolen-Hoeksema et al., 1986, 1992), only one found full support for an Attributional Style \times Stress interaction in predicting depressive symptoms (Hilsman & Garber, 1995) and two found partial support (Nolen-Hoeksema et al., 1986, 1992; also see Joiner & Wagner, 1995). These mixed findings imply that there may be substantial variability in the relationship between attributional style and depression in childhood. Little speculation has been raised as to why this variability between studies occurs. However, because of the limited number of studies testing the prospective diathesis-stress interaction, and the methodological variability within them (e.g., age

of participants, clinical versus nonclinical samples, concurrent or prospective design, type of stressor, and whether domain specificity was assessed), it is unclear what might account for the differing findings in the Attribution \times Stress interaction predicting depressive symptoms. Thus, as others have noted (Bennett & Bates, 1995; Joiner & Wagner, 1995), future research will need to systematically test the theories under the noted methodological conditions, in order to determine how various sample and experimental characteristics fit with the theory's predictions.

Consistent with the integrated hopelessness/self-esteem theory, negative attributional style (stability and globality for negative events), using the CASI, interacted with self-esteem and life stress in predicting increases in depression. Examining this interaction separately for younger and older children revealed an interesting pattern: Younger children's attributional style interacted with life stress in predicting depression in the *expected* direction, whereas older children's attributional style interacted with life stress in predicting depression in an *unexpected* direction. For younger children, as the theory predicts, the combination of negative attributional style (i.e., interpreting negative events as caused by stable and global factors), low self-esteem and stress was associated with increases in depression. Thus, consistent with the theories, one possible pathway to childhood depression seems to be that children with negative attributional style and low self-esteem may view both themselves and the causes of events in maladaptive ways, and thus experience increases in depressive symptoms when encountering negative life stress. Conversely, children with positive attributional style or high self-esteem may be buffered from increases in depressive symptoms when faced with negative life stress (e.g., Metalsky et al., 1993).

In contrast, and at odds with the integrated theory, older children with low self-esteem and *positive* attributional style for negative events (i.e., interpreting negative events as being caused by unstable, specific factors), in conjunction with life stress, experienced increases in depressive symptoms. Keeping in mind that our sample is somewhat limited (i.e., mostly White, upper-middle class children attending a Catholic private school), and that this is the first test of the integrated theory in a sample younger than 12 years old, this finding should be interpreted cautiously. With this in mind, three theories related to cognitive diatheses for depression may provide a possible explanation of this finding. First, Seligman, Reivich, Jaycox, and Gillham (1995) present a hypothesis of over-optimism in children. They argue that children whose self-esteem is not based on actual aptitudes and achievements, and whose positive attributions are not based on actual experiences (hence, are overly optimistic),

run the risk of developing depressive symptoms when they encounter negative life events. In addition, Swann's self-verification theory (e.g., Swann, Pelham, & Krull, 1989; Swann, Wenzlaff, Krull, & Pelham, 1992) in conjunction with Joiner and Metalsky's (1995) interpersonal theory of depression, highlight the significance of both confirmatory feedback (e.g., those with negative attributional style for negative events who, consistent with their pessimistic expectations, experience high levels of negative life stress) and disconfirmatory feedback (e.g., those with positive attributional style for negative events who, inconsistent with their optimistic expectations, experience high levels of negative life stress) as being important contributors to depressive symptoms. In the present study, older children with conflicting cognitive diatheses experienced increases in depressive symptoms following stress. That is, for these children, negative events may have matched expectations derived from their low self-esteem, but may have simultaneously suggested that their positive outlook, based on their attributional style, was not justified. Swann et al. and Joiner and Metalsky's theories propose that this type of conflicting evidence is likely to be unsettling, and may lead them to question their positive outlook, ultimately leading to depressive symptoms. Taking these three theories into account, perhaps for some children, an additional pathway to childhood depression may result from the combination of low self-esteem and negative experiences that contradict a (perhaps unrealistically) positive attributional style.

Although the mixed and unexpected findings both in previous literature and in the present study provoke interesting speculation, they also suggest the need to further examine and replicate these and other possible pathways from attributional style to depression in children. Furthermore, it is only with the utmost caution that we have posited potential explanations for the present study's unexpected finding. The current sample is relatively small and unrepresentative, which limits the generalizability of these results (Dixon & Ahrens, 1992). Among older children, who showed an unexpected diathesis-stress pattern, the majority were Caucasian, from upper-middle class two-parent families, and attended a parochial school. Furthermore, the older children showed depressive symptom levels (6.95 for T1) well below those in other nonclinical samples (e.g., 9.1 in Cole & Turner, 1993; 9.74 in T1 of Nolen-Hoeksema et al., 1992) suggesting that the unexpected attribution-depression pattern found in these children may only hold for certain subgroups of children like this one. Clearly, further research on more diverse samples (in terms of SES, ethnicity, family structure, and level of depression) using the CASI to test the cognitive diathesis-stress theories of depression is needed before interpretations can be made with confidence.

These caveats aside, the different patterns we found for younger and older children raise important questions about age differences in the attribution-depression relationship. Several researchers hypothesize that attributional style becomes a more powerful cognitive moderator of the stress-depression relationship with development and cite evidence of Attributional Style \times Stress interactions predicting the onset of depressive symptoms in older but not younger children as supporting this hypothesis (e.g., McCauley et al., 1988; Nolen-Hoeksema et al., 1992; Turner & Cole, 1994). However, in the present study's tests of the reformulated helplessness theory, the predicted interaction between life stress and attributional style (for positive events, as measured by the CASI) was evident for both younger and older children. In addition, for younger children, the interaction between attributional style, self-esteem, and stress, as predicted by the integrated theory, also occurred (using the CASI's generality negative subscale). Friedberg and Dalenberg (1991) suggest that developmentally oriented methodology is necessary in order to capture the attributional style of young children. Thus, the developmentally oriented methodology of the CASI may have allowed us to reveal cognitive diathesis-stress relationships in younger children that have not been found, and typically have not been tested, in previous literature. Alternatively, Tram and Cole (2000) predict that attributional style may be stable only over short periods in younger children, and therefore the shorter time lag used in this study may account for the supportive findings. Longitudinal studies, beginning with very young children, that measure critical variables (i.e., attributional style, stress, depressive symptoms) at frequent intervals are needed to delineate the developmental course of the attributional style-stress relationship with depression.

COMPARISONS OF THE CASI AND CASQ-R: METHODOLOGICAL AND PSYCHOMETRIC ISSUES

In the current study, the CASI subscales evidenced stronger internal consistency than did the CASQ-R subscales, particularly for negative event attributions. Previous research has also found low internal consistency reliability for the CASQ-R, particularly for its negative event subscales (e.g., Dixon & Ahrens, 1992; Hilsman & Garber, 1995; Nolen-Hoeksema et al., 1992; Robins & Hinkley, 1989; Robinson et al., 1995; Turner & Cole, 1994; see also Thompson et al., 1998, for a psychometric examination of the CASQ-R). This pattern may explain, to some extent, the low correlations between the CASI and CASQ-R subscales, which reached significance for

positive subscales, but not for negative subscales. Taken together, the differences in internal consistency and low correlations between the CASI and CASQ-R indicate that these two measures may assess somewhat different aspects of attributional style.

Furthermore, the CASI and CASQ-R evidence different strengths with younger and older children. The CASQ-R has shown a robust cross-sectional correlational relationship to depression and some support of the cognitive diathesis-stress theories in school-aged children. In the present study, although the CASQ-R did not yield support of the helplessness or hopelessness theories in the expected ways, it did not yield any unusual patterns either. In contrast, the CASI performed well for younger children, showing support of both the helplessness and hopelessness theories as expected, but not as well with older children, yielding an expected helplessness finding and an unexpected hopelessness finding. Thus, while the CASQ-R may be more robust with older children in testing some aspects of the helplessness and hopelessness theories, the CASI shows promise as a developmentally appropriate instrument for assessing attributional style and testing the cognitive diathesis-stress theories in children, particularly younger children who previously could not be tested using the CASQ-R.

The CASI and the CASQ-R are complementary in providing two alternative methodologies for assessing attributional style in children, which may each be useful in different research situations. The CASQ-R's forced-choice format provides a short and simple assessment (takes 15 min or less) of attributional style that is convenient both for individual and group assessment, making it a preferable measure when researchers need a quick, general assessment of attributional style in school-aged children. In contrast, the CASI's interview format is more time-consuming (about 40 min), but may be preferable when researchers need to assess attributional style in younger children or need to obtain spontaneous attributions from children. Because the CASI has children generate their own attributions for events and rate them on internality, stability, and globality, it allows researchers to look at overall attributional style as well as specific types of attributions, whether for specific attributional *dimensions* (such as testing the hopelessness theory using stability and globality attributions for negative events only, or assessing locus of control using internality attributions only) or for specific attributional *domains* (such as testing for specific vulnerabilities to depression in achievement or interpersonal domains). Relatedly, although the CASI and the original CASQ both have a balance of items representing internality, stability, and globality for positive and negative events, the CASQ-R does not have such a balance (2 posi-

tive and 3 negative events assess internality, 7 positive and 6 negative events assess stability, and 3 positive and 3 negative events assess globality; Thompson et al., 1998). Consequently, Thompson and colleagues recommend the use of the original CASQ whenever time permits. The CASQ-R's weight toward the stability dimension suggests that it may assess a slightly different component of attributional style than does the CASI's balance of dimensions, and may explain some of the differences between CASI and CASQ-R findings.

As mentioned earlier, the CASI's balanced representation of interpersonal and achievement domains is also valuable for assessing specific vulnerabilities to depression (in which attributions and stressors within a particular domain put people at risk for depression; Metalsky et al., 1987; Turner & Cole, 1994), an area that has scarcely been examined in children (noted in Cole & Turner, 1993; examined in Turner & Cole, 1994). The balance of domains in the CASI also makes it a useful tool within other theoretical frameworks besides the cognitive diathesis-stress theories. For example, attributional patterns have played an important role in research on learned helplessness views of achievement motivation (e.g., Dweck & Leggett, 1988; Mueller & Dweck, 1998), and in cognitive models of aggression (e.g., Crick & Dodge, 1994; Dodge, 1980, 1983). In the achievement domain, for example, effort versus ability attributions, though both internal attributions, are expected to lead to very different outcomes (Mueller & Dweck, 1998). Therefore, while the CASQ-R is a strong measure of general attributional style within the cognitive diathesis-stress theories, the CASI, in future research, may also be useful for studying children's attributional patterns within particular domains and in other theoretical frameworks.

The CASI's strong reliability is encouraging both as an indication of the CASI's utility, and in addressing the question of whether children have attributional styles. Based on the moderate to low internal consistency reliability of the CASQ-R subscales in previous studies (e.g., Dixon & Ahrens, 1992; Hilsman & Garber, 1995; Nolen-Hoeksema et al., 1992; Robins & Hinkley, 1989; Robinson et al., 1995; Turner & Cole, 1994; see also Thompson et al., 1998, for a psychometric examination of the CASQ-R), some researchers have questioned whether or not younger children have attributional *style* (e.g., Cole & Turner, 1993; Nolen-Hoeksema et al., 1992; Turner & Cole, 1994). Others argue that young children do have attributional style, but that methodological problems have limited our ability to assess it, and thus cloud our understanding of young children's attributional style (Friedberg & Dalenberg, 1991). The present study's findings, along with work by Dweck and her colleagues (Burhans &

Dweck, 1995; Heyman et al., 1992; Ruble & Dweck, 1995), suggest that young children may indeed have characteristic ways of making attributions. The present study's findings supporting the diathesis-stress theories suggest that the Attributional Style \times Stress interaction may indeed hold in young children, at least over a short time period, like the one in this study. Future research should consider that young children's attributional style may be malleable while they are developing cognitively and building a base of experiences, and thus, the effects of the Attribution \times Stress interaction on depression may be short-lived, compared to adults (Cole & Turner, 1993; Tram & Cole, 2000; Turner & Cole, 1994).

LIMITATIONS OF THE CURRENT STUDY

Preliminary findings using the CASI are promising, but further research is needed to address limitations of the present study. The present study's predominantly Caucasian, upper-middle class sample (many of whom attended a parochial school), limits the generalizability of these results, as reviewed earlier. The CASI needs to be used with more diverse samples (i.e., in terms of SES, ethnicity, and level of depression) in order to establish its validity more clearly. Furthermore, the findings in the present study, particularly the unexpected finding with older children, needs to be replicated with larger and more representative samples of children before it can be interpreted with confidence.

In addition, our developmentally oriented methodology entailed using slightly different assessment techniques for the older children (i.e., group administration) and younger children (i.e., illustrated scales and one-on-one administration) on the CDI and self-esteem scales, which were designed for slightly older children than those at the younger end of our sample. The illustrations we added conformed to Harter's other illustrated scales for young children (Harter & Pike, 1984; see also Harter, 1999), and seemed to help the younger children comprehend and use the scales appropriately. Although these slight changes in administration methods appear not to have changed the measures' psychometric properties (e.g., the internal consistency alphas for younger and older children on these measures were very comparable), it is possible that the different administration methods for younger and older children may account, in part, for the age differences in our results.

The present study used a relatively short time lag between T1 and T2 measures, and assessed daily hassles as a form of stress. Future studies should test the CASI in longer-term longitudinal prospective designs, and use

assessments of major life stressors as well. Such studies would be able to assess the CASI's test-retest reliability, as well as its relationship to other forms of life stress over time. Furthermore, the issue of the *method* of assessing stress needs to be addressed. Dohrenwend and colleagues (e.g., Dohrenwend, Dohrenwend, Dodson, & Shrout, 1984; Dohrenwend & Shrout, 1985) have cited problems with several life stress measures and argue for the need to assess life stress in the context of theoretical formulations in order to tease apart the life events or hassles that are consequences of personal dispositions or psychopathology on the one hand, and of those that are independent of such factors on the other hand. Future studies using the CASI in diathesis-stress models could administer more comprehensive one-on-one interviews of a child's experiences of stressors, including the child's appraisal of the *degree* of stress the events caused them.

CLINICAL IMPLICATIONS AND FUTURE DIRECTIONS

The present study's findings, particularly those indicating evidence for both helplessness and hopelessness patterns of attributional style and depression in young children, have several clinical implications. First, evidence of cognitive diathesis-stress patterns of depression in young children highlights the need for very *early* intervention and prevention programs in children as young as 5 years old. Second, because the CASI has shown initial evidence of reliability and validity in young children, it may be useful in identifying young children with maladaptive attributional style *before* they become depressed, thus targeting the children who could benefit most from primary prevention programs. Attributional style has been the focus of several prevention and intervention programs that address mental health issues ranging from depression to poor achievement motivation to aggression (e.g., Dweck, 1975; Hudley & Graham, 1993; Jaycox, Reivich, Gillham, & Seligman, 1994; Lochman & Lenhart, 1993; Rabiner, Lenhart, & Lochman, 1990). Based on the promising findings of prevention and early intervention programs in a sample of fifth and sixth grade children, Jaycox and colleagues (Gillham, Reivich, Jaycox, & Seligman, 1995; Jaycox et al., 1994) conclude that cognitive interventions begun in childhood may not only relieve but also prevent depressive symptoms and behavior problems from developing in adolescence. With the ability to assess *young* children's attributions with the CASI, similar programs for younger children could be targeted at preventing depressive symptoms and developing healthy attributional style earlier in development. That is, the CASI's interactive,

hands-on approach, which was interesting and engaging for the young children in this sample, may be useful as a tool for attribution retraining in young children. Attribution retraining, which teaches children to identify causal attributions as positive or negative, challenge inaccurate, negative attributions, and make more accurate, positive attributions (such as trying harder after a failure instead of becoming helpless), has been shown to predict decreases in depressive symptoms (Jaycox et al., 1994). And third, based on evidence in the present study and elsewhere (Burhans & Dweck, 1995; Friedberg & Dalenberg, 1991; Heyman et al., 1992; Palmer & Rholes, 1989; Ruble & Dweck, 1995) for attributional style in young children, our field can further explore the origins and developmental nature of attributional style. In sum, the CASI's ability to assess attributional style in young children may help further our understanding of the origins and developmental nature of attributional style, and thus put our field in a better position to make inroads into successful primary prevention of depression.

APPENDIX

Events from the Children's Attributional Style Interview (CASI)

Event	Domain
1. You come home one day, and your mom tells you she's proud of you.	Interpersonal
2. You say something to some kids at school, and they make fun of you.	Interpersonal
3. You're painting a picture of a horse for your teacher, but it doesn't turn out.	Achievement
4. You are working on a project at school and you get a good grade on it.	Achievement
5. You're playing with toys at home, and your mom yells at you.	Interpersonal
6. You do a drawing for class and get a gold star for it.	Achievement
7. You do a math worksheet, but you get a lot wrong.	Achievement
8. You're lining up for lunch and you get pushed.	Interpersonal
9. You go to a friend's house one afternoon and have a really good time.	Interpersonal
10. After school one day, your teacher says she's disappointed in you.	Achievement
11. A group of kids are playing ball and they ask you to play with them.	Interpersonal

12. You're playing a video game and you win the game.	Achievement
13. You're playing on a sports team and you play poorly.	Achievement
14. After you and your mom go to the toy store, you have a fight.	Interpersonal
15. You run a race at school and you win.	Achievement
16. You are helping clean the house one day, and mom says you did a good job.	Interpersonal

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