This is to certify that the

dissertation entitled

Changing Explanatory Style in Children

presented by

Abigail Ellen Gleason

has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Psychology

Major professor

Date August 29, 1996

CHANGING EXPLANATORY STYLE IN MIDDLE-SCHOOL CHILDREN

By

Abigail Ellen Gleason

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1996

ABSTRACT

CHANGING EXPLANATORY STYLE IN MIDDLE-SCHOOL CHILDREN

By

Abigail Ellen Gleason

Fifty-one middle school students volunteered to participate in an after-school program designed to increase self-esteem. Children were assigned to one of three treatment groups: a) explanatory style training, b) relaxation training, and c) no-contact.

The explanatory style and relaxation groups received five hours (one hour weekly) of training to foster optimistic explanatory style or to promote relaxation skills, whereas students in the no-contact group received no training during this phase. All children completed measures before groups began (pre-test), immediately following training (post-test) and five weeks after the conclusion of training (follow-up). The no-contact group received explanatory style training after follow-up data collection, and completed additional measures after the conclusion of their training.

At pre-test, depressed children obtained significantly lower scores than non-depressed children on measures of perceived competence, self-efficacy, and explanatory style. Many of these differences persisted at post-test and follow-up. Depressed children in all three groups experienced a reduction of depressive symptoms at post-test [explanatory style group: $F(1,7) = 8.36$, $p < .05$; relaxation

training group: $F(1,4) = 8.00$, $p < .05$; no-contact group: $F(1,7) = 14.82$, $p < .01$].

Results from pre-test to follow-up indicated an increase in optimism for positive events among the explanatory style group [$F(1,17) = 6.28$, $p < .05$] During this time, the no-contact group experienced increasing pessimism in the face of negative events [$F(1,17) = 33.63$, $p < .001$] and a decline in overall optimism [$F(1,17) = 15.36$, $p < .001$]. These results suggest that explanatory style training may have a positive impact on optimism among children, and may serve as a protective factor against the development of pessimism in the face of negative events.

There were no significant differences between treatment groups in perceived competence, self-efficacy, or persistence at any time. It is speculated that longer interventions may be necessary to produce positive changes in these areas.

Suggestions are made for improving future interventions among middle school children.

ACKNOWLEDGMENTS

I have been fortunate to have the help and support of many individuals during the course of this project. Of course, I am especially indebted to Dr. Dozier Thornton, who gave generously of his time in order to meet with me frequently, especially when the STARS program was just a vague idea in our heads. At every step of the way, he offered support and guidance, and acted as a true mentor.

Also, I greatly appreciate the interest of the other members of my dissertation committee. Dr. Norman Abeles and Dr. Robert Caldwell offered excellent advice on ways of promoting participation among students at Summit. I am especially grateful to Dr. Ray Frankmann, for his help with statistical issues, and his reminder to have fun with the data analysis portion of the project.

Once the project started to take shape, Francine Edwards of the Office of State and Federal Programs was instrumental in connecting me with Summit Middle School and helping me to iron out some of the details of the program. I am thankful to Chester Hughes, the principal at Summit, who opened his school to me, and offered moral support, advice, and his presence at a number of STARS-related functions.

The wonderful staff at Summit also deserves special praise and heartfelt thanks. Mrs. Leavitt, Mrs. Stinett, and Mrs. Loper were always available and cheerful toward me, and helped make my work

at Summit a true pleasure. I also wish to thank all the fifth and sixth grade teachers; they do an incredible job under challenging circumstances. For their warmth and obvious dedication to the students at Summit, I thank Mrs. Perry, Mrs. Brooks, Mrs. Martinez, Ms. McZee and Mr. Sharp. A special thanks goes to Mrs. Peterson, M.S.W., for her unending moral support, interest in the STARS program, and commitment to the students.

I am especially appreciative of the students who participated in the STARS program. Throughout our time together, I was impressed by their intelligence, good humor, and patience. Bravo also to their parents, who offered their feedback, and asked great questions about the program.

In addition, I thank Amy Jadde Wong, who revived her role as research assistant (from the days of my Master's thesis) to help me in many phases of the data collection. Thanks also to Jamie Mogush and Terry Hicks for their assistance in data collection.

My friends and family have been fantastic listeners throughout my graduate school experience. I am so fortunate to have my family as a built-in support system; thanks to Frank, Mary, Bridget, Ana, Molly, Julia, and especially my mother. Thanks also to Stephanie Gilbert, who has been a true inspiration to me, and has taught me a lot about priorities.

I am fortunate to have a number of wonderful long-distance friends who have given me tremendous support and have helped keep MCI in business. They include Rob Glass, Matt Jorgensen, Sridhar Narayanan, "Fish" and Priya Ramakrishnan, Kristin Schard, C. Sudhama, and Gloria Yueh.

My support system at MSU has also been extremely helpful to me. Special thanks to Larry Holmes, Beth Katz, Mark Heim, Stephen Jefferson, and Alison Ward, for their encouragement and belief in my graduation potential! I am also grateful to the support staff in the psychology department. Cheryl Forcia and Suzy Pavick have given me the benefit of their knowledge of the program, and of life in general, more times than I can remember.

I also want to express my appreciation to Natalie Denburg. More than a wonderful friend for the last five years, she volunteered to lead two STARS groups. I cannot adequately convey how much her support has meant to me during my years at MSU.

Finally, I thank Rama Divakaruni, who has stuck with me for the last six years. More than once, he has preserved my mental health with his patience, kind words, and unconditional support. I consider myself unbelievably lucky to have him in my life.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Martin Seligman (1991) defined explanatory style[1] as the manner in which one consistently explains the causes of events (p. 15). Seligman, along with a number of other investigators, has proposed that certain types of attributions for negative life events (i.e., internal, global, and stable attributions) can lead to depression, as well as poor physical health and general inactivity or passivity (Abramson, Seligman, & Teasdale, 1978; Peterson, Seligman, & Vaillant, 1988; Seligman, 1991).

At this point, it may be helpful to consider what constitutes a maladaptive attribution for a negative event. Internal attributions tend to credit or blame oneself for events (e.g., "It was *my* fault that our team didn't win"). Global attributions generalize the success or failure to other areas (e.g., "I'm not good at *anything*"). Stable attributions contain the notion that situations will not change over time (e.g., "I will *never* be any good at math"). The examples given above illustrate the kinds of thoughts that may be related to the development of depression in individuals with pessimistic explanatory styles.

The concept of explanatory style derives from the reformulated learned helplessness model of depression (Abramson et al., 1978). The main idea of the original learned helplessness model is that the expectation of uncontrollable outcomes leads to cognitive,

---

[1] Throughout this paper, the terms "explanatory style" and "attributional style" are used interchangeably.

motivational, and emotional deficits. In the reformulated model, the authors hypothesized that individuals who tend to make internal, stable, and global attributions for negative life events are prone to helpless behaviors and depression. The reformulated model posits that these types of attributions lead to the perception of helplessness, and to depression. In the same way, research in explanatory style has identified internal, stable, and global attributions for negative events as the components of maladaptive[2] attributional styles (Seligman, 1991).

Although much of the learned helplessness literature concentrates on depression as a consequence of maladaptive attributions, studies in explanatory style suggest a number of additional negative consequences associated with maladaptive attributional style. For example, researchers conducting a thirty-five year longitudinal study found that a pessimistic explanatory style constituted a significant risk factor for physical illness (Peterson, Seligman, & Vaillant, 1988). In addition, findings in educational research suggest a link between attributions and academic persistence behaviors in children (Andrews & Debus, 1978; Chapin & Dyck, 1976; Fowler & Peterson, 1981; Okolo, 1992).

Furthermore, there is evidence that explanatory style becomes more stable as children age, and may begin a solidification process around puberty (Nolen-Hoeksema, Girgus, & Seligman, 1986; 1992). If it is true that depressive explanatory style is related to depressed

---

[2] The adjectives "maladaptive," "depressive," and "pessimistic" are used interchangeably in describing attributional styles. All of these descriptors refer to an attributional style characterized by internal, global, and stable attributions for negative life events.

mood, poor physical health, and a lack of persistence, it makes sense to target this explanatory style for intervention, in order to prevent or reduce potential negative consequences and enhance physical and mental well-being. In addition, it may be particularly useful to work with children as they are entering puberty to determine whether explanatory style training serves a preventive purpose.

This investigation sought to determine the efficacy of a school-based program directed at changing children's maladaptive attributions. In light of evidence that optimistic explanatory style is related to greater persistence behaviors as well as a reduction in depressive symptomatology, it was expected that children who participated in this program would evidence some positive changes in both of these areas.

The following sections will describe the problem of childhood depression, introduce the reformulated learned helplessness model (Abramson, Seligman, & Teasdale, 1978), and explain the subsequent development of explanatory style as a research topic. Later sections will outline some attempts at modifying explanatory style, and will provide examples of various cognitive treatment approaches that have already been used with children and adolescents. Next, there will be a discussion of parental involvement in interventions with minors. Finally, a number of methodological issues related to this type of research will be addressed.

Childhood Depression

There is evidence that feelings of depression increase between childhood and adolescence (Rutter, 1986), especially for girls (Offord et al., 1987). At present, there is a dearth of methodologically sound

epidemiological studies to determine the prevalence of depression in childhood. Fleming and Offord (1990) conclude that rates of pre-pubertal depression are probably less than 3%, and increase with age. They temper their conclusion with the caveat that methodological shortcomings and inconsistent use of assessment instruments have probably led to under-reporting of depression rates.

The Ontario Child Health Study (Boyle et al., 1987; Offord et al., 1987) reported somewhat higher rates of emotional disturbance. These investigators found that 8.3% of rural children and 10.7% of urban children (ages 4-16) suffered from some type of emotional disorder.[3] In contrast to the aforementioned study by Fleming and Offord (1990), these authors found that more than 10% of their sample of children aged 4-11 suffered from an emotional disorder.

Developmental issues appear to play a large role in childhood depression. In pre-pubertal children, sex differences are apparently negligible, with girls and boys showing similar rates of symptoms. However, in adolescence, females surpass males in rates of depression (Fleming & Offord, 1990). This pattern mirrors that of adult depression. However, it is not clear at this time whether females show more depressive explanatory styles than males at any point in the lifespan.

Childhood depression may have consequences for academic performance. For example, Nadine Kaslow and her associates (Kaslow, Tannenbaum, Abramson, Peterson, & Seligman, 1983) found

---

[3] "Emotional disorder" includes affective disorders, anxiety disorders, and obsessive-compulsive disorder.

an inverse relationship between depression and problem-solving performance.[4] In their study, fourth and fifth grade children completed the Children's Depression Inventory (CDI), in addition to block design and anagram tasks. CDI scores were inversely related to problem-solving performance, indicating that depressed children did not perform as well as non-depressed children in these cognitive tasks.

Learned Helplessness

One model of depression which has been useful in cognitive-behavioral therapy is the reformulated learned helplessness model (Abramson et al., 1978). Learned helplessness is a process in which an organism is exposed to an inescapable aversive stimulus and subsequently learns that outcomes are not contingent upon instrumental responses. In humans, this realization leads to four major types of deficits: cognitive, motivational, emotional, and self-esteem. The cognitive deficit in this model refers to the individual's difficulty learning new information, specifically, learning that a particular response will allow escape from the aversive stimulus. The motivational deficit involves retardation of voluntary responding, such that the individual eventually stops trying to escape the aversive situation. The emotional deficit represents feelings of depression. Finally, the self-esteem deficit results from the perception that although one is not capable of escaping an aversive situation, others would be able to escape by responding effectively.

---

[4] Measures of cognitive performance included block designs ($r = -.64$) and anagrams ($r = -.67$).

The reformulated model distinguishes between universal helplessness and personal helplessness. Universal helplessness refers to the belief that *anyone* would be helpless in a particular situation, whereas personal helplessness refers to the belief that *oneself alone* would be helpless in a given situation, whereas others would not be helpless. The contribution of this distinction is that personal helplessness involves an internal attribution, and thus is more likely than universal helplessness to lead to depression and a self-esteem deficit.

Another flaw in the original model was an inability to predict the chronicity and generality of helplessness. The authors of the reformulated model posit that the perception of helplessness is attributed to a cause which may be global or specific, stable or unstable, and internal or external. If a global attribution is made for a failure, the individual will likely generalize feelings of helplessness to other situations, and perceive them as uncontrollable. In the same way, if the individual makes a stable attribution for failure, the perception of helplessness is likely to persist in the future.

The reformulation proposes that a subset of depression, called helplessness depression, involves internal, global, and stable attributions for failure, and external, specific, and unstable attributions for success (Abramson, Seligman, & Teasdale, 1978). The depressive attributional style characterized by internal, global, stable attributions for negative events has also been referred to as "pessimism" (Seligman, 1991).

According to the reformulated model, depression can result from a chain of events which begins with a negative outcome and

ends with internal, stable, and global attributions or expectations of hopelessness (Alloy, Abramson, Metalsky, & Hartlage, 1988). The authors of the reformulated model (Abramson et al., 1978) proposed a diathesis-stress relationship between outcomes and depression. Whereas positive uncontrollable outcomes can lead to motivational and cognitive deficits, negative outcomes are necessary to produce emotional deficits, or depression. The authors do not, however, rule out the possibility of other types of depression, with varying etiologies.

It has been proposed that learned helplessness may be induced through aversive stimulation that is inescapable (Hiroto & Seligman, 1975). Such a situation could easily occur in a school setting in which a child is exposed repeatedly to failure and finally stops trying to achieve. The end result of this scenario might be a lack of academic persistence (motivational deficit), a failure to recognize that studying could improve performance (cognitive deficit), depression (emotional deficit), and a belief that others are capable of academic success while this particular student is not (self-esteem deficit). Unfortunately, such a pattern could lend itself to further school failure and corroborate the student's pessimistic attributions.

Explanatory Style

Philip Kendall (1993) hypothesized that cognitive dysfunction takes on two different forms among children and adolescents. *Cognitive deficiencies* are present when youths fail to thoughtfully consider the consequences of their actions, and are associated with impulsivity. On the other hand, *cognitive distortions* are present when youths process information in a biased or dysfunctional

manner. Cognitive distortions are related to depression and anxiety in youths. In both types of cognitive dysfunction, coping skills are impaired.

Albert Ellis (1962) asserted that cognitive distortions constituted both a cause and a maintenance factor in emotional disturbance. He proposed that, if individuals could be released from illogical thought patterns, they would probably not become disturbed, and even if they did, they would not be able to remain disturbed for very long. In the same way, optimistic explanatory style does not imply an unrealistic worldview, but rather a realistic openness to possibilities for success and positive outcomes, with the understanding that a particular negative outcome is only one of many possibilities. Optimistic explanatory style involves seeing oneself as an agent rather than a passive onlooker. In other words, optimists believe that they can influence outcomes by their actions.

It is important to note that an optimistic explanatory style is not the equivalent of "blind optimism." That is, an optimist can be a realist who does not expect the worst imaginable scenario to occur when a situation has the potential to lead to disappointment. Rather, an optimist would be likely to consider a number of possible outcomes, and would probably generate and pursue a number of alternative actions, should the outcome be disappointing. In this way, the optimistic person would work to influence outcomes.

Research with Adult Participants: Explanatory Style and Depression

Research on explanatory style with adult subjects indicates a positive correlation between attributional style and depression. Using a sample of 39 adult patients with unipolar depression and 12

with bipolar depression, Martin Seligman and his associates (Seligman et al., 1988), found that the worse the depression, the more maladaptive the explanatory style. The patients in this study received cognitive therapy, based on the program outlined by Beck, Rush, Shaw, and Emery (1979). Some of the basic components of this approach include translating the individual's concerns into solvable problems[5], helping the individual to confront and challenge irrational beliefs and assumptions, and assigning "homework" to be done between therapy sessions. Participants experienced both a reduction of depressive symptoms and an improvement in explanatory style. These changes were largely maintained at one year follow-up.

Similarly, another investigator found that depressed college students were more likely to attribute failure to an internal cause, and success to an external cause than their non-depressed counterparts (Rizley, 1978). This pattern is consistent with the reformulated learned helplessness model.

Research on cognitive correlates of depression has not yielded a clear causal relationship between depression and attributional style. In a one-year longitudinal study, investigators did not find cognitive measures predictive of future depression (Lewinsohn, Steinmetz, Larson, & Franklin, 1981). These researchers concluded that depressive cognitions coincide with other depressive symptoms, but do not necessarily precede depressive episodes. However, they also

---

[5] While a client might complain of "just not feeling right" upon entering therapy, this program would encourage client and therapist to target particular areas of the client's life for intervention. In this way, a client could set specific goals such as "I'd like to be more assertive at work" or "I'd like to be more clear in communicating my feelings to my romantic partner." In so doing, the individual may feel that his/her problems are manageable.

reported that individuals who showed more negative cognitions during depressive episodes were slower to recover from depression than subjects who displayed fewer depressive cognitions.

Explanatory Style and Cognitive Performance

Pessimistic explanatory style may also be related to poor performance on cognitive tasks. There is evidence that anxious and depressed adults experience difficulties with cognitive problem-solving tasks and experience more cognitive interference than control subjects when performing these tasks. In a study by Zarontonello, Slaymaker, Johnson, and Petzel (1984), anxious and depressed college students (as measured by the State Trait Anxiety Inventory-A and the Beck Depression Inventory) performed more poorly on a test of anagrams, thought more about how well they were doing while completing the task, and evaluated their own performance more negatively than control subjects.

Explanatory Style and Physical Health

Using data from a 35-year longitudinal study, Peterson, Seligman, and Vaillant (1988) concluded that explanatory style has important implications for physical health in adults. Investigators from this research project followed 99 men from Harvard University's classes of 1942-1944. The participants were screened so that only the individuals who were believed to be in very good mental and physical health, with excellent academic records, were selected for participation. Between ages 25 and 40, there was very little correlation between health at the present age and explanatory

style at age 25.[6] However, at age 45, the correlation jumped dramatically ($r = .37$, $p < .001$), indicating that explanatory style at age 25 was predictive of future physical health. The authors suggested a number of possibilities for the relationship, namely that the pessimistic subjects may have been more passive than their peers in the face of illness. In other words, individuals with a pessimistic attributional style might have failed to seek or follow medical advice, or might have neglected to attend to basic preventive health care measures.

Peterson and Bossio (1991) posit that a combination of blaming oneself for bad events and feeling powerless to change one's situation creates a great deal of stress, which weakens the immune system over time, and makes illness more likely.

There is a growing body of evidence that pessimistic explanatory style is related to, but not predictive of, depression, cognitive performance deficits, and poor physical health in adults. The next few sections will contain descriptions of research related to explanatory style in children and adolescents.

Research with Child and Adolescent Participants: Explanatory Style and Depression

Research on explanatory style among children and adolescents has also offered some support for the reformulated learned helplessness model. In other words, the literature suggests that depressed children have more pessimistic attributional styles than non-depressed children (Garber, Weiss, & Shanley, 1993; Kaslow,

---

[6] Controlling for initial physical and mental health, the correlations ranged from .03 to .13. None of these correlations was significant at the .05 level. Measures of physical health were taken every five years.

Rehm, & Siegel, 1984; McCauley, Mitchell, Burke, & Moss, 1988; Nolen-Hoeksema, Girgus, & Seligman, 1986; Nolen-Hoeksema, Girgus, & Seligman, 1992). Further, there is evidence that the correlation between depression and explanatory style increases with age, lending support to the notion that explanatory style becomes increasingly stable with age (Nolen-Hoeksema et al., 1992).

Although research has tended to focus on children's attributions for negative or stressful life events, there is evidence that depressed children also view positive life events differently than non-depressed children. In a study by Elizabeth McCauley and her associates (McCauley, Mitchell, Burke, & Moss, 1988), it was found that depressed children made more external, unstable, and specific attributions for successes. This pattern of dismissing successes as external to oneself and one's abilities may prevent the individual from engaging in proactive behaviors, and thus maintains the perception of helplessness.

Like Lewinsohn and his colleagues (1981), Susan Nolen-Hoeksema and her associates (1986) found conflicting results about the direction of causality between explanatory style and depression. In a one-year longitudinal study, they reported that explanatory style was predictive of future depression in children, and that depression also predicted changes in explanatory style. Five times during the course of a year, the researchers administered the Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984) and the Children's Depression Inventory (CDI; Kovacs, 1980), among other instruments, to a group of third, fourth and fifth grade students. They found that explanatory style at time *n* served as a

predictor of depression at time $n + 1$, even when depression at times n and n - 1 were controlled. The investigators conducted a similar analysis to determine whether depression scores predicted changes in explanatory style, and found that depression at time n was predictive of explanatory style at time $n + 1$. This pattern of results suggests that depression and explanatory style coincide and may reinforce one another. For example, the authors posited that depression could play a role in the development of a pessimistic attributional style, and that a maladaptive attributional style could also contribute to depression. Taken together with the findings of Lewinsohn and his associates (1981), it appears that, at the very least, pessimistic explanatory style may be related to a delay in remission from depressive symptomatology.

Attributional Style and Academic Persistence

Much of the educational literature in explanatory style has focused on its relationship to persistence. One general finding has been that attributions have an impact on persistence behaviors in children (Andrews & Debus, 1978; Chapin & Dyck, 1976). Investigators in this area have attempted to encourage persistence in children by teaching a relationship between effort and outcomes.

In a study by Andrews and Debus (1978), sixth graders who attributed failures to lack of effort (internal, unstable) tended to be more persistent than children who attributed negative outcomes to lack of ability (internal, stable) or task difficulty (external, unstable). Furthermore, the investigators found that children who were verbally reinforced for associating effort with outcomes tended to be more persistent at post-test, and that there was generalization of this

persistence to an unfamiliar tester and tasks that were not used in the original testing sessions.

Fowler and Peterson (1981) expanded on these findings and conducted attribution retraining sessions with middle school subjects. In these training sessions, an experimenter either verbally associated outcomes with children's level of effort or taught the children to say to themselves, "I got that right. That means I tried hard." or "No, I didn't get that. That means I have to try harder." Children in the control groups were merely given feedback on whether their responses were correct or incorrect. Children who received attribution retraining were more persistent in reading difficult materials than control subjects on later trials. It is important to note that these children persisted in the face of failure, suggesting that attribution retraining may reduce some of the negative effects of school failure. This type of intervention may allow children to continue to learn rather than abandon tasks as they become more difficult.

In a more recent study (Okolo, 1992), children with learning disabilities participated in eight 30-minute sessions involving a computerized mathematics program. Members of the experimental group received feedback about the number of correct responses they had given, and whether or not they had reached their goals.[7] Experimental participants also received some attributional feedback, relating their performance to effort and ability if they succeeded, and to effort alone if they failed. On the other hand, members of the

---

[7] For all participants, the specified goal was to solve the same set of problems three times within a given time period, and achieve at least 80% accuracy.

control group only received feedback on the number of correct responses and the status of the goal. Although the students did not differ on the types of attributions made for success and failure at post-test, those who received attribution retraining voluntarily completed more problem sets than the control subjects. In addition, despite the similarity between the two groups on a computation pre-test, children in the attribution retraining group performed significantly better on a computation post-test than the children who received neutral feedback. These findings suggest that attribution retraining has an impact on academic persistence. Improved performance on the computational measure may have been a reflection of persistence as well as the additional practice undertaken by children in the experimental group.

The research literature on explanatory style in children and adolescents resembles the adult literature in that both link explanatory style to depression and cognitive performance. The key difference between adults and children is that there is no evidence at present that children with pessimistic explanatory styles suffer from poor health, as compared with optimistic children. However, the results of the study by Peterson and his colleagues (1988) suggest that the correlation between explanatory style at age 25 and physical health increases with age, and becomes pronounced only at around age 45.

Modification of Explanatory Style

According to Beck and Weishaar (1989), "the goals of cognitive therapy are to correct faulty information processing and to modify dysfunctional beliefs and assumptions that maintain maladaptive

behaviors and emotions." (p. 28) Certainly, pessimistic attributions are often both irrational and self-defeating. For example, imagine that a child experiences a failure, and then says, "I never could do anything right." This statement is surely inaccurate, and the child could probably come up with a memory of doing something kind or helpful or intelligent. More importantly, however, this internal, stable, and global attribution gives the child no reason to persist or to believe that the future will be different. In that way, the child's attribution maintains both maladaptive behaviors and negative emotions.

On the other hand, consider a situation in which the same child experiences a failure and says, "I guess I'll have to study harder to improve my grade. This teacher tends to give pretty tough exams." The attribution is now external (the teacher gives difficult tests), unstable (there is the expectation that the grade will change through study), and specific (limited to this particular course). In this case, the child may be encouraged to take action in order to improve the situation, and will probably not experience motivational, cognitive, emotional, or self-esteem deficits in relation to the attribution.

There is evidence that cognitive therapy can help adults develop a more optimistic explanatory style. For instance, in a study by Martin Seligman and his colleagues (1988), depressed adults participated in psychotherapy at the Center for Cognitive Therapy at the University of Pennsylvania, and were monitored for depression levels and explanatory style scores. The therapy was based on the model outlined by Aaron Beck and his colleagues for the treatment of depression (Beck, Rush, Shaw, & Emery, 1979). In this study, the

most severely depressed patients tended to have the most pessimistic explanatory styles. The authors found an inverse relationship between depression and explanatory style such that decreases in depression were associated with more optimistic explanatory styles. Furthermore, patients with optimistic explanatory styles continued to be less depressed at one year follow-up. These findings support the notion that explanatory style is related to depression, and that cognitive therapy may facilitate change in explanatory style.

Although some studies have examined the relationship between attributions and performance in children, no studies have focused solely on changing the explanatory style of children. There is evidence that cognitive work and skill building can lead to a reduction of depressive symptoms (Jaycox, Reivich, Gillham, & Seligman, 1994; Kahn, Kehle, Jenson, & Clark, 1990) or a reduction of perceived severity of stressors (Elias, Gara, Ubriaco, Rothbaum, Clabby, & Schuyler, 1986).

For children, in contrast to adults, changes in depression level have not coincided with changes in explanatory style. In a study by Lisa Jaycox and her colleagues (1994), a group of children at risk for depression[8] was given cognitive and social problem solving skill training. Although depressive symptoms decreased among these children, explanatory style did not change significantly. However, experimental subjects experienced a greater reduction of depressive

---

[8] The high risk group was composed of children who showed depressive symptoms as measured by the CDI, and who evidenced a perception of marital conflict, as measured by the Child's Perception Questionnaire (Emery & O'Leary, 1982).

symptoms than control subjects, and this difference was maintained at six month follow-up. The control group in this experiment was made up of a combined waitlist group and no-contact control group. Thus, the role of non-specific factors in this study is not clear.

There are several possibilities as to why these investigators did not find significant changes in explanatory style. The most obvious, of course, is that the children's explanatory styles did not change, and thus no change could be measured. A second possibility, which has been suggested previously, is that children's explanatory styles grow more stable with age, and may not be consistent enough for meaningful pre-/post- comparisons before puberty (Cole & Turner, 1993; Nolen-Hoeksema, Girgus, & Seligman, 1992). A third alternative is that the current measures of explanatory style for children are inadequate. Cole and Turner (1993) stated that the Children's Attributional Style Questionnaire (CASQ) has poor internal consistency, which may be related to children's lack of a consistent attributional style. Finally, another possibility is that the relationship between explanatory style and depression differs between adults and children.

Use of Training or Therapy Groups with Children

A number of efforts have been made to reduce depression levels in children and adolescents, or to reduce the negative impact of common stressors on this population. Group treatments have received more research attention than individual interventions, and have shown promise in reducing depression (Elias, Gara, Ubriaco, Rothbaum, Clabby, & Schuyler, 1986; Fine, Forth, Gilbert, & Haley,

1991; Jaycox, Reivich, Gillham, & Seligman, 1994; Lewinsohn & Clarke, 1984).

Marc Zimmerman (1990) spoke of "learned hopefulness," which he described as "...the process of learning and utilizing problem-solving skills and the achievement of perceived or actual control." (p. 72) He proposed that the perception of present and future controllability would lead to "hopeful" behaviors and emotional states, including psychological empowerment, proactive behavior, and reduced alienation. His findings indicated that a sense of empowerment played a large role in reducing feelings of alienation.

A recent study compared cognitive-behavioral, relaxation, and self-modeling treatments for depression in adolescents (Kahn, Kehle, Jenson, & Clark, 1990). The cognitive-behavioral and relaxation training groups participated in twelve 50-minute sessions over a six-week to eight-week period. The self-modeling condition, however, involved twelve sessions, but only for 10-12 minutes each. In the self-modeling condition, participants met with the experimenter individually, rather than in a small group. For the cognitive-behavioral group, an adolescent form of the Coping with Depression (CWD) course (Lewinsohn & Clarke, 1984) was used. In each session, a specific depression-related topic was addressed. The course was based on a skill deficit/skill acquisition model in which participants were encouraged to practice various skills during and between sessions. The relaxation group also involved practice within and between sessions, and included lecture, demonstration, discussion, case examples, and feedback. The self-modeling participants were instructed to behave in certain ways that were not consistent with

their depression (e.g., eye contact, erect body posture, positive affective expression, positive verbal attributions). Subjects in all treatment groups experienced a reduction in depressive symptoms. However, subjects in the self-modeling condition did not generally maintain the changes at one month follow-up, in contrast to members of the cognitive-behavioral and relaxation training groups.

Another group of investigators (Butler, Miezitis, Friedman, & Cole, 1980) conducted a school-based intervention with two experimental groups (a role play group and a cognitive restructuring group) and two control groups (a placebo control group and a no-contact control group). Both experimental groups and the placebo control group participated in ten weekly hour-long sessions. Each role play session focused on a topic which would be played out by group members and discussed. The topics were related to depression, and included themes such as success and failure, peer acceptance and rejection, and loneliness. The cognitive restructuring group sought to teach children to replace dysfunctional automatic thoughts with more constructive ones, to enhance listening skills, and to understand the relationship between thoughts and feelings. Children in the placebo control group were taught to solve problems collectively by sharing research and information. The final group was a no-contact control group. The investigators found that children who received role play training tended to experience decreased depression levels, whereas children in the cognitive restructuring and control groups did not differ significantly from one another after the treatment. The authors speculated that the role play group had more appeal for the participants, as it did not

demand as much verbal activity or introspection from the participants.

One program which targeted middle school children took a social problem-solving approach, and included both instructional and application phases over an academic year (Elias et al., 1986). The instructional phase was conducted throughout the first semester of an academic year, and consisted of an introduction to problem-solving over 20 40-minute sessions. The application phase was implemented throughout the second semester, and consisted of two major components: formal sessions in which the teacher demonstrated methods of integrating problem-solving skills into regular class sessions and informal sessions in which the teacher mediated conflicts by encouraging the children to use the problem-solving skills they had learned. While the formal sessions of the application phase were held approximately once a week, the informal sessions were held at the teachers' discretion. The authors report that these informal sessions took place approximately three times a week.[9] Children who received both phases of the training perceived life stressors as less of a problem than children who received only the instructional portion of the training. Certainly, part of the success of this program may be related to its length and integration into the academic curriculum.

The Penn Prevention Program included both cognitive and social problem-solving components in an intervention designed to

---

[9] The authors did not report individual differences across teachers, but merely stated that, "...our data indicate that such interventions were used approximately three times per week by the majority of teachers." (p. 265)

reduce or prevent depression among at-risk[10] 10-13 year olds (Jaycox, Reivich, Gillham, & Seligman, 1994). Children who received this treatment were significantly less depressed than children in a combined waitlist/no-contact group at the conclusion of the treatment period, as well as at 6-month follow-up. Although these children did not show corresponding changes in a composite measure of explanatory style[11], they were less likely to attribute events to stable causes at the end of treatment.

Parental Involvement in Treatment/Training of Children

Although there have been many calls for greater parental involvement, either as collaborators in treatment or as clients in family interventions, little research has been done to determine the efficacy of such applications (Kendall, 1993). Lauren Braswell (1991) cites three major reasons to involve parents in cognitive behavioral treatment for their children. First, parents often play a role in defining the child's problem. Parents frequently refer their children for treatment, and may possess important information about their children's problems. Secondly, parents may have an effect on the child's problem. For example, they may cause, exacerbate, or otherwise moderate the problem. It may be helpful in treatment to determine the impact of the parents' behaviors and communications on the child's problems, and if necessary, work with the parents to help them change maladaptive patterns. Finally, parents can be

---

[10] Children were classified as "at risk" on the basis of elevated depression scores (as measured by the Children's Depression Inventory; Kovacs, 1980) and self-reports of parental conflict (as measured by the Child's Perception Questionnaire; Emery & O'Leary, 1982).

[11] Explanatory style was measured by the Children's Attributional Style Questionnaire (CASQ; Seligman, Peterson, Tannenbaum, Alloy, & Abramson, 1984).

important collaborators in the therapeutic process, and may facilitate skill transfer, or maintenance of therapeutic change.

Of course, it is often the case that parents resist participation in treatment. Robin and Foster (1989) point out that a parent may not see the need to participate in his or her child's treatment, since the child or the other parent is perceived as "the problem." (p. 212) They suggest contracting with families in order to clarify all participants' expectations for treatment. They also emphasize the importance of building rapport with family members, so that respect is conveyed to all family members, and it is clear that therapy will not be a forum for blaming or scapegoating any individual family member. Ellen Wachtel (1994) asserts that resistance is a response to anxiety, and thus the therapist should work to make clients feel at ease, so that therapy can proceed. It seems reasonable that experimenters would also benefit from these guidelines, as cooperation may be enhanced and attrition reduced if they make efforts to respectfully involve family members.

Methodological Issues

A number of methodological issues have arisen in the study of depression in childhood and adolescence. According to Fleming and Offord (1990), one major stumbling block in this type of research is sampling. Perhaps most importantly, samples are often too small to permit conclusions about epidemiology of disorders. In addition, the attrition rate is frequently so great as to compromise the representativeness of the sample. Unfortunately, the subjects who drop out of these studies are not usually followed up, and it is

unclear whether they differ demographically from the remainder of the sample.

Another important problem in depression research with this population is the inconsistent use of measures. Measures for depression in children have not withstood as much psychometric scrutiny as have adult measures (Kazdin, 1981). That is, issues of reliability and validity do not always receive adequate attention, which may result in the use of inappropriate measures.

Hypotheses

Martin Seligman (1991) proposed a method of teaching children to become more optimistic, in order to reduce the risk of depression, and allow children to persist even when faced with disappointments and failures. Unfortunately, there is no research known to the present author that has closely followed Seligman's training approach, and it is unclear at this time whether a group focused solely on changing the explanatory style of children would be effective and beneficial to participants.

If it is true that depressive explanatory style is related to depressed mood, reduced persistence, and poor physical health (at least in adulthood), it makes sense to target this explanatory style for intervention, in order to prevent or reduce potential negative consequences and enhance physical and mental well-being.

I hypothesize that (1) Depressed children who receive a five-session training course (over five weeks) aimed at improving children's explanatory styles will show a reduction in depressive symptoms (as measured by the Children's Depression Inventory; Kovacs, 1980) and a decrease in behavioral problems at home (as

measured by the Child Behavior Checklist behavior problems subscale completed by parents; Achenbach & Edelbrock, 1983) at the conclusion of the course.

(2) Depressed children in a control group (relaxation training) may also experience a reduction in depressive symptoms and behavioral problems.

(3) Participants in an explanatory style group are expected to show more optimistic explanatory styles at the conclusion of the course than children in the relaxation training group and children in the no-contact control group.

(4) Participants in the explanatory style group are also expected to show greater perceived competence and confidence in their own skills and abilities (as measured by the Perceived Competence Scale for Children; Harter, 1982; Child Behavior Checklist, social competence subscale, Achenbach & Edelbrock, 1983) and a greater sense of self-efficacy (as measured by the Self-Efficacy Scale; Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982) as compared to participants in the other two groups.

(5) Members of the experimental group are expected to show more persistence behaviors at post-test and follow-up than members of the relaxation training group and the no-contact control group.

(6) After receiving explanatory style training, children in the no-contact control group will show decreases in their depression scores, and will show greater perceived competence, self-efficacy, and a more optimistic attributional style, as compared with members of the relaxation training group.

Method

Subjects

The parents of all fifth and sixth graders at a Michigan middle school were asked to consent to a self-esteem screening of their children. Children with elevated scores on the CDI (CDI $\geq$14) and children with low scores on the CDI (CDI $\leq$5) were recruited to participate in the study.[12] The recruitment process consisted of sending a letter home to parents of selected children and requesting consent for these children to participate in an after-school program, called the S.T.A.R.S. (Students Trying and Reaching Success) program. Children who completed the program were promised S.T.A.R.S. program t-shirts and an awards banquet at the end of the program.

Twenty-two boys and twenty-nine girls between the ages of 10 and 12 were included in the data analysis. According to parent reports, 32 (63%) of the participants were African-American, 10 Caucasian (20%), 1 Hispanic (2%), 1 Native American (2%), 4 Multi-racial (8%), and 2 were identified as "Other" (4%). One parent declined to identify the ethnicity of her child (2%). Compared with the population of the surrounding community, Caucasian students were slightly under-represented in the program (Beecher Community School District, 1990).

---

[12]The parents of a child whose CDI score was 43 were notified that their child showed some risk for depression. Information regarding the community mental health system in the area and mental health resources available at the middle school was provided. The parents were invited to call the investigator for additional information or referrals.

Twenty-three (45%) of the parents reported a household income of less than $10,000 a year; nine (18%) reported an income between $10,000 and $20,000; ten (20%) reported $20,000 to $35,000; four (8%) reported $35,000 to $50,000 and two (4%) reported $50,000 to $70,000. Three parents (6%) declined to specify their household incomes. No data were available regarding the average income in this community.

The parents of all participants agreed to attend two meetings: one before the training began, and one after the conclusion of training. Parents who could not attend these meetings were asked to come to the school to complete parent forms. Parents who were unable to arrange transportation to the school were allowed to answer questions over the telephone.

Parent and child measures were chosen for their wide use among researchers as well as their high levels of reliability. It was thought that the use of these particular materials would allow other researchers to easily compare this study with related investigations.

Children's Test Battery[13]

Children's Depression Inventory (CDI; Kovacs, 1980). Each CDI item contains three sentences, indicating different symptom severity levels. Sentences are assigned a value from 0 to 2, with a score of 2 being the most severe level of the symptom. The total score ranges from 0 to 54. The internal consistency of the CDI ranges from .80 to .94 (Saylor, Finch, Spirito, & Bennett, 1984), and this measure has been shown to reliably discriminate psychiatric patients from non-

[13]Sources of all child measures may be found in Appendix A.

referred adolescents (Carey, Faulstich, Gresham, Ruggiero, & Enyart, 1987).

Children's Attributional Style Questionnaire (CASQ; Seligman et al., 1984). The CASQ is a 48-item forced choice measure in which two dimensions of explanatory style are held constant, while the third varies. In this way, children may receive composite explanatory style scores for positive and negative events, in addition to an overall composite score. The coefficient alphas (Cronbach, 1951) for the Composite Positive (CP), Composite Negative (CN), and Total Composite (CPCN) are .71, .66, and .73, respectively.

Perceived Competence Scale for Children (Harter, 1982; Harter, 1987). Harter's Perceived Competence Scale for Children is a 36-item scale in which children are asked to rate their own competence, in comparison with other children, in five domains appropriate to children: 1) scholastic competence, 2) social acceptance, 3) athletic competence, 4) physical appearance, and 5) behavioral conduct. Each item consists of two opposing statements, taking the form, "Some kids..." but "other kids..." Children are asked to identify the statement that is most like them, and then rate whether that statement is "really true for me" or "sort of true for me." Items are scored on a scale of 1 to 4, with 1 indicating low perceived competence, and 4 indicating high perceived competence. The coefficient alphas for the cognitive, social, physical and self-worth subscales range from .75 to .83, .75 to .84, .77 to .86, and .73 to .82, respectively.

Self-Efficacy Scale (Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982; Sherer & Adams, 1983). Self-efficacy

involves optimism (the perception that one will be able to perform a given task successfully) and a positive internal attribution (the perception of oneself as a skilled or skillful individual). The Self-Efficacy scale contains 23 items pertaining to one's sense of general self-efficacy or one's sense of social self-efficacy. The remaining 7 items are "fillers" that relate to the subject's interests and hobbies. Subjects are asked to rate each item on a 5-point scale as to whether they "disagree strongly," "disagree moderately," "neither agree nor disagree," "agree moderately," or "agree strongly" with each statement. The coefficient alphas for the General Self-efficacy and Social Self-efficacy subscales are .82 and .71, respectively.

Adult Test Battery[14]

Demographics Questionnaire. Parents were asked several questions about their age, educational level, marital status and socio-economic status. They were also asked about their children's age, grade level, and school performance.

Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983). The CBCL consists of 20 items assessing social competence and 118 items assessing behavioral problems. For the social competence subscale, parents report on their children's participation and performance in sports, hobbies, social activities, academic work, and home behavior. For the behavior problems subscale, parents rate their children on a number of behaviors. A rating of 0 indicates that a statement is not true of the child, a rating of 1 indicates it is sometimes true, and a rating of 2 indicates that it is often true of the child. Test-retest coefficients for the CBCL range from .95 (behavior

[14]Sources of all adult measures may be found in Appendix B.

problems) to .99 (social competence) after one week, and from .84 (behavior problems) to .97 (social competence) for a three-month interval.

Parent Questionnaire. Parents were asked about a number of activities in which their children participate (e.g., studying, playing a musical instrument, or participating in a sport). For each activity, parents were asked how long their children practice at one time, how much they practice during the course of a week, and whether or not they practice every day. Parents were also asked how often their child "gave up" an activity, whether they were able to "redirect" their child to continue to practice, and how long their child has been participating in each particular activity.

Procedure

All fifth and sixth graders who received parental permission completed the CDI, the CASQ, the Perceived Competence Scale for Children, and the Self-Efficacy Scale at an initial depression screening session. Based on CDI scores, 30 depressed children and 40 non-depressed children were recruited to participate in this study.

At the screening session, children were given a series of ten five-letter anagrams to solve. All words that were included in the set of anagrams were at or below a third grade reading level. The first set of five anagrams was solvable, while two of the second set of five were unsolvable. Children were asked to do their best on this task, and told that they could take as much time as they wanted. The number of correct answers and the amount of time each child spent on this task was recorded. At this time, they also completed a test of persistence, which consisted of a number of cross-out tasks.

For each item, the child was asked to draw a line through the three visual stimuli that resembled the target stimulus. The total number of items completed became the persistence score.

Three types of groups were constructed, such that approximately 10 depressed children and 10 non-depressed children were invited to participate in each type of group. Efforts were made to construct groups with similar male to female ratios. The group leader was naive as to the status of group participants on the screening measures. Table 1 provides sample sizes of depressed and non-depressed children for each treatment group.

Insert Table 1 About Here

The experimental group was the explanatory style group in which children were instructed in Seligman's (1991) method for explanatory style change. One control group was a relaxation training group in which children practiced relaxation techniques aimed at reducing stress. The second control group was a no-contact control group in which children had no contact with the experimenter, except to complete pre-test and post-test measures. There were two explanatory style groups and two relaxation training groups, made up of 10 children each, so that each participant received some individual attention from the group leader.

The Parent Meeting

Before the training began with the children, parents were asked to attend a meeting in which the rationale of the project was

Table 1

Sample Sizes of Depressed and Non-Depressed Children in Each Treatment Group

	Group Type		
Time	Explan. Style	Relaxation	No-Contact
Pre-test	(9,9)	(5,8)	(9,11)
Post-test	(9,9)	(5,8)	(8,11)
Follow-up	(9,9)	(4,7)	(8,10)
Post-treatment	---	---	(4,5)
Tx Follow-up	---	---	(3,5)

Note. n = (number of depressed children, number of non-depressed children).

explained, and parental cooperation was solicited. If the child had two parents, both were invited to attend the meeting and complete the necessary forms. In order for a child to participate, at least one parent was required to attend the meeting, or otherwise complete the parent instruments.[15]

Parents were informed that two different types of groups would be formed, and that the groups were designed to help children to cope better with stressors. This investigation examines the effectiveness of these groups.

Children were expected to complete "homework assignments" between all group sessions.[16] Assignments were checked (for effort, not "correctness") at each group meeting. Parents were asked to encourage their children to complete all of the assignments, so that the children could derive maximum benefit from participation and the groups could fairly be compared. The parents of participants were told that all of the children would eventually be able to participate in a group, but some would have to wait several weeks to be placed in a group.

All children who attended at least four of the five group sessions were invited to attend a banquet, along with their parents, at the conclusion of the program. Children were given S.T.A.R.S. program t-shirts at that time. Data from children who attended less than four sessions were not included in the final analysis.

---

[15] Parents were offered two dates for the parent meeting. If they could not attend either meeting, the experimenter made efforts to make alternative arrangements with them (e.g., telephone interviews, or appointments with them in their homes or at the school).

[16] A description of homework assignments is provided in Appendix C.

At the end of the meeting, parents were asked to sign an informed consent agreement and complete a brief demographics questionnaire, the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983) and a short questionnaire about their children's levels of persistence at various tasks.

Notices were sent home to remind parents of the follow-up parent meeting, scheduled approximately one month after the final children's group session. Parents were asked to attend the follow-up meeting regardless of whether their children had been placed in a group. Because of the small number of parents attending the first two meetings, and the small number of participants in the no-contact group completing the explanatory style training, parents of children in that group were asked to come to the school to complete follow-up parent forms.

The Explanatory Style Group

The explanatory style group followed the procedures suggested in Seligman's book Learned Optimism (1991). During 5 forty-five minute sessions, children engaged in exercises to improve their explanatory style. At each session they learned at least one exercise designed to improve explanatory style. Between sessions, the children were asked to complete "homework assignments."

The first session focused on teaching the group the "ABC's" (Adversity-Belief-Consequence), the relationship between an adverse event, beliefs about the cause of the event, and emotional and behavioral consequences. In the next session, the ABC concept was reviewed, and children were taught to make their own "ABC Records" in which they articulated personal examples of the connection

between events, beliefs, and emotions. Between the second and third sessions, children were asked to continue with their ABC Records, and write down five additional ABC sequences, to be used in the next session. In the third session, children were taught to dispute their own beliefs and assumptions that lead to negative emotions. They were encouraged to generate as many alternatives as possible to explain why a particular event occurred. In addition, they were encouraged to look for evidence for and against their belief. After disputing a belief, they were asked if they felt any emotional change. Between the third and fourth sessions, children were asked to dispute one of their own beliefs, and write down how they disputed it. In the fourth session, children were taught to keep an ABCDE (Adversity-Belief-Consequence-Disputation-Energization) Record. Children in the group were asked to bring up a number of adverse events, and the group worked together to outline the beliefs and consequences that might follow. The group then offered alternative interpretations, and speculated as to how alternatives might alter a person's mood. Between the fourth and fifth sessions, children were asked to add two complete entries to their ABCDE logs. In the final session, children each chose a piece of paper out of a hat. Each sheet included an aversive situation (e.g., "The teacher called on you to answer a question in class, and you blurted out the wrong answer. The whole class laughed."). Students worked together in groups of two to go through the entire ABCDE sequence. One child offered criticisms (negative beliefs) based on the scenario, while the other child disputed the criticisms.

The Relaxation Training Group

The relaxation training group was based on the program used by James Kahn and his colleagues (1990), and consisted of five forty-five minute sessions. The first session focused on the links between a stressful situation, bodily stress and tension, and depression. Participants were asked to recall emotional consequences of situations in which they felt physically tense. In the second session, children were taught a number of physical relaxation techniques. For homework, they were asked to practice those techniques before the next session. During the third session, participants were taught additional techniques to facilitate physical relaxation. This session focused on various muscle groups and breathing exercises. Between the third and fourth sessions, children were asked to write down the exercise they would be most likely to use in tense circumstances, and note the emotional consequences that might follow. In the fourth session, group members learned to use mental strategies for reducing stress. Between the fourth and fifth sessions, they were asked to write down at least two adverse situations and how they used (or could have used) relaxation techniques in dealing with those situations. The fifth session was a review of the previous four sessions, and involved practice of mental and physical techniques, as well as breathing exercises.

The No-Contact Control Group

The children in the no-contact control group did not attend any of the group meetings over the five week period. They were asked to complete post-test and follow-up measures at the same time as participants of the other two groups. After the follow-up period,

children in the no-contact group received explanatory style training. At the conclusion of this training, they again completed post-test measures. These children and their parents completed follow-up measures approximately one month after the final group session.

Post-test

At the end of the final session, children in the experimental and placebo groups were asked to write down what they learned in the five group sessions. Children from all three groups were asked to fill out a CDI, a CASQ, the Perceived Competence Scale for Children, and the Self-Efficacy Scale. Next, participants from all groups were given alternative versions of the anagram and cross-out tasks.

Follow-Up

One month after the conclusion of the training program, children attended a follow-up session in which they completed the CDI, CASQ, the Perceived Competence Scale for Children, the Self-Efficacy Scale, the anagram task, and the cross-out task. They were also asked whether they spoke to participants in other groups about the program, and about how much time they spent in discussion about the group with members of other groups.

At about the same time, parents were invited to attend a meeting in which they could ask questions about the project, and give feedback regarding the program's impact, if any, upon their children. At this time, parents who completed the initial measures were asked to complete a second CBCL and parent information form.[17] Parents were invited to ask any questions about the project

---

[17] As before, parents who did not attend the meeting were able to complete the parent forms over the telephone or by appointment.

at this time. All participants were thanked for their participation. After children in the no-contact group received explanatory style training, children in the relaxation training group were also invited to participate in an explanatory style group.

Overview of Parent and Child Measures

In summary, all student participants completed all measures before training group activities began (pre-test), after the completion of explanatory style and relaxation training groups (post-test), and approximately five weeks after the conclusion of training groups (follow-up). After follow-up testing was completed, children in the no-contact group received explanatory style training. Members of the no-contact group were tested immediately after receiving explanatory style training (post-treatment) and five weeks after the conclusion of explanatory style training (treatment follow-up). Thus, data from post-treatment and treatment follow-up includes members of the no-contact group only. Table 2 outlines the schedule of testing for children in the program.

Insert Table 2 About Here

Parents of all participants were asked to report on their children's behavior before the groups began (Time 1) and five weeks after the conclusion of groups (Time 2). Parents of no-contact group members were asked to fill out the measures a third time, five weeks after their children finished explanatory style training (Time 3). Because parents were not on exactly the same time schedule as

Table 2

Data Collection Procedures for All Groups

Group	Pre-test	Training Type	Post-test	Follow-up	Training Type	Post-Tx	Tx F.U.
Explanatory							
Style	X	Exp	X	X	---	---	---
Relaxation							
Training	X	Rel	X	X	---	---	---
No-contact	X	---	X	X	Exp	X	X

Note: "X" indicates that data was collected for that group. "Exp" indicates explanatory style training. "Rel" indicates relaxation training.

their children for completing test instruments, the terms "Time 1," "Time 2" and "Time 3" are used, rather than the terms "pre-test," "follow-up," and "treatment follow-up." Table 3 shows the data collection schedule for parent measures.

Insert Table 3 About Here

Table 3
Data Collection Schedule for Parent Measures

Group	Time 1 (Pre-test)	Time 2 (Follow-up)	Time 3 (Tx Follow-up)
Explan. Style	X	X	---
Relaxation	X	X	---
No-contact	X	X	X

Note: "X" indicates that data was collected for parents of that treatment group.

Results

Independent samples *t*-tests were used to compare children who participated in the program with children who did not participate or dropped out. No significant differences between participants and non-participants were found on any pre-test measure.

At the conclusion of their group activities, thirty-three children responded to a question about what they had learned. In the explanatory style group, twelve of the fifteen respondents (80%) gave answers that indicated they understood the basic premises of their group activities. In the relaxation group, eleven of the thirteen children (85%) gave adequate responses. All of the five respondents from the no-contact group gave satisfactory answers. These numbers indicate that the majority of children had at least a basic understanding of the purpose and underlying theme of group activities.

Persistent Differences Between Depressed and Non-Depressed Students

Independent samples *t* -tests revealed that depressed children responded differently than non-depressed children in several areas measured at pre-test.

For instance, in all five domains measured by the Harter Perceived Competence Scale, depressed children indicated lower estimations of their own competence. In other words, they were less pleased by their own behavioral conduct, scholastic abilities, athletic

skills, social competence, and attractiveness compared to non-depressed children. Table 4 shows the mean scores for depressed and non-depressed students in the overall sample for each area of perceived competence. Independent samples *t* - tests were conducted to determine whether depressed and non-depressed children differed on each measure at each testing time. Results of these analyses may also be found in Table 4.

Insert Table 4 About Here

In addition, at pre-test, depressed children obtained lower scores than non-depressed children for general self-efficacy and social self-efficacy. Finally, depressed children exhibited more pessimistic explanatory styles than non-depressed children. Many of these differences between depressed and non-depressed children persisted through post-test and follow-up. Mean self-efficacy scores and CPCN (composite explanatory style) scores for depressed and non-depressed children may be found in Table 5. For each of these measures, *t* values are also presented to indicate significant differences between depressed and non-depressed children at each testing period.

Insert Table 5 About Here

Hypothesis 1

The first hypothesis stated that depressed children in the explanatory style group would show decreased CDI scores and

Table 4

Sample Sizes, Means, Standard Deviations (n, M, SD) and t-tests for differences between means for Depressed and Non-Depressed Participants

Dependent Variable	Time	Depressed	Non-Depressed	t
Behavioral Conduct	Pre	23, **31.84**, 4.43	28, **41.34**, 5.68	6.70[a]
	Post	22, **32.55**, 5.26	28, **42.03**, 6.27	5.81[a]
	Follow	21, **34.08**, 4.29	27, **40.38**, 7.06	3.82[a]
Perceived Schol. Competence	Pre	23, **14.26**, 3.31	28, **20.16**, 2.97	6.71[a]
	Post	22, **15.09**, 2.86	28, **19.31**, 3.88	4.26[a]
	Follow	21, **14.95**, 3.25	27, **19.52**, 4.44	4.11[a]
Perceived Phys. Competence	Pre	23, **13.59**, 4.60	28, **19.02**, 3.53	4.77[a]
	Post	22, **14.81**, 2.74	28, **18.36**, 3.97	3.73[a]
	Follow	21, **14.36**, 3.72	27, **19.16**, 3.72	4.80[a]
Perceived Social Competence	Pre	23, **13.86**, 4.23	28, **19.06**, 3.86	4.59[a]
	Post	22, **15.91**, 3.39	28, **18.42**, 4.12	2.31[c]
	Follow	21, **16.89**, 3.49	27, **19.58**, 4.48	2.27[c]
Perceived Attractiveness	Pre	23, **14.77**, 4.73	27, **20.70**, 3.82	4.90[a]
	Post	22, **16.32**, 4.43	28, **21.36**, 2.81	4.65[a]
	Follow	21, **16.20**, 3.62	27, **20.26**, 4.12	3.57[a]

[a] $p \leq .001$, [b] $p \leq .01$, [c] $p \leq .05$

Table 5

Sample Sizes, Means, Standard Deviations (n, **M**, SD) and t-tests for differences between means for Depressed and Non-Depressed Participants

Dependent Variable	Time	Depressed	Non-Depressed	t
General Self-Efficacy	Pre	23, **56.65**, 7.20	27, **65.54**, 8.35	3.99[a]
	Post	22, **54.71**, 8.14	28, **64.77**, 10.10	3.80[a]
	Follow	21, **56.10**, 10.31	27, **59.38**, 12.24	0.99
Social Self-Efficacy	Pre	23, **18.13**, 4.34	27, **21.70**, 5.33	2.57[b]
	Post	22, **19.82**, 4.25	28, **21.59**, 3.35	1.65
	Follow	21, **20.14**, 3.29	27, **21.30**, 4.23	1.03
Composite Explan. Style	Pre	23, **2.45**, 3.79	28, **7.65**, 5.03	4.20[a]
	Post	22, **1.93**, 4.84	28, **5.98**, 4.89	2.92[b]
	Follow	21, **2.97**, 4.59	27, **5.59**, 5.44	1.77

[a] $p \leq .001$, [b] $p \leq .01$, [c] $p \leq .05$

decreased problem scores as reported by their parents. This hypothesis was supported by the data. Results of repeated measures ANOVAs indicated that scores of depressed children in the explanatory style group declined between pre-test and post-test [F (1,8) = 8.36, p < .05]. From post-test to follow-up, there was no significant change in depression scores [F (1,8) = .01, p = .92]. Table 6 provides a summary of within-subjects effects for the explanatory style group between pre-test and post-test. Table 7 includes mean CDI scores for depressed and non-depressed students in the explanatory style group.

Insert Tables 6 and 7 About Here

Parents of depressed children in the explanatory style group reported a decrease in problem behaviors among their children between Time 1 and Time 2, although this difference did not reach significance [F (1,7) = 5.31, p = .055]. Problem scores for depressed children in the explanatory style group are provided in Table 8. For both analyses that were used to test Hypothesis 1, only the data from depressed participants were included, due to the specific nature of the hypothesis. Of course, the exclusion of the remaining data resulted in a reduction in statistical power.

Insert Table 8 About Here

Table 6

Analysis of Variance for Change in CDI Scores among Depressed Children in the Explanatory Style Group

Source	SS	df	MS	F	p
Within + Residual	143.78	8	17.97		
Pre-test to Post-test	150.22	1	150.22	8.36	.020

Table 7

CDI Scores for Depressed and Non-Depressed Children in the Explanatory Style Group

	Time		
	Pre-test	Post-test	Follow-up
Depressed			
n	9	9	9
M	19.89	14.11	13.78
SD	3.69	6.45	11.40
Non-depressed			
n	9	9	9
M	3.10	6.11	6.03
SD	1.55	7.34	6.96

Table 8

Problem Scores for Depressed Children in the Explanatory Style Group

	Time	
	Time 1	Time 2
n	9	8
M	.33	.24
SD	.26	.27

Note. The highest possible problem score is 2, indicating that the child engaged in all of the negative behaviors "all the time." The lowest possible score is 0, indicating that the child "almost never" engaged in any of the problem behaviors listed.

Hypothesis 2

The second hypothesis stated that depressed children in the relaxation group would also experience reductions in depressive symptoms and problem behaviors. This hypothesis was supported by the data. A repeated measures ANOVA indicated a significant decrease in depression scores between pre-test and post-test [$F(1,4) = 8.00$, $p < .05$]. From post-test to follow-up, depression scores did not change significantly [$F(1,3) = .18$, $p = .70$]. Again, the small sample size for these analyses led to reduced statistical power. Results of the pre-test to post-test ANOVA are presented in Table 9. Mean CDI scores for the relaxation training group are given in Table 10.

Insert Tables 9 and 10 About Here

For depressed children in the relaxation group, no significant change occurred in the amount or severity of behavioral problems as reported by parents between Time 1 and Time 2 [$F(1,4) = 1.78$, $p = .25$]. Table 11 provides mean problem scores for depressed children in the relaxation training group.

Insert Table 11 About Here

Additional Findings Regarding the First Two Hypotheses

It should be noted that depressed children in the no-contact group also experienced a reduction in depressive symptoms between

Table 9

Analysis of Variance for Change in CDI Scores Between Pre-test and Post-test Among Depressed Children in the Relaxation Training Group

Source	SS	df	MS	F	p
Within + Residual	67.04	4	16.76		
Pre-test to Post-test	134.07	1	134.07	8.00	.047

Table 10

CDI Scores for Depressed and Non-Depressed Children in the Relaxation Training Group

	Time		
	Pre-test	Post-test	Follow-up
Depressed			
n	5	5	4
M	18.92	11.60	11.75
SD	9.05	2.86	3.95
Non-depressed			
n	8	8	7
M	2.72	5.13	7.50
SD	2.30	6.69	7.25

Table 11

Problem Behavior Among Depressed Children in the Relaxation Training Group

	Time	
	Time 1	Time 2
n	5	5
M	.23	.15
SD	.19	.18

pre-test and post-test [$F(1,7) = 14.82$, $p < .01$]. Table 12 includes mean CDI scores for depressed and non-depressed children in the no-contact group.

Insert Table 12 About Here

Repeated measures ANOVAs conducted with data from the entire sample indicated that depression scores for the sample as a whole (including depressed and non-depressed children) decreased significantly from pre-test to post-test [$F(1,44) = 6.93$, $p \leq .01$] and from pre-test to follow-up [$F(1,42) = 4.50$, $p < .05$]. There was no significant interaction effect of group status over time [pre-test to post-test: [$F(2,44) = .22$, $p = .81$]; pre-test to follow-up: [$F(2,42) = .59$, $p = .56$].

No significant changes in problem scores were found for these students between Time 1 and Time 2 [$F(1,6) = .01$, $p = .93$]. Mean problem scores for depressed children in the no-contact group are located in Table 13.

Insert Table 13 About Here

Although individual analyses for each treatment group failed to show significant declines in problem scores, a repeated measures ANOVA using the entire sample uncovered a significant decline in these scores from Time 1 to Time 2 for the overall sample $F(1,38) = 11.21$, $p < .01$).

Table 12

CDI Scores for Depressed and Non-Depressed Students in the No-Contact Group

	Time				
	Pre-test	Post-test	Follow-up	Post-Tx	Tx follow-up
Depressed					
n	9	8	8	4	3
M	20.00	12.32	10.75	8.82	8.00
SD	7.07	3.70	6.71	5.03	3.00
Non-depressed					
n	11	11	10	5	5
M	2.55	3.47	4.26	8.00	5.60
SD	1.29	2.84	4.62	11.77	7.60

Table 13

Problem Scores for Depressed Children in the No-Contact Group

	Time		
	Time 1	Time 2	Time 3
n	8	8	3
M	.38	.36	.29
SD	.30	.23	.28

Pearson correlation coefficients were examined to determine the relationship between explanatory style and depression. Analyses revealed that explanatory style at pre-test was significantly correlated with CDI scores at pre-test ($r = -.54$, $p < .001$), post-test ($r = -.55$, $p < .001$), and follow-up ($r = -.54$, $p < .001$). Post-test CPCN scores were not as strongly associated as pre-test CPCN scores with CDI scores at post-test ($r = -.31$, $p < .05$) or follow-up ($r = -.16$, $p = .27$). In the same way, follow-up CDI scores were not as highly correlated with CPCN scores at follow-up ($r = -.39$, $p < .01$) as they were with pre-test CPCN scores.

Hypothesis 3

The third hypothesis predicted that students in the explanatory style group would show more optimism than students in the other two groups at post-test and follow-up. Results of independent samples t-tests did not support this hypothesis. Mean CPCN scores for each group are presented in Table 14.

Insert Table 14 About Here

Additional Findings Regarding Hypothesis 3

It should be noted that pre-test CPCN scores suggested that the no-contact group was the most optimistic, and the explanatory style group was the least optimistic of the three groups. This difference did not attain significance [$t(36) = -1.86$, $p = .072$]. At follow-up, explanatory style group members attained the highest CPCN scores, whereas the no-contact group members obtained the lowest. This trend was also non-significant [$t(34) = 1.23$, $p = .23$].

Table 14

Explanatory Style and Group Membership

Time	n	M	SD
	Explanatory style group		
Pre-test	18	3.75	5.26
Post-test	18	4.41	5.15
Follow-up	18	5.22	5.27
	Relaxation training group		
Pre-test	13	5.35	5.88
Post-test	13	4.51	5.48
Follow-up	12	5.00	6.59
	No-contact group		
Pre-test	20	6.67	4.44
Post-test	19	3.78	5.40
Follow-up	18	3.29	4.07
Post-treatment	9	5.21	5.62
Treatment Follow-up	8	3.57	5.97

A repeated measures ANOVA was conducted for the entire sample to assess changes in CPCN scores over time. In the overall sample, there were no significant changes in explanatory style from pre-test to follow-up [$F(1,42) = 1.22$, $p = .28$]. However, there was a significant interaction effect indicating that the three treatment groups showed different patterns of change in CPCN scores during this time period [$F(1,42) = 4.75$, $p \leq .01$]. Whereas the relaxation and no-contact groups showed decreased optimism between pre-test and follow-up, the explanatory style group experienced some increase in optimism. Figure 1 shows the change in explanatory style for the three treatment groups over time.

Insert Figure 1 About Here

Separate analyses for each treatment group revealed that the no-contact group showed a significant decrease in optimism between pre-test and post-test [$F(1,17) = 6.62$, $p < .05$], and between pre-test and follow-up [$F(1,17) = 15.36$, $p < .001$]. The other two treatment groups' changes in overall optimism were not found to be significant.

Upon closer examination of the components of the CPCN score, it was found that the no-contact group was significantly more optimistic in the face of negative events (CN) at pre-test compared to the explanatory style group [$t(36) = 3.54$, $p < .001$] and the relaxation training group [$t(31) = 2.70$, $p \leq .01$]. These differences disappeared at post-test and follow-up. There were no significant differences between the three groups in explanatory style for positive events (CP) at pre-test or post-test. However, at follow-up,

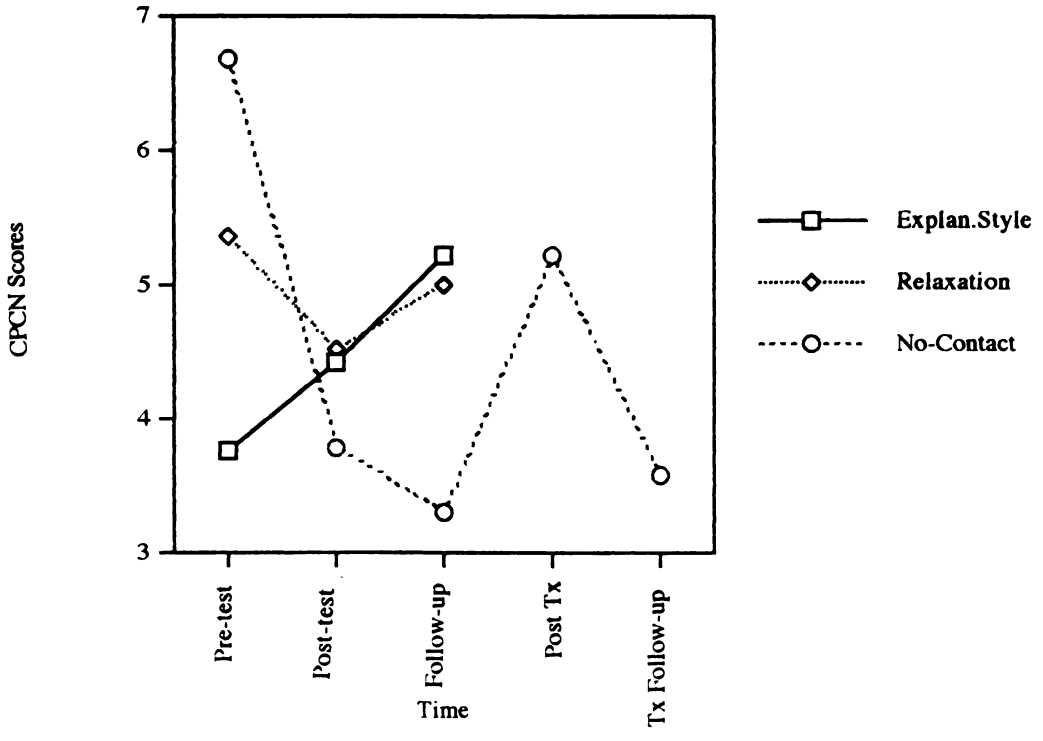


Figure 1. Composite explanatory style (CPCN) by treatment group at each data collection point.

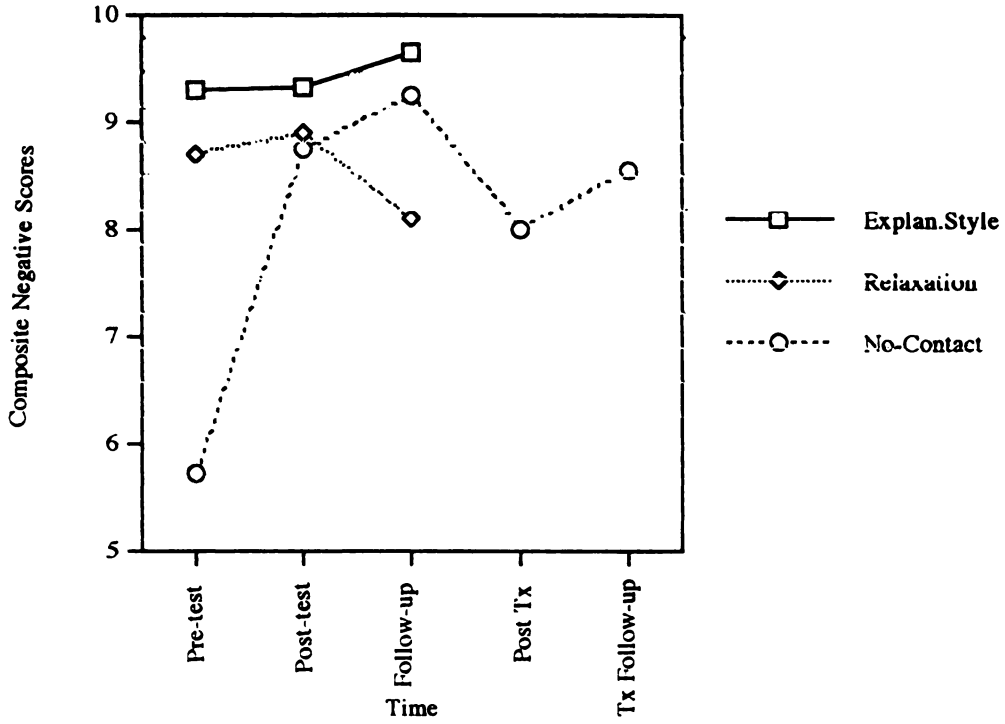
the explanatory style group obtained higher CP scores than the no-contact group [t (34) = 2.47, p < .05]. A repeated measures ANOVA indicated that the change in CP scores among the explanatory style group between pre-test and follow-up was significant [F (1,17) = 6.28, p < .05]. In addition, the no-contact group showed a significant decline in optimism for negative events between pre-test and post-test [F (1,17) = 8.85, p < .01] and between pre-test and follow-up [F (1,17) = 33.63, p < .001]. Figures 2 and 3 show the changes in CP and CN scores over time for the three treatment groups.

Insert Figures 2 and 3 About Here

Hypothesis 4

According to the fourth hypothesis, members of the explanatory style group were expected to show greater perceived competence and a stronger sense of self-efficacy than the other two treatment groups at post-test and follow-up. This hypothesis was not supported. Independent samples t-tests did not indicate significant differences between the explanatory style group and the other two treatment groups at any time on any measure of perceived competence (Perceived Competence Scale for Children; Child Behavior Checklist, Social Competence Subscale) or self-efficacy.

Pearson correlation coefficients indicated that explanatory style at pre-test was correlated with a measure of general self-efficacy at pre-test (r = .54, p < .001), post-test (r = .43, p < .01), and follow-up (r = .41, p < .01). Pre-test CPCN scores were also related to social self-efficacy at post-test only (r = .31, p < .05). CPCN scores at post-test



Note. Higher scores indicate increased *pessimism* in the face of negative events.

Figure 2. Explanatory style for negative events (CN) by treatment group at each data collection point.

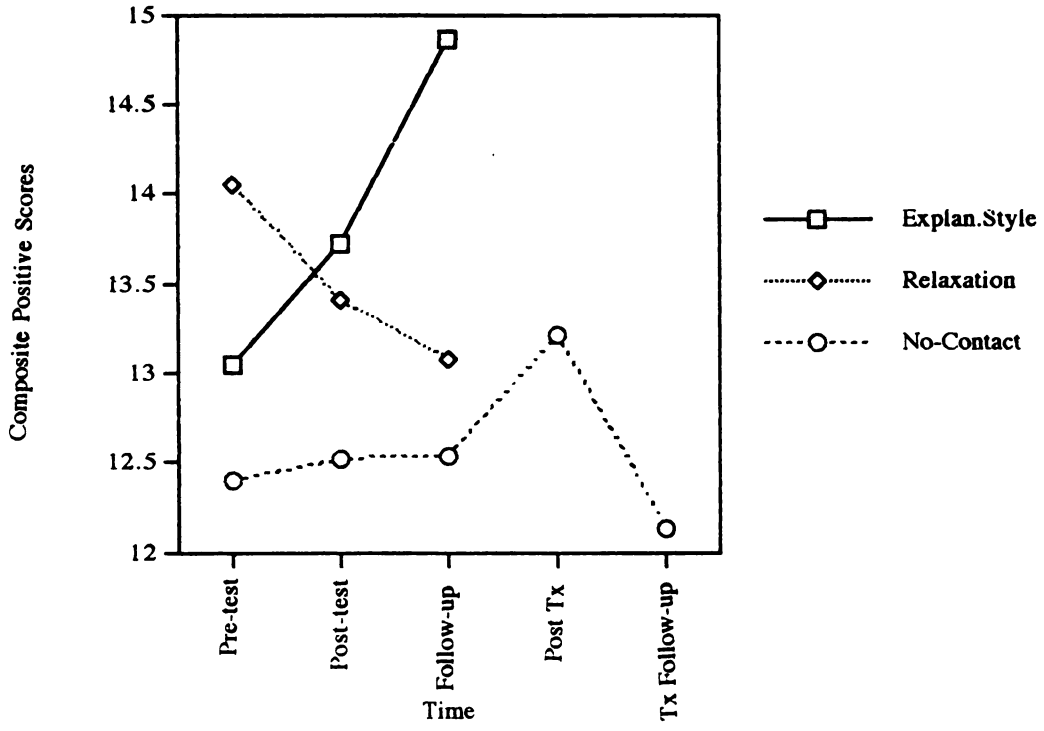


Figure 3. Explanatory style for positive events (CP) by treatment group at each data collection point.

were significantly correlated with general self-efficacy scores at post-test ($r = .37$, $p < .01$) and follow-up ($r = .39$, $p < .01$), and with social self-efficacy at post-test only ($r = .41$, $p < .01$). Follow-up CPCN scores were significantly associated with both general self-efficacy at follow-up ($r = .52$, $p < .001$) and social self-efficacy at follow-up ($r = .72$, $p < .001$).

In regard to the relationship between perceived competence and explanatory style, it was found that CPCN scores at pre-test were significantly correlated with all indices of perceived competence at pre-test, post-test, and follow-up. These correlations ranged from .29 to .62. With the exception of the follow-up behavioral conduct score, pre-test CPCN measures were more highly correlated than CPCN scores at post-test and follow-up with all indices of perceived competence at pre-test, post-test, and follow-up. A correlation matrix including correlations between CPCN scores and perceived competence scores is provided in Table 15.

Insert Table 15 About Here

Hypothesis 5

Students in the explanatory style group were expected to show more persistence behaviors than members of the other two treatment groups after receiving explanatory style training. The data did not support this hypothesis. No significant differences were found among the three groups in terms of numbers of correct responses or amount of time spent in the two tests of persistence.

Table 15

Correlations between CPCN Scores and Indices of Perceived Competence

	CPCN (Pre)	CPCN (Post)	CPCN (Follow-up)
Behavioral Conduct			
Pre	.61***	.35**	.32*
Post	.50***	.37**	.47***
Follow-up	.39**	.50***	.49***
Scholastic			
Pre	.60***	.25	.33*
Post	.52***	.41**	.48***
Follow-up	.49***	.47***	.43**
Social			
Pre	.33*	.26	-.01
Post	.42**	.21	.21
Follow-up	.39**	.12	.26
Physical			
Pre	.47***	.05	.05
Post	.59***	.09	.18
Follow-up	.62***	.20	.28*
Attractiveness			
Pre	.53***	.18	.15
Post	.29*	.17	.15
Follow-up	.34*	.06	.18

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

Table 15

Correlations between CPCN Scores and Indices of Perceived Competence

	CPCN (Pre)	CPCN (Post)	CPCN (Follow-up)
Behavioral Conduct			
Pre	.61***	.35**	.32*
Post	.50***	.37**	.47***
Follow-up	.39**	.50***	.49***
Scholastic			
Pre	.60***	.25	.33*
Post	.52***	.41**	.48***
Follow-up	.49***	.47***	.43**
Social			
Pre	.33*	.26	-.01
Post	.42**	.21	.21
Follow-up	.39**	.12	.26
Physical			
Pre	.47***	.05	.05
Post	.59***	.09	.18
Follow-up	.62***	.20	.28*
Attractiveness			
Pre	.53***	.18	.15
Post	.29*	.17	.15
Follow-up	.34*	.06	.18

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

Additional Findings Regarding Hypothesis 5

CPCN scores were not significantly related to scores for either of the tasks of persistence, with the exception of a significant association between CPCN scores at follow-up and cross-out scores at follow-up ($r = .34$, $p < .05$).

The two tests of persistence, an anagram task and a cross-out task, yielded very different results for depressed and non-depressed children. On the cross-out task, depressed children obtained higher scores than non-depressed children. This difference was not significant at pre-test [$t\,(49) = -1.30$, $p = .20$], but did reach significance at post-test [$t\,(48) = -2.54$, $p < .05$] and follow-up [$t\,(46) = -2.43$, $p < .05$]. Means for depressed and non-depressed children in the overall sample may be found in Table 16.

Insert Table 16 About Here

Levene's test for equality of variances showed significantly different variances for depressed and non-depressed children on the cross-out measure. Variances for the non-depressed group were significantly larger than variances for the depressed group at post-test [$F\,(1,48) = 7.98$, $p < .01$], and follow-up [$F\,(1,46) = 12.77$, $p \leq .001$]. This discrepancy indicated that non-depressed students showed a significantly wider range of scores compared with the depressed group.

In contrast to their performance on the cross-out task, depressed children gave significantly fewer correct responses than

Table 16

Cross-Out Persistence of Depressed and Non-Depressed Participants

Time	n	M	SD	t [d]
		Depressed children		
Pre-test	23	80.52	7.36	
Post-test	22	82.36	6.82	
Follow-up	21	83.00	7.34	
		Non-depressed children		
Pre-test	28	76.11	14.77	
Post-test	28	71.79	20.67	
Follow-up	27	73.04	19.57	
		Total sample		
Pre-test	51	78.10	12.11	-1.30
Post-test	50	76.44	16.84	-2.54*
Follow-up	48	77.40	16.12	-2.43*

*$p < .05$.

[d] t values compare depressed and non-depressed students.

non-depressed children on the anagram task at pre-test [t (49) = 2.15, $p < .05$], and follow-up [t (46) = 3.31, $p < .01$]. (At post-test, this discrepancy did not attain significance [t (48) = 1.33, $p = .19$]. Mean scores for depressed and non-depressed children on the anagram task may be found in Table 17.

Insert Table 17 About Here

Hypothesis 6

After receiving explanatory style training, the no-contact group was expected to show fewer depressive symptoms, greater perceived competence, higher self-efficacy, and more optimistic explanatory style than the relaxation training group. This hypothesis was somewhat difficult to test because of the high attrition rate among members of the no-contact group between follow-up and post-treatment, and the relatively small numbers of relaxation group members. The current data do not offer corroboration for this hypothesis.

Independent samples t-tests were conducted comparing the relaxation group at post-test and follow-up with the no-contact group at post-treatment and treatment follow-up. No significant differences were found between the two groups in regard to depression scores, perceived competence, self-efficacy, or explanatory style.

Table 17

Anagram Persistence of Depressed and Non-Depressed Participants

Time	n	M	SD	t [d]
		Depressed children		
Pre-test	23	3.61	2.61	
Post-test	22	3.00	2.12	
Follow-up	21	3.33	2.58	
		Non-depressed children		
Pre-test	28	5.00	1.85	
Post-test	28	3.79	2.04	
Follow-up	26	5.70	2.37	
		Total sample		
Pre-test	51	4.37	2.31	2.15*
Post-test	50	3.44	2.09	1.33
Follow-up	47	4.67	2.71	3.31**

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

[d] t values compare depressed and non-depressed students.

Discussion

Contrary to predictions, group treatments did not lead to significant differences among the three experimental groups on a number of measures of emotional functioning. However, increases in optimism for positive events among children in the explanatory style training group lend some support to the notion that interventions can lead to change in the explanatory style of pre-adolescent children.

Undoubtedly, the most striking finding of this report is that depression in children seems to color almost every aspect of their emotional functioning. At pre-test, depressed children were more likely than non-depressed children to have: (a) lower perceived competence in all five of the domains measured by the Harter Perceived Competence Scale (behavioral conduct, cognitive abilities, social competence, athletic competence, and attractiveness), (b) lower general and social self-efficacy scores, and (c) a more pessimistic explanatory style. These findings mirror those of Kaslow, Rehm, and Siegel (1984), in which depressed children showed more pessimistic explanatory style, lower self-esteem, and lower expectations for success on a cognitive task compared to non-depressed children.

Obviously, deficits of these kinds may result in significant difficulties with peer relations as well as reduced productivity in the classroom. In turn, unsatisfying peer relations and academic difficulties may lead to further increases in depression level. In this way, childhood depression may result in a "snowball effect" in which children fall behind their classmates in terms of social and academic competencies, and thus become increasingly depressed.

In particular, the current investigation indicates that depressed children do not have as much confidence in their abilities as non-depressed children. Moreover, these children may not have gained the necessary skills to deal with difficult situations, due to their lack of experience in relying on their own abilities to make friends, behave appropriately, or solve problems. This lack of confidence and skills may translate into a learned helplessness mindset, in which trying to improve a situation is seen as an exercise in futility.

Changes in Depression Status and Behavior Problems

The first hypothesis stated that depressed children in the explanatory style group would show less depression and fewer behavioral problems after the conclusion of their five-week training course. Although depression among this group decreased over time, significant reductions in problem behaviors did not emerge.

There have been numerous investigations in which maladaptive explanatory style has been associated with depressive symptomatology in both children and adults (Garber et al., 1993; Kaslow et al., 1994; McCauley et al., 1988; Nolen-Hoeksema et al., 1986; Nolen-Hoeksema et al., 1992; Rizley, 1978; Seligman et al., 1988) The current investigation also indicated an inverse relationship between optimism and depression, although the direction of causality between the two variables remains unclear.

A decline in reported behavioral problems was also predicted for this group. Decreases in depression scores were expected to result in fewer externalizing and "acting out" behaviors, as viewed by the parents. However, significant decreases in CBCL problem scores did not emerge at Time 2.

Earlier research indicated that relaxation training groups could also have a positive impact on depression levels (Kahn et al., 1990). This hypothesis was supported in the current study, as depressed children in the relaxation group experienced decreases in depression scores. However, depressed children in this group did not show significant declines in CBCL problem scores.

One reason for a lack of significant decreases in parent reports of behavioral problems for each treatment group may be the short duration of group activities. It may take time for children to reduce problem behaviors following a reduction in depressive symptomatology. Alternatively, it may take time for parents to notice behavioral changes in their children, and to accept them as "changes" rather than temporary fluctuations in the child's usual behavior.

Perhaps more importantly, the small numbers of children included in analyses for each separate group seemed to mask reductions in problem behaviors. Even though all groups showed some non-significant reductions in CBCL problem scores between Time 1 and Time 2, no group's decline reached significance. This lack of statistical power to find changes in CBCL problem scores among each separate treatment group was underscored by the finding of a significant decline in problem scores in the overall sample. It is recommended that future investigations include larger numbers of children in each treatment group in order to increase statistical power. In addition, an increase in the potency of the interventions (which might be achieved by increasing the number of group sessions) would also have the effect of boosting power.

It should be noted that the no-contact group experienced a significant decrease in depression scores, but no significant change in reported behavioral problems. Thus, data from the three groups do not indicate that training is directly responsible for a decrease in depression scores over time. However, it is possible that children in all three groups derived some benefit from being part of the STARS program, in that each student was known (by name) to the experimenter, and was recognized within the school as a program participant. Even children in the no-contact group were able to look forward to participation in the groups and an awards banquet at the conclusion of the program. This situation may have contributed to a feeling of anticipation and a reduction in depression scores and problem scores among the sample as a whole.

Another possibility is that the reduction in depression scores was simply a case of regression to the mean, suggesting that depression status in children of this age group is somewhat unstable. However, an examination of the data shows a significant discrepancy between depressed and non-depressed children in CDI scores at pre-test, post-test, and follow-up. This persistent difference between depressed and non-depressed students indicates that depression is a somewhat chronic problem among many of the children in the depressed classification. Moreover, persistent differences between depressed and non-depressed children in other areas of functioning suggest some real differences between depressed and non-depressed children.

The decrease in depression scores among children in the no-contact group may also be related to their relatively high composite

CASQ scores (CPCN scores) at pre-test. Although the direction of causality linking depression and explanatory style is unclear at present (Garber et al., 1993; Lewinsohn et al., 1981; Nolen-Hoeksema et al., 1986), initial optimism among the no-contact group may have facilitated a reduction of depressive symptomatology between pre-test and post-test.

In regard to parent reports of behavioral problems, it may be useful to conduct future research using larger samples of children in each treatment group in order to increase statistical power in analyses of each separate treatment condition. Moreover, longer interventions may provide additional time for children to change their behavior, and for parents to perceive these changes as stable.

Explanatory Style

Children in the explanatory style training group did not have significantly more optimistic explanatory styles than children in the other two groups at post-test or follow-up. However, the explanatory style group did evidence significant improvement in composite positive explanatory style (CP) scores over time. In contrast, the no-contact group evidenced a significant increase in pessimism for negative events and a significant decrease in overall optimism over time. Thus, an interaction effect emerged such that different treatment groups experienced different patterns of change in CPCN scores over time (Figure 1 shows the differential patterns of change in CPCN scores among the three groups.)

The School Environment

It is not clear why the no-contact group showed decreased optimism over time. It is possible that the special challenges faced

by students in this community made it difficult to maintain an optimistic style, particularly in the face of poverty and pressing community-wide health concerns. Over the course of the program, there were a number of indications that many families in the community were struggling financially. For example, forty-five percent of S.T.A.R.S. parents reported an annual income of less than $10,000. Furthermore, many children in the program took advantage of a school breakfast program.

In addition, there seemed to be a high incidence of physical illness in the community. Throughout the course of the program, a number of children "dropped out" due to illnesses lasting for more than two weeks. Several children also reported serious illness among their parents.

The 1995-1996 school year may have been especially stressful in the classroom, as this middle school received the lowest basic skills test scores of all schools in the state, for the second year in a row. Obviously, this situation put additional pressure on teachers to improve student performance.

Still, students had a number of resources within the school. For instance, many students participated in the Helping One Student to Succeed (HOSTS) program, a mentoring program in which children were paired with adults in the community to receive one-on-one help with language arts, including reading and writing skills. Students in the HOSTS program were expected to attend the program one hour daily, during school hours. In addition, the school had excellent computing facilities, in which students had the opportunity

to learn the basics of word processing and other computer functions. In general, school facilities were clean and in good condition.

Promoting Explanatory Style

The findings of the present study suggest that it is worthwhile to begin promoting optimism in pre-adolescents, since they seem capable of changing explanatory style during this developmental period. In fact, the majority of students in the explanatory style group were able to articulate the purpose of the group, indicating that they had at least a basic understanding that there are many ways of looking at situations, and that beliefs affect the way we feel. Emphasis on explanatory style in this age group may increase the chances of developing more enduring optimism.

However, predicted changes in areas such as persistence, perceived competence and self-efficacy did not appear, even with increases in optimism for positive events. It makes sense that students who begin to believe in their own ability to make good things happen (i.e., those who make internal attributions for positive events) would be expected to show confidence in many of their skills and abilities. Yet, it may take time for these individuals to change behavior patterns and begin to have confidence in their own skills. Further, the many elements of a child's living situation (e.g., the classroom, peer relations, and home life) might not reinforce, or even support, the child's new optimistic thinking. Finally, time-limited group activities may not provide the child with sufficient opportunity to internalize the connection between effort and achievement. If this connection is not made, increased persistence is not likely to be obtained.

Optimism for Positive and Negative Events

Specifically, it appears that the explanatory style training approach was successful in increasing optimism for positive events. However, optimism in the face of negative events did not change significantly after training. Perhaps explanatory style training acted as a protective factor to mitigate the effects of negative events on explanatory style. In this case, the no-contact group may have become increasingly pessimistic in the face of negative events, whereas the explanatory style group did not show significant change in that area. Future interventions may benefit from an additional focus on problem-solving skills for dealing with difficult situations in positive ways.

It should be noted that many of the stressors faced by these students cannot be "wished away" by optimism and positive thinking. Obviously, these children cannot control their families' economic situations or the behavior of their parents or any number of other events. Thus, future researchers may wish to include a "coping" component to interventions in order to help students deal with some of these uncontrollable stressors.

One model for working with children in this age group was provided by the Penn Prevention Program (Jaycox et al., 1994). The Penn program included weekly 90-minute meetings in which children participated in cognitive training (including explanatory style training), social problem-solving training, or a combined approach including both cognitive and problem-solving aspects. Children in treatment groups experienced a reduction of depressive symptoms compared to control children. However, parents did not

report a corresponding decrease in behavioral problems following group activities. Furthermore, there was no significant change among these children in CPCN scores at the conclusion of the training. Results of the current investigation suggest that a greater focus on explanatory style may result in increased optimism, and perhaps a reduction in behavioral symptoms as well.

Perceived Competence and Self-efficacy

The fourth hypothesis stated that children in the explanatory style group would obtain significantly higher scores than children in the other two groups in perceived competence and self-efficacy. Yet, as stated earlier, no significant differences were found among the three treatment groups on these measures. Perhaps interventions that focus solely on explanatory style are not sufficient to alter functioning in these areas. Alternatively, this type of intervention may have been adequate, but of insufficient duration to significantly modify perceptions of competence and self-efficacy. Additional sessions might have increased students' confidence in themselves and helped them to see themselves as capable of influencing future events by their actions in the present.

Furthermore, time and context may play an important role in changing these variables. Reinforcement of positive explanatory style at home and at school may help students increase perceptions of their own competence. In turn, this type of contextual change may help children to associate effort with positive outcomes, by viewing good events as determined by internal, stable, and global causes.

This investigation does provide some evidence that self-efficacy and explanatory style are related. For example, at follow-up, children's CPCN scores were relatively highly correlated with their general self-efficacy ($r = .52$, $p < .001$) and social self-efficacy ($r = .72$, $p < .001$) scores.

In addition, some areas of perceived competence, such as behavioral conduct and scholastic competence, were found to be significantly related to explanatory style. Furthermore, CPCN scores at pre-test were significantly associated with all indices of perceived competence at all testing sessions. Thus, it is possible that enduring changes in explanatory style will lead to a heightened sense of self-efficacy and increased perceived competence.

Persistence

Persistence is based on the hope that one's efforts will be rewarded at a later point in time. Thus, it requires some delay of gratification. The existing research on delay of gratification is helpful in elucidating some of the benefits of persistence among children. For example, in a review of the literature, Mischel, Shoda, and Rodriguez (1989) concluded that the ability of children to delay gratification is predictive of later social and cognitive competence, as well as enhanced coping skills when dealing with stress and frustration. It makes sense that children who persist in their relationships with people (rather than "discarding" friendships when they seem unrewarding) may develop a larger support network than children who are less persistent. In the same way, task persistence may result in higher levels of academic achievement.

The explanatory style group was expected to show more persistence behaviors than the other two groups on both persistence tasks (Hypothesis 5). However, the number of correct responses and the amount of time taken to complete these tasks were unrelated to treatment group membership. Thus, the current investigation does not support the notion that explanatory style training is an effective method for increasing persistence.

The perception that "persistence pays off" may be a necessary prerequisite to significant increases in persistence behaviors, and it may take more than five weeks for students to arrive at this realization. Future interventions should increase the number of sessions, and seek to involve more students in order to obtain more conclusive results.

Persistence and Depression

Findings on measures of persistence were mixed with regard to depression status. While depressed children consistently performed better than non-depressed children on a cross-out task, the reverse was found for an anagram task. These outcomes may be related to the different nature of the two tasks. Whereas the cross-out measure was not difficult, and did not require higher level cognitive processing, the anagram task was certainly more cognitively challenging, as the children attempted to arrange a series of letters to form a familiar word.

Perhaps depressed children saw the cross-out task as an opportunity for success, one which did not make excessive cognitive demands. On the other hand, the anagram problems may have seemed too difficult for depressed children to even seriously

attempt. During the testing itself, it was apparent that many of the students did not take the anagram task seriously, but instead returned it quickly, either with few written responses, or with a number of "nonsense" responses in which the letters were rearranged but did not form words.

It appears that optimal performance on tasks of persistence may be the result of a delicate balance of cognitive challenge and opportunity for success. This balance is likely to differ from child to child.

Similar to the results of this study, other investigators have also demonstrated that depressed children have difficulty with complex cognitive tasks such as anagrams and block design (Kaslow et al., 1983; Ward, Friedlander and Silverman, 1987). In addition, Laurer, Giordani, Boivin, & Halle (1994) found that depressed children do more poorly than non-depressed children on higher order memory tasks, but perform at about the same level as non-depressed children on automatic memory tasks. In the same way, Nadine Kaslow and her associates (1984) found that the performance of depressed children was impaired in some cognitive tasks, such as block design, coding, and digit span, but was comparable to the performance of non-depressed children on a test of vocabulary. The results of these studies and the present investigation suggest that all tasks of persistence do not yield the same findings, especially when depression status is considered. Clearly, the cognitive complexity of a task is also a key factor in determining how a child will perform.

Results of a study by Diener and Dweck (1978) shed some light on differences between "helpless" and "mastery-oriented" children (a

distinction which is likely to be related to depression status). According to their study, when confronted with failure, helpless children engaged in self-talk attributing difficulties to a lack of ability (internal attribution for failure), whereas mastery-oriented children's self-talk focused upon self-instruction and a search for solutions. Whereas negative self-talk may result in a decrease in attention and effort, solution-oriented talk may result in increased attention, effort, and performance. It is possible that depressed children in the current investigation engaged in discouraging self-talk that led them to stop working on the anagrams task prematurely.

In a related study, Diener and Dweck (1980) found that helpless children viewed (academic) successes as external and unstable. Clearly, these beliefs are not conducive to the development of persistence. It is reasonable to speculate that children can gain confidence in themselves when they begin to view their successes as: 1) related to their own efforts and abilities (internal), 2) generalizable to other areas (global), and 3) likely to continue (stable). Future interventions that involve more children and last longer than five weeks may result in increased persistence behaviors as well as an enduring optimism for both positive and negative events.

The No-contact Group

Because of the small number of no-contact group members who actually completed explanatory style training, the sixth hypothesis was difficult to test. Children in the no-contact group were expected to show lower depression scores, and higher scores in perceived

competence, self-efficacy, and explanatory style, as compared with members of the relaxation training group. Following treatment, the no-contact group did not differ significantly from the relaxation group in terms of perceived competence, self-efficacy, or explanatory style.

Future Directions

Context plays a large role in behavior, and can facilitate or obstruct change. Children who participated in group activities experienced some change in context, but only for a total of five hours over a five-week period. Still, following explanatory style training, children were able to increase their reported levels of optimism on the Children's Attributional Style Questionnaire. Future research that seeks to involve parents and teachers more fully in changing explanatory style may result in corresponding changes in other aspects of emotional functioning such as depression, self-efficacy, and perceived competence. In addition, this reinforcement of optimistic thinking may lead to increased persistence on cognitively demanding tasks.

The current training program focused solely on improving the explanatory style training of pre-adolescent children. Such a focus has both costs and benefits associated with it. One advantage was that basic concepts regarding explanatory style (e.g., the idea that beliefs are related to feelings) were reviewed numerous times within the five week course, so that children were not likely to miss the central ideas of the program. In addition, the data from this program suggest that explanatory style can be taught to children fairly

directly, using exercises and discussions similar to those described by Seligman (1991).

Still, future programs may benefit from more attention to the challenges of growing up in a time and place where children are exposed to poverty and other mental and physical health issues. Decreases in optimism in the face of negative events may be combated with effective problem-solving skills, in addition to explanatory style training. A coping skills training component may also be useful to children facing various uncontrollable stressors.

Although children who received explanatory style training showed increased optimism, they did not show changes in other areas that would distinguish them from the other two treatment groups. Further research should be done, in which interventions last longer than five weeks, and allow parents and/or teachers to participate along with the students. These considerations may increase the potency of the intervention and actually change the context in which the children are living.

In addition, changes in emotional functioning may take time to surface. In other words, children may require more than five weeks to internalize a sense of confidence in their own abilities. Clearly, longer interventions may reveal whether an "incubation period" is needed for children to show changes in behavior and emotional functioning following decreases in depression level and/or increases in optimism. Finally, as stated earlier, larger samples will reduce sampling error, and will facilitate stronger conclusions about the benefits and limitations of this type of intervention.

LIST OF REFERENCES

LIST OF REFERENCES

Abramson, L.Y., Seligman, M.E.P., & Teasdale, J. (1978). Learned helplessness in humans: Critique and reformulation. Journal of Abnormal Psychology, 87, 32-48.

Achenbach, T.M., & Edelbrock, C.S. (1983). Manual for the Child Behavior Checklist and Revised Child Behavior Profile. Burlington, University of Vermont.

Alloy, L.B., Abramson, L.Y., Metalsky, G.I., & Hartlage, S. (1988). The hopelessness theory of depression: Attributional aspects. British Journal of Clinical Psychology, 27, 5-21.

Andrews, G.R., & Debus, R.L. (1978). Persistence and the causal perception of failure: Modifying cognitive attributions. Journal of Educational Psychology, 70(2), 154-166.

Beck, A.T., Rush, A.J., Shaw, B.F., & Emery, G. (1979). Cognitive therapy of depression: A treatment manual. New York: Guilford Press.

Beck, A.T., & Weishaar, M. (1989). Cognitive therapy. In A. Freeman, K.M. Simon, L.E. Beutler, & H. Arkowitz (Eds.), Comprehensive handbook of cognitive therapy (pp. 21-36). New York: Plenum Press.

Beecher Community School District (1990). 1990 Census Tracking Data.

Boyle, M.H., Offord, D.R., Hofmann, H.G., Catlin, G.P., Byles, J.A., Cadman, D.T., Crawford, J.W., Links, P.S., Rae-Grant, N.I., & Szatmari, P. (1987). Ontario child health study. Archives of General Psychiatry, 44, 826-831.

Braswell, L. (1991). Involving parents in cognitive-behavioral therapy with children and adolescents. In P. Kendall (Ed.), Child and adolescent therapy (pp. 316-351). New York: The Guilford Press.

Butler, L., Miezitis, S., Friedman, R., & Cole, E. (1980). The effect of two school-based intervention programs on depressive symptoms in preadolescents. American Education Research Journal, 17, 111-119.

Carey, M.P., Faulstich, M.E., Gresham, F.M., Ruggiero, L., & Enyart, P. (1987). Children's depression inventory: Construct and discriminant validity across clinical and nonreferred (control) populations. Journal of Consulting and Clinical Psychology, 55(5), 755-761.

Chapin, M., & Dyck, D.G. (1976). Persistence in children's reading persistence as a function of n length and attribution retraining. Journal of Abnormal Psychology, 85(5), 511-515.

Cole, D.A., & Turner, J.E., Jr. (1993). Models of cognitive mediation and moderation in child depression. Journal of Abnormal Psychology, 102, 271-281.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297-309.

Diener, C.I., & Dweck, C.S. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. Journal of Personality and Social Psychology, 36(5), 451-462.

Diener, C.I., & Dweck, C.S. (1980). An analysis of learned helplessness: II. The processing of success. Journal of Personality and Social Psychology, 39(5), 940-952.

Elias, M.J., Gara, M., Ubriaco, M., Rothbaum, P.A., Clabby, J.F., & Schuyler, T. (1986). Impact of a preventive social problem solving intervention on children's coping with middle-school stressors. American Journal of Community Psychology, 14, 259-275.

Ellis, A. (1962). Reason and emotion in psychotherapy. Seacaucus, NJ: Lyle Stuart.

Emery, R.E., & O'Leary, K.D. (1982). Children's perceptions of marital discord and behavior problems of boys and girls. Journal of Abnormal Child Psychology, 10, 11-24.

Fine, S., Forth, A., Gilbert, M., & Haley, G. (1991). Group therapy for adolescent depressive disorder: A comparison of social skills and therapeutic support. Journal of the American Academy of Child and Adolescent Psychiatry, 30, 79-85.

Fleming, J.E., & Offord, D.R. (1990). Epidemiology of childhood depressive disorders: A critical review. Journal of the American Academy of Child and Adolescent Psychiatry, 29(4), 571-580.

Fowler, J.W., & Peterson, P.L. (1981). Increased reading persistence and altering attributional style of learned helpless children. Journal of Educational Psychology, 73(2), 251-260.

Garber, J., Weiss, B., & Shanley, N. (1993). Cognitions, depressive symptoms, and development in adolescents. Journal of Abnormal Psychology, 102 (1), 47-57.

Harter, S. (1982). The Perceived Competence Scale for Children. Child Development, 53, 87-97.

Harter, S. (1987). The determinants and mediational role of global self-worth in children. In N. Eisenberg (Ed.), Contemporary topics in developmental psychology (pp. 219-242). New York: Wiley.

Hiroto, D.S., & Seligman, M.E.P. (1975). Generality of learned helplessness in man. Journal of Personality and Social Psychology, 31 (2), 311-327.

Jaycox, L.H., Reivich, K.J., Gillham, J., & Seligman, M.E.P. (1994). Prevention of depressive symptoms in school children. Behaviour Research and Therapy, 32 (8), 801-816.

Kahn, J.S., Kehle, T.J., Jenson, W.R., & Clark, E. (1990). Comparison of cognitive-behavioral, relaxation, and self-modeling interventions for depression among middle-school students. School Psychology Review, 19 (2), 196-211.

Kaslow, N.J., Rehm, L.P., & Siegel, A.W. (1984). Social-cognitive and cognitive correlates of depression in children. Journal of Abnormal Child Psychology, 12(4), 605-620.

Kaslow, N.J., Tannenbaum, R.L., Abramson, L.Y., Peterson, C., & Seligman, M.E.P. (1983). Problem-solving deficits and depressive symptoms among children. Journal of Abnormal Child Psychology, 11(4), 497-502.

Kazdin, A.E. (1981). Assessment techniques for childhood depression: A critical appraisal. Journal of the American Academy of Child Psychiatry, 20, 358-375.

Kendall, P.C. (1993). Cognitive-behavioral therapies with youth: Guiding theory, current status, and emerging developments. Journal of Consulting and Clinical Psychology, 61, 235-247.

Kovacs, M. (1985). The Children's Depression Inventory (CDI). Psychopharmacology Review, 21, 995-1124.

Laurer, R.E., Giordani, B., Boivin, M.J., & Halle, N. (1994). Effects of depression on memory performance and metamemory in children. Journal of the American Academy of Child and Adolescent Psychiatry, 33(5), 679-685.

Lewinsohn, P.M., & Clarke, G.N. (1984). The coping with depression course adolescent version: Instructor's manual for parent course. Eugene, OR: Castalia Publishing Company.

Lewinsohn, P.M., Steinmetz, J.L., Larson, D.W., & Franklin, J. (1981). Depression-related cognitions: Antecedent or consequence? Journal of Abnormal Psychology, 90(3), 213-219.

McCauley, E., Mitchell, J.R., Burke, P., & Moss, S. (1988). Cognitive attributes of depression in children and adolescents. Journal of Consulting and Clinical Psychology, 56(6), 903-908.

Mischel, W., Shoda, Y., & Rodriguez, M.L. (1989). Delay of gratification in children. Science, 244 (4907), 933-938.

Nolen-Hoeksema, S., Girgus, J.S., & Seligman, M.E.P. (1986). Learned helplessness in children: A longitudinal study of depression, achievement, and explanatory style. Journal of Personality and Social Psychology, 51 (2), 435-442.

Nolen-Hoeksema, S., Girgus, J.S., & Seligman, M.E.P. (1992). Predictors and consequences of childhood depressive symptoms: A 5-year longitudinal study. Journal of Abnormal Psychology, 101, 405-422.

Offord, D.R., Boyle, M.H., Szatmari, P., Rae-Grant, N.I., Links, P.S., Cadman, D.T., Byles, J.A., Crawford, J.W., Munroe Blum, H., Byrne, C., Thomas, H., Woodward, C.A. (1987). Ontario child health study. Archives of General Psychiatry, 44, 832-836.

Okolo, C.M. (1992). The effects of computer-based attribution retraining on the attributions, persistence, and mathematics computation of students with learning disabilities. Journal of Learning Disabilities, 25(5), 327-334.

Peterson, C.P., & Bossio, L.M. (1991). Health and optimism. New York: The Free Press.

Peterson, C., Seligman, M., & Vaillant, G. (1988). Pessimistic explanatory style is a risk factor for physical illness: A thirty-five-year longitudinal study. Journal of Personality and Social Psychology, 55, 23-27.

Rizley, R. (1978). Depression and distortion in the attribution of causality. Journal of Abnormal Psychology, 87(1), 32-48.

Robin, A.L., & Foster, S.L. (1989). Negotiating parent-adolescent conflict: A behavioral-family systems approach. New York: The Guilford Press.

Rutter, M. (1988). Epidemiological approaches to developmental psychopathology. Archives of General Psychiatry, 45, 486-495.

Saylor, C.F., Finch, A.J., Spirito, A., & Bennett, B. (1984). The Children's Depression Inventory. Journal of Consulting and Clinical Psychology, 52, 955-967.

Seligman, M.E.P. (1991). Learned optimism. New York: Alfred A. Knopf.

Seligman, M.E.P., Castellon, C., Cacciola, J., Schulman, P., Luborsky, L., Ollove, M., & Downing, R. (1988). Explanatory style change during cognitive therapy for unipolar depression. Journal of Abnormal Psychology, 97, 13-18.

Seligman, M.E.P., Peterson, C., Kaslow, N.J., Tannenbaum, R.L., Alloy, L.B., & Abramson, L.Y. (1984). Attributional style and depressive symptoms among children. Journal of Abnormal Psychology, 83, 235-238.

Sherer, M., & Adams, C.H. (1983). Construct validation of the Self-efficacy scale. Psychological Reports, 53, 899-902.

Sherer, M., Maddux, J.E., Mercandante, B., Prentice-Dunn, S., Jacobs, B., & Rogers, R.W. (1982). The Self-efficacy Scale: Construction and validation. Psychological Reports, 51, 663-671.

Wachtel, E.F. (1994). Treating troubled children and their families. New York: Guilford Press.

Ward, L.G., Friedlander, M.L., Silverman, W.K. (1987). Children's depressive symptoms, negative self-statements, and causal attributions for success and failure. Cognitive Therapy and Research, 11(2), 215-227.

Zarantonello, M., Slaymaker, F., Johnson, J., & Petzel, T. (1984). Effects of anxiety and depression on anagram performance, ratings on cognitive interference, and the negative subjective evaluation of performance. Journal of Clinical Psychology, 40(1), 20-25.

Zimmerman, M.A. (1990). Toward a theory of learned hopefulness: A structural model analysis of participation and empowerment. Journal of Research in Personality, 24, 71-86.

APPENDICES

APPENDIX A:
SOURCES OF CHILD MEASURES

Sources of Child Measures

Children's Depression Inventory (CDI)

Kovacs, M. (1985). The Children's Depression Inventory (CDI). Psychopharmacology Review, 21, 995-1124.

Perceived Competence Scale for Children

Harter, S. (1982). The Perceived Competence Scale for Children. Child Development, 53, 87-97.

Self-efficacy Scale

Sherer, M., Maddux, J.E., Mercandante, B., Prentice-Dunn, S., Jacobs, B, & Rogers, R.W. (1982). The Self-efficacy Scale: Construction and validation. Psychological Reports, 51, 663-671.

Children's Attributional Style Questionnaire (CASQ)

Seligman, M.E.P, Kaslow, N.J., Alloy, L.B., Peterson, C., Tannenbaum, R., & Abramson, L.Y. (1984). Attributional style and depressive symptoms among children. Journal of Abnormal Psychology, 93, 235-238.

The anagram task was developed by the present author and is provided in Appendix D.

The Cross-out task was developed by the present author.

APPENDIX B:
SOURCES OF ADULT MEASURES

Sources of Adult Measures

Child Behavior Checklist for Ages 4 - 18 (CBCL)

Achenbach, T.M., & Edelbrock, C.S. (1983). Manual for the Child Behavior Checklist and Revised Child Behavior Profile. Burlington, University of Vermont.

The Parent Questionnaire was developed by the present author and is provided in Appendix E.

APPENDIX C:
HOMEWORK ASSIGNMENTS

HOMEWORK ASSIGNMENTS FOR THE EXPLANATORY STYLE GROUP

Week 1: "Write about two situations in which you felt sad, angry, or embarrassed after something bad happened. What was the belief that led you to feel that way? Give two examples of your own and don't forget to write down the belief that goes with the feeling. Don't try to write down the worst thing that has ever happened to you; just give a couple examples from today or yesterday when things didn't happen the way you hoped or expected they would." (Examples provided.)

Week 2: "Complete five Adversity-Belief-Consequence chains." (Example provided.)

Week 3: "Use one of your A-B-C chains where you didn't like the consequence of a belief. Write down five other possible beliefs about the situation. Use evidence to dispute the original belief."

Week 4: "Make up two examples of A-B-C-D-E chains." (Example provided.)

HOMEWORK ASSIGNMENTS FOR THE RELAXATION TRAINING GROUP

Week 1: "Write about two times when you felt tense or stressed. Then tell how you got yourself to relax." (Examples provided.)

Week 2: "Before our next meeting, tense and relax the muscles that we went through in our last session. For each one, tense for 2 seconds and relax for 10 seconds. Then relax each one for 10 seconds without tensing beforehand. Also, think of one situation where you would like to be able to relax more, and write it down for next time." (Exercises listed.)

Week 3: "For the next session, practice each of the following exercises. Do each exercise for only a few seconds at a time." (Exercises described.)

Week 4: "Write down two situations where you could use the relaxation techniques that we learned in group sessions."

APPENDIX D:
ANAGRAMS

ANAGRAMS

Start Time: _____
Finish Time: _____

Your Name: _____

Anagrams are groups of letters that you can re-arrange to make a word. Try to solve these 10 anagrams by re-arranging the letters to make words. Some of the anagrams are more difficult than others. Most people won't be able to get all the correct answers. Do your best and take as much time as you want.

Example: T R P I N Answer: PRINT

1. RPPAE

2. LWCON

3. SBOKO

4. OLROC

5. NURDE

6. UOHES

7. ORTTI

8. GIHLT

9. SYNAN

10. ELRYA

ANAGRAMS

Start Time: _____
Finish Time: _____

Your Name: _____

Anagrams are groups of letters that you can re-arrange to make a word. Try to solve these 10 anagrams by re-arranging the letters to make words. Some of the anagrams are more difficult than others. Most people won't be able to get all the correct answers. Do your best and take as much time as you want.

Example: T R P I N Answer: PRINT

1. SERPS

2. UIMCS

3. EXOSB

4. ORDAI

5. CIPHT

6. RAHST

7. MSGUE

8. PALEP

9. RZEIH

10. SLMAL

ANAGRAMS

Start Time: _____
Finish Time: _____

Your Name: _____

Anagrams are groups of letters that you can re-arrange to make a word. Try to solve these 10 anagrams by re-arranging the letters to make words. Some of the anagrams are more difficult than others. Most people won't be able to get all the correct answers. Do your best and take as much time as you want.

Example: T R P I N Answer: PRINT

1. HARIC

2. PTNIA

3. SMGAE

4. TFURI

5. MTOHN

6. SDERS

7. HATYN

8. NREGE

9. FINAC

10. PSNAT

ANAGRAMS

Start Time: _____
Finish Time: _____

Your Name: _____

Anagrams are groups of letters that you can re-arrange to make a word. Try to solve these 10 anagrams by re-arranging the letters to make words. Some of the anagrams are more difficult than others. Most people won't be able to get all the correct answers. Do your best and take as much time as you want.

Example: T R P I N Answer: PRINT

1. BALTE

2. CDAYN

3. OCHCU

4. BSDRI

5. TWEIH

6. ROSET

7. NRETE

8. SLSAC

9. REGNA

10. UPCNH

ANAGRAMS

Start Time: _____
Finish Time: _____

Your Name: _____

Anagrams are groups of letters that you can re-arrange to make a word. Try to solve these 10 anagrams by re-arranging the letters to make words. Some of the anagrams are more difficult than others. Most people won't be able to get all the correct answers. Do your best and take as much time as you want.

Example: T R P I N Answer: PRINT

1. KISCT

2. HTGLI

3. CRAHT

4. HUSOT

5. LAGNE

6. HRITS

7. PAYKP

8. SRAGS

9. ROKYS

10. ZPREI

APPENDIX E:
PARENT QUESTIONNAIRE

Parent Questionnaire

Your Child's Name: _____ Child's Age: _____
Child's Grade Level: _____

Your Name: _____ Your Age: _____

1. What is your relation to this child? (Circle one):
   Mother Father Stepmother Stepfather Grandmother
   Grandfather Aunt Uncle Other_____

2. How many children are currently living in your home?

   _____ boys (please give ages of boys): _____

   _____ girls (please give ages of girls): _____

3. What is your ethnicity? (Check one):
   _____ African American _____ Asian American _____ Caucasian
   _____ Hispanic _____ Native American
   _____ Other (Explain): _____

4. What is your child's ethnicity? (Check one):
   _____ African American _____ Asian American _____ Caucasian
   _____ Hispanic _____ Native American
   _____ Other (Explain): _____

5. What is your level of education? (Check one):
   _____ Finished junior high school _____ Finished high school
   _____ Some college
   _____ Completed a degree from a trade school or vocational program
   _____ Completed a 2-year college degree
   _____ Completed a 4-year college degree _____ Completed a graduate degree

6. What is your total yearly household income? (Check one):
   _____ Less than $10,000 _____ $10,000 - $20,000
   _____ $20,000 - $35,000 _____ $35,000 - $50,000
   _____ $50,000 - $70,000 _____ Greater than $70,000

7. What is the marital status of the child's **biological** parents?

   _____ Married _____ Divorced _____ Separated
   _____ Widowed _____ Single (the biological parents were never married to each other)
   _____ Other (Explain): _____

8. How is your child doing in school now? (Check one):

_____ Excellent (A average) _____ Satisfactory (B or C average)
_____ Below Average (D average) _____ Failing (F average)

The following questions ask how much time your child spends in various activities. Please be as accurate as you can about your child's behavior.

9a. How long does your child study each week? _____

9b. Does your child study every day? (Circle one): Yes No

9c. How many minutes does your child study at one time? _____ minutes

9d. When your child stops studying, do you usually encourage him or her to continue to study for a while longer?
(Check one): _____ Yes (If YES, please go to 9e)
_____ No (If NO, please go to 9f)

9e. If YES, does your child usually agree to continue to study when you ask him or her to do so? (Circle one): Yes No

9f. How often does your child "give up" when studying, and refuse to complete an assignment?

(Circle one): Almost never Once a month Once a week Almost every day

10. Does your child participate in a sport? (Circle one): Yes No
If NO, please go to Question 11.
If YES, How long has your child played this particular sport? _____

10a. How much time does your child practice the sport each week? _____

10b. Does your child practice the sport every day? (Circle one): Yes No

10c. How many minutes does your child practice the sport at one time?
_____ minutes

10d. When your child stops practicing the sport, do you usually encourage him or her to continue to practice for a while longer?
(Check one): _____ Yes (If YES, please go to 10e)
_____ No (If NO, please go to 10f)

10e. Does your child usually agree to continue to practice the sport when you ask him or her to do so?

(Circle one): Yes No

10f. How often does your child "give up" when practicing the sport, and refuse to continue to play?

(Circle one): Almost never Once a month Once a week Almost every day

11. Does your child play a musical instrument? (Circle one): Yes No
If NO, please go to Question 12.
If YES, How long has your child played this particular instrument? ____

11a. How much time does your child play the instrument each week?

_____ minutes

11b. Does your child play the instrument every day? (Circle one): Yes No

11c. How many minutes does your child play the instrument at one time?

_____ minutes

11d. When your child stops practicing, do you usually encourage him or her to continue to play the instrument for a while longer?
(Check one): _____ Yes (If YES, please go to 11e)
_____ No (If NO, please go to 11f)

11e. If YES, does your child usually agree to continue to play the instrument when you ask him or her to do so?

(Circle one): Yes No

11f. How often does your child "give up" when practicing, and refuse to continue to play the instrument?

(Circle one): Almost never Once a month Once a week Almost every day

12. Is your child involved in any group or activity (besides sports or music lessons) outside of school? (Check one):

_____ No (If NO, please stop here.)

_____ Yes (If YES, What is the activity? _____)

12a. How long has your child participated in this activity?

_____ months

12b. How much time does your child participate in the activity each week?

_____ minutes

12c. Does your child participate in the activity every day?

(Circle one): Yes No

12d. How many minutes does your child participate in the activity at one time?

_____ minutes

12e. How often does your child refuse to attend activities or group meetings?

(Circle one): Almost never Once a month Once a week Almost every day