ACADEMIC STATUS AND THE GENERALIZATION OF LEARNED HELPLESSNESS:
THE PROCESSING OF SUCCESS AND FAILURE IN
ACADEMICALLY-MARGINAL, ACADEMICALLY-SUCCESSFUL,
AND LEARNING DISABLED CHILDREN

DISSERTATION

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* * * * *

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To my wonderful grandparents

Ann and August Gerner
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INTRODUCTION

Learned helplessness occurs when an individual comes to believe their responses will have little, if any, impact on future successes and reinforcements. Repeated exposure to failure results in behavior which suggests some subjects have learned that contingencies are not under their personal control. These subjects show performance decrements, decreased expectancies for success, and attribute failure to stable factors such as lack of ability (implying later failure) rather than less stable factors like insufficient effort that suggests future success remains possible (Butowsky & Willows, 1980; Diener & Dweck, 1978; Weiner, 1972, 1974, 1976).

Research with children has conclusively shown that not all children respond to failure in this way. Some children are characterized by cognitions which imply a belief in the insurmountability of failure while others believe their mistakes are rectifiable and can be overcome with effort (Dweck & Lichert, 1980). As the subsequent literature review indicates, Dweck and her colleagues have demonstrated striking differences between "mastery-oriented" and "helpless" children in their response to success and failure (Deiner & Dweck, 1978; Dweck & Reppucci, 1973). However, there has been limited research on learned helplessness and specific subgroups of children who show preexisting differences in their level of academic
success. Although learning disabled children differ sharply from their age peers in terms of their adjustment to the school environment, little information has been available regarding their susceptibility to learned helplessness and their causal attributions and expectancies given success or failure (Canino, 1981; Thomas, 1979). Only recently have investigators begun to empirically examine variables associated with learned helplessness in learning disabled populations (Aponik & Dembo, 1983; Kleinhammer-Tramill, Tramill, Schrepel, & Davis, 1983; Pearl, Bryan, & Herzog, 1983). Another common subgroup of children in school settings can be characterized as "academically marginal" students with sub-average classroom performance. These children share the regular classroom with "academically successful" peers who function in the upper third of their classes and enjoy a much more adequate academic adjustment. One objective of this study is to use a learned helplessness paradigm to investigate cognitive variables such as expectancies and causal attributions among children who are learning disabled as well as children who fall at opposite ends of the continuum in terms of actual academic success in the classroom.

The proposed study would enlarge upon the recent work of Butkowsky and Willows (1980) and Johnson (1981) with naturally occurring samples of children in the school environment. These studies contrast with other investigations which formed "helpless" and "non-helpless" groups prior to analysis on the basis of experimental susceptibility to learned helpless or used cut-off scores
on certain questionnaire measures (Diener & Dweck, 1978; 1980; Dweck & Reppucci, 1973). The present study will compare Academically-Marginal and Academically-Successful students (identified by teacher ratings and standardized test scores) in addition to a Learning Disabled sample on their differential response to success and failure outcomes. Susceptibility to learned helplessness will be measured by monitoring such dependent variables as initial expectancy for degree of success, change in expectancy following outcome, affective response to outcome, causal attributions made to explain success or failure, and estimated persistence given future repeated failure outcomes.

Another objective of this study is to focus on the generalization of cognitive, motivational, and affective differences in the way Academically-Marginal, Academically-Successful, and Learning Disabled children respond to success and failure under contrasting task requirements. Therefore, conceptually different tasks were employed to encourage children to view them as unrelated as possible. The tasks attempted to reflect opposing areas of activity that emphasized contrasting behavioral domains. For instance an anagram task used in a learned helplessness study appears to sample the behavioral domain of the school environment since children have had copious amounts of experience with similar activities in the classroom. A contrasting activity such as a maze or visual-motor task, although appearing somewhat dissimilar on the surface, is essentially comparable since the child can easily construe the task
as a challenging, learning-related activity. The recent work of Butkowsky and Willows (1980) clearly demonstrates this point. They were interested in determining whether a reading task (anagrams) and an unspecified task basically unrelated to reading (line tracing puzzles) would show cognitive and motivational differences for their subjects who varied in reading ability. With one exception, results indicated no significant main effects or interactions with the task variable. The pattern of results was essentially identical for both activities.

From the point of view of this study such an outcome is not surprising. The unspecified task required a child to trace over all the lines of a diagram without lifting the pencil or retracing any line. This task could still be perceived as a learning-related activity that children might easily interpret as reflecting on their abilities to analytically execute. Both tasks share the similarity of being problems to solve and correspond more to the behavioral domain of school rather than an activity which a child might engage in on his own outside of the school environment, like playing a popular game for enjoyment. There is also a conceptual difference between an academic skill-related task and problem-solving which involves the interpretation of social situations. It is important to know if the pattern of results found for various cognitive and motivational measures in achievement situations generalize to these other task-specific areas. For this reason it
is necessary to assess children's response to success and failure on different types of tasks within a single experiment. Procedures must be designed to ensure little generalization between the tasks within the experiment itself by using different experimenters, referring to the tasks by opposing titles, and providing specific directions that underscore the differences of what is involved in performing each task (e.g., academic skills vs. playing a game for fun vs. social problem-solving). Cole and Coyne (1977) present evidence that unless this is done there can be generalization from one task in an experiment to the next. Such an effect would confound experimental results in measuring the generalization of cognitive, motivational, and affective differences since the tasks could be perceived as experimentally similar and would not represent discrete behavioral domains to the child.

Presently, there is no research that directly assesses whether children who vary in achievement status will generalize potential differences in the way they respond to success and failure in academic as opposed to non-academic situations. One purpose of this study is to investigate this question by controlling for within-experiment generalization effects. This is essential to guarantee that generalization (or the lack of it) reflects true differences in opposing behavioral domains as much as possible. Past research has taught us that children can show marked differences in the way they respond to academically-related success and failure. What is
less clear is whether these differences tend to generalize to situations that have little to do with formal schooling and academic skills.
Chapter I
LITERATURE REVIEW

Learned Helplessness: From Infrahuman to Human Research

Learned helplessness was originally defined by Seligman and Maier (1967) to describe the deterioration of performance an organism experiences after learning its responses are incapable of controlling either the onset or termination of aversive events. When noncontingent failure occurs over a series of trials efficient responding dramatically decreases. In a subsequent experiment, Seligman, Maier, and Geer (1968) exposed dogs to inescapable shock. A large percentage of these animals were unable to emit responses to escape the situation after the contingency was altered so that shock was escapable and could be avoided. Experimentally induced learned helplessness in infrahuman species has been demonstrated in rats (Maier, Albin, & Testa, 1973; Maier & Testa, 1975; Seligman & Maier, 1967), and cats (Masserman, 1971; Seward & Humphrey, 1967; Thomas & Dewald, 1977) as well as other species like fish (Padilla, 1973). While learned helplessness theory was originally tested and developed on the basis of animal research and extensive reviews have presented the convergence of findings (Maier & Seligman, 1976), Seligman (1975) has also convincingly argued for the extension of the learned helplessness paradigm to humans.
Early "cross-over" experiments essentially conformed to the research models in former infrahuman investigations. The experiment by Hiroto (1974) provides an excellent example of such work. College student volunteers were assigned to conditions where they could successfully terminate a loud noise by pushing a button four times, whereas others received noise that terminated independently of their responses. A third group received no noise during this portion of the experiment. The subjects later were tested with a shuttle box apparatus where noise termination was possible for all subjects by manipulating a small lever. The subjects who had previously been able to terminate the noise and those that did not receive this outcome had no difficulty learning to efficiently stop the noise with the shuttle box. On the other hand, subjects that learned the noise had before terminated independent of their responding were not able to successfully adjust to stop the noise in this later condition and passively listened. The surprising feature of this experiment was that given a different situation (shuttle box manipulation vs. button pressing) subjects had generalized their inability to influence the aversive noise outcome. This experiment and others following a similar model began to increasingly shift the laboratory-based, infrahuman focus of learned helplessness research to studies with human subjects in the decade of the 70's.

An Attributional Model of Learned Helplessness

It was being conclusively shown that learned helplessness could be induced in humans and an interest was developing to not only
produce learned helplessness, but to account for individual differences (developmental, affective, or cognitive) in susceptibility. Once the characteristic signs of helplessness were observed as decrements in motivation or performance, a fundamental question remained: why does an individual behave helplessly? Julian Rotter's (1966) earlier work on internal vs. external control and the contributions of attribution theory regarding the role of cognitions mediating performance (Weiner, 1972, 1974; Weiner & Kukla, 1970) suggested a crucial role which causal attributions could play in accounting for human helplessness.

Abramson, Seligman, and Teasdale (1978) presented an updated model of learned helplessness which suggested that the attribution an individual makes for their perceived inability to influence present outcomes is an important determinant of their subsequent expectation for future noncontingency and failure. For example, when a positive or negative outcome occurs an individual can attribute it to: 1) an internal-stable factor (ability), 2) an internal-unstable factor (effort), 3) an external-stable factor (task difficulty), or 4) an external-unstable factor (luck). In addition to the "internal-external" and "stable-unstable" dimensions, the authors discussed a third "global-specific" dimension to account for the generality of helplessness across situations. Consider being turned down for a job. If you conclude "I am unqualified" (an internal-stable factor) implying that "Despite what I do I am likely to be unqualified for all such jobs," this has far more serious
implications than concluding "This particular employer is biased" (an external-unstable factor) and "I have only to redouble my efforts to ensure success with other employers." Studies have provided evidence to substantiate the link between attribution and actual performance as well as delineate individual differences in attributional style (Seligman, Abramson, Semmel, & von Baeyer, 1979).

The present investigation will examine attributional differences between the groups utilizing the causal ascriptions of ability, effort, task difficulty, and luck. These four causal factors will be organized and analyzed along two dimensions: locus of control (internality/externality) and stability (stable/unstable). Because ability and effort originate within the individual they can be contrasted with the more external factors of task difficulty and luck. In terms of stability, ability and task difficulty are stable factors since they imply a lack of change when the same task is attempted at a later time. Effort and luck, on the other hand, can be considered unstable factors since they are capable of fluctuating when an individual reattempts the same task.

Developmental Approaches to Learned Helplessness

Since learned helplessness can be closely related to the causal attributions an individual makes to account for their failures, possible developmental differences in attributions should be considered. This is particularly important because research has substantiated that there are changes in the kinds of attributions
children make between the ages of five and ten. Parsons and Ruble (1977) found that children three to 11 years of age experience success and failure differently. Outcome tends to have a much greater impact on older as opposed to younger children. This difference seems to suggest that younger children may be less susceptible than older children to learned helplessness because they do not view failure as reflecting on their level of competence (Nicholls, 1978, 1979; Ruble, Parsons, & Ross, 1976).

To experimentally test whether younger children are less susceptible to learned helplessness, Rholes, Blackwell, Jordan, and Walters (1980) studied kindergarten, first, third, and fifth grade children. Susceptibility to learned helplessness was examined by exposing children to repeated failure and repeated success on hidden figure problems. Persistence in searching for the hidden figures and subjects' ability to find them following success or failure was taken as the measure of helplessness. Results provided strong support for older children being more susceptible to learned helplessness. While younger subjects showed no evidence of learned helplessness, fifth graders were more helpless in both persistence and performance, and only among fifth grade age children did outcome have a significant impact on mood.

In general, it appears that before nine years of age children manifest less susceptibility to cognitive and motivational negative evaluation. Developmental differences in relation to learned helplessness must, therefore, be taken into account in studies which
use attributional measures. In the present study no children below
nine years of age were included in the sample and the average age
of children in all three groups fell in the 11 to 12 year range.

Learned Helplessness, Children, and Achievement

The work of Carol S. Dweck and her associates over the last
decade has provided the most relevant information on the learned
helplessness of school-aged children and achievement (Diener &
Dweck, Davidson, Nelson, & Enna, 1978; Dweck & Gilliard, 1975;
In this work the striking effect of failure on children's subsequent
achievement performance has been demonstrated. Interestingly, it
has been shown that children respond differently to failure. For
some children the effects seem to be positive since effort is
enhanced, their concentration sharpens, and the strategies they use
for problem-solving remain fundamentally sound or even improve.
This contrasts with other children where failure produces the
effects so commonly associated with learned helplessness. These
children show decreased effort, strategies deteriorate, and they
are unable to solve problems which previously presented little
difficulty for them. The groups have respectively been labeled
"mastery-oriented" vs. "helpless" by Dweck and her co-workers. They
have shown that although these two groups begin with identical
performances, equivalent problem-solving strategies, and do not
significantly differ on standardized intelligence measures, they
evidence dramatic differences in the way they respond to failure.

Besides their sharp differences in performance under failure conditions, mastery-oriented and helpless children appear to have contrasting beliefs concerning their ability to personally influence future outcomes and reinforcements. For example, they differ in the kinds of attributions they make to account for their successes and failures. Even when helpless children experience success they can tend to devalue the role their own competence played in earning the positive outcome. In accounting for their successes, they are likely to attribute the reason to luck or some other external circumstance. This contrasts with mastery-oriented children who credit their successes to personal ability. When they do experience failure it does not cause them to question their own competence; instead, they attribute their poor performance to motivational factors like lack of effort. They continue to believe success is possible since they have only to try harder and failure can be overcome in the future.

The procedures used to induce learned helplessness in children and measurement of the attributions they make when exposed to failure in achievement situations varies from study to study. Yet the basic approach is similar in that noncontingent failure is used with an accompanying measure of attribution (questionnaire, direct questioning, or spontaneous verbalizations). A review of two
illustrative studies can clarify the representative procedures as well as present characteristic findings of learned helplessness studies in this area.

Dweck and Reppucci (1973) wished to determine if a deterioration in performance following failure would result in an achievement situation. They were also interested whether children exhibiting a worsening of performance differed from those who showed no such decrement in their beliefs about the controllability of reinforcements. Children were divided into mastery-oriented and helpless groups on the basis of their reaction to the test problems. The Intellectual Achievement Responsibility (IAR) Questionnaire was subsequently used to assess patterns of reinforcement responsibility (Crandall, Katkovsky, & Crandall, 1965). The IAR consists of 34 forced-choice attributions that describe a positive or negative achievement experience where the child attributes causality to internal, external, or effort factors.

The subjects in the study were 40 fifth grade children (20 males and 20 females). Each child was presented with a Wechsler Intelligence Scale for Children (WISC) block design-type task administered by a "success" experimenter and a "failure" experimenter during a single session. Both experimenters showed the subjects a design card and gave them four blocks with which to reproduce the model. However, training problems administered by the success experimenter were solvable while those given by the failure experimenter were impossible to complete with the blocks provided. A
test condition followed where the failure experimenter administered solvable problems similar to the success experimenter's. The children worked for chips which were given after each successfully completed problem and could be redeemed for desirable prizes at the conclusion of the session.

The findings provided strong support for certain children developing learned helplessness in an achievement situation. Those children whose performance worsened in the face of failure showed performance decrements and appeared to have differing beliefs regarding their ability to be able to control reinforcements or outcomes. For instance, some children failed to complete solvable test problems administered by the failure experimenter even though they had recently solved identical problems administered by the success experimenter. Children who showed the greatest performance decrements also tended to take less personal responsibility for the outcomes they experienced and ignored the role motivation (effort) might play in their successes and failures. In addition, subjects who persisted in the face of failure placed more emphasis on effort (suggesting future success remains possible) and males were found to be more likely to make this attribution than females. Later research has supported the view that generally girls are more helpless than boys in achievement situations (Dweck & Bush, 1976; Dweck, Davidson, Nelson & Enna, 1978; Dweck & Gilliard, 1975). This initial study of children and learned helplessness on a problem-solving task dramatically illustrates the detrimental
effects of failure for some children. As Dweck and Reppucci conclude, "In essence, they are saying to themselves that whether they try or not, the consequence will be the same. Thus, in the sense that they view outcomes as relatively independent of what they do, they are 'helpless'" (p. 115).

In a later study Diener and Dweck (1978) set out to more exhaustively determine the nature of task performance changes and the associated cognitive-motivational differences of mastery-oriented and helpless children. Because past research had shown that these groups either emphasized or neglected the role effort played in accounting for their failures (Dweck, 1975; Dweck & Reppucci, 1973; Floor & Rosen, 1975), subjects were designated into mastery-oriented and helpless groups based on their pre-experimental responses to the Intellectual Achievement Responsibility (IAR) Scale. In Study I 70 fifth graders (35 males and 35 females) worked on a specially designed discrimination task where their hypothesis-testing strategy could be monitored. Following eight training problems, four test problems were administered and consistent failure feedback given. After the fourth test problem the children were directly asked to account for the difficulty they had experienced in attempting to solve the problems. In Study II an identical procedure was followed with a separate fifth grade sample (30 males and 30 females), however, children were requested to verbalize aloud what they were thinking while they performed the task.
Preceding the failure condition mastery-oriented and helpless children (as defined by the IAR) did not differ in the efficacy of their problem-solving strategies or in the kinds of statements they made. However, once repeated failure occurred for these groups striking differences emerged. When the children were asked why they thought they had trouble with the problems over 50 percent of the helpless children responded that it was because they "were not smart enough" while none of the mastery-oriented children responded in this way. Moreover, 45 percent of the mastery-oriented children attributed their difficulties to effort or luck while only seven percent of the helpless children did so. Spontaneous verbalizations showed the same significant differences. Helpless children began attributing their failure to stable causes like a lack or loss of ability by vocalizing they had a poor memory or were getting confused, for example. In contrast none of the mastery-oriented children made attributions to a loss of ability; they instead made references to needing to take their time or try harder. Helpless children's hypothesis testing strategies deteriorated, task-irrelevant statements increased, and they expressed a desire to withdraw from the task although moments before they appeared to be quite invested in the training problems. Whereas, helpless children seemed to ruminate over their failures, mastery-oriented children remained directed to searching for a solution.

At the present time few studies have specifically addressed learned helplessness in academically handicapped or low achieving
children samples where failure was experimentally manipulated. The few studies which have appeared represent the first efforts to apply the learned helplessness paradigm to these populations and will be discussed next in detail since they bear directly on the topic of the present research investigation.

**Learned Helplessness and Academic Difficulties**

In a cognitive-motivational analysis of children varying in reading ability, Butkowsky and Willows (1980) examined expectancies of success, task persistence under failure, and the causal attributions of good, average, and poor readers. Subjects were 72 fifth grade boys: 24 good readers, 24 average readers, and 24 poor readers. The size and direction of each child's IQ-reading achievement test discrepancy was used to form the good, average, and poor reading groups. Therefore, poor readers in the study were children who showed significant problems in the reading area.

Success and failure was manipulated on two discrete tasks: a "reading test" and an unspecified task described to the children simply as a "test." The reading test was not actually a test of reading ability per se, but a series of five-letter anagrams solvable at all reading levels (ospon, hroes, chria, muoies, trnia). These anagrams were altered by one letter in the failure condition so that a solution was impossible (sponi, hrorns, echru, muoas, atrne). The unspecified task was similar to the one described in Weiner (1972) where subjects had to continuously trace over lines of a puzzle without retracing their paths. Solvable and unsolvable forms were constructed.
The four dependent measures of the study were the initial expectancy of success, task persistence/time-to-completion, causal attributions of success or failure, and expectancy shift after success or failure when the task was completed. Initial expectancy referred to the number of puzzles or anagrams the child estimated he could solve prior to any testing trials (one, two, three, four, or all of them). Time-to-completion was defined as elapsed time from beginning work to successfully solving the problem, while persistence time was elapsed time between beginning work and rejecting the drawing task or anagram task trial to go on to another. Causal attributions were collected following completion of the tasks by having the child select cards with attributional statements written on them as the alternatives were read aloud (e.g., "Do you think you did (did not do) so well because you are (are not) good at this, because you tried hard (could have tried harder) . . ."). Lastly, expectancy shift referred to the change from initial expectancy for success and a child's final estimate of expected problems they could solve if five more reading tests or puzzles were given.

Results showed that the poor reading group expected to initially solve significantly fewer problems on both tasks in comparison to average or good readers. There was essentially no difference between good and average readers in their initial expectancies for success on the unspecified task, however, good
readers expected to solve significantly more anagrams than the average readers. Moreover, poor readers expected to do relatively better on the unspecified task in comparison to good readers who had higher expectancies for success on the reading task. Since ANOVA results did not produce significant main effects or interactions with the task variable on any of the other dependent measures, both tasks were combined for all subsequent data analysis. There was strong support for poor readers vs. average and good readers to differ in persistence time but not time-to-completion. Good and average readers persisted approximately 40 percent longer than poor readers on the tasks. The attributional hypotheses of the study were also verified. Poorer readers were more likely to attribute failure to a stable factor like lack of ability, although they attributed success to the stable but external cause of the task being easy. On the other hand, good and average readers attributed failures to unstable factors like effort and success to more stable factors like ability. Poor readers clearly took less personal responsibility for their successes and were relatively unable to appreciate the role ability played in earning a positive outcome. Finally, good and average readers did not significantly lower their expectancies of future success following failure, whereas poor readers decreased their future expectancy for success even further below their initial modest expectancies.

In summary, this study provided evidence for learned helplessness in poor readers, demonstrating marked differences in
expectancies for success, persistence under failure conditions, and causal attributions by poor readers in comparison to children who did not show learning difficulties in an academic setting. It is important to note that this study deviated from the typical learned helplessness paradigm where children first receive training and later are exposed to noncontingent failure.

In a typical learned helplessness study subjects are first trained on a task under success or failure conditions and then presented with test problems. The goal is to assess the resultant effects of experimentally induced noncontingent failure by measuring cognitive or behavioral indices (e.g., attributions/persistence). The investigation by Butkowsky and Willows (1980) used a failure paradigm, however, no learned helplessness pretraining was given. These authors argued that the learned helplessness training procedures in typical designs measure children's differential susceptibility to the training, while their stated intent was to measure learned helplessness "as it naturally occurred in the population of children with reading difficulties as opposed to measuring these children's sensitivity to helplessness inductions" (p. 420). A similar procedure was used in two additional studies that specifically investigated learned helplessness in samples of children with learning difficulties.

Johnson (1981) was primarily interested in determining if the value of an outcome predicted passivity, and how self-concept
was affected by failure. Learned helplessness theory states that the desirability of an uncontrollable outcome can affect emotionality and self-esteem, but observed passivity is caused solely by an expectation of lack of control in the situation. Social learning theory, on the other hand, argues that the absence of either expectancy or attached value causes passivity. This study compared the predictions of these two theories by manipulating the attractiveness (value) of an outcome while keeping expectancy and attributions constant. The second focus of the study was to discern if average vs. failing achievement, external attribution for failure, and internal attribution for success predicts self-esteem. According to learned helplessness theory children who are "helpless" make internal attributions for failure (blaming themselves for lack or loss of ability) and external attributions for success (assigning the credit to luck or the ease of the task but not to their own efforts or ability).

Subjects were 60 white males between the ages of 9 to 12, divided into average, failing, and remedial groups of 20 students each. The average group was made-up of children in regular classes who scored within the 4th and 5th stanine on the total reading scale of the most recent group achievement test and had average or above grades on their cumulative records. The failing group of children had been referred for self-contained remedial classes (learning disabilities) on the basis of normal range ability as measured by the WISC-R and low total reading scores
(2nd stanine or lower). These children, although referred, were currently being educated in the regular classroom. The remedial group had been in self-contained classes (learning disabilities) for at least one year and showed roughly equivalent test performances to the failing group.

All children were orally administered the Piers-Harris Children's Self-Concept Scale (Piers, 1969) and the Intellectual Achievement Responsibility (IAR) Questionnaire (Crandall, Katkovsky, & Crandall, 1965) several days before the experimental task was given. The experimental task consisted of diagrams or mazes where the child must successfully trace all the component lines without lifting his pencil or retracing any line (Feather, 1961). Time spent in working and the number of trials on the impossible maze were defined as measures of persistence and constituted the dependent variables in the study. Expectancy was controlled by informing all the children that the task predicted success in school. The reinforcement value (desirability) of the outcome was manipulated by telling half the children in each group they would receive 10 cents for each maze completed.

Results showed that reinforcement value did have a significant impact on persistence as predicted by social learning theory. Although average and remedial class children evinced no such effects, failing children spent significantly more time working for money in comparison to working only for demonstrating they were good at school work. On the second persistence measure (number
of trials on the maze task) no significant differences were found among any of the groups.

To investigate the relationship of school experience and attribution of academic success and failure to self-esteem only the average and failing groups were analyzed. In agreement with learned helplessness theory actual school failure, external attribution for success, and internal attribution for failure predicted low self-concept—accounting for almost half the variance in the global self-concept score ($R^2 = .48$). Johnson interpreted these findings as suggesting that remediation (special class placement) had reinstated successful experiences in school for the remedial group since they (like the average group) did not show increased persistence from differential reinforcement value. In addition, she argued that because remedial class children showed more variance in their self-concept scores and had higher (though not significantly so) self-concept scores over the failing group this suggested that remediation (special class placement) had been a factor in improving the self-concept of these children. She concluded her data demonstrated a relationship among school achievement, persistence at a task, self-concept, and attribution for a naturally occurring sample of children with learning difficulties.

The final study included in this section not only dispensed with learned helplessness training trials, but also did not use solvable and unsolvable tasks as a prelude to measuring affective
or behavioral differences among children with learning problems. Instead, Pearl (1982) used a total cognitive approach where children had to respond to orally-presented scenarios and then select attributions which applied personally to themselves. Stressing the importance of causal attributions, Pearl, Bryan, and Donahue (1980) had previously examined attributions among low achieving children who had not been formally classified as learning disabled, despite qualifying under federal guidelines, because they attended parochial schools. Their results supported the impression that these children made similar maladaptive attributions hypothesized for learning disabled children. The current study was undertaken to verify if children actually labeled learning disabled would show maladaptive attributions and whether their earlier findings could be replicated for this group.

Subjects were white, third and fourth grade upper middle class suburban children who had been labeled learning disabled by school personnel. All were receiving daily special education services by a learning disabilities teacher in a resource room. The sample selected was composed of six LD girls and eight LD boys in third grade; seven LD girls and eight LD boys in fourth grade; and, control subjects chosen from classmates who matched the LD children on race and sex.

The procedure was based on a questionnaire (Nicholls, 1979) that was adopted for the purposes of the study. Six questions were read aloud to the children in their classrooms. The questions
presented an outcome and then asked about reasons for their personal successes and failures in reading, putting a puzzle together, and getting along with other children. After each question (essentially a brief scenario) was read, children had to pick which attribution they believed described the reason for what happened in the question by marking the appropriate alternative in a booklet.

Results indicated that control children attributed failures in reading and puzzle outcomes to a lack of effort significantly more often than learning disabled children. Control children also believed ability was significantly more involved in their puzzle successes than LD children. Fourth grade LD children placed significantly less emphasis on ability in accounting for reading successes compared to the fourth grade control children. Within the "luck" domain, LD children attributed to luck a greater role in determining their successes and bad luck was chosen as less a cause of their failures than control children. Moreover, the LD children believed their social failures were caused more by bad luck in comparison to their reading or puzzle failures. Essentially, the findings of the earlier study were replicated except that LD children in the current study placed more emphasis on effort being able to overcome social failure. In summary, the results suggested that the attributions LD children make for academic successes and failures differs from the attributions of other children in being more negative. It is significant that success for LD children is
not necessarily interpreted as indicating "... something positive about themselves, and failures are not necessarily viewed as something that can be overcome with effort" (p. 176).

These three studies are directly germane to the topic of the present research investigation. They establish that extensive training trials before administering a test task as well as subject selection on the basis of questionnaire measures is not necessary to demonstrate learned helplessness effects. It appears cognitive and attributional differences indicative of learned helplessness can be found in "naturally occurring" subgroups of children within the school environment. However, the extent to which these differences may generalize to other situations not logically connected with school deserves further study. Pearl's (1982) finding that learning disabled children did not devalue the role effect could play in overcoming social failure is provocative. This suggests a related line of research that specifically investigates whether children's response to success and failure generalizes to unrelated domains when intra-experimental generalization is controlled using an experimental learned helplessness paradigm.

Learning Disabilities and Learned Helplessness

Within the last few years increasing attention has been given to cognitive and affective factors associated with learning disabilities. In a review of studies concerned with self-concept and locus of control in learning disabled children, Bryan and Pearl (1979) reported that these children seem to have a negative
self-concept, to believe their successes are caused by external factors like luck or other people, and to also feel that failure can be insurmountable. Other research utilizing a variety of questionnaire measures have essentially confirmed this characterization (Chapman & Boersma, 1980; Lincoln & Chazan, 1979). Thomas (1979) observed that there was a lack of information on learned helplessness and learning disabled children. She suggested that learning disabled children might show similar cognitive and motivational deficits which have been found in "helpless" or failure-oriented children. Only quite recently has an experimental learned helplessness paradigm been applied to the learning disabled.

Previously, Diener and Dweck (1978) had shown that mastery-oriented children respond to failure feedback by maintaining or increasing their problem-solving strategies whereas failure-oriented showed a deterioration. Pearl, Bryan, and Herzog (1983) investigated learning disabled and nondisabled children's reaction to high or low success conditions on a specially designed bowling game. They found that nondisabled children were more likely to respond to a poor performance by making a specific analysis of their performance. Learning disabled children, on the other hand, produced more ambiguous verbalizations and attributed their low scores to external factors like task difficulty or luck. Learned helplessness in learning disabled adolescents (10 to 14 years of age) has also been studied as a function of noncontingent rewards (Kleinhammer-Tramill, Tramill, Schrepal, & Davis, 1983). Subjects
had to reproduce block designs and received rewards for their performance which were either contingent on a correct response, 100 percent noncontingent, or delivered on a 50 percent random noncontingent reinforcement schedule. A subsequent coding task was administered and learning disabled children in the two noncontingent reward groups showed significantly greater response latencies in comparison to those in the contingent reward or control groups. A limitation of the study was that learning disabled students were not compared with normal children in the noncontingent conditions. However, another recent study did contrast learning disabled and normal adolescents' causal attributions of success and failure when levels of task difficulty was manipulated. Aponik and Dembo (1983) reported that the high-achieving normal adolescents differed from the learning disabled group by attributing their successes more to their own ability while learning disabled students perceived a lack of ability accounted for their failures. However, two unexpected findings occurred that have not been characteristic in prior research. First, the learning disabled group felt effort was a significant factor in explaining their successes. Second, the high-achieving normal students in the failure condition placed a greater emphasis on lack of ability compared to the expected attribution of insufficient effort.

Despite this deviation, the convergence of findings from investigations of children that perform at sharply lower levels of academic achievement as well as the learning disabled suggests
that these groups are more likely to show cognitive and motivational
deficits associated with learned helplessness. Compared to their
higher-achieving, mastery-oriented counterparts these children would
appear to be more failure-oriented. In terms of the present study,
differences between the Academically-Successful group on the one
hand, and the Learning Disabled and Academically-Marginal groups
on the other, could be reasonably expected in the academic task
situation. Moreover, whatever differences might pertain between
the groups the essential question is whether the pattern of results
on the academic task will remain essentially the same given a game
or social problem-solving activity.

**Learned Helplessness in Social Situations**

It has been found that the attributions helpless children make
to account for their failures tends to focus on causes that are
relatively internal and stable (e.g., lack of ability), whereas
mastery-oriented children focus instead on the role effort can
play in being able to overcome their failures (Diener & Dweck,
1978). It is interesting to speculate if the relationship between
attribution and outcome verified in academic situations would tend
to also occur in a contrasting behavioral domain like a social
situation. Will children attribute social rejection to factors
outside of their immediate control and show poorer goal-directed
behavior and performance after experiencing social rejection?

Goetz and Dweck (1980) wished to examine the relationship
between causal attributions and response to social rejection
across popularity levels using a learned helplessness model. They took classroom popularity measures and assessed attributions for rejection by children's responses to a questionnaire describing social vignettes. Subsequently, children were individually involved in a situation where they attempted to gain admittance to a pen-pal club by composing a message for another child. After receiving the feedback that they had not been accepted, children were given the chance to revise their original communication. Results showed that those children who experienced the strong disruptive effects of social rejection tended to emphasize personal incompetence regardless of popularity level.

This study was the first to investigate the relationship between causal attributions and children's later attempts to overcome social rejection using an experimental, learned helplessness model. It suggests that cognitive mediators would seem to influence children's social behaviors as well as their academic behaviors given failure outcomes. Studies of learned helplessness have successfully demonstrated cognitive and motivational differences among children in accounting for outcome in certain situations, but investigation to compare these variables in contrasting domains within the same experiment is lacking. The present research is designed to assess children's differential response to success and failure outcomes across three types of situations: an academic skill task, a non-school related game activity, and a social problem-solving task.
Learned Helplessness and Generalization

Learned helplessness theory suggests that the generalization of helplessness deficits partially depends on the stability and globality of the attribution an individual makes to account for their experience of failure or noncontingency (Abramson, et al., 1978). Under this concept, cues available to subjects that suggest an attribution for their lack of success can play an important part in determining whether learned helplessness generalizes from training to test task. Tennen and Eller (1977) labeled unsolvable discrimination problems as either progressively "harder" or progressively "easier." Subjects who were failed on trials labeled as easier were hypothesized to attribute their failure to a lack of ability (internal, stable, global), while those subjects that failed problems described as growing more difficult should attribute their failure to task difficulty (external, unstable, specific). The second part of the experiment required subjects to enter another laboratory room to work on anagrams. The anagrams were presented as a language activity that had a theoretical relationship to the earlier problem-solving task. The results indicated that subjects who had repeatedly failed problems described as being progressively easier did significantly poorer on the anagrams. Consistent with learned helplessness theory, attribution to inability produced cross-situational deficits while attribution to task difficulty generalized to better anagram-solving performance.
However, the attributional contribution to the generalization of learned helplessness has not been clearly determined. For example, Wortman, Panciera, Shusterman, and Hibschuster (1976) told female college students they could prevent aversive noise if they did well on a problem-solving task. The subjects who failed were given the impression that either anyone in their situation would have done as poorly or the impression others could succeed where they themselves did not. Subjects that were led to make situational attributions were found to experience considerably less stress than subjects that attributed failure to their own incompetence. A surprising finding was that these latter subjects (low ability attribution) also performed better than the other subjects on later problems administered in the same situation and with a new situation, perhaps because they failed to see subsequent tasks as related. A similar pattern of results, somewhat less equivocal, has been obtained by Hanusa and Schulz (1977). The manner attributions interact with other variables to determine the transfer of learned helplessness deficits across experimental tasks is somewhat ambiguous considering these findings. However, Abramson, et al. (1978) argue that methodological problems exist and the later test task used in some of these studies may not have been sensitive to helplessness deficits.

Another approach to explaining the generalization of learned helplessness has been formulated on the basis of Rotter's social learning theory (Zuroff, 1980). Social learning theory maintains that generalization is more likely to occur when there is a physical
similarity of situations or when there is a perceived similarity along some psychologically meaningful dimension. These considerations directly apply to the focus of this present research investigation. Will children who vary in school adjustment differ in the manner in which they respond to success and failure on a school-related task vis-a-vis a game activity or a social problem-solving task when they are compared? There is a lack of information regarding the generalization of learned helplessness in children. To investigate this phenomenon discrete tasks must be used that do not share a physical or psychological similarity within the experiment, but instead share these features with discrete ecological domains in which the child operates. For instance, Butkowsky and Willows (1980) used a reading task (anagrams) and an unspecified task (line drawings) that showed an almost identical pattern of results for their good, average, and poor readers. One purpose of their study was to assess the generality of cognitive/motivational differences between the reading task and the unrelated task. The findings substantiated that their children tended to react to both tasks in a highly similar fashion. Past research on learned helplessness with children in achievement settings has used cognitive, verbal, or paper and pencil problems that can easily be construed similarly by a child as challenging, learning-related tasks. Some of the tasks that have been used with children in learned helplessness experiments are discrimination learning problems (Diener & Dweck, 1978, 1980), hidden figure picture puzzles
(Rholes, et al., 1980), block designs (Dweck & Reppucci, 1973), line diagram mazes (Johnson, 1981), and a matching familiar figures test (Ruble, Parsons, & Ross, 1976). Each task differs somewhat in content (visual-motor to more conceptual), however, they all share the similarity of being problems to solve rather than an activity which a child might find intrinsically interesting and engage in on his own outside of a learning or experimental situation. A related question is whether children will respond similarly to success and failure feedback on a task which entails academic skills in comparison to a social problem-solving situation. The present research investigation is designed to operationalize such task differences in order to evaluate the generalization of learned helplessness in children.

**Hypotheses of the Study**

Past research of learned helplessness in achievement situations has shown that there can be dramatic differences in the manner children respond to failure. Some children are particularly sensitive to the debilitating effects of failure, while other children continue to believe that they have only to try harder to overcome failure and experience future success. Such "helpless" and "mastery-oriented" children have been studied extensively by Carol S. Dweck and her colleagues (Dweck & Licht, 1980). Recent studies have begun to provide information on precisely who these children are within the school environment. We know, for example, that poor readers can manifest cognitions and expectancies associated
with learned helplessness yet average and good readers do not (Butkowsky & Willows, 1980). Chronic school failure children also demonstrate a pattern of helplessness that appears to be "naturally acquired" through their experiences with frequent failure in academic settings (Johnson, 1981).

On the basis of this recent work there is reason to believe that children who are generally more successful in school would tend to be less susceptible to learned helplessness cognitions than their age peers with relatively poorer school adjustment when the task used to induce learned helplessness relates closely to the behavioral domain of the school environment. Also at issue is how robust the effects of learned helplessness are in children across behavioral domains, involving an activity that is not directly associated with academic skills but instead entails social problem-solving or is similar to the kind of games male children (average age 11 years) engage in outside of the school situation. The two objectives of this study are to investigate whether task differences affect subjects' initial expectancy for success, mood, attributions, change in expectancy following outcome, and estimated persistence; and to determine group differences on these cognitive and motivational measures as a function of academic status. The null hypotheses of no statistically significant differences between the groups, tasks, conditions (success/failure), and the interactions of these variables will be tested.
The hypotheses of the study stated in null form are:

$H_{0_1}$: There will be no statistically significant differences between the groups on each of the dependent variables of the study.

$H_{0_2}$: There will be no statistically significant differences between conditions on each of the dependent variables of the study.

$H_{0_3}$: There will be no statistically significant differences between the tasks on each of the dependent variables of the study.

$H_{0_4}$: There will be no statistically significant differences between the groups within conditions on the dependent variables of the study.

$H_{0_5}$: There will be no statistically significant differences between the groups within tasks on the dependent variables of the study.

$H_{0_6}$: There will be no statistically significant differences between conditions within the tasks on the dependent variables of the study.

$H_{0_7}$: There will be no statistically significant differences between the tasks within conditions on the dependent variables of the study.
$H_{08}$: There will be no statistically significant differences between the groups within the tasks and conditions on the dependent variables of the study.

$H_{09}$: Within group and condition there will be no statistically significant differences between tasks on the consistency of subjects' primary (1st) attributions to account for outcome.
Chapter II

METHODOLOGY

Subject Selection

Subjects were male schoolchildren from six public schools within a large suburban school district serving two predominately white, middle class communities. Relatively older schoolchildren were used since relevant developmental findings suggest that children below nine years of age experience success and failure differently; outcome tends to have a much greater impact on older as opposed to younger children (Parsons & Ruble, 1977; Ruble, Parsons, & Ross, 1975). A totally male sample was chosen because sex differences in learned helplessness were not a focus of the present study and past research had verified differential effects (Dweck & Bush, 1976; Dweck et al., 1978; Dweck & Gilliard, 1976).

An initial sample was identified after permission had been obtained from the Central Office of the cooperating school district and the building principals. The researcher spoke with male students from 16 regular classes who had been ranked by teachers in the upper and lower third of students in classroom reading performance. All male students from nine learning disabled classes were also given the opportunity for participating. The children were told their participation was strictly voluntary, what they could expect if they
took part, and the general nature of the study. The need for obtaining written permission from their parents was explained as well as their right to discontinue participation at any time. The general introductory comments were:

This study is interested in learning how kids your age do on different kinds of activities and what you think about doing them. Over the next couple of weeks a researcher would come three times to see one of you individually for about 20 minutes. This will happen on three separate days with a week in between each of the days. You and the researcher would go to a quiet room in your school for privacy. Then he would give you a certain kind of problem to solve or a game to play and ask you questions about what you did. This will help him better understand how kids your age do on different kinds of activities. Some of the things you will be doing are like schoolwork. Some of the things do not have anything to do with school and are more like a game. You might find the things hard or easy, but remember this does not go on your report card. It is only for us to see what kids your age think about doing different activities. Your personal answers will not be shared with anyone else. Only how you did as a group will be told. Are there any questions, I'd be happy to answer them?
If you would like to take part we will need your parent's sealed written permission returned to your school. When the permission forms are returned we will choose participants from among those of you who would like to be included. Not everyone with permission will be finally selected. We have to be fair when we choose participants. This is like choosing kids to include in a game, but because you don't want to show any favorites you decide to close your eyes and pick. If you are selected you or your parents can decide not to continue at any time. Are there any questions? (After all questions are answered the sealed letters of explanation to parents and the consent forms were distributed.)

Because this investigation involved noncontingent success and failure full disclosure to parents was essential. Appendix A and B present the letter and consent form which detailed the procedure of the study. Material was also provided in the packet so that permission forms could be returned in individually sealed and addressed envelopes. The initial sample consisted of 100 students who returned signed permission forms. Originally 150 packets were distributed resulting in a return rate of 66 percent.

Once parental permission was obtained each child's cumulative record was consulted to gather standardized group achievement and intelligence test data. Efforts to limit the variability of
intelligence test scores of the sample resulted in selecting subjects whose IQ fell within a 78 to 124 score range. Learning disabled students in the final sample were also required to have reading as an identified disability area and to have received special class services for at least one year. These restrictions, in addition to those described below for the groups, reduced the potential pool of 100 subjects to 82. Subjects within each classification were then randomly assigned such that three experimental groups were formed consisting of 24 students each: Academically-Successful, Academically-Marginal, and Learning Disabled.

Academically-Successful Group. This group is composed of children whose cumulative records indicated they have averaged "B" grades or higher in reading for the last two years of school attendance. Teachers also rank ordered students in their classrooms from highest to lowest in terms of overall reading achievement. Academically-Successful students had to fall in the upper third according to teacher rank orderings. In addition, a group of children who attain considerable academic success, but still maintain a low concept of themselves and set lower expectancies for success, has been recently described (Phillips, Note 1). To compensate for this potential influence, teachers rated both Academically-Successful and Academically-Marginal children on their response to failure using a 4-item scale: poor, somewhat adequate, adequate, and superior. Academically-Successful students selected had to meet the criteria described above and not receive a "poor" rating in their response to failure from the classroom teacher.
**Academically-Marginal Group.** The Academically-Marginal Group consists of children whose cumulative records verified a "C" average or below in reading for their last two years of public school attendance. They met the criterion of being in the lower third of teacher classroom rank orderings and were not considered candidates for special classroom placement or psychological evaluation. Considering Phillips (Note 1) findings, it is logical to assume that there might be a very small number of Academically-Marginal students who show modest achievement yet have an inflated self-concept and harbor high expectations for success nevertheless. In order to exclude these children, the Academically-Marginal students selected did not receive a "superior" rating in their response to failure from the classroom teacher.

**Learning Disabled Group.** This group includes students who have been classified as learning disabled and have received services for at least one year. These students were selected from those in special class placement who are mainstreamed in at least one area during the school day. This was necessary to ensure the children have the opportunity for social comparison with regular class students. Learning disabled children, by State definition, have intelligence with the average range of functioning although their achievement in one or more areas is severely discrepant (two standard deviations or more below their measured intelligence level). In addition, learning disabled students were required to have reading designated as an area of disability.
Sample Composition

The final sample included 72 male students who ranged in age from 9 years 0 months to 13 years 9 months. Average age for the total sample was 11.4 years. Standardized group achievement and intelligence test scores were also collected for the groups to more completely describe the sample. Regular class children that made-up the Academically-Successful and Academically-Marginal groups had been administered the Short Form Test of Academic Aptitude (SFTAA) and the reading section of the Comprehensive Test of Basic Skills (CTBS). Learning Disabled students had been tested with the Wechsler Intelligence Test for Children--Revised (WISC-R) and the California Achievement Test (CAT). The resulting scores for these instruments were converted to a common metric of a $M = 100$ and $SD = 16$.

Table 1 presents the means and standard deviations for each group of subjects' age, IQ, and reading score. A comparison of the mean ages for the groups (Table 2) failed to produce a significant difference, $F(2,69) = 1.58$, $p > .20$. However, the groups did differ significantly in their IQ scores, $F(2,69) = 28.58$, $p < .001$ (Table 3). A post hoc mean comparison using Tukey's test found that Academically-Successful children had significantly higher IQ's than the comparable Academically-Marginal and Learning Disabled groups ($p < .05$). Since the groups could not be equated on IQ this variable was entered as a covariate in the later analyses. In terms of reading achievement the groups showed significant differences as expected, $F(2,69) = 117.21$, $p < .001$ (Table 4). The contrast of means with Tukey's test
Table 1
Means and Standard Deviations of Academically-Marginal, Academically-Successful, and Learning Disabled Children on Age, IQ, and Reading Achievement

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>ACADEMICALLY-MARGINAL</th>
<th>ACADEMICALLY-SUCCESSFUL</th>
<th>LEARNING DISABLED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>AGE</td>
<td>11.46</td>
<td>.74</td>
<td>11.15</td>
</tr>
<tr>
<td>IQ*</td>
<td>93.83</td>
<td>8.20</td>
<td>111.42</td>
</tr>
<tr>
<td>READING*</td>
<td>93.50</td>
<td>8.80</td>
<td>117.33</td>
</tr>
</tbody>
</table>

*NOTE. Academically-Marginal and Academically-Successful children were tested with the Short Form Test of Academic Aptitude (IQ) and the Comprehensive Test of Basic Skills (Reading Score). Learning Disabled children were tested with the Wechsler Intelligence Scale for Children--Revised (IQ) and the California Achievement Test (Reading Score). All scores converted to a common metric of M = 100, SD = 16.

Table 2
Analysis of Variance for Age of Academically-Marginal, Academically-Successful, and Learning Disabled Children

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN</td>
<td>2</td>
<td>2.46</td>
<td>1.23</td>
<td>1.58</td>
<td>NS</td>
</tr>
<tr>
<td>WITHIN</td>
<td>69</td>
<td>53.85</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>71</td>
<td>56.31</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Table 3
Analysis of Variance for IQ of Academically-Marginal, Academically-Successful, and Learning Disabled Children

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>BETWEEN</td>
<td>2</td>
<td>4239.08</td>
<td>2119.54</td>
<td>28.58</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>WITHIN</td>
<td>69</td>
<td>5117.79</td>
<td>74.17</td>
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<td>TOTAL</td>
<td>71</td>
<td>9356.86</td>
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Table 4
Analysis of Variance for Reading Score of Academically-Marginal, Academically-Successful, and Learning Disabled Children

<table>
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<td>WITHIN</td>
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<td>71</td>
<td>35848.82</td>
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produced significant differences between each of the groups ($p < .05$). The Academically-Successful group earned an average reading standard score of 117 which exceeded the Academically-Marginal group by approximately 24 points. The Learning Disabled group, on the other hand, scored 24 points lower than the Academically-Marginal group and 48 points beneath the Academically-Successful group by comparison. This sizable difference between the groups in reading achievement supports the validity of the group designations. Moreover, the discrepancy between IQ and reading achievement for Learning Disabled group approached the magnitude of two standard deviations suggested as a guideline for eligibility in many states.

**Experimental Tasks**

Three tasks were administered individually to children within each group in which success and failure was manipulated. The first task was described to the children as a "school achievement test" and partially consisted of the five anagrams used in the Butkowsky and Willows (1980) study which previous pilot testing has determined were solvable for 5th graders at all levels of reading ability. A procedural difference in the present study was that the first letter of the correct solution was underlined to ensure the extremely deficient learning disabled readers could solve the anagrams. Children within each group in the success condition received five solvable anagrams: OSPON, HROES, CHRIA, MUOES, and IRNIA. In the failure condition children received anagrams that had a single letter altered
making them insolvable: SOPNI, HRINS, ECHRUA, MUOAS, ATRNE. These insolvable anagrams were identical to those used by Butkowsky and Willows (1980) except "HRINS" was substituted for "HRONS" which is, in fact, solvable (e.g., HORN). Also, the first letter of an alleged solution was not underlined so that a capable student would not be able to exhaust all potential solutions and conclude an answer was not possible. Since subjects within each group were assigned either to the success or failure condition this change in administration presented no difficulties. In the success condition subjects were encouraged to work until they solved the anagram. All subjects were able to do so. In the failure condition the experimenter asked if the subject wished to go on to the next anagram after 45 seconds and at 30 second intervals thereafter if he chose to keep working. No subjects requested to keep on working beyond the third 30-second interval before giving-up on a solution. In this way children were regularly provided the opportunity to avoid excess frustration once they realized failure and felt no pressure to work for a longer time than was individually necessary.

The second task was described to the children as a modified "battleship game" that they and the experimenter would play for fun. This task involved a 4 X 4 matrix, lettered across the top and numbered down the side, where coordinates can specify a discrete square. Pilot testing had determined that children readily understand this task and view it as an enjoyable activity. Both the experimenter and child had identical but separate copies of the grid over five
game trials. The child's goal was to "hit" a hidden "battleship" somewhere on the experimenter's grid by calling out coordinates. On each of the five game trials the child had 8 attempts to score a "hit." Each attempt was recorded by the child on his copy of the grid concurrently with the experimenter logging it on his own grid held out of view. In the success condition the experimenter covertly drew a circle around the child's fourth, fifth, or sixth "shot" and announced a hit as the grid was shown. On the other hand, in the failure condition the experimenter allowed eight attempts on the grid and then covertly drew a circle in an empty square, subsequently confirming the child's failure. The next games were played in the success and failure conditions such that the child received repeated successful or unsuccessful feedback over each of the five games. Covert marking of "battleships" within the conditions by the experimenter was shown to be effectively executed without suspicion during pilot testing due to the child being simultaneously busy monitoring the pattern of his attempts.

The third task was described to the children as a social problem-solving activity. This task consisted of five orally-presented stories where the child was told the beginning of the story and supplied with the story's ending. The stories used follow the form of means-ends problem-solving tasks devised by Spivak and Shure (Spivak & Shure, 1974; Spivak, Platt, & Shure, 1976). Each story presented the child with a social problem (beginning) and concluded with the narration of a favorable social result (ending). The
child's task was to "fill in the middle" by telling the "best" thing that could be done to bring about the favorable conclusion. The stories used were as follows:

1) You have just moved into a new neighborhood with your family. You don't know anyone and feel very lonely.

The story ends with you feeling very good and having many friends in the neighborhood. What could you do in between moving in and feeling lonely and then later ending up with many good friends? What is the best thing to do to make this happen?

2) You want to play an outdoor game with a lot of other boys your age. They begin arguing about the rules and this goes on and on.

The story ends with you and the other boys happily playing together. What could you do in between all the boys arguing among themselves and then later ending up happily playing a game together? What is the best thing to do to make this happen?

3) Your best friend is mad at you for something. Each time you try to talk about it he refuses to talk to you and walks away.
The story ends with you and your best friend made-up and doing things together again. What could you do in between your best friend refusing to talk to you and then later ending up with you and he friends again doing things together? What is the best thing to do to make this happen?

4) You are at a birthday party and everyone is ignoring you. You feel sad and left out.

The story ends with you happily celebrating along with everyone else at the party. What could you do in between being ignored at the party and then later ending up having fun together with everyone? What is the best thing to do to make this happen?

5) You know about a very shy boy who lives in your neighborhood. He always keeps to himself and never joins you and your friends.

The story ends with the boy joining in and having a good time with you and your friends. What could you do in between the boy always keeping to himself and then later ending up with him joining in and having a good time with you and your friends? What is the best thing to do to make this happen?
In the success condition the experimenter responded, "Yes, that is the best thing you could do for that situation," to each of the five replies by the child on the social problem-solving stories. In the failure condition the experimenter responded, "Yes, but that is not the best thing you could do for that situation," to each of the child's five replies. Feedback within the conditions was non-contingent, that is, regardless of the actual quality of their answers the experimenter indicated success or failure over each of the five stories. This manipulation was possible since the experimenter requested the "best" solution among possible alternative answers. In effect, this condition reflects naturalistic social success and failure situations where outcome can be determined by the subjective attitude of judgemental others rather than adequacy being defined according to an objective standard.

Procedure

Academically-Marginal, Academically-Successful, and Learning Disabled groups of children were administered three contrasting tasks where success and failure was manipulated. Three testing days, separated by an interval of one week, were required to individually administer each task. The order and outcome of the tasks was counterbalanced. Order was controlled by having one-third the subjects within each group randomly assigned to be administered the school achievement test (anagrams) the first day, the battleship game the second day, and the social problem-solving activity the third day, whereas the other two-thirds of subjects in each group received the
tasks in alternating order. Outcome was controlled by randomly assigning half the children in each group (N = 12) to repeated failure conditions or repeated success conditions over all three days of testing on the three tasks.

Similar to the design used in the Butkowski and Willows (1980) study, this counterbalancing produced a 3 X 2 (Order X Outcome) interaction resulting in six experimental groups. Subjects were randomly assigned to triads composed of one Academically-Marginal, one Academically-Successful and one Learning Disabled student with roughly equivalent IQ scores. Each triad of subjects (N = 24) was then randomly assigned to one of the six groups. Tables 5, 6, and 7 presents the ANOVA's of group mean differences on age, IQ, and reading score. In no instances were the F ratios significant, \( F(5,66) = 1.63, p > .15; F(5,66) = .20, p > .96; \) and \( F(5,66) = .13, p > .98, \) respectively.

Table 5

Analysis of Variance for Counterbalanced Groups on IQ

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Table 6
Analysis of Variance for
Counterbalanced Groups on Reading Score

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Table 7
Analysis of Variance for
Counterbalanced Groups on Age

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Three experimenters alternated between testing days such that each child in the success or failure condition had a different experimenter the second day and third day of testing to control for expectancy effects. Male experimenters of approximately the same age were used to reduce possible influences which could result if experimenter sex or age varied. Introductory directions for the school achievement test (anagrams) were:

In a moment you are going to take a school achievement test. This school achievement test is made-up of five academic problems you will try to solve. Before we start I would like to know how many of the five academic problems you think you will be able to solve. Do you think you will be able to solve none of the academic problems? One academic problem? Two academic problems? Three academic problems? Four academic problems? or all five of the academic problems?

Introductory directions for the battleship game were:

In a moment you and I are going to play a game for fun. This game is called "the battleship game" and you will try to sink my battleship each time on five separate games. Before we start I would like to know how many of the games do you think you will be able to sink my battleship. Do you think you will be able to sink it none of the games? One game? Two games? Three games? Four games? or in all five of the games?
Introductory directions for the social problem-solving activity were:

In a moment you are going to do a social problem-solving activity. This social problem-solving activity is made up of five stories that I will read to you. Each story describes a social situation. I will read the beginning of the story and the end of the story. Your job is to fill in the middle of the story by telling the best thing that could be done to make the happy ending happen. Before we start I would like to know how many of the stories you think you will be able to give the best thing that could be done to make the happy ending possible. Do you think you will be able to give the best answer for the middle of the story in none of the stories? One story? Two stories? Three stories? Four stories? or all five of the stories?

After the introductory directions were given for the task the experimenter administered a practice trial to illustrate exactly what was involved in each task. The child was shown how to unscramble the letters to make a real word on the practice anagram, how to use the grid on the practice battleship game, and how to respond when the beginning and ending of a problem-solving story was orally presented. A subsequent practice trial, which the child completed independently, guaranteed that the tasks were understood before actual testing
commenced. All the subjects had no difficulty understanding the requirements of the three tasks and were able to satisfactorily complete both practice trials. The practice trials also served to convince each child that the experimental tasks were capable of being successfully completed. On the second and third day of testing the experimenter's introductory directions for each task was proceeded with a comment that the child would now be doing something completely different from what they had done last week with the "other man," further encouraging the tasks to be viewed distinctly.

Differences between Academically-Marginal, Academically-Successful, and Learning Disabled subjects exposed to success or failure on three opposing types of tasks (achievement vs. game vs. social problem-solving) were evaluated on five dependent measures: initial expectancy for success, change in expectancy following success or failure, causal attributions made to account for success or failure, affective response to outcome, and estimated persistence given future repeated failure outcomes. Initial expectancy was collected by the experimenter when the child specified how many academic problems, games, or stories he estimated he would be able to successfully complete in response to a direct question before the task was administered. At the completion of the experimental tasks the child was asked to specify in the same way how many academic problems, games, or stories he estimated he could be successful with if given another five academic problems, games, or stories. Causal attributions for success or failure were queried by the experimenter following completion of the
five test trials in each condition. The method for presenting attributions followed the procedure used in the Butkowsky and Willows (1980) study. The child was requested to attribute success or failure to the four potential causes of ability, effort, task difficulty, or luck by pointing to a card randomly placed from right to left in front of him as the following questions were asked:

Why do you think you did (did not do) so well on these academic problems/games/stories. Was it because you are (are not) good at things like this? Was it because you tried hard (did not try hard enough)? Was it because these academic problems/games/stories were easy (very hard)? Or was it because you were lucky (unlucky) on these academic problems/games/stories? I will repeat the choices and you select the card that explains why you did (did not do) so well.

In the present study additional procedures were employed to ensure all subjects understood which card characterized each attribution and did not feel social pressure to respond in a certain way. For example, as the experimenter verbalized the alternatives he pointed to the corresponding card in turn. The cards themselves were also color-coded such that each type of attribution had its own color. The attributions were briefly detailed on the colored cards to facilitate identification (e.g., I am good at things like
this/I am not good at things like this; I tried hard/I did not try hard enough; it was easy/it was hard; I was lucky/I was unlucky).
Before the alternatives were repeated, the experimenter showed the child a closed box with a slit on top to put his choice into. The experimenter then added, "I need to make some notes; you let me know when you have made a choice and put it in the box." The alternatives were then repeated (and pointed to) and the experimenter immediately began busying himself so that the child was not subject to his scrutiny. This was to avoid the possibility of a choice being influenced by social approval. The experimenter upon looking up when the child indicated a choice had been made mentally noted the color absent for later recording. Butkowski and Willows' (1980) procedure of providing the opportunity for a second attributional choice (but not requiring it) was modified in the present study. Children were told to make another choice which explained why they did (or did not) do so well. All children were readily able to make a second choice and deposit it in the box.

Affective response to outcome was assessed by having the children rate their mood on a similar seven-point scale to the one used in the Rholes et al. (1980) study. It depicted drawings of faces that ranged from a pronounced smile to a pronounced frown expression. This measure was taken directly after completion of the last anagram, game, or story in each experimental session, prior to any of the other indicies which followed success or failure. Finally, children in the success and failure conditions on the three tasks were asked
to estimate how many anagrams, games, or stories they would be willing to complete in the face of consistent failure before giving up. The question was asked as follows:

Imagine you began solving academic problems (or playing games/answering stories) again. Each time you completed an academic problem (or game/story) you found out that you failed. How many academic problems (or games/stories) would you be willing to do in trying to successfully complete your first one. How long would you keep on going to get your first one right? Do you understand? Would you be willing to do no more? five more? ten? fifteen? twenty? or twenty-five more academic problems/games/stories to get your first one right?

To aid the children in carefully considering each numerical choice, cards containing the corresponding number of dots were displayed left to right. This same manner of presentation was also used when initial and final expectancy estimates were requested.

Every subject assigned to the failure conditions was given three solvable anagrams, three battleship games, or three stories where success was guaranteed at the end of the individual sessions on each testing day. One reason for this procedure was to prevent subjects from generalizing an expectancy of failure from the first day of testing to the second or third day of testing one week later.
Most importantly in this study, as in most learned helplessness studies, ethical considerations require providing concluding successful experiences to minimize any potential lasting effects of failure. Before children in the failure conditions left the individual sessions they experienced success on three consecutive anagrams, games, or stories and were warmly congratulated by the experimenter. As former studies employing a learned helplessness paradigm have reported (Rholes et al., 1980; Ruble, Parsons, & Ross, 1976), such procedures are used to counteract the effects of prior poor performance.

The last thing communicated to the subjects at the conclusion of the sessions was the importance of not discussing their experiences with other children. All children agreed with this request. They were told that there would be a meeting to talk about the study and answer questions when everything was finished. Ten days after the third week of testing was completed the children were formally debriefed, questions answered, and gratitude expressed for their cooperation (Appendix C). Children's reaction to the debriefing was very positive. They expressed initial surprise in learning the tasks had been "rigged" and were inquisitive as to how this was done. The subjects also volunteered that they were glad they participated and would do so again, suggesting the concluding successful trials in the failure condition had been effective. Most importantly, the debriefing comments of the children substantiated they had remained naive throughout the duration of the study.
Data Analysis

Scores on four of five dependent measures in the study yielded individual integer values which were collected during the experiment within the following ranges: initial expectancy for success (0 to 5), affective response to outcome (1 to 7), change in expectancy following success or failure (initial expectancy score 0-5 subtracted from final expectancy score 0-5), and estimated persistence given future repeated failure outcomes (0 to 25 trials).

Subjects' attributions to the causes of their successes and failures (ability, effort, task difficulty, and luck) were scored along two dimensions: internality (internal-external) and stability (stable-unstable). If a child fails (or succeeds) on a task he can attribute the outcome to a lack (or presence) of ability, or a lack (or presence) of effort. These two factors (ability/effort) are characterized as "internal" since they originate within the individual. They can be contrasted with the more "external" factors of task difficulty and luck. If failure (or success) on a task is attributed to the task being hard (or easy), or the outcome is accounted for in terms of being unlucky (or lucky), then causation is perceived as being primarily under the control of outside forces acting on the individual. Within the stability dimension, on the other hand, task difficulty and ability are "stable" factors since success or failure on a task will not be perceived as likely to change if the task is subsequently attempted. However, if success or failure is attributed to the "unstable" factors of effort or luck outcome
is susceptible to shift depending on the level of effort put forth or an individual's luck changing when the task is attempted at a later time.

Attributions were quantified for analysis by the method used in Butkowski and Willows' (1980) study of children who varied in reading ability. All subjects in the present study selected a primary (1st choice) and secondary (2nd choice) attribution to account for their successes or failures. Two 4-point scales were used to score attributions in the direction of increasing internality or increasing stability. For example, a "0" on the internality scale indicates that both attributions were to external factors (task difficulty/luck), whereas a "3" indicates that both attributions were to internal factors (ability/effort). A primary attribution to an internal factor coupled with a secondary attribution to an external factor would result in a score of "2." If a child made a primary attribution to an external factor followed by a secondary attribution to an internal factor, he would receive a score of "1" on the scale. The stability dimension was scored in an identical fashion depending on the combination of a child's first and second attributional choice. These relationships are depicted in Figure 1.

To aid interpretation of the internality and stability scales, the total frequency of attributional choice for the groups within each task and condition was computed. A weighting procedure was used where first choice (primary) attributions were assigned a weight of "2" and second choice (secondary) attributions were assigned a weight
of "1." Within the tasks (anagram/game/story) of the study each group (Academically-Marginal, Academically-Successful, and Learning Disabled) made a total number of attributions in the success condition and a total number of attributions in the failure condition. To compute differences between the groups weighted frequencies and a resulting weighted proportion were tabulated. For example, the total number of attributions for success that Academically-Successful students might hypothetically make on the anagram task is 24. Of these, 12 attributions are first choices and 12 are second choices, yielding a weighted frequency of 36 \((24 + 12 = 36)\). However, of the 24 total attributions in the success condition, only 16 are made to the
attributional category of "ability." Of these, 10 are first choices and six are second choices, yielding a weighted frequency of 26 \((20 + 6 = 26)\). Therefore, the weighted proportion (the number which will be used to contrast the groups) of attributions to success for ability by Academically-Successful children is 26/36 or .722, a strikingly high hypothetical proportion indicating this group thought ability figured prominently in their successes. These final computations were entered into an attributional summary table which lists the weighted proportions of subjects' total attributions as a function of group membership and outcome.

As previously reported, the counterbalancing groups did not significantly differ in age, IQ, or reading score. An additional analysis of counterbalancing effects was conducted for each dependent variable. The purpose of this analysis was to determine if there were order effects associated with receiving the tasks in the pre-arranged sequence. This analysis of counterbalancing effects yielded no significant differences with one exception. On initial expectancy a significant task X group X condition interaction was found for the counterbalanced groups \(F = 4.71; \text{df} = 4.132; p < .01\). Tukey's test for comparison among means revealed that initial expectancy for anagrams in the group that was exposed to the failure condition on the first testing day \((M = 4.25)\) was significantly higher than for the groups that were exposed to failure on the second \((M = 3.25)\) or third \((M = 3.17)\) test days conducted either one or two weeks later \((q = 3.14, \text{df} = 36, p < .05 \text{ and } q = 3.39, \text{df} = 36, p < .05; \text{respectively})\). However, since the counterbalanced group in the
failure condition which received anagrams first was composed of four Academically-Marginal, four Academically-Successful, and four Learning Disabled subjects this difference was equally distributed among the groups in the subsequent analysis of initial expectancy.

Due to the significantly higher IQ scores of the Academically-Successful group, IQ was entered as a covariate in the analyses of the dependent variables. A $3 \times 3 \times 2$ repeated measures analysis of covariance (ANCOVA) was performed separately upon subjects' initial expectancy, affective response (mood), expectancy change, persistence, and attribution (internality/stability) scores. The levels of the variables were academic status (Academically-Marginal, Academically-Successful, and Learning Disabled), task (anagrams, games, stories), and outcome (success, failure). When the resulting interactions were significant additional information was generated by systematically analyzing simple main effects (Kirk, 1968). To control experiment-wise error rate the significance level for each of the simple main effects ratios was set at .05. This was accomplished by dividing the overall alpha for a main effects test evenly among the collection of comparisons (Kirk, 1968). Tukey's test for comparisons among means was computed if a main effect or simple main effects analysis yielded significant differences on a multilevel variable.

Finally, subjects' primary (1st) attributions to the causes of their successes and failures (ability, effort, task difficulty, and luck) were analyzed using the Cochran "Q" Test. The Cochran "Q" Test is a nonparametric analogue to a repeated measures analysis of
variance that tests the consistency of subjects' responses over three or more experimental tasks (Marascuillo & McSweeney, 1977). Within each of the designated groups, Academically-Marginal (AM), Academically-Successful (AS), and Learning Disabled (LD), children were randomly assigned to success and failure conditions. This produced six experimental (N = 12) groupings: AM success, AM failure; AS success, AS failure; and LD success, LD failure. A Cochran's "Q" Test was performed for each attributional choice within the six groups to determine if significant discrepancies occurred between subjects' choices on anagrams, games, or stories (24 total tests; 8 per the AM, AS, and LD group). Cochran's "Q" directly tests the null hypothesis of first choice (primary) attributional consistency between the tasks within group and condition. Experimentwise error was maintained at p = .05 by setting alpha at .01 for each of the overall "Q" tests. If the overall "Q" value was significant post hoc chi-square analyses were used to define the pertinent task differences in attribution. Since three chi-squares were required to determine which of the three pairwise comparisons among the tasks were significant, experimentwise error was also maintained at p = .05 by setting alpha at .02 for each comparison.
Chapter III

RESULTS

To test the null hypotheses that there would be no statistically significant differences between the groups, tasks, conditions and the interaction of these variables, a 3 (group) X 3 (task) X 2 (condition) ANCOVA was performed on the initial expectancy, affective response (mood), expectancy change, persistence, and attribution (internality/stability) scores. Significant interactions were subjected to a simple main effects analysis. If the simple main effects analysis indicated significant differences on a multilevel variable, Tukey's test for comparison of means was employed. Primary (1st) attributions were analyzed by Cochran's "Q" Test to determine the consistency of subjects' attributional choices within group and condition on the three tasks (anagrams, games, stories). Chi-squares were used to contrast task differences within a group when the resulting "Q"-value was significant.

The presentation of results is organized into separate sections which detail the analysis of each variable considered in the study. A brief statement describing the dependent measure is followed by the results. The abbreviations AM (Academically-Marginal), AS (Academically-Successful), and LD (Learning Disabled) are used throughout the following chapters.
Initial Expectancy

Initial expectancy for success refers to the child's estimate of how many items (0 to 5) he expected to successfully completed on each task. This measure was taken before the child experienced either success or failure on the anagram, game, or story test trials.

The ANOVA for initial expectancy produced a significant main effect for group ($F = 6.27; \text{df} = 2,65; p < .01$), however, no other significant main or interaction effects resulted. Table 8 presents the ANCOVA for initial expectancy and the adjusted cell means used in the analysis. A post hoc comparison of means on Tukey's test found that the LD group ($M = 4.05$) had significantly higher initial expectancies for success across tasks and conditions in comparison to the AS ($M = 3.21$) and AM ($M = 3.29$) groups ($q = 4.77, \text{df} = 72, p < .05; q = 4.32, \text{df} = 72, p < .05$; respectively). The difference between the AS and AM group was not significant ($q = .46, \text{df} = 72, p > .05$). The hypothesis that there is no differences between the groups on initial expectancy can be rejected. Since no other main effects or interactions resulted, the hypotheses relevant to no significant task or condition specific differences on initial expectancy for the groups are supported.

Affective Response (Mood)

A measure of mood was taken immediately following success or failure on the three tasks. Line drawings of faces were displayed along a 1 to 7 scale. A pronounced frown expression was associated
Table 8
Analysis of Covariance for the Groups on Initial Expectancy

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<td>1.03</td>
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<tr>
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<td>.89</td>
<td>1.43</td>
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<tr>
<td>T X G X C</td>
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ADJUSTED CELL MEANS

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<th>LD FAIL</th>
<th>AS SUC</th>
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<td>3.18</td>
</tr>
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<td>3.47</td>
<td>3.22</td>
<td>3.19</td>
<td>3.18</td>
</tr>
</tbody>
</table>
with "l." Expression changed by degree such that "7" corresponded to a pronounced smile.

Table 9 summarizes the ANCOVA for mood scores and lists the adjusted cell means. A significant main effect for condition was found ($F = 41.62; df = 1.65; p < .001$). The hypothesis that there are no significant differences in mood between the success or failure conditions is rejected. Children in the success condition across groups and tasks registered a significantly higher mean mood score ($M = 6.50$) than children in the failure condition ($M = 5.27$). In addition, a significant main effect for task resulted ($F = 11.38; df = 2.132; p < .001$). A post hoc comparison of task means on Tukey's test demonstrated that mood on the anagram task across group and condition ($M = 5.54$) was significantly lower than the story ($M = 5.87$) task ($q = 3.21, df = 72, p < .05$) or game ($M = 6.24$) task ($q = 6.28, df = 72, p < .05$). The difference between overall mood on games in comparison to mood on the stories was also significant ($q = 3.60, df = 72, p < .05$). Therefore, the hypothesis that there are no significant differences in mood between the tasks can be rejected. Mood across groups and conditions was significantly lower on the anagrams compared to the stories, and both of these tasks produced overall mood scores significantly lower than that observed for the games.

Because the task X condition interaction was significant ($F = 6.62; df = 2.132; p < .01$) a simple main effects analysis was performed.
Table 9
Analysis of Covariance for the Groups on Mood

<table>
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<tr>
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<tr>
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<td>NS</td>
</tr>
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<tr>
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<td>11.38</td>
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</tr>
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<td>5.06</td>
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<td>&lt;.01</td>
</tr>
<tr>
<td>T X G X C</td>
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<td>5.94</td>
<td>1.49</td>
<td>1.95</td>
<td>NS</td>
</tr>
<tr>
<td>ERROR</td>
<td>132</td>
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<td>0.76</td>
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ADJUSTED CELL MEANS

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<th>AS SUC</th>
<th>AS FAIL</th>
<th>AM SUC</th>
<th>AM FAIL</th>
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</thead>
<tbody>
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<td></td>
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</tr>
<tr>
<td>Anagrams</td>
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</tr>
<tr>
<td>Games</td>
<td>6.61</td>
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<td>6.75</td>
<td>5.84</td>
<td>6.46</td>
<td>5.32</td>
</tr>
<tr>
<td>Stories</td>
<td>6.52</td>
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<td>6.66</td>
<td>5.01</td>
<td>6.21</td>
<td>4.82</td>
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</table>
Table 10 details these results. Mood in the success condition (M = 6.44) was significantly higher than mood in the failure condition (M = 4.65) on anagrams (p < .001). This same pattern of results was found for mood in the success condition (M = 6.61) compared to the failure condition (M = 5.87) on games, as well as stories in the success (M = 6.46) and failure (M = 5.28) conditions (significant at the .01 and .001 level, respectively). The hypothesis that there are no significant differences within the tasks on mood between the success and failure conditions is rejected.

Within the success condition, the type of task showed no significant differences for mood (F < 1), however, a significant difference was observed between the tasks for mood within the failure condition (F = 17.63; df = 3,132; p < .001). A post hoc analysis on Tukey's test found that under the failure condition mood on anagrams (M = 4.65) was significantly lower than mood on stories (M = 5.28) and the game (M = 5.87) task (q = 3.49, df = 108, p < .05 and q = 6.77, df = 108, p < .05; respectively). The difference observed for mood under failure conditions between the game and story task was also significant with games showing a higher mean mood score (q = 3.27, df = 108, p < .05). The hypothesis that there are no significant differences between the tasks on mood in the failure condition can also be rejected. Given failure, mood was significantly lower on anagrams in comparison to the stories, and the highest mood rating was observed for the games. While no group differences were found, the
Table 10
Task X Condition Simple Main Effects
Analysis for Mood

<table>
<thead>
<tr>
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<td>8.43</td>
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</tr>
<tr>
<td>CONDITION AT STORIES</td>
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<td>&lt;.001</td>
</tr>
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<td>1.17</td>
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<td>.34</td>
<td>.45</td>
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<td>26.80</td>
<td>13.40</td>
<td>17.63</td>
<td>&lt;.001</td>
</tr>
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<td>100.78</td>
<td>0.76</td>
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<td></td>
</tr>
</tbody>
</table>

Note: Experimentwise error was set at .05 for both condition and task comparisons.
results verify that failure affects mood more on academic (anagram) and a social problem-solving task (stories) than a non-academic game activity for the total sample.

**Expectancy Change**

Expectancy change refers to the difference between subjects' initial expectancy for success (0-5) on a task and their subsequent or post-expectancy (0-5) following success or failure if five more items were administered. It was computed by subtracting initial expectancy from post-expectancy. A positive value indicates increases in estimates of future success following outcome; a negative value indicates a decrease from subjects' original (pre-test condition) expectancies for success, prior to success or failure experiences.

The ANCOVA for expectancy change produced a significant main effect for group ($F = 3.91; df = 2,65; p < .05$) and condition ($F = 191.00; df = 2,65; p < .001$). Table 11 presents these results and the adjusted cell means. A post hoc comparison of means on Tukey's test found that the LD group ($M = -.48$) showed a significantly greater expectancy change decrement than the AM group ($M = .06$) across tasks and conditions ($q = 3.78, df = 72, p < .05$). There were no significant differences between the AM and LD groups compared to the AS ($M = -.11$) group ($q = 1.19, df = 72, p > .05$ and $q = 2.59, df = 72, p > .05$; respectively). In addition to rejecting the hypothesis that the groups can be equated on expectancy change, results also indicated a significant difference for condition. Across all tasks and groups expectancy
Table 11

Analysis of Covariance

for the Groups on Expectancy Change

<table>
<thead>
<tr>
<th>SOURCE</th>
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<td>0.89</td>
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<td>0.08</td>
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<td>2.51</td>
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<td>&lt;.05</td>
</tr>
<tr>
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<td>1.65</td>
<td>2.22</td>
<td>NS</td>
</tr>
<tr>
<td>ERROR</td>
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<td>0.74</td>
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ADJUSTED CELL MEANS

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<th>AS FAIL</th>
<th>AM</th>
<th>AM FAIL</th>
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<td>SUC</td>
<td></td>
<td>SUC</td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Anagrams</td>
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<td>1.21</td>
<td>-1.38</td>
<td>1.03</td>
<td>-0.89</td>
</tr>
<tr>
<td>Games</td>
<td>0.43</td>
<td>-1.23</td>
<td>0.79</td>
<td>-0.71</td>
<td>1.53</td>
<td>-1.23</td>
</tr>
<tr>
<td>Stories</td>
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<td>-1.98</td>
<td>0.87</td>
<td>-1.46</td>
<td>1.45</td>
<td>-1.48</td>
</tr>
</tbody>
</table>
change after success ($M = .97$) was significantly higher than after
the failure ($M = -1.32$) outcome ($p < .001$).

A task $\times$ condition interaction was significant ($F = 3.37,$
$df = 2,132, p < .05$) and the simple main effects analysis is detailed
in Table 12. The hypothesis that there are no significant task
differences between the success and failure conditions is rejected.
Expectancy change following success on the anagrams ($M = .92$), games
($M = .92$), and stories ($M = 1.06$) was significantly higher than after
failure ($M = -1.25, -1.06, -1.64$; respectively), $p < .001$ for each
of the comparisons. Similar to the obtained results for mood, within
the success condition the type of task showed no significant differ-
cences for expectancy change ($F < 1$), however, a significant difference
was found within the failure condition ($F = 4.26; df = 2,132$;
$p < .025$). Failure on stories ($M = -1.64$) caused a significantly
greater decrement than failure in the game ($M = -1.06$) on Tukey's
test ($q = 3.51, df = 108, p < .05$). The differences in expectancy
shift between failure on anagrams ($M = -1.25$) compared to failure
on the stories or games was not significant ($q = 2.36, df = 108,$
$p > .05$ and $q = 1.15, df = 108, p > .05$; respectively). The hypothesis
that there are no significant differences between the tasks in the
failure condition can be rejected, although no other interactions were
significant.

Persistence

Subjects' persistence scores are their estimated amount of trials
they would be willing to attempt in trying to meet success given
Table 12

Task X Condition Simple Main Effects

Analysis for Expectancy Change

<table>
<thead>
<tr>
<th>SOURCE</th>
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</tr>
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<tr>
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<td>70.57</td>
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</tr>
<tr>
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<td>&lt; .001</td>
</tr>
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<td>.98</td>
<td></td>
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</tr>
<tr>
<td>TASK AT SUCCESS</td>
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<td>.24</td>
<td>.32</td>
<td>NS</td>
</tr>
<tr>
<td>TASK AT FAILURE</td>
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<td>3.15</td>
<td>4.26</td>
<td>&lt; .025</td>
</tr>
<tr>
<td>ERROR</td>
<td>132</td>
<td>98.33</td>
<td>.74</td>
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</tbody>
</table>

Note. Experimentwise error was set at .05 for both condition and task comparisons.
repeated failure feedback (0, 5, 10, 15, 20, and 25). The measure was taken after success or failure outcomes were experienced. It was a cognitive rather than a behavioral measure since no child was administered additional test trials on the tasks.

The ANCOVA for persistence generated a significant main effect for condition \((F = 5.57; \, df = 2,65; \, p < .05)\). Table 13 presents the results of this analysis and the adjusted cell means. Children in the success condition across groups and tasks demonstrated a significantly higher mean persistence score \((M = 17.47)\) than children in the failure condition \((M = 13.92)\). The hypothesis that there are no significant differences between conditions on persistence can be rejected. However, the ANCOVA produced no other significant main or interaction effects, supporting the hypotheses that no task or group specific differences exist for this variable.

**Attribution**

Subjects made a primary and secondary choice to account for their success or failure among the attributions of ability, effort, task difficulty, and luck. Two scales were constructed ranging from 0 to 3 in the direction of increasing internality or stability, depending on the combination of a child's first and second attributional choice. In addition, subjects' primary (1st choice) attributions were analyzed using the Cochran "Q" Test which evaluates the consistency of attribution among the three tasks within group and condition.
Table 13

Analysis of Covariance for the Groups on Persistence

<table>
<thead>
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ADJUSTED CELL MEANS

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<th>AS FAIL</th>
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<td>17.84</td>
<td>12.46</td>
<td>15.27</td>
<td>11.65</td>
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</tr>
</tbody>
</table>
Internality. Internality refers to the extent subjects attributed the cause of their success or failure to factors which originate within the individual (ability/effort vs. task difficulty/luck). Mean scores approaching "3" indicate relatively "internal" attributions; mean scores approaching "0" indicate relatively more "external" attributional choices.

The ANCOVA for internality produced a significant main effect for condition ($F = 53.18; \text{df} = 1,65; \ p < .001$), however, no other significant main or interaction effects were observed. Table 14 presents the results and the adjusted cell means used in the analysis. The hypothesis that there are no significant differences in internality between the success and failure conditions is rejected. Children in the success condition across groups and tasks scored significantly higher in internality ($M = 2.10$) than children in the failure condition ($M = 1.07$). This indicates that the total sample assigned causality for their successes to relatively more internal factors (citing their own efforts or ability) than they did under failure conditions (citing the difficulty of the tasks or the influence of luck). Since no interactions were significant for this variable, group differences on internality within tasks, conditions, or tasks and conditions were trivial and the relevant null hypotheses were supported.

These findings can be more clearly seen in Table 15 which presents the weighted proportions of the children's total attributions as a function of group membership and outcome. The pattern of attributional
Table 14
Analysis of Covariance
for the Groups on Internality

<table>
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</thead>
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<td>0.26</td>
<td>NS</td>
</tr>
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<td>TASK</td>
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<td>1.37</td>
<td>0.69</td>
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ADJUSTED CELL MEANS

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<table>
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<td>0.96</td>
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<td>1.12</td>
<td>2.22</td>
<td>0.89</td>
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Table 15

Weighted Proportions of Subjects' Total Attributions
as a Function of Group Membership and Outcome

<table>
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<tr>
<th></th>
<th>LD</th>
<th>AS</th>
<th>AM</th>
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<td></td>
<td>A</td>
<td>G</td>
<td>S</td>
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<td>ABILITY</td>
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<tr>
<td>Success</td>
<td>.194</td>
<td>.250</td>
<td>.278</td>
</tr>
<tr>
<td>Failure</td>
<td>.278</td>
<td>.167</td>
<td>.417</td>
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<tr>
<td>EFFORT</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Success</td>
<td>.444</td>
<td>.389</td>
<td>.417</td>
</tr>
<tr>
<td>Failure</td>
<td>.083</td>
<td>.056</td>
<td>.111</td>
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<tr>
<td>TASK DIFF</td>
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<tr>
<td>Success</td>
<td>.222</td>
<td>.167</td>
<td>.167</td>
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<tr>
<td>Failure</td>
<td>.500</td>
<td>.278</td>
<td>.306</td>
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<tr>
<td>LUCK</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Success</td>
<td>.139</td>
<td>.194</td>
<td>.139</td>
</tr>
<tr>
<td>Failure</td>
<td>.139</td>
<td>.500</td>
<td>.167</td>
</tr>
</tbody>
</table>
choice for the LD, AS, and AM groups is strikingly similar on internal factors. For example, LD children attributed 64 percent of their success on anagrams to internal factors (ability/effort). The corresponding proportions for the AS and AM groups was 75 percent and 67 percent, respectively. The proportion of internal attribution for games and stories in the success condition likewise shows only minor variation (for games, LD 64%; AS 75%; AM 70%; for stories, LD 70%; AS 72%; AM 75%).

**Stability.** Stability refers to the extent subjects attributed the cause of their success or failure to factors that are not susceptible to change when the same task is subsequently attempted (ability/task difficulty vs. effort/luck). Mean scores approaching "3" indicate relatively "stable" attributions; mean scores approaching "0" indicate relatively more "unstable" attributional choices.

Table 16 summarizes the ANCOVA for stability scores and lists the adjusted cell means. A significant main effect for group ($F = 5.63; \text{df} = 2.65; p < .01$) and condition ($F = 9.71; \text{df} = 2.65; p < .01$) was found. A post hoc comparison of group means on Tukey's test indicated that the AS group ($M = 1.04$) showed relatively more instability than the LD ($M = 1.74$) or AM group ($M = 1.95$) across tasks and conditions ($q = 4.68, \text{df} = 72, p < .05$ and $q = 6.09, \text{df} = 72, p < .05$; respectively). There was no significant difference between the LD and AM groups ($q = 1.40, \text{df} = 72, p > .05$).

In addition to rejecting the hypothesis that the groups can be equated on stability, results also indicated a significant difference
Table 16

Analysis of Covariance for the Groups on Stability

<table>
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<tr>
<th>SOURCE</th>
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<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
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<td>15.62</td>
<td>9.71</td>
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<td>G X C</td>
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<td>4.69</td>
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<td>1.46</td>
<td>NS</td>
</tr>
<tr>
<td>ERROR</td>
<td>65</td>
<td>104.52</td>
<td>1.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TASK</td>
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<td>16.59</td>
<td>8.30</td>
<td>15.15</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>T X G</td>
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<td>1.02</td>
<td>0.25</td>
<td>0.47</td>
<td>NS</td>
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<tr>
<td>T X C</td>
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<td>9.59</td>
<td>4.80</td>
<td>8.76</td>
<td>&lt; .001</td>
</tr>
<tr>
<td>T X G X C</td>
<td>4</td>
<td>1.19</td>
<td>0.30</td>
<td>0.54</td>
<td>NS</td>
</tr>
<tr>
<td>ERROR</td>
<td>132</td>
<td>72.28</td>
<td>0.55</td>
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ADJUSTED CELL MEANS

<table>
<thead>
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<th>GROUP COND</th>
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<th>LD FAIL</th>
<th>AS SUC</th>
<th>AS FAIL</th>
<th>AM SUC</th>
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<tbody>
<tr>
<td>TASK</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Anagrams</td>
<td>1.38</td>
<td>2.34</td>
<td>0.80</td>
<td>2.11</td>
<td>2.11</td>
<td>2.38</td>
</tr>
<tr>
<td>Games</td>
<td>1.38</td>
<td>1.47</td>
<td>0.63</td>
<td>0.61</td>
<td>1.69</td>
<td>1.46</td>
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<tr>
<td>Stories</td>
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<td>2.30</td>
<td>0.46</td>
<td>1.61</td>
<td>1.86</td>
<td>2.21</td>
</tr>
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</table>
for condition. Across all tasks and groups attributions following success (M = 1.31) were significantly less stable than after the failure (M = 1.85) outcome (p < .01). This indicates that the total sample assigned causality for their successes to relatively less stable factors (citing their own efforts or luck) than they did under failure conditions (citing a lack of ability or the difficulty of the task).

This latter finding can also be further clarified by referring to Table 15. On the three tasks combined success was attributed to unstable factors 57 percent of the time by the groups, with attributions to effort accounting for 42 percent and attributions to luck 15 percent. The total sample demonstrated a proclivity toward explaining their success in terms of trying hard rather than citing their own ability (28%) or the ease of the tasks (15%).

A main effect for task was also found for the stability dimension over all groups and conditions (F = 15.15; df = 2,132; p < .001). Tukey's test for comparison of the task means indicated that stability of attributions on the game (M = 1.21) was significantly lower than the anagram (M = 1.88) or the story (M = 1.65) task (q = 7.70; df = 72, p < .05 and q = 5.06, df = 72, p < .05). The hypothesis that there are no significant differences in stability of attributions between the tasks is rejected. The difference between stability on the anagram and story task was not significant (q = 2.64, df = 72, p > .05). A primary factor in this result is that the combined groups assigned a
total of 68 percent of their attributions for success and failure to luck on the games (Table 15).

A task X condition interaction was significant ($F = 8.76$, $df = 2,132$, $p < .001$) and the simple main effects analysis is summarized in Table 17. Stability in the success condition ($M = 1.43$) was significantly lower than stability in the failure condition ($M = 2.32$) on anagrams ($p < .001$). This same pattern was found for stability in the success condition ($M = 1.26$) compared to the failure condition ($M = 2.04$) on the story task ($p < .001$), but not for games in the success ($M = 1.23$) and failure ($M = 1.18$) conditions ($p > .05$).

As Table 15 indicates, the unstable factors of effort and luck accounted for 53 percent of subjects' attributions for success on anagrams, whereas they accounted for only 22 percent in the failure condition. Similarly, subjects made 58 percent of their attributions for success on stories to unstable factors, while the corresponding figure for failure was only 32 percent. Attributions to the unstable factor of effort was responsible for accounting for this success/failure difference on the anagram (42%) and story (44%) task, outstripping the other unstable factor of luck sizably across groups in the success condition (11% on anagrams; 14% on stories).

Within the success condition, the type of task showed no significant differences on stability ($F < 1$), but a significant difference was found for stability between the tasks in the failure condition ($F = 23.11$; $df = 2,132$; $p < .001$). A post hoc analysis on Tukey's test indicated that under failure conditions stability on the
Table 17  
Task X Condition Simple Main Effects  
Analysis for Stability  

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>df</th>
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<th>F</th>
<th>p</th>
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<td>CONDITION AT STORIES</td>
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<td>10.95</td>
<td>12.17</td>
<td>&lt;.001</td>
</tr>
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<td>ERROR</td>
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<td>19.80</td>
<td>.90</td>
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<td></td>
</tr>
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<td>.42</td>
<td>.76</td>
<td>NS</td>
</tr>
<tr>
<td>TASK AT FAILURE</td>
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<td>25.52</td>
<td>12.71</td>
<td>23.11</td>
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<td>ERROR</td>
<td>132</td>
<td>72.28</td>
<td>.55</td>
<td></td>
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</tr>
</tbody>
</table>

Note. Experimentwise error was set at .05 for both condition and task comparisons.
game (M = 1.18) was significantly lower than stability on anagrams (M = 2.32) or the story (M = 2.04) task (q = 7.20, df = 108, p < .05 and q = 5.43, df = 108, p < .05; respectively). The hypothesis that there are no significant differences between the tasks on stability in the failure condition can be rejected. Stability differences between the anagram and story task in the failure condition was not significant (q = 1.76, df = 108, p > .05). The differences between the game and the anagram/story tasks in the failure condition is explained by referring to Table 15. Given failure on the games the combined groups made 49 percent of their attributions to the unstable category of luck. This figure, on the other hand, was only 15 percent for anagrams and 26 percent for stories.

**Consistency of Primary (1st choice) Attributions**

Subjects made two attributional choices to account for their successes and failures, and attributions were analyzed along the internality and stability dimensions. However, a separate analysis of only subjects' first attributions by category was carried out to determine the consistency of their choices. Cochran's "Q" Test was selected since this data is necessarily dichotomous and it is a non-parametric analogue to a repeated measures analysis of variance for dichotomous data. Cochran's "Q" directly tests the null hypothesis of attributional (1st choice) consistency between the tasks within group and condition. A significant Q-value indicates differences do exist between tasks in subjects' attributional patterns. The precise
attributional differences are then determined by a post hoc chi-square analysis. Experimentwise error, as previously discussed, was maintained at $p = .05$ by setting alpha at .01 for each of the overall "Q" tests. Since three pairwise chi-square comparisons were necessary to identify specific task differences if the overall Q-value was significant, experimentwise error was further regulated by setting alpha at .02 for each comparison.

In terms of attributions to luck to account for their failures, LD children showed a marked difference in attributional pattern on the three tasks ($Q = 10.13, \text{df} = 2, p < .01$). Being unlucky was cited significantly more often to explain failure on the game compared to the anagram ($\chi^2 = 9.14, \text{df} = 1, p < .01$) and story task ($\chi^2 = 10.13, \text{df} = 1, p < .01$). The difference between the anagram and story task was not significant ($\chi^2 = 1.00, \text{df} = 1, p > .05$). No other significant differences were found for primary attributions in the LD failure group. Moreover, all tests for attributional consistency in the categories of ability, effort, task difficulty, and luck on the three tasks were not significant for any of the other groups (AM failure, AS failure, as well as the LD, AM, and AS success groups). The hypothesis that within group and condition no significant differences exist between the tasks regarding the pattern of subjects' first attributions to outcome can only be rejected for the LD failure group (in the luck category). In no other cases did attributional patterns significantly vary between the tasks for the groups as a function of outcome.
Chapter IV

DISCUSSION

The work of Carol S. Dweck and her colleagues has been instrumental in demonstrating the striking differences between success-oriented and failure-oriented children (Diener, Dweck, 1978, 1980; Dweck, 1975, 1976, 1981; Dweck & Licht, 1980; Dweck & Reppucci, 1973). Research has shown some children react to failure by intensifying their efforts to subsequently succeed while others appear to have a personal belief in the impossibility of overcoming failure.

Recent research has begun to address the issue of what particular subgroups of children within the school environment are more likely to show the cognitive, affective, and motivational deficits associated with learned helplessness. Poor readers have been found to show such deficits in comparison to children who have average and above-average reading ability (Butkowski & Willows, 1980). Chronic school failure children similarly can demonstrate a pattern of helplessness that appears to be "naturally acquired" by exposure to frequent school failure (Johnson, 1981). One objective of this study was to select subgroups of children who are commonly found within the school environment and contrast them on cognitive, affective, and motivational measures. This information is crucial to better understand how past
experience in school contributes to possible differences in response to success and failure. Beyond this general purpose, an additional objective of the study was to investigate whether the same pattern of results found in a more school-related task would also be observed for contrasting activities like a social problem-solving task, or a game which entailed chance rather than academic skill. After analyses of group characteristics and ordering effects, test data was examined for significant group, condition, and task main effects followed by analysis of interactions in instances where this was indicated on each dependent measure. In addition, a nonparametric examination of first choice attributional consistency was performed.

Expectancies

The only significant finding for initial expectancy for success was the group main effect. Across condition and task LD children demonstrated an overall higher expectancy in comparison to AS or AM children. This finding is contrary to research which suggests learning disabled children might show lower expectancies for success on the basis of a more negative self-concept (Bryan & Pearl, 1979; Chapman & Boersma, 1980). However, other work indicates that a failure-prone strategy for children with learning difficulties can be to set their expectations for success unrealistically high so that failure to obtain the goal does not necessarily imply low ability (Beery, 1975; Covington & Beery, 1976; Covington & Omelich, 1979). Perhaps more applicable in terms of the present study are Johnson's (1981) findings that remedial class children showed less signs of a
failure orientation compared to chronic school failure children left in regular classes. LD children in the present study maintained higher expectancies for success, possibly due to prolonged exposure to special class services where success experiences are routinely provided. Supporting this interpretation is the fact that 83 percent of the LD sample had received a minimum of three hours per day of special class services for two years or more.

Condition had a significant main effect on expectancy change after outcome. Across all groups and tasks expectancies following success increased by roughly one item in comparison to decreasing by over one item from initial estimates after failure. A significant main effect for group showed that while LD children had the highest initial expectancies, after failure they registered the largest decrement; significantly lower than the AM group. This suggests that the LD group was more sensitive to failure than the AM group. Alternatively, because both the AM and AS groups made more modest initial expectancies, outcome tended to have less of an expectancy change effect. Unlike the AS and AM group, LD children might have over-estimated their initial expectancies and the experience of failure caused a sharper reassessment.

A simple main effects analysis of the task X condition interaction indicated that after failure expectancies were significantly lower than after success on each of the three tasks. No task differentiation was observed; outcome showed the same trend for
anagrams, games, and stories. However, within condition failure on the stories caused a more severe downward expectancy change than failure on the games for the groups. At least for subjects in the failure condition across groups, failure on stories had a significantly more negative effect on future expectancy. Therefore, limited differentiation between the tasks on expectancy change after failure was indicated. Yet no significant differences occurred in either initial expectancy or expectancy change that contrasted LD, AS, and AM children within task and condition. These results suggest that task differences apply to the total sample of subjects. They did not produce differential initial expectancies or expectancy changes following success or failure for the individual LD, AS, and AM samples.

Mood

As might be expected, mood scores were significantly lower following failure than after success across groups and tasks. Moreover, a significant main effect for task indicated that mood on the anagrams was significantly lower than for stories; and both of these tasks produced mood scores lower than that observed for games. Within tasks, anagrams, games, and stories showed the same pattern of higher mood scores after success than after failure. The essential reason, however, for games showing a relatively higher overall mean mood score was that within conditions and across groups failure on games caused the least decrease in mood. Support was given to the position that failure affects mood more on academic (anagram) and social problem-solving tasks (stories) that have a stronger evaluative component in
comparison to failure on a game which involved chance rather than ability.

It must be pointed out that higher mean mood scores following failure on the game compared to the anagram or story task was observed across groups. Again, group membership was not a significant determinant of mood following success or failure. The task-related differences observed for mood apply equally to LD, AS, and AM children.

Persistence

Group membership was also found to be unassociated with variability in persistence scores. A main effect for condition was the only significant main or interaction effect observed for persistence. Children in the success condition across groups and tasks demonstrated a significantly higher mean persistence score than children in the failure condition. On the average, children after success were willing to attempt 3.5 more items than children after failure.

The lack of any group or task interactions indicates that neither group membership nor task differences account for any meaningful variability in estimated persistence. This result potentially might be accounted for by the manner in which persistence was measured in the study. A child had to specify how many items (given repeated failure) he would be willing to attempt in trying to successfully complete his first one. Since no children were administered additional items to behaviorally determine this number, persistence was measured
solely by means of the child's estimate and could be influenced by wishful thinking rather than reflecting actual persistence to continue.

**Attributions**

Children in the success condition across groups and tasks scored significantly higher in internality than children in the failure condition. This main effect for condition was the only significant main or interaction effect which resulted on this variable. Essentially, across groups and tasks subjects attributed their successes to relatively more internal factors (most notably effort) than subjects in the failure condition who cited the difficulty of the tasks or the influence of luck.

The lack of interaction effects indicates that group membership or task differences also did not account for variability in internality scores. Absence of group differences on internality in the study is contrary to some previous research findings. Bryan and Pearl (1979) reported that LD children tend to attribute their successes to external factors such as luck or other people. Pearl, Bryan, and Herzog (1983) found that LD children attributed low scores on a bowling game to being unlucky or the difficulty of the task (both external factors). In the Butkowsky and Willows (1980) study, 59 percent of total attributions made by poor readers to account for their successes were to internal factors. The corresponding figures for average readers was 77 percent; for good readers 84 percent.
On the other hand, in the present study the proportion of internal attributions to success across the three tasks was remarkably similar for the groups: LD 66 percent, AS 75 percent, and AM 71 percent. Subjects within each of the groups showed a tendency to attribute success to their own efforts. Particularly with LD children this finding is surprising, however, it is not without precedent in the literature. Aponik and Dembo (1983) reported two uncharacteristic results that would not be expected given the findings from the self-concept research for LD and high-achieving students. First, their LD group felt effort was a significant factor in explaining success. Secondly, high-achieving regular class students placed a relatively greater emphasis on lack of ability to account for failure compared to the expected attribution of insufficient effort. The results of the present study substantially conform to these results. LD children made 42 percent of their total attributions under success conditions across the three tasks to the category of effort (e.g., "I tried hard"). AS children assigned 30 percent of their attributions under failure conditions on the tasks to the category of ability (e.g., "I am not good at things like this"). The corresponding proportion to the expected attribution of insufficient effort for the AS group was only six percent. While research on cognitive and attributional differences between LD and regular class high-performing students is in its infancy, these findings suggest that learning disabled populations might exhibit considerably more variability in attributional tendency than originally
thought on the basis of extrapolation from Dweck's work with "mastery-oriented" and "helpless" children (Thomas, 1979).

On the stability dimension, condition was also found to significantly influence the results. Across all tasks and groups, attributions following success were relatively less stable than after failure. After failure on the anagrams or stories in particular, the groups showed a proclivity towards explaining it in terms of task difficulty, whereas success was attributed to the unstable factor of effort. The groups also differed. Across tasks and conditions the AS group showed more instability in their attributions compared to the LD or AM group who did not significantly vary from each other. Interestingly, AS children under success conditions chose the stable factor of task difficulty only seven percent of the time, while LD and AM children accounted for success in terms of the task being easy 19 percent and 20 percent, respectively over the anagrams, games, and stories.

In addition, a significant main effect for task across group and condition indicated stability of attributions on the game was significantly lower than either anagrams or stories. This is accounted for by subjects attributing their successes or failures on the game to luck 68 percent of the time, while the corresponding figures for luck attributions on stories was 40 percent and only 26 percent for the anagrams. Clearly, the subjects viewed the game task as being significantly more influenced by luck. The simple main effects analysis of the significant task X condition interaction helps to
clarify this difference. Stability in the success condition was significantly lower (due to attributions to effort) than the failure condition on anagrams and stories, where 41 percent of the attributions the groups made were to the difficulty of the task. Games did not show this pattern principally because the groups felt task difficulty as a reason for failure (21%) was far less important than being unlucky (49%). Within the failure condition, attributions on the game task were decidedly more unstable in comparison to either anagrams or stories. In fact, subjects made only 15 percent of their attributions under failure conditions on the anagrams to luck; the same figure for stories was 26 percent.

Support was given to the view that task differences (games vs. either the anagram or story) affected the stability of the total group's attributions. Subjects (LD, AM, and AS) perceived the games as being significantly more influenced by luck. While no specific group X task differences were observed, overall AS subjects attributed their successes much less to task difficulty (a stable factor), placing relatively more emphasis on the role effort and luck played (unstable factors). Further evidence for task discrimination by LD children was produced in the analysis of only primary (1st choice) attributions. LD children exposed to failure cited being unlucky significantly more often as a factor to account for failure on the game compared to failure on the anagrams or stories.
Summary

This study had two objectives. One objective was to select subgroups of children who are commonly found within the school environment and contrast them on cognitive, affective, and motivational measures. The second objective of the study was to investigate if the pattern of results significantly varied according to task characteristics. Hypotheses germane to group and task differences and the interaction of group, task, and condition can be viewed as the major hypotheses of the study.

Results provide very limited support for group differences. LD children across tasks and conditions showed higher initial expectancies than the AS and AM groups. Also, the LD group after failure significantly lowered their expectancies for future success compared to AM children. The AS group across tasks and conditions made significantly more unstable (effort/luck) attributions, tending to devalue the role task difficulty (a stable factor) played in earning their successes. These were the only significant findings for group differences. On all dependent measures (initial expectancy, mood, expectancy change, attribution, and persistence) the group X condition interaction was not significant.

Stronger evidence was produced for task differentiation in the study. Failure on the stories yielded the greatest decrement in expectancy change scores compared to failure on the games across groups. The sample of subjects as a whole also was least affected by
failure on the games. Their mood scores following failure were significantly higher than those observed for either anagrams or stories after failure. In fact, across group and condition the game task produced the highest mood scores. The game task was also associated with significantly more total attributions to unstable factors. This was primarily because luck was seen as the strongest influence on outcome for this task. When failure occurred on the game, subjects as a total group tended to attribute it to being unlucky, whereas they did not do so on the anagrams or stories by comparison. Supporting the view that the game task was perceived quite differently by the groups is the finding the LD children in the failure condition cited luck as a primary attribution significantly more often.

In summary, evidence points to the conclusion that outcome on the game task caused a somewhat different pattern of results. Failure on the games least affected mood and expectancy change scores and luck was an overwhelming attributional choice to explain failure. On the other hand, differences between the LD, AM, and AS groups on the dependent measures of the study were minimal; the groups tended to show approximate comparability except in the few instances noted. Further differentiation for group and task by condition was not indicated. In all cases, the group X task X condition interaction was not significant.

**Task Characteristics, Generalization, and Learned Helplessness**

Learned helplessness theory has attempted to define the conditions under which a failure orientation might generalize, suggesting that the
attributions an individual makes to explain their successes and failures can be a crucial influence. Yet research on the generalization of learned helplessness in humans remains somewhat ill-defined, particularly in regard to the role of attributions in accounting for learned helplessness across situations or tasks (Wortman, Panciera, Shusterman, & Hibschuster, 1976; Hanusa & Schulz, 1977). Rather than focus on the contribution of attributions in producing cross-situational helplessness deficits, this study attempted to operationalize task differences to determine if children would show comparable cognitive and motivational responses under success and failure conditions. In general, learned helplessness studies employing actual success and failure experiences with children have shown a tendency to select tasks with a strong cognitive or test-based content. Therefore, task differences were emphasized in the present study. While it could be argued that both the anagram and social problem-solving task were more school-related (cognitive), the game activity had the distinction of requiring little skill beyond understanding the directions. Realistically, success or failure depended a great deal more on luck than on ability to select a "right" answer.

The results support that the children (AS, AM, and LD) combined tended to respond to the games differently. Mood across outcome was highest on the games, negative expectancy change following failure was significantly less severe in comparison to stories, and subjects showed an overwhelming tendency to attribute outcome on games to
unstable factors. Given failure, approximately half of the total sample cited being unlucky as a cause, whereas this choice was clearly less in evidence for failure on the anagrams or stories. These results suggest that outcome on an academic (anagrams) or problem-solving task (stories) can more negatively affect mood, expectancy change, and attributional choice (where failure was accounted for by the stable factors of task difficulty and lack of ability).

From one point-of-view such findings are not surprising. The game contrasted the most with typical school-type activities and outcome was far more dependent on chance. For children to respond differently might be expected, however, little is known concerning what type of tasks cause differential expectancies, affective response, and attributions in children. Some evidence suggests that if the tasks are cognitive (e.g., anagrams) and are composed of problems to be solved (e.g., mazes) the pattern of results can be quite similar (Butkowski & Willows, 1980). Obtaining some degree of task differentiation on the game activity is meaningful in the sense that children who did not show clear helplessness deficits on the anagram and story task nevertheless jointly shifted their pattern of responses on the game task perceiving it differently. LD, AS, and AM children in the study manifested few group differences. Based on the results no group demonstrated more susceptibility to learned helplessness or responses clearly indicative of a failure orientation compared to the
others, despite wide differences in academic status. The groups also responded similarly to outcome on the game. Yet the way they responded contrasted with a more cognitive and social problem-solving task.

This observation suggests an interesting line of inquiry. If children who do not show apparent helpless deficits can appreciate the different factors involved in outcome on the game (e.g., being primarily determined by luck), will children who are failure-oriented respond in the same way? Will they also be able to assign failure to being unlucky (rather than ability or task difficulty factors) and be less affected in mood when they fail compared to more cognitive tasks? To investigate this question a cognitive task and a task comparable to the game activity used in the present study would need to be administered on a sample of children with a previously identified failure orientation. For example, a sample could be selected known to exhibit learned helplessness on the anagram task. Once established, this same group could be exposed to noncontingent success and failure on the game activity. The present study suggests that children who do not have a clear pattern of helpless attributions, affect, and expectancies were able to appreciate differences between the tasks. Whether failure-oriented children will also be able to do so and assign failure to their own lack of ability rather than luck is an issue for future research. While group similarity in the study precluded scrutiny of this line of inquiry, task differentiation
between the game activity and more cognitive tasks was supported. Including the game activity or a comparable non-cognitive task in learned helplessness studies with children can promote a better understanding of the extent and limits of learned helplessness under conditions other than those associated with academic or test-based tasks.

Learned Helplessness in LD Children Reconsidered

The relative comparability of the LD, AS, and AM groups on the measures of the study was an unexpected finding, especially for the LD group. While investigations employing a learned helplessness paradigm with LD students are few in number, those that have been reported in the literature seem to suggest this group shows cognitive and motivation deficits associated with a failure orientation. For instance, Pearl, Bryan, and Donahue (1980) examined attributions of low-achieving students enrolled in parochial schools who, while not formally labeled LD, would qualify as such under federal guidelines. Compared to non-LD control children they were less prone to believe their failures were a result of a lack of effort and when they did succeed it was attributed to the easiness of the task, indicating a belief that external rather than internal factors accounted for favorable outcomes. Pearl (1982) essentially replicated these results for an identified LD sample that were receiving daily resource room assistance. The total length of time the children had been receiving services as well as hours per day it was provided was not
reported. In a recent study, low scores on an experimental bowling
game had been found to result in non-labeled LD children explaining
their lack of success by citing external factors like task difficulty
or luck and devaluing the role effort could play in overcoming
failure (Pearl, Bryan, & Herzog, 1983). This group of "LD children"
were also students attending parochial schools in regular classes
where special education services were not available. Similar to the
earlier study (Pearl, Bryan, & Donahue, 1980) they were defined as
LD by the experimenters through an inspection of test scores and
teacher ratings. Aponik and Dembo (1983) reported that LD adolescents
attributed their failures to a lack of ability in contrast to high-
achieving normal adolescents who felt ability was highly influential
in their successes. Like the Pearl (1982) study these results were
obtained by a labeled LD sample, however, neither study specified
the length of time or hours per day the LD students received special
services. Kleinhammer-Tramill et al. (1983) did report that their
LD sample had received at least one year of services (amount per day
and exact type: class, tutoring or resource room was unspecified),
but their study did not compare LD with normals. Rather, the effects
of contingent rewards on LD students was compared with the effects
of non-contingent rewards on LD students.

It appears to be the case that studies investigating learned
helplessness in LD compared to normal children have typically ignored
length and extent of service as meaningful variables. Moreover, two
of the studies (Pearl, Bryan, & Donahue, 1980; Pearl, Bryan, & Herzog,
1983) based their conclusions on a simulated LD sample (students with large ability-achievement discrepancies in regular classes) that had received no special education services of any kind. In many ways the LD children they described were similar to Butkowsky and Willows' (1980) poor readers. This group also showed a sizable ability-achievement discrepancy in reading although they attended regular classes and had never received special education services. Essentially, the support for LD children showing cognitive and motivational deficits associated with a failure orientation in studies employing learned helplessness procedures comes from children with considerable learning problems who remain in regular classes. Those studies that focused on an identified LD sample failed to report the extent and duration of special services. At least these studies did use an ability-achievement discrepancy to define their LD groups. Tollefson, Tracy, Johnsen, Buenning, Farmer, and Barke (1982) claimed to have studied the attributional patterns of LD adolescents. However, the subjects had Full Scale WISC-R IQ's between one and two standard deviations below the mean. Although they scored at least two years, six months below their current grade placement in achievement areas, the sample was essentially low IQ rather than LD children. With this exception, care to use an ability-achievement discrepancy to identify LD children has been implemented. But consistent reporting of the extent and duration of remedial service has been less rigorously adhered to. That duration and extent of service can be an important variable is suggested by Johnson's (1981) finding that LD children who
received self-contained remedial class services for more than a year performed comparable to an average group of children; only failing children who remained in the regular classroom worked harder for a monetary reward than for the academic incentive alone, i.e., to demonstrate they were good at schoolwork.

Evidence supporting the position that LD children are more prone to a failure orientation, in studies employing a learned helplessness paradigm, is not overwhelming. The generalizability of the findings to the LD population as a whole is problematic since there are indications the length and extent of remedial service can influence the cognitive and motivational characteristics of these children. Stronger evidence would seem to exist for learned helplessness deficits in children with sizable ability-achievement discrepancies who remain in regular classes without the benefit of any special assistance. The cognitive, affective, and motivational characteristics of LD children would appear to be more differentiated when environmental factors (e.g., extent and duration of remedial services) are taken into account. A review of the self-concept and locus of control literature suggested LD children maintain lower self-concepts and have an external locus of control (Bryan & Pearl, 1979). Yet inconsistent reporting of the type, extent, and duration of remedial services these children received makes it difficult to evaluate the generalizability of this conclusion. Chapman and Boersma's (1980) extensive monograph on the affective correlates of learning disabilities presented data
supporting a comparatively lower academic self-concept for LD children, but their subjects only received one-half to one hour of remedial services daily (average length of time subjects had participated was not reported). There is some supporting evidence that identified LD students in a special class placement compared to those diagnosed but not yet receiving services have better self-concepts regarding school adequacy (Ribner, 1978). Indirect evidence comparing identified LD children placed in a remedial program to children diagnosed but not receiving services seems to favor the self-contained remedial classroom (Serafica & Harway, 1979).

With these considerations in mind the findings of the present study are not particularly surprising. LD children who participated all had received at least one year of remedial, special class services at a minimum three hours per day and 83 percent of the sample had received services for two years or more. It is quite probable that special class placement had reinstated successful academic experiences for these children and, therefore, expectancies, affect, persistence, and attributional differences between the groups were decreased. As previously discussed, children that have a sizable ability-achievement discrepancy comparable to LD students but remain in the regular classroom are characterized by a failure orientation. The AM group in the study, although performing marginally below average in relation to their peers, did not show any discrepancy between their mean ability and mean reading achievement scores (IQ = 93.83; Reading Score = 93.50). Their exposure to failure experiences within the regular classroom
could be hypothesized to be far less severe compared to chronic school
failure children with LD-type discrepancies (Johnson, 1981) or
children attending parochial schools who would qualify for LD
services on the basis of federal guidelines (Pearl, Bryan, &
Donahue, 1980; Pearl, Bryan, & Herzog, 1983). Key variables influ-
encing academic learned helplessness in naturally occurring groups of
children appear to be the availability, extent, and duration of
remedial services.

**Implications**

By the nature of measurements typically used to demonstrate
learned helplessness deficits (cognitive, affective, motivational)
a "person-specific" explanation for a failure orientation is implied.
Questionnaire measures of self-concept or locus of control attempting
to identify trait differences among children, especially the learning
disabled, further support the inclination towards explaining learned
helplessness as a primarily child (or person) construct. This has
resulted in LD children being uniformly described as having a poor
self-concept, an internal locus of control, and a failure orientation.
However, the majority of evidence to support this view in studies using
a learned helplessness paradigm comes not from LD children who have
received remedial services of a long duration, but from students with a
sizable ability-achievement discrepancy who remain to academically
struggle in regular classes. The results of the present study strongly
suggest that the environmental manipulation of removing chronic school
failure children from constant exposure to academic failure in the regular classroom can have an ameliorating affect. Specifically, susceptibility to cognitive, affective, and motivational deficits associated with learned helplessness may be lessened through providing special class remedial services of sufficient extent and duration. While the status of this claim is still hypothetical, current research indicates a potential relationship. What is needed in future investigations is to directly address this claim by routinely considering length and extent of remediation, particularly for LD children.

Senf (1981) presented a more complete person X environment interaction model for learning disabled children. He questioned the efficacy of diagnosing learning disabilities as strictly a child handicap. Instead, he convincingly argued for the position that the chronic school failure typical of learning disabled children is more completely accounted for in terms of a failure of the child-school interaction. Poor school adjustment is not best viewed solely as the child's problem, also crucial is the way learning environments respond and adjust to academically different children. Past research does indicate that chronic school failure children left in regular classes with no supportive services and with presumably minimal attempts to environmentally adapt the academic curriculum to their needs can produce the deficits so commonly associated with learned helplessness. Rather than measuring the depth of a child's individual helplessness, the findings of these studies suggest that what might
be actually measured is the caustic effect of an environment that
does not adapt to the requirements of certain children. Condemning
children to frequent failure experiences through exposure to an
unresponsive regular class environment is capable of producing
learned helplessness deficits in these children. However, it is a
mistake to conclude LD children, for example, have these deficits
under all environmental conditions. In this view, the deficit is not
only the child's, it is also a deficit of an educational setting that
fails to meaningfully adapt. The lack of group differences in
learned helplessness between LD, AM, and AS children in this study
might be due to the availability, quality, and extent of services
that the LD children received.

If this hypothesis is correct, then it is crucial to measure such
environment factors in any investigation of learned helplessness in
naturally occurring groups of schoolchildren, especially LD students.
To only focus on the children themselves without considering differences
in their learning environment (e.g., the range, quality, and duration
of remedial services) may result in contradictory findings. Children
with LD achievement-ability discrepancies might or might not show
learned helplessness deficits depending on the extent and duration of
remedial services they receive. There is a need to begin routinely
differentiating LD students according to how long they have received
remedial or special services. It is also important to have some
indication of the type of service (resource room, tutoring, part or
full-time special class) and hours per day it is provided. Finally, an estimation of the quality of this service would be extremely valuable. Consideration of the duration, type, range, and quality of service (environmental factors) is critical to make sense of a study's results. Without this attention to environmental variables findings will be difficult to interpret. It will not be known, for example, why an LD sample shows or fails to show learned helplessness deficits. Like many other areas of research, the findings might appear to be contradictory when in fact the differences observed may be accounted for by environmental, rather than child-specific, differences. Research on learned helplessness in LD and naturally occurring groups of schoolchildren is just beginning. If future findings are to be interpretable, then potential influencing factors such as the extent and duration of service should be reported. Research has a responsibility to consider environmental influences as well as differences in the children it examines, especially when there are indications these differences can be strongly influenced by environmental factors.

Limitations

A major limitation of the study was the geographical and demographic restrictiveness of the sample. The children which comprised the LD, AS, and AM samples were drawn from 16 regular and 9 LD classes in six schools within a single school district serving predominately
white, middle class communities. This necessarily limits generalization of the findings to children that conform to similar social and educational circumstances.

This is particularly relevant for learned helplessness investigations that employ "naturally occurring" groups of schoolchildren. The educational approaches and philosophies of school districts vary considerably. For example, the amount of special assistance available for children in regular classes whose academic achievement is marginally below grade level depends on how committed the administration and school staff is to helping these children. Financial and community pressures exert an influence as well as the particular educational orientation of the professional staff. The school system used in this study had a highly developed special education program and an active psychological services staff which regularly consulted with teachers and administrators. The quality of special class and support services for LD and regular class students enjoyed a respected reputation both regionally and within the communities served. These factors necessarily influence the the educational environment for children and the degree to which they are exposed to negative educational experiences. When groups of children who show preexisting differences in academic status are selected for study, the extent of variability in their cognitive, affective, and motivational characteristics will be affected by such environmental influences. Therefore, generalization to other settings with limited services or to samples of children
with large ability-achievement discrepancies who receive no remedial services is not advised.

Another limitation associated with learned helplessness studies employing a similar design is the assumption that the experimental manipulation accurately simulates success or failure in the naturalistic setting of the classroom. In this investigation children were exposed to success and failure experiences in the presence of an unknown adult. They were led to a private room and were individually administered each of the tasks. This contrasts with their typical school experience where success and failure is not a private but a social matter. Peer comparison and the evaluative pressure of a teacher were necessarily absent. It is arguable that failure on tasks in school is more negative because of the opportunity for social comparison. It must be assumed that children's response to outcomes was sufficiently established so that it could be accurately manifested in somewhat of a contrived, experimental situation. The degree to which learned helplessness on experimental tasks actually reflects naturalistic success and failure experiences is a matter for future study.
APPENDIX A

Letter to Parents
Dear Parent,

I am writing to request permission for your child to participate in a study of how children perform on different kinds of tasks. One of the tasks is closely related to schoolwork, while the other two have more to do with social or game activities. The purpose of the study is to find out if children think about success and failure on a school achievement task in the same way that they think about success and failure on tasks that have little to do with school-related activities.

Your child's participation would involve three, 20-minute individual sessions with the researcher. These sessions would be approximately one week apart and take place at school. A different kind of task will be given each time that your child will find either possible or impossible to solve. He will be asked questions on how he did and the researcher will write down the responses. Some children will be given unsolvable problems each week which they will fail. Others will be given solvable problems each week, on which they can be successful. This information will be used to learn if children think similarly about their efforts on school-related tasks compared to other tasks that have more to do with out-of-school activities. After answering these questions, the children who had insolvable problems will be given 3 solvable problems on which they can be successful so that each session will end in a more positive way.

It is very important that you do not discuss this with your child. If your child knows the purpose of the study and that the tasks will be either possible or impossible to solve, the results will be biased.

We would also like your permission to obtain test information on your child from the school's cumulative records. Your child's identity and responses will be strictly confidential. Either your, or your child's, request to withdraw from the study at any time will be honored. If you would like to know more about the study, please leave a message for Michael Gerner at 422-8787 and he will return your call.

Thank you for your time and understanding. Please complete the first copy of the enclosed form, seal it inside the envelope provided, and have your child return it to his classroom teacher. The second copy of the form is to be kept by you. Thank you very much for your cooperation.

Judy L. Genshaft, Ph.D.
Associate Professor of School Psychology

Michael E. Gerner
Doctoral Student
School Psychology Program

College of Education
APPENDIX B

Consent Form
CONSENT TO SPECIAL TREATMENT OR PROCEDURE

Judy Genshaft, Ph.D./M. Gerner

__1__
__2__
__3__
__4__

1. I hereby authorize or direct Mrs. Gerner or associates or assistants of his or her choosing, to perform the following treatment or procedure and such additional services as they may deem technically necessary in their performance (describe in general terms) Three types of tasks made-up of five items each will be given to participants. Items will be designed to be either capable or incapable of being solved.

2. (Name of subject)

The experimental (research) portion of the treatment or procedure is: To measure differences given repeated success or failure on three types of tasks: word problems, a game activity, or completing a story about a social situation.

This is done as part of an investigation entitled: Academic Status and the Generalization of Learned Helplessness: The Processing of Success and Failure in Children.

1. Purpose of the procedure or treatment: To determine if children think about success and failure on a school achievement task in the same way that they think about success and failure on non-school tasks such as a game activity or a social storytelling exercise.

2. Possible appropriate alternative methods of treatment: Children who are given impossible items to solve on the three tasks will receive three items at the end of each session where they will be successful.

3. Discomforts and risks reasonably to be expected: Children who are given impossible items to solve on the three types of tasks might reasonably be expected to feel uncomfortable about their performance. However, these children will be given three consecutive items at the end of each session where they will be successful and warmly praised for their work. At the conclusion of the study all the children will be told that their successes or failures were due to the tasks being either possible or impossible to solve.

4. Possible benefits for subject/subject's society: To better understand if children think about their school-related successes and failures in the same way as they think about success and failure on non-school types of tasks.

5. Anticipated duration of subject's participation: Three 20-minute sessions (one session per task) separated by an interval of approximately one week.

I hereby acknowledge that Dr. Genshaft/M. Gerner has provided information about the procedure described above, about my rights as a subject, and has answered all questions to my satisfaction. I understand that I may contact him/her should I have additional questions. He/She has explained the risks described above and I understand them, he/she has also offered to explain all possible risks or complications.

I understand that the information obtained from me, or from the person I am authorized to represent, will remain confidential unless I specifically agree otherwise by placing my initials here. I understand that, where appropriate, the U.S. Food and Drug Administration may inspect records of this research project.

I understand that I am free to withdraw my consent and participation in this project at any time after notifying the project director without prejudicing future care. No guarantee has been given to me concerning this treatment or procedure.

In the unlikely event of physical injury resulting from participation in this study, I understand that immediate medical treatment is available at University Hospital of The Ohio State University. Questions about this should be directed to the person named above. I also understand that the costs of such treatment will be at my expenses and that financial compensation is not available.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: ____________ Time ____________ AM/PM

Signed:

Parent or Legal Guardian

I certify that I have personally completed all blanks in this form and explained them to the subject or his/her representative before requesting the subject or his/her representative to sign it.

Signed:

Form MS-628 (Rev. 12/15/81)
APPENDIX C

Debriefing Comments to Subjects
at the Conclusion of the Study
Debriefing Comments to Subjects at the Conclusion of the Study

"On three days over the last few weeks you took part in a study where you had a chance to work on problems. For example, letters had to be unscrambled, a 'battleship' had to be 'hit' in a game, or the middle part of a story had to be completed that made the ending possible. You were asked how many problems you thought you would do, how you felt after they were over, why you did (or did not do) so well, etc. Some of you were successful on every problem, while others of you were unsuccessful on all the problems. This was because the problems were either possible to get right or they were impossible to get right no matter how hard you tried. Some of you got all of the problems right because these problems could be answered. Some of you got all of the problems wrong because these problems were 'rigged.' This means they did not have right answers so any answer you gave was wrong. Those of you who had impossible problems to solve were given more problems to work on before you left the session that could be answered. You were able to solve them because they were not 'rigged' like the others.

You are probably wondering why some of you had impossible problems to solve, while others had problems that could be answered. Now that the study is over I can tell you the reasons. The idea of the study was to see if you reacted differently when you did well or did not do well on completely different kinds of problems. For example,
not doing well on an achievement test, like unscrambling the words, might bother you more than not doing well on a game like 'battleship.' Or doing well on the battleship game might be less important to you than doing well on the stories. This is the kind of information the study was planned to find out. Are there any questions about the study or about how you did? I would be happy to answer any questions you have.

I want to thank you for your cooperation in the study. Your help was very important because not much is known about what people your age think when they do well or do not do well on different kinds of problems. The time and effort you gave is greatly appreciated. Thank you again very, very much for your help and cooperation."
REFERENCE NOTE

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