LEARNED-HELPLESSNESS THEORY: IMPLICATIONS FOR RESEARCH IN LEARNING DISABILITIES

Frank J. Canino, Ph.D.
University of Virginia

The application of learned-helplessness theory to achievement is discussed within the context of implications for research in learning disabilities. The etiology of academic helplessness is reviewed with respect to attributional style in children who experience performance deficits. Of interest are gender differences, mediating variables, information processing, and strategies of intervention. Research has established that helpless students have a maladaptive style of attribution. Attributing academic failure to an internal, invariant source of poor ability has been significantly associated with an expectancy of noncontrol and poor achievement. Teacher and parental practices have been shown to have an important influence on the development of negative self-attribution. Finally, the similarities between helpless children and learning disabled students in terms of problem-solving and attention are discussed.

Despite support for the proposition that performance is improved by the reinforcement of correct responses, there are students who fail to benefit from contingent reinforcement (Blair, 1972; Lubin, 1965; Zontine, Richards, & Strang, 1972). These children, given that they have the ability to learn, may not perform well because they do not perceive a link between their responses and the occurrence or termination of reinforcement (positive or negative). Seligman (1973) has conceptualized the perception and expectation of response-outcome independence as learned helplessness. The phenomenon has been associated with debilitating cognitive, motivational, and emotional deficits. The purpose of this review is to evaluate learned-helplessness theory and research as it relates to achievement behavior, within the context of implications for the study of learning disabilities.

While the concept of learning disabilities has come to represent an all-encompassing constellation of behavioral, cognitive, and perceptual disorders in children (Gaddes, 1976), the one unifying characteristic of these children is academic failure. These otherwise normal students typically demonstrate a major discrepancy between expected grade-level achievement and actual performance. The degree of difference generally reflects a deficit of 1 to 2½ years in one or more subject areas. Such a history is frequently associated with emotional overlays of frustration, anger, despair, and defeat which can adversely affect performance and school adjustment (Minde, Lewin, Weiss, Lavigeur, Douglas, & Sykes, 1971; Wallace & Kauffman, 1978). To date, there has been little systematic study of learning-disabled students' perceptions, expectations, attributions, and subsequent problem-solving strategies when faced with aca-

0022-4669/81/1504-0008$01.00/0

demic failure. The importance of knowing how learning-disabled students interpret failure experiences has particular relevance for understanding and remediating the performance problems of children with attentional deficits. If, as suggested by Meichenbaum (1977), these children are deficient in cognitive self-control, it may also be that they do not attribute academic outcomes to factors within their control. The concept of learned helplessness offers a framework for evaluating how internal intervening variables affect performance.

Learned helplessness

Learned-helplessness theory was originally formulated on the basis of laboratory experiments with dogs (Seligman & Maier, 1967; Overmier & Seligman, 1967). Extensive reviews of this and related infrahuman research has established that exposure to uncontrollable and inescapable aversive reinforcement in one setting impairs subjects' performance in a different setting (Maier & Seligman, 1976; Seligman, Maier, & Solomon, 1971). The cognitive-motivational-emotional effects involve learning retardation, behavioral passivity, and heightened physiological distress.

Given the apparent validity and reliability of animal research, Seligman (1975) expanded the scope of the helplessness hypothesis to account for a variety of human conditions (e.g., reactive depression, stomach ulcers, and academic failure). While interest in the helplessness theory has proliferated along with some initial support (e.g., Hiroto, 1974; Hiroto & Seligman, 1975; Klein & Seligman, 1976; Thornton & Jacobs, 1971), other researchers have been unable to find evidence of impairment following pretreatment with uncontrollable reinforcement (e.g., Roth & Bootzin, 1974; Wortman & Brehm, 1975; Wortman, Panciera, Shusterman, & Hibscher, 1976). Reviews of this early research (see Hanusa & Schultz, 1977; Levis, 1976; Miller & Norman, 1979) have demonstrated that reinforcement (positive or negative) and human information processing of instruction, task importance, and attribution interacted with uncontrollability to effect the production of helplessness. The theory has been revised in light of these unpredicted and unexplainable results (see Abramson, Seligman, & Teasdale, 1978).

The reformulated hypothesis is now based on the attribution-theory model of Weiner (see Weiner, 1974). To Weiner's concepts of causality (internal-external) and stability (stable-unstable), Seligman has added the dimension of globality (specific-general). In brief, the model states that a subject's attribution (given its locus of causality, stability, and globality) for the perceived experience of objective noncontingency is influenced by the subject's expectation for future noncontingency. Expectancy, in turn, influences the generality, chronicity, and type of helplessness felt by the subject. As this review is concerned with understanding the dynamics of helplessness in an academic setting, a distinction between uncontrollability and failure is required. Weiner's theory of attribution refers to success and failure as outcomes. Success is defined as obtaining a desired outcome, and failure as not obtaining a desired outcome. Within the helplessness model, failure is viewed as a kind of uncontrollability, whereby effort is not perceived by the subject to have influenced the occurrence or termination of achievement outcomes.

ACHIEVEMENT SITUATIONS

Gender differences

The dominant theorist and researcher in the application of learned-helplessness theory to child development has been Dweck and her coworkers (Dweck, 1976; Dweck & Bush, 1976; Dweck, Davidson, Nelson, & Enna, 1978; Dweck & Goetz, 1978; Dweck & Reppucci, 1973). The work of Dweck represents an important extension of helplessness research, which for the past decade has been primarily concerned with adult behavior.

In the first study, Dweck and Reppucci (1973) investigated the role of academic locus of control as measured by the Intellectual Achievement Responsibility (IAR) Questionnaire (Crandall, Katkovsky, & Crandall, 1965) and attributional style (effort versus ability) on the problem-solving capabilities of 40 regular fifth-grade students (20 male and 20 female) pretreated with solvable and unsolvable block-design problems. For each condition there was one adult experimenter, with trials from each condition being randomly interspersed to provide a measure of proficiency. It was expected that low expectancy of reinforcement control in the presence of the failure experimenter would differentially affect a child's performance as a function of his/her locus of control. The authors predicted that children who acquiesced in the face of failure would yield IAR profiles indicating (a) less internal responsibility for success and failure; and (b) a greater predisposition to view outcomes, even when attributed to personal factors, as due to the presence or absence of ability rather than to effort. Persistent learners were expected to demonstrate greater intellectual achievement responsibility and produce more internal-effort attributions than internal-ability attributions in comparison with non-mastery-oriented children. A scoring distinction presented by Weiner and Kukla (1970) enabled Dweck and Reppucci to subdivide the internal items of the IAR into the causal elements of effort and ability. Support was found for the effect of noncontingency and generalized expectancies of reinforcement control on performance. For some children the experimental manipulation of interspersing success trials with the failure experimenter produced deficit responding. Unlike persistent subjects, these children produced IAR profiles suggesting an external locus of academic control. When they did assume responsibility for failure, non-mastery-oriented children blamed failure on their lack of ability (i.e., an internal-stable factor) rather than on insufficient effort (i.e., an internal-unstable factor). However, an unexpected result was that male students attributed greater responsibility for failure to poor effort than did females, and demonstrated smaller performance deficits.

The presence of a sex effect was a source of concern to Dweck, for the literature on achievement behavior in girls reported them to receive more success during elementary school years than did boys — a factor thought to instill confidence in one's abilities and foster motivation to learn (see Brophy & Good, 1974; McCandless, Roberts, & Starnes, 1972). Consequently, Dweck and Bush (1976) sought to investigate the role of socialization on achievement behavior with respect to sex, attributional style, and evaluator feedback. Fifth graders (male and female) were presented with noncontingent failure feedback from both an adult and a peer evaluator. The authors hypothesized that evaluator feedback would assume different levels of importance for children, given their sex and age. Peer evaluation was thought to acquire more importance and influence than adult-related feedback as chronological age advances. Dweck and Bush observed that failure feedback from adults produced problem-solving deficits in girls, but facilitated the performance of boys. The authors reported that subjects' attributions for failure varied as a function of the evaluator. Among boys, effort attributions for failure were associated with the adult evaluator and ability attributions with a peer evaluator; girls showed the opposite effect. Dweck and Bush discussed these differences in terms of the relative socialization histories of each sex. They suggested that boys have been instructured to think independently and determine their own standards of excellence, whereas girls have been taught to depend on teacher praise and/or criticism, a practice which may foster their susceptibility to academic helplessness.

Dweck et al. (1978) studied how the process of teacher feedback differentially affects children's performance. The authors were particularly interested in the manner teachers use feedback (positive and negative) and in the attributions teachers form for children's failures. Dweck et al. found that for girls, the contingencies of feedback and the attributions made by teachers were ones predicted to produce ability attributions rather than motivational beliefs. First, the negative evaluation of boys was more frequent and more ambiguous. Feedback emphasized nonintellectual behavior (e.g., neatness, following instructions, and conduct) rather than the intellectual quality of work (54% and 45.6%, respectively). Second, the majority of feedback given to girls (89.9%) referred to intellectual adequacy (e.g., competency or correctness of work). Third, girls received greater positive feedback and less negative evaluation than did boys. Fourth, teachers made explicit attributions of insufficient effort to boys for their failures, but not to girls. Finally, boys received more work-related praise (95.8%) than girls (80.9%), which Dweck et al. interpreted as a source of their competence beliefs.

Dweck and Goetz (1978) extended the research on teacher practices by studying the effects of agent-evaluator change on the generalization of helplessness. Failure feedback was provided by an adult female after four trials on a task emphasizing neatness and accuracy. Prior to each trial, the subject's expectancy of success was measured. On the fifth trial, a new task, a new evaluator, or both were presented, and expectancy was reassessed. It was reported that boys changed their expectations for success (i.e., improved) from trial 4 to trial 5, when the evaluator changed. Girls, on the other hand, did not alter their expectations. When the task was changed, both sexes demonstrated an increase in confidence. Girls, however, failed to regain their initial level of enthusiasm. When both the evaluator and task were changed, thus creating a new situation, girls showed no expectancy recovery, whereas boys did.

Several conclusions can be drawn from this research. First, children who attributed failure to insufficient effort (i.e., a controllable factor) worked harder and longer than ability attributors (i.e., a factor which is not subject to personal control). Second, so-called helpless or ineffective learners were those who attributed failure to inadequate ability rather than to poor effort, more a characteristic of girls than boys. Overall, the results are consistent with the revised helplessness hypothesis; namely, performance and emotionality can be significantly impaired by a spiraling process of negative self-attribution (Seligman, Abramson, Semmel, & Baeyer, 1979).

Mediating variables

Kennelly and his colleagues investigated how parental and other significant adult practices influence the development of response-outcome independence in children. Yates, Kennelly, and Cox (1975) studied the relationship among perceived contingencies of parental reinforcement (positive and negative), parent-child relations, and locus of control in university subjects. The authors reported that, in general, an internal locus of control was associated with subjects who viewed parental punishment as having occurred contingently rather than noncontingently. No relationship between perceived contingency of parental reward and locus of control was found. With regard to sex and locus of control, internally oriented males perceived their parents as less noncontingently punitive, and specifically viewed their fathers as more systematically punishing than externally oriented subjects. For females, an internal locus of control was also positively correlated with a belief in contingent parental punishment. The relation of parent-child interactions to the perceived pattern of parental reinforcement showed that contingently punishing parents were also seen as loving, while noncontingently punitive parents were viewed as rejecting. Little evidence of a relationship between locus of control and parent-child interactions was observed. Given helplessness theory, one would have expected external subjects to have recalled a greater degree of noncontingent punishment.

In a subsequent study, Kennelly and Kinley (1975) investigated the relation between a child's perceived contingency of teacher-administered reinforcement (reward and punishment) and academic locus of control on achievement. Forty nine sixth-grade boys were given a specially constructed Teacher Contingency of Reinforcements Questionnaire, which categorized teacher-pupil interaction into four scales: contingent punishment, noncontingent punishment, contingent reward, and noncontingent reward. Girls were excluded from the study because of insufficient sample size. Academic locus of control was measured through use of the IAR. Measures of academic achievement were obtained from the average report-card grades for students over the most recent 6-week period, and from scores on the Iowa Test of Basic Skills given at the end of the previous school year. Significant correlations between the Teacher Contingency of Reinforcements Questionnaire and the IAR with scholastic performance were found. Kennelly and Kinley reported that boys who interpreted their teachers' actions as resulting from contingent punishment demonstrated an internal locus of academic control, and performed well on measures of achievement. Subjects displaying an external locus of academic control perceived their teachers as being noncontingently punitive, and exhibited very poor achievement. No relation between noncontingent reward and scholastic performance was observed. The researchers discussed the results in terms of helplessness theory.

In addition to reporting that teachers emphasized different intellectual and nonintellectual aspects of learning with boys than with girls, Dweck et al. (1978) also analyzed the specific events that seemed to mediate the relationship of perceived noncontingency to poor achievement. Dweck et al. speculated that if teacher feedback was made uniform for both sexes, the role of relevant versus irrelevant feedback could be assessed. Male and female elementary school children were randomly assigned to either a teacher-boy or teacher-girl condition of evaluative feedback. The teacher-boy contingency emphasized ambiguous and nonintellectual aspects of learning, while the teacher-girl contingency referred exclusively to the correctness of a solution. For each condition an adult female was employed to present feedback. Dweck et al. specifically excluded male teachers from investigation, and suggested that in general, adult females provided the major source of interaction for elementary school students. Training involved success and noncontingent failure with anagram puzzles. Testing of effects required the use of a digit-letter substitution task; failure trials were randomly interspersed. Subjects were then asked to attribute the source of failure to effort, ability, or the evaluator. Dweck et al. reported that subjects in the teacher-boy condition interpreted the cause of failure to be insufficient effort, whereas subjects in the teacher-girl condition displayed a preference for ability attributions.

Overall, this research has shown that the development of academic helplessness was maximized by authority figures who punished the occurrence and nonoccurrence of misbehavior with equal probability (i.e., noncontingently). Such practice contributed to the perception of response-outcome independence and the development of maladaptive attributions (e.g., poor ability), which together produced expectations that reinforcement was uncontrollable in some children. The net result of such learning was poor achievement. Second, children (regardless of sex) who received only solution-specific feedback (i.e., intellectual content) with no motivational component were more likely to interpret teacher criticism as suggestive of poor ability. Criticism that exclusively attributed failure to uncontrollable and invariant factors like ability fostered the development of academic helplessness.

Information processing

The mechanism of action by which attribution mediates the generalization of failure effects to new situations was investigated by Diener and Dweck (1978). The first part of their study divided fifth graders into two groups, helpless or mastery oriented, based on their neglect or emphasis of the 10 internal-effort items of the IAR (helpless = 7 or less, mastery oriented = 8 or more). Subjects were administered a three-dimension, two-choice discrimination training problem to assess their level of hypothesis testing; veridical feedback was provided. Next, a failure procedure was instituted and its effects on hypothesis testing were monitored. Subjects were also asked to report their causal attributions following failure. Two important results emerged. First, with respect to hypothesis testing, both groups used feedback appropriately, but when noncontingent failure was administered, they revealed differences. Helpless subjects retained their ineffective hypotheses, while mastery-oriented subjects changed their problem-solving strategies. Second, groups differed in terms of their attributions for failure. Helpless subjects regarded inadequate ability as the source of their failures, whereas none of the mastery-oriented subjects gave this response. They attributed causality to such factors as effort, luck, task difficulty, or the experimenter — attributions which, unlike ability, are controllable and situation-specific.

In part two of the study, Diener and Dweck repeated the first experiment but with one addition. Subjects now had to verbalize their problem-solving strategies. Verbalizations were categorized into statements of useful task strategy, statements of ineffectual task approach, attributions, self-instruction, self-monitoring, statements of positive affect, statements of negative affect, positive prognostications, and solution-irrelevant statements. Two critical factors were found to distinguish mastery-oriented subjects from helpless subjects. These involved whether or when spontaneous attributions occurred (i.e., timing) and the type of expression made following an outcome (i.e., nature). Helpless subjects focused on the cause of their failure, whereas mastery-oriented subjects engaged in ways to overcome subsequent failure. Moreover, mastery-oriented subjects exhibited more self-instruction, greater self-monitoring, and maintained a better attitude towards the task and the future.

In brief, the research on information processing has shown that helpless and mastery-oriented children differ with respect to style of attribution (ability versus effort, respectively), pattern of performance, and the nature of verbalizations following failure. Little is known, however, about the extent to which learning-disabled students experience similar information-processing deficiencies. Existing research is limited and contradictory. Pearl, Bryan, and Donahue (1980) were the first to apply helplessness theory to study the attributional preferences of learning-disabled children (parochial school students in grades 3 through 8). Of interest was how important the causal elements of ability, effort, task difficulty, and luck were to subjects' interpretation of success and failure on a specific academic task (i.e., reading) and in nonacademic situations (i.e., puzzle solving and social situations). Subjects' attributions were obtained during individual interview sessions; no actual experience with objective noncontingent failure was provided. Compared to controls, learning-disabled subjects significantly minimized the importance of effort as a source of failure in academic and nonacademic settings. The results were discussed in terms of helplessness theory. Subsequent research by Canino (Note, 1), however, whose experimental design, procedures, and subject-selection criteria were similar to those of Pearl et al., was unable to demonstrate the existence of a specific or generalized pattern of maladaptive attribution. Given the inconsistency of results, no definitive conclusions can be drawn regarding learning-disabled children's interpretation of achievement outcomes. There is a need for a standardized and systematic approach to future research.

Intervention

As discussed, the helplessness phenomenon of cognitive, motivational, and emotional deficit was least evident in children who externalized the cause of academic failure (i.e., males) and most observable in those who internalized it (i.e., females). Therefore, one might logically expect to employ a variety of treatment approaches. The reformulated hypothesis presented by Abramson et al. (1978) provides a rationale for selecting interventions. The prerequisite criterion is to determine the type of helplessness resulting from the individual's attributions. Helplessness produced from internal-stable attributions (e.g., ability) has more debilitating and long-lasting effects than does helplessness caused by either internal-unstable (e.g., effort) or external attributions (e.g., luck or task difficulty). More recently, Seligman has discussed diagnostic procedures, presented relevant treatments (e.g., response-contingent reinforcement, environmental enrichment, personal-control training, resignation training, and attribution retraining), and reviewed intervention outcomes (Seligman et al., 1979; Seligman, Note 2).

For subjects experiencing helplessness caused by an external-variable attribution, the application of response-dependent success has been an effective intervention (Bugental, Whalen, & Henker, 1977; Dickman, 1978; Klein & Seligman, 1976). The Bugental et al. (1977) study has particular relevance to the field of learning disabilities. They studied the role of academic locus of control and causal attribution in hyperactive children relative to the effectiveness of two treatment approaches: contingent social reinforcement and self-instruction. The authors hypothesized that a subject's locus of reinforcement control and attributional style would interact to differentially affect treatment outcomes. It was expected that for externally oriented subjects and those receiving medication, a condition which regularized response-outcome contingencies (i.e., social praise) would foster the development of effective instrumental responding. Internally oriented subjects, on the other hand, already possessed a sense of effort-outcome covariation. Consequently, Bugental et al. thought that they would benefit from cognitive self-instruction, an intervention designed to maximize motivational interest. The results were entirely consistent with the hypotheses: Self-instruction significantly improved the performance of internally oriented subjects, whereas contingent social reinforcement enhanced the performance of externally oriented and medicated subjects.

Helplessness resulting from internal-stable attributions appears to be impervious to response-contingent reinforcement. Seligman (Seligman et al., 1979; Seligman, Note 2) and others (Miller & Norman, 1979) have reported that this type of intervention is unsuccessful because it fails to alter a subject's expectancy of control for future outcomes. Thus when confronted with adversity, subjects may continue to display performance deficits. Effective treatment involves challenging the subject's maladaptive beliefs. The basis for this approach derives from such existing clinical techniques as cognitive behavior modification (Meichenbaum, 1977), cognitive restructuring (Davidson, 1966), and rational-emotive therapy (Ellis, 1962). Studies that have induced appropriate, achievement-enhancing attribution in helpless children are growing (Andrews & Debus, 1978; Blaess, 1977; Chapin & Dyck, 1976; Dweck, 1975; Miller, Brickman, & Bolen, 1975; Ostrove, 1977; Rhodes, 1977).

Dweck (1975) was the first to apply attribution retraining to remediate the performance deficits of helpless elementary school children (male and female). The criteria for identification were (a) performance below grade level; (b) independent evaluation by their classroom teacher, principal, and school psychologist; and (c) teacher ratings of students on a specially constructed Helplessness Rating Scale. Helpless subjects were compared with controls on measures of academic locus of control, attribution, test anxiety, and self-evaluation. A five-item Effort versus Ability Failure Attribution Scale was developed to assess pre-post attribution change in helpless subjects. The experimental procedure required these subjects to receive 25 individual training sessions using grade-level arithmetic problems. Half the subjects received attribution retraining, while the other half were given success-only problems. In the attribution condition a few trials were set to exceed a child's capabilities (i.e., the usual number of problems solved correctly), and failure was then interpreted by the experimenter to be due to the subject's not trying hard. The results revealed that subjects given only solvable problems continued to display problem-solving difficulties when confronted with subsequent failure. First, subjects treated with reattribution training either maintained or improved their performance. Second, they approached problems with greater determination, effort, and efficiency. Finally, when tested, they showed an increase in the degree to which they emphasized insufficient motivation versus ability as a determinant of failure.

Rhodes (1977) extended Dweck's (1975) work by demonstrating generalization to tasks not used in training, a result not found in other research. Using a multiple-baseline design, four helpless children were administered 18 individual reattribution training sessions. The positive effects of attribution retraining were veiwed as further support for a cognitive approach for remediating maladaptive attributional beliefs.

Other researchers have investigated the relative effectiveness of various reinforcement programs compared with attribution retraining (Chapin & Dyck, 1976; Miller et al., 1975). The Chapin and Dyck (1976) study is of particular interest because of the authors' subject population. Male and female underachievers in grades 5 through 7 were randomly assigned to one of the following conditions: attribution retraining, continuous reinforcement, or partial reinforcement. In the partial reinforcement condition two levels of reinforcement were used: three consecutive difficult items, and one difficult sentence followed by an easy one. Training consisted of three individual sessions in which subjects read aloud a series of sentences. Chapin and Dyck reported that attribution and partial reinforcement significantly improved subjects' reading persistence, whereas continuous reinforcement did not. When used in combination with each other, attribution retraining and partial reinforcement were far superior to individual forms of treatment.

Subsequent research has focused on the joint application of attribution and reinforcement techniques (Andrews and Debus, 1978; Blaess, 1977; Ostrove, 1977). Ostrove (1977) found that supplying a subject with effort attributions in an achievement situation, when combined with variable feedback, was significantly better than just consistent feedback. Blaess (1977) investigated the relation of attribution preference (i.e., high-effort and low-effort attributors) with effort verbalizations (i.e., effort and neutral) and self-reinforcement (positive and neutral) in fourth graders. Several significant performance effects were observed: (a) Children in the high-effort attribution group spent more time on tasks; (b) low-effort attributors who employed effort verbalizations persisted more than children using neutral phrases; (c) high-effort attributors were not differentially affected by the type of effort statements provided; and (d) self-reinforcement of effort phrases improved the performance of low- and high-effort attributors. Similarly, Andrews and Debus (1978) obtained equivalent success with contingent praise or token reinforcement for increasing the rate of effort attributions in low-effort attributors (male and female sixth graders). A 4-month follow-up continued to demonstrate treatment effectiveness and generalization.

The literature on intervention suggests that a cognitive-functional approach to remediating the maladaptive attributions of underachieving students offers the best likelihood for success. Though limited, comparative studies between attribution retraining and reinforcement showed that attribution retraining alone, or in conjunction with some type of reinforcement schedule (e.g., partial reinforcement), was superior to reinforcement procedures. Treatment techniques designed to eliminate the negative consequences of failure and to ensure success (e.g., continuous positive reinforcement) were not sufficient to improve a student's performance when confronted with new failure.

The effectiveness of reattribution training would appear to lie in its purpose and objectives. First, instructional programs are not designed to provide a student with an inaccurate perception of self-ability. Rather, they are intended to systematically teach a child to understand the origins of failure. This involves a realistic appraisal of what the task requires in terms of problem-solving skills. A similar approach to treating impulsivity and hyperactivity in children has demonstrated considerable success (Meichenbaum, 1977). Second, a student is taught to modify what he/she says about failure and to emphasize motivation rather than ability as a determinant of failure. Such techniques would appear to be suitable for teachers dealing with children who disregard the importance of effort as a cause of success and failure. Ideal instruction would encourage underachievers to interpret evaluative feedback from a motivational viewpoint.

Taken in sum, the results derived from a cognitive-functional approach to intervention are impressive and promising. Modifying children's maladaptive explanations about the causes of achievement outcomes have significantly improved subsequent achievement behaviors; namely, academic responsibility (Diener & Dweck, 1978), performance (Dweck, 1975), and self-esteem (Ames, 1978). Still, little is known about the durability and generality of attributional schemata following training. Moreover, it is unclear whether attributional patterns remain stable or change with successive classes, teachers, and/or academic years (Dweck & Goetz, 1978). Questions such as these, and the development of instructional programs for teachers, are issues for future research.

CONCLUSIONS

Interest in children with learning disabilities has generated research in a variety of disciplines (e.g., medicine, biochemistry, neuropsychology, psychology, and education) investigating factors thought to either cause, contribute to, or be associated with learning disabilities. Yet little attention has been directed at studying the role of internal, intervening variables on the cognitive, motivational, and emotional functioning of learning-disabled children. Several similarities between helpless children and students with attentional difficulties have been discussed. It is the contention of this paper that the learned-helplessness paradigm would appear to have important psychoeducational implications for the area of learning disabilities.

In summary, the model provides a framework for understanding how students interpret achievement outcomes. In a classroom setting, this most often involves the question, Why did I fail? It has been suggested that for some learning-disabled students, failure may be regarded as an inevitable consequence of inadequate ability. For others, success may be ascribed to external sources such as luck or task ease. In either case, the evidence presented clearly demonstrates that these respective attributions undermine motivation, limit interest patterns, heighten negative affect (i.e., loss of self-esteem), and retard intellectual growth (Bar-Tal, 1978; Weiner, 1979). The model would also appear to offer a basis for evaluating how teachers, parents, and peers influence the development of attributional schemata in underachieving students. Finally, the helplessness concept is thought to have relevance for teacher practices as well as importance for intervention.

References

Abramson, L. L., Seligman, M. E., & Teasdale, J. D. Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology,* 1978, *87,* 49–74.

Ames, C. Children's achievement attributions and self-reinforcement: Effects of self-concept and competitive reward structure. *Journal of Educational Psychology,* 1978, *70,* 345–355.

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

Bar-Tal, D. Attributional analysis of achievement-related behavior. *Review of Educational Research,* 1978, *48,* 259–271.

Blaess, D. A. Relative effects of attributional preference, effort verbalizations, and self-reinforcement on children's task persistence. *Dissertation Abstracts International,* 1977, *37,* 7624A.

Blair, J. R. The effects of differential reinforcement on the discrimination learning of normal and low-achieving middle-class boys. *Child Development*, 1972, *43*, 251–255.

Brophy, J. E., & Good, T. L. *Teacher-student relationships*. New York: Holt, 1974.

Bugental, D. B., Whalen, C. K., & Henker, B. Causal attributions of hyperactive children and motivational assumptions of two behavior change approaches: Evidence for an interactionist position. *Child Development*, 1977, *48*, 874–884.

Chapin, M., & Dyck, G. Persistence in children's reading behavior as a function of N length and attribution retraining. *Journal of Abnormal Psychology*, 1976, *85*, 511–515.

Crandall, V. C., Katkovsky, W., & Crandall, V. J. Children's beliefs in their control of reinforcements in intellectual-academic achievement situations. *Child Development*, 1965, *36*, 91–109.

Davidson, G. C. Differential relaxation and cognitive restructuring in therapy with a paranoid schizophrenic or paranoid state. *Proceedings of the 74th Annual Convention of the American Psychological Association*, 1966, *1*, 177–178. (Summary)

Dickman, H. N. Immunization and reversibility of cognitive deficits due to learned helplessness. *Dissertation Abstracts International*, 1978, *38*, 4448B.

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

Dweck, C. S. The role of expectations and attributions in the alleviation of learned helplessness. *Journal of Personality and Social Psychology*, 1975, *31*, 674–685.

Dweck, C. S. Children's interpretation of evaluative feedback: The effect of social cues on learned helplessness. *Merrill-Palmer Quarterly*, 1976, *22*, 105–109.

Dweck, C. S., & Bush, E. S. Sex differences in learned helplessness: I. Differential debilitation with peer and adult evaluators. *Developmental Psychology*, 1976, *12*, 147–156.

Dweck, C. S., Davidson, W., Nelson, S., & Enna, B. Sex differences in learned helplessness: II. The contingencies of evaluative feedback in the classroom and III. An experimental analysis. *Developmental Psychology*, 1978, *14*, 268–276.

Dweck, C. S., & Goetz, T. E. Attributions and learned helplessness. In H. H. Harvey, W. Ickes, & R. F. Kidd (Eds.), *New directions in attribution research* (Vol. 2). New Jersey: Lawrence Erlbaum Associates, 1978.

Dweck, C. S., & Reppucci, N. D. Learned helplessness and reinforcement responsibility in children. *Journal of Personality and Social Psychology*, 1973, *25*, 109–116.

Ellis, A. *Reason and emotion in psychotherapy*. New York: Holt, 1962.

Gaddes, W. Prevalence estimates and the need for definition of learning disabilities. In R. H. Knights & D. J. Bakker (Eds.), *The neuropsychology of learning disorders*. Baltimore: University Park Press, 1976.

Hanusa, B. H., & Schultz, R. Attributional mediators of learned helplessness. *Journal of Personality and Social Psychology*, 1977, *35*, 602–611.

Hiroto, D. S. Locus of control and learned helplessness. *Journal of Experimental Psychology*, 1974, *102*, 187–193.

Hiroto, D. S., & Seligman, M. E. Generality of learned helplessness in man. *Journal of Personality and Social Psychology*, 1975, *31*, 311–327.

Kennelly, K., & Kinley, S. Perceived contingency of teacher administered reinforcements and academic performance of boys. *Psychology in the Schools*, 1975, *12*, 449–453.

Klein, D. C., & Seligman, M. E. Reversal of performance deficits and perceptual deficits in learned helplessness and depression. *Journal of Abnormal Psychology*, 1976, *85*, 11–26.

Levis, D. J. Learned helplessness: A reply and an alternative S-R interpretation. *Journal of Experimental Psychology: General,* 1976, *105,* 47–65.

Lubin, S. C. Reinforcement schedules, scholastic aptitude, autonomy need, and achievement in a programmed course. *Journal of Educational Psychology,* 1965, *56,* 295–302.

Maier, S. F., & Seligman, M. E. Learned helplessness: Theory and evidence. *Journal of Experimental Psychology: General,* 1976, *105,* 3–46.

McCandless, B., Roberts, A., & Starnes, T. Teachers' marks, achievement test scores, and aptitude relations with respect to social class, race, and sex. *Journal of Educational Psychology,* 1972, *63,* 153–159.

Meichenbaum, D. H. *Cognitive behavior modification: An integrative approach.* New York: Plenum Press, 1977.

Miller, R. L., Brickman, P., & Bolen, D. Attribution versus persuasion as a means for modifying behavior. *Journal of Personality and Social Psychology,* 1975, *31,* 430–441.

Miller, I. W., & Norman, W. H. Learned helplessness in humans: A review and attribution-theory model. *Psychological Bulletin,* 1979, *86,* 93–118.

Minde, K., Lewin, D., Weiss, G., Lavigeur, H., Douglas, V., & Sykes, E. The hyperactive child in elementary school: A five year controlled followup. *Exceptional Children,* 1971, *38,* 215–221.

Ostrove, N. M. The effects of consistency of performance feedback and incentive on expectations for future success. *Dissertation Abstracts International,* 1977, *38,* 2434B.

Overmier, J. B., & Seligman, M. E. Effects of inescapable shock upon subsequent escape and avoidance responding. *Journal of Comparative and Physiological Psychology,* 1967, *63,* 28–33.

Pearl, R., Bryan, T., Donahue, M. Learning disabled children's attributions for success and failure. *Learning Disability Quarterly,* 1980, *3,* 3–9.

Rhodes, W. A. Generalization of attribution re-training. *Dissertation Abstracts International,* 1977, *38,* 2882B.

Roth, S., & Bootzin, R. R. The effects of experimentally induced expectancies of external control: An investigation of learned helplessness. *Journal of Personality and Social Psychology,* 1974, *29,* 253–264.

Seligman, M. E. Fall into helplessness. *Psychology Today,* 1973, *7,* 43–48.

Seligman, M. E. *Helplessness: On depression, development, and death.* San Francisco: Freeman, 1975.

Seligman, M. E., Abramson, L. L., Semmel, A., & Baeyer, C. Depressive attributional style. *Journal of Abnormal Psychology,* 1979, *88,* 242–247.

Seligman, M. E., & Maier, S. F. Failure to escape traumatic shock. *Journal of Experimental Psychology,* 1967, *74,* 1–9.

Seligman, M. E., Maier, S. F., & Solomon, R. L. Unpredictable and uncontrollable aversive events. In F. R. Bush (Ed.), *Aversive conditioning and learning.* New York: Academic Press, 1971.

Thornton, J. W., & Jacobs, P. D. Learned helplessness in human subjects. *Journal of Experimental Psychology,* 1971, *87,* 369–372.

Wallace, G., & Kauffman, J. M. *Teaching children with learning problems* (2nd ed.). Columbus, Ohio: Merrill, 1978.

Weiner, B. *Achievement motivation and attribution theory.* New Jersey: General Learning Press, 1974.

Weiner, B. A theory of motivation for some classroom experiences. *Journal of Educational Psychology,* 1979, *71,* 3–25.

Weiner, B., & Kukla, A. An attributional analysis of achievement motivation. *Journal of Personality and Social Psychology,* 1970, *15,* 1–20.

Wortman, C. B., & Brehm, J. W. Responses to uncontrollable outcomes: An integration of reactancy theory and the learned helplessness model. In L. Berkowitz (Ed.), *Advances in experimental social* *psychology* (Vol. 8). New York: Academic Press, 1975.

Wortman, C. B., Panciera, L., Shusterman, L., & Hibscher, J. Attributions of causality and reactions to uncontrollable outcomes. *Journal of Experimental Social Psychology,* 1976, *12,* 301–316.

Yates, R., Kennelly, K., & Cox, S. H. Perceived contingency of parental reinforcements, parent-child relations, and locus of control. *Psychology Reports,* 1975, *36,* 139–146.

Zontine, P. L., Richards, H. C., & Strang, H. R. Effect of contingent reinforcement on Peabody Picture Vocabulary Test performance. *Psychological Reports,* 1972, *31,* 615–622.

Reference Notes

1. Canino, F. J. *An application of learned helplessness theory for learning disabled children's interpretation of success and failure.* Unpublished dissertation, University of Virginia, Charlottesville, 1980.
2. Seligman, M. E. *Behavioral and cognitive therapy for depression from a learned helplessness point of view.* Paper presented at the University of Virginia, Charlottesville, April 1979.