Goals: An Approach to Motivation and Achievement

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This study tested a framework in which goals are proposed to be central determinants of achievement patterns. Learning goals, in which individuals seek to increase their competence, were predicted to promote challenge-seeking and a mastery-oriented response to failure regardless of perceived ability. Performance goals, in which individuals seek to gain favorable judgments of their competence or avoid negative judgments, were predicted to produce challenge-avoidance and learned helplessness when perceived ability was low and to promote certain forms of risk-avoidance even when perceived ability was high. Manipulations of relative goal value (learning vs. performance) and perceived ability (high vs. low) resulted in the predicted differences on measures of task choice, performance during difficulty, and spontaneous verbalizations during difficulty. Particularly striking was the way in which the performance goal–low perceived ability condition produced the same pattern of strategy deterioration, failure attribution, and negative affect found in naturally occurring learned helplessness. Implications for theories of motivation and achievement are discussed.

Past research (Diener & Dweck, 1978, 1980) documented and described two strikingly different reactions to failure. Despite previous success on a task, children displaying the "helpless" response quickly began to attribute their failures to low ability, to display negative affect, and to show marked deterioration in performance. In contrast, those with the mastery-oriented response did not focus on failure attributions; instead, they exhibited solution-oriented self-instructions, as well as sustained or increased positive affect and sustained or improved performance.

Although the research has clearly demonstrated these different patterns, the question that remains unanswered is why two groups of children who are completely equal in ability would react to failure in such discrepant ways—that is, why do helpless children react as though they have received an indictment of their ability, but mastery-oriented children react as though they have been given useful feedback about learning and mastery. These findings suggested that helpless and mastery-oriented children are pursuing different goals in achievement situations, with helpless children seeking to document their ability (but failing to do so) and mastery-oriented children seeking to increase their ability (and receiving information on how to do so).

The purpose of our study was to experimentally test the hypothesis that different goals set up the observed helpless and mastery-oriented patterns.

Specifically, we propose that there are two major goals that individuals pursue in achievement situations: (a) performance goals, in which individuals seek to maintain positive judgments of their ability and avoid negative judgments by seeking to prove, validate, or document their ability and not discredit it; and (b) learning goals, in which individuals seek to increase their ability or master new tasks (Nicholls & Dweck, 1979). It is hypothesized that performance goals, which focus individuals on the adequacy of their ability, will render them vulnerable to the helpless response in the face of failure, setting up low ability attributions, negative affect, and impaired performance. In contrast, it is hypothesized that learning goals, which focus individuals on increasing their ability over time, will promote the mastery-oriented response to obstacles: strategy formulation, positive affect, and sustained performance.

To elaborate, one may view each goal as generating its own set of concerns and as creating its own framework for processing incoming information. Individuals who pursue performance goals are concerned with the measurement of their ability and can be seen as posing the question, Is my ability adequate? Subsequent events, such as failure outcomes, may be seen as providing information that is relevant to this question, leading some individuals (particularly those who may already doubt their ability) to low ability attributions and their sequelae.

In contrast, individuals who pursue learning goals are concerned with developing their ability over time and can be seen as posing the question, How can I best acquire this skill or mas-

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Table 1
Summary of Goals and Predicted Achievement Patterns

Goal value	Confidence (perceived level of ability[a])	Predicted achievement pattern	
		Task choice	Response to difficulty
Performance goal is highlighted	High	Sacrifice learning and choose moderate or moderately difficult task to display competence	Mastery-orientation of effective problem-solving
	Low	Sacrifice learning and choose moderately easy task to avoid display of incompetence	Learned-helpless response of deterioration in problem-solving and negative affect
Learning goal is highlighted	High or low	Choose learning at risk of displaying mistakes to increase competence	Mastery-orientation of effective problem-solving

[a] A distinction is made between perceived current ability (perceived level of current skill) and potential ability (perceived capacity to acquire new skills). Perceived current ability was manipulated to be high or low. Perceived potential ability was manipulated to be high and constant across all conditions.

ter this task? Subsequent events, such as failure outcomes, may then provide information that is relevant to this question, leading individuals to alter their strategies or escalate their efforts. Here, even individuals with poor opinions of their current ability should display the mastery-oriented pattern, because (a) they are not focused on judgments of their current ability, (b) errors are not as indicative of goal failure within a learning goal, and (c) low current ability in a valued area may make skill acquisition even more desirable.

The specific hypotheses of our study are depicted in Table 1. It is predicted that when goals (performance or learning) and perceptions of current ability level (low or high) are induced experimentally, the following patterns will result: (a) Performance goals and high perceived ability will allow a mastery-oriented response (but will lead subjects to sacrifice learning opportunities that involve the risk of errors), (b) performance goals and low perceived ability will create the helpless response, and (c) learning goals and either high or low perceived ability will result in the mastery-oriented response to failure.

How, more specifically, might the performance goal–low perceived ability condition act to create debilitation? What are the particular mechanisms through which impairment occurs? Although these factors are not tested separately here, we suggest that this condition can in itself generate many of the different cognitive and affective factors that have been found to be associated with performance disruption during difficulty: (a) low ability attributions that lead to a loss of belief in the utility of effort (e.g., Ames, 1984; Diener & Dweck, 1978; Dweck, 1975); (b) defensive withdrawal of effort, given that continued effort may further document low ability (e.g., Frankl & Snyder, 1978; Leggett, 1986; Nicholls, 1976, 1984); (c) worry about goal failure that can divert attention from the task (e.g., Spielberger, Morris, & Liebert, 1968; Wine, 1971, 1982); (d) negative affect, such as anxiety or shame, that can motivate escape attempts (e.g., Weiner, 1972, 1982); and (e) blockage of intrinsic rewards from task involvement, solution-oriented effort, or even progress, due to threatened negative judgment (Deci & Ryan, 1980; Lepper, 1980; Lepper & Greene, 1978). Thus, *goal* may be a construct that organizes these previously distinct cognitive and affective factors and helps us to understand the conditions under which they arise.

The focus of individuals who pursue learning goals (whether they believe their ability to be high or low) is on improving ability over time, not on proving current ability. As noted, obstacles will not as readily be seen to imply goal failure and will, therefore, not require defensive maneuvers, not as readily generate anxiety, and not detract from the intrinsic rewards shown to derive from involvement and progress on a valued task.

Method

Overview

There were four experimental contrasts: feedback that the child's current skill level on the experimental task was either low or high was crossed with task instructions that highlighted the value of either a performance (look competent) or a learning (increase competence) goal.

Children's beliefs about their current level of skill on the experimental task were manipulated via feedback on a pattern recognition task. Half the children were told that this task revealed that they currently had high ability and half were told that they currently had low ability for the experimental task. All were told that they had the capacity to acquire new knowledge or skills from the task.

In the second part of the study, another experimenter, who was unaware of the child's ability feedback, gave instructions that highlighted (relatively) either a learning or a performance goal (i.e., high value for learning and moderate value for performance vs. high value for performance and moderate value for learning). Half the children were assigned to each of the goal value conditions.

There were three dependent variables: choice of tasks, performance during difficulty, and spontaneous verbalizations during difficulty. All children were given a choice of tasks, each embodying one goal: (a) one described as a learning task (i.e., continued risks of mistakes and confusion during the acquisition process, but the task would promote skill development); and (b) another described as a performance task (i.e., nothing new would be learned, but the task would allow one to display or avoid display of one's skills by choice of three difficulty levels). In fact, all were given the same discrimination task, which was designed to allow comparison of groups on effectiveness of problem-solving strate-

gies and on spontaneous verbalizations (e.g., attributions, expression of positive or negative affect, etc.).

Predictions for each of the experimental groups are summarized in Table 1.

Participants

The participants were 101 fifth-grade children (57 girls and 44 boys) from semirural schools. Roughly equal numbers of subjects had been randomly assigned to conditions, but due to time limits imposed by the school's schedules, several sessions could not be completed, resulting in unequal cell sizes: 15 girls and 12 boys in the learning goal–low ability condition, 14 girls and 10 boys in the learning goal–high ability condition, 13 girls and 10 boys in the performance goal–low ability condition, and 15 girls and 12 boys in the performance goal–high ability condition.

An additional 9 girls and 8 boys and 15 girls and 14 boys participated in the first and second pilot study, respectively.

Tasks and Procedures

Tasks and procedures for manipulating ability perceptions. A pattern recognition task adapted from Glanzer, Huttenlocher, and Clark (1963) was used to manipulate perceptions of ability. Each stimulus consisted of some combination of five geometric forms drawn in yellow or blue on a card. The subject was shown a card for 2 s and was then asked to recognize the pattern from among three alternative cards. Each subject was administered 10 cards. This task was sufficiently complex so that subjects were unsure of the correctness of their responses. This allowed the tester to give predetermined feedback on performance.

The experimenter instructed the children that their performance would indicate how good they presently were at this type of work and explained the details of the task. To ensure that children who would be receiving high ability feedback did not attribute their performances to good luck, children were told that even the kinds of guesses they made would indicate how they would do on the later work. Children were randomly assigned to the low and high ability feedback conditions.

All children were told that they had the capacity to acquire knowledge from the tasks to be presented by the experimenter. This was done in order to ensure that all children had high confidence in their ability to learn. Hence, if children sacrificed learning, it would be known that sacrifice of learning did not come from low confidence in learning. It could also be shown that learned helplessness occurs with the presence of a performance goal despite high confidence in ability to learn. In other words, a strong case is made if the learning option has a high expectancy and moderately high value (i.e., if there is a good alternative and it is not taken and not kept in mind for mastery purposes).

Tasks and procedures for highlighting goal value. After the children were given the instructions described above, the first experimenter introduced the second experimenter to the children and left the room with her materials. The next experimenter was blind to the children's ability conditions. She presented all children with two boxes: one described as containing the learning task and the other described as containing the performance task with its three levels of difficulty: moderately easy, moderate, and moderately difficult. The identical discrimination task had been placed in both boxes.

The presentation of the boxes was counterbalanced. (Differences between goal value manipulations are described below.) All children were given the following description of the tasks in the two boxes.

> *Performance task.* In this box we have problems of different levels. Some are hard, some are easier. If you pick this box, although you won't learn new things, it will really show me what kids can do.
>
> *Learning task.* If you pick the task in this box, you'll probably learn a lot of new things. But you'll probably make a bunch of mistakes, get a little confused, maybe feel a little dumb at times—but eventually you'll learn some useful things.

Under conditions that highlighted the value of the performance goal, children were told that their performance was being filmed and would be normatively evaluated by experts. It was assumed that the filming instructions would make the value of displaying competence high and that the general description of the learning task would make the value of increasing competence moderate.

Under conditions that highlighted the value of the learning goal, no film was mentioned. In addition to the general description of the learning task, children were told that the learning task might be a big help in school, because it "sharpens the mind" and learning to do it well could help their studies. It was assumed that this added information about the learning task would make the value of increasing competence high and that the mere presence of the experimenter would make the value of displaying competence moderate.

As can be seen, we made both goals available in each condition rather than presenting one goal per condition. This was done to mimic real-world choices in which the two goals are valued and available, and in which individuals must sacrifice one goal as a result of high value on the other. That is, the learning goal leads individuals to risk performance failure and the performance goal makes individuals sacrifice learning opportunities.

Procedures for measuring dependent variables. There were three dependent variables: task choice, problem-solving effectiveness during the discrimination task, and spontaneous verbalizations during the discrimination task.

Children's task choice preferences were taken after the manipulation of the goal. To ensure that children felt no demand from the experimenter to choose a particular task, children were told that different children like to choose different tasks and that she was only interested in what tasks children choose.

After children indicated preferences, all worked on the same discrimination task, which was found in both the learning and the performance boxes. For those who chose the learning box, instructions for the discrimination task were given immediately. For those who chose the performance task, the three levels were reviewed and the children were asked to indicate their two preferences. All children who chose the performance task were then given the "moderate" task, which could be presented as consonant with their choice in that it was either one of their two choices or could be described as the average of their two choices. This allowed comparison of the experimental groups when subjects believed that they were performing a task that allowed inferences about ability.

The discrimination task, used to measure problem-solving effectiveness and spontaneous verbalizations, was adopted from Diener and Dweck (1978). Each child was presented with four training problems and three test problems. A problem consisted of a deck of cards with each card displaying two figures that varied on three dimensions: color (e.g., red or blue), form (e.g., square or triangle), and symbol in the center of the form (e.g., dot or star; see Figure 1). At the beginning of each new deck of cards the experimenter named each of the six stimulus values and told the child only one was correct for the entire deck. Children pointed to the left or right figure and the experimenter said "correct" if the figure contained the stimulus value that was chosen for the deck.

To monitor hypothesis testing on Training Problems 3 and 4 and all test problems, the children received feedback about the correctness of their responses on every fourth card (Levine, 1966). A hypothesis was defined as the consistent selection of a particular stimulus property, such as the color red, over four trials prior to feedback. The cards were varied in a systematic fashion so that the child's hypothesis about the correct solution could be inferred unambiguously from his or her pattern of choices of the left or right side. For example, a child who is

testing the hypothesis, "triangle," would choose cards in the sequence of left, left, right, left, as can be seen in Figure 1.

On the fourth training problem, the children were asked to begin "thinking out loud" (see Diener & Dweck, 1978) when they worked on the problems. They were told that we were interested in what kinds of things children think about while they do tasks of this nature. To dispel inhibitions about making task irrelevant statements, it was stressed that children think about many different kinds of things.

Because one goal of the study was to examine the effects of failure feedback on problem-solving strategies during the testing, rather than to test children's hypothesis use per se, each child was given extensive training prior to the test problems. The experimenter repeated a training problem until the child reached a criterion of six successive correct responses. A hint was provided each time the training deck was repeated (e.g., "The correct answer is one of the two shapes, either the square or triangle.").

On the three test problems, the child received feedback after every fourth response and was asked to verbalize his or her thoughts. Each of the three test decks was gone through only once. This allowed the children to search for the solution but ensured that, given their strategy level, they would not have tested all possible solutions. The feedback always consisted of "wrong," thus permitting the monitoring of strategy change following continued failure feedback.

Children were very carefully debriefed to make sure that all left feeling proud of their performance. The second experimenter told them that they certainly did very well on her tasks. She also said that sometimes children who do poorly on the first task really do show a lot of talent, that it does not always indicate how well children will do. She added that because they had done such good work, she had even put in some problems that were intended for older children.

Two pilot studies were run to ensure the effectiveness of the ability manipulation and goal value manipulation. The pilot questions and results are presented in Table 2.

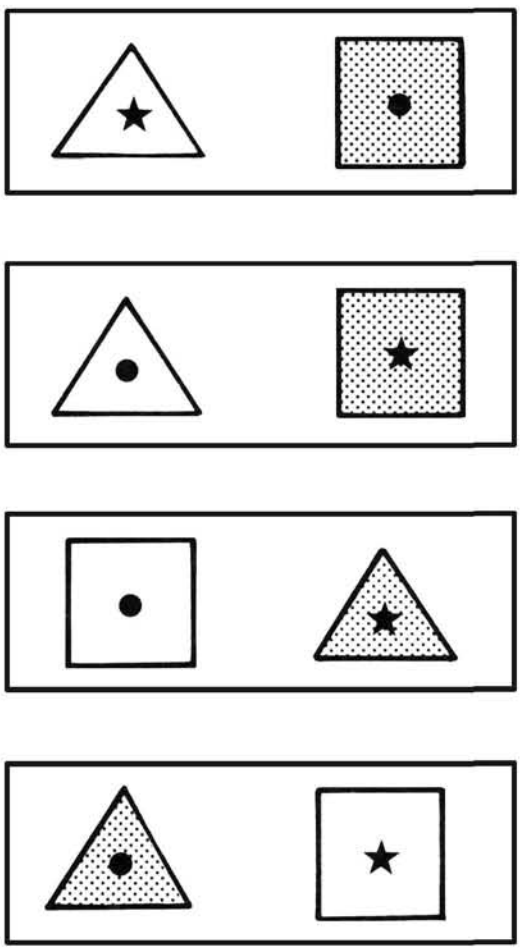

Figure 1. Example of four consecutive stimulus cards that allowed the tracking of a hypothesis over the no-feedback trials.

Results

Pilot Studies

Pilot Studies 1 and 2 revealed that the ability and the goal value manipulations were effective (Table 2).

Choice of Tasks

The number of children in each of the four conditions who chose the learning and the performance box was analyzed by means of a chi-square test. As expected, no significant effect was found for ability feedback. The data were collapsed across ability and a chi-square test was performed on the number of children who chose either the learning or the performance box in performance and learning conditions. As predicted, children more often chose the learning box (82.4%) when the utility of the knowledge was high and the performance box (66%) when the importance of evaluation was high, $\chi^2(1, N = 101) = 22.35$, $p < .001$.

The number of children in the high and low ability feedback conditions who chose each of the three difficulty levels was analyzed. The results supported our predictions. About 33% of the children who were given low feedback chose the moderately easy level and none of the children chose the moderately hard level. On the other hand, only 9% of the children who were given high feedback chose the moderately easy level and 14% chose the moderately difficult level, $\chi^2(2, N = 42) = 5.91$, $p = .05$.

Performance Measures

Classification of strategies. To assess the effectiveness of each group's problem-solving efforts, their hypotheses were classified as useful strategies (dimension checking and hypothesis checking, in descending order of sophistication) or as ineffectual strategies (stimulus preference, position alternation, and position preference, also in descending order of sophistication). Useful strategies are sequences of hypotheses that, when followed perfectly, will lead to problem solution. Ineffectual strategies are sequences of hypotheses that can never lead to problem solution (see Diener & Dweck, 1978, for a fuller description of strategies).

Training measures: Performance prior to failure. To determine the comparability of groups prior to the test trials, several ease-of-training measures were analyzed: number of hints, number of ineffectual hypotheses, and number of times children used dimension checking versus hypothesis checking during training. These training trial measures were not significant except for a single effect on Trial 2 and on Trial 3, and all differences were eliminated by the training trial immediately preceding the failure test trials.

Table 2
Ability and Goal Value Manipulations

Pilot question	Manipulation	*M*	*df*	*t*
Right now, how good do you think you are on these tasks?	High present ability feedback	5.33	15	2.04**
	Low present ability feedback	4.37		
How good do you think you'll be at learning new things, developing new skills from these tasks?	High present ability feedback	5.00	15	.23
	Low present ability feedback	5.12		
How important is it to you that I (experimenter)/ experts think your work is good?	High evaluation	5.40	27	1.83**
	Moderate evaluation	4.54		
How important is it to you that you learn new things and develop new abilities from these tasks?	High skill utility instruction	6.23	27	1.54*
	Moderate skill utility instruction	5.40		

*$p < .10$. **$p < .05$.

An Ability × Goal interaction was found on Trial 2 for the number of hints, $F(1, 97) = 8.51$, $p < .005$, (mean number of hints was 0.1 for the performance goal–low perceived ability group, 0.7 for the performance goal–high perceived ability group, 0.5 for the learning goal–low perceived ability group, and 0.3 for the learning goal–high perceived group). A main effect on Trial 3 was also found for the stimulus preference hypothesis, with groups under the performance conditions ($M = .51$) using this ineffectual hypothesis more often than groups under the learning conditions ($M = .24$), $F(1, 94) = 4.08$, $p < .05$.

Strategy use on Trials 3 and 4 was also analyzed. A chi-square analysis was performed on the number of children in each condition using hypothesis checking versus dimension checking. No significant effects were found for Trials 3 or 4.

Test measures: Strategy change after failure. Analyses were performed to test for the predicted changes in strategy use from Test 1 to Test 3. To ensure that there were no baseline differences between groups on Test 1, a chi-square analysis was performed on the number of children in each condition using ineffectual hypotheses, hypothesis checking, or dimension checking. No significant differences were found between the low and high ability groups in the learning condition, $\chi^2(2, N = 51) = 1.72$, $p = .42$, nor in the performance condition, $\chi^2(2, N = 50) = 3.02$, $p = .22$.

Given no significant baseline differences in Test 1, children's strategies (ineffectual strategy use, hypothesis checking, or dimension checking) were classified as improving, remaining the same, or deteriorating on Test 1 versus Test 3 (Table 3).

As predicted, there were differences between low and high ability groups under performance but not under learning conditions, although this difference fell just short of significance. Under the performance condition, 43.5% of the low ability group deteriorated and only 8.7% improved from Test 1 to Test 3. In contrast, only 29.6% of the high ability children deteriorated, whereas 37.0% of them actually improved, $\chi^2(2, N = 50) = 5.47$, $p = .06$.

In addition to the chi-square, a McNemar test (Siegel, 1956) for the significance of change was used to test the significance of the observed changes for each of the four experimental groups. There were no significant changes from Test 1 to Test 3 for any group except the performance goal–low perceived ability group. These children showed a significant tendency to deteriorate in use of problem-solving strategies from Test 1 to Test 3, $\chi^2(1, N = 23) = 4.08$, $p < .05$. These results replicated the Diener and Dweck (1978, 1980) findings for children with learned helplessness.

Verbalizations

Raters. Two independent raters, blind to the condition of each subject, categorized verbalizations according to the classification used by Diener and Dweck (1978). The mean interrater reliability for these categories was computed by using the conservative method of evaluating percentage agreements for each category separately. Only categories with mean interrater reliabilities greater than 80% were used in the study. These categories included statements of useful task strategy, statements of ineffectual task strategy, attributions, statements of negative affect, and solution-irrelevant statements. Only verbalizations on which there was agreement were used in the analyses.

Training. Verbalizations were recorded on the last training trial prior to failure trials. Analyses showed that as in the Diener and Dweck (1978) study, there were no verbalization differences among groups during training.

Testing. Contingency tables for verbalizations were analyzed with a chi-square or a Fisher's exact test. Several significant differences were found among the verbalizations of the different groups (Table 4). The attributional category includes statements that attribute performance on the task to lack or loss of

Table 3
Percentage of Low and High Ability Feedback Children in Each condition Whose Hypothesis-Testing Strategy Improved, Remained the Same, or Deteriorated Over the Three Failure Trials

Strategy status	Condition			
	Learning goal		Performance goal	
	Low	High	Low	High
Improved	22.2	20.8	8.7	37.0
No change	44.4	45.8	47.8	33.3
Deteriorated	33.3	33.3	43.5	29.6

Table 4
Percentage of Low and High Ability Children in Each Condition Who Make Verbalizations During the Failure Problems

	Condition			
	Learning goal		Performance goal	
Verbalizations	Low	High	Low	High
Statements of attribution	3.7	8.3	26.1	3.7
Statements of negative affect	3.7	0.0	30.4	3.7

ability, lack of effort, task difficulty, experimenter's unfairness, or lack of luck. An analysis of the number of children in each group who made attributional statements during the failure trials supported the original predictions. Under the learning condition there was no difference between low and high ability groups. Neither high nor low ability groups were likely to make attributions for failure. However, under the performance conditions there was a significant difference between low and high ability groups. Under the performance condition, children given low ability feedback more frequently made attributions for failure, whereas only 4% of the high ability feedback group made such an attribution (Fisher's exact test, $p = .03$).

Particularly noteworthy is that all of the children in the performance goal–low perceived ability group attributed failure to an uncontrollable cause. None attributed failure to lack of effort, a controllable and modifiable factor. Of the low ability group who made attributional statements, half attributed their failures to themselves. These statements reflected a perceived lack or loss of ability such as "I'm not very good at this" or "I'm confused." The remaining children in this group made statements that fit into various attributional categories including luck ("I accidentally picked the wrong one"), task difficulty ("This is hard and still getting harder"), and experimenter unfairness ("Seems like you're switching on me").

Analysis of verbalizations of negative affect also supported predictions. Under the learning condition, neither low nor high ability groups were likely to express negative affect during the failure trials. Under the performance condition, however, there was a significant difference between ability groups (Fisher's exact test, $p = .01$) as 30% of the low ability group expressed negative affect during the failure test trials. These included statements like "After this (problem), then I get to go?" "This is boring," "My stomach hurts," and "I'm going to hate this part" (stated prior to a "wrong" feedback). Only one child in the high ability group expressed negative affect during the failure test trials.

There were no differences among groups in the remaining verbalization categories: solution-irrelevant statements and statements of effective and ineffectual task strategy.

Similar to the learned helpless children in the Diener and Dweck (1978) study, verbalizations of the performance goal–low perceived ability group were characterized by attributions for their failure to uncontrollable factors and by statements of negative affect. In contrast, similar to the mastery-oriented children of the Diener and Dweck study, verbalizations of the performance goal–high perceived ability condition and verbalizations of both high and low ability–learning goal conditions were marked by an absence of both attributions and negative affect during the failure trials.

Discussion

This study addressed the question of children's behavioral, cognitive, and affective patterns in achievement situations. When will children undertake challenging achievement tasks and exhibit the mastery-oriented response to difficulty? What underlies children's avoidance of challenging tasks and the more interfering, learned helpless response to failure? Why do these children allow little latitude for learning and focus prematurely on negative outcomes as a reflection of a personal deficit (i.e., low ability)?

The results of this study suggest that children's achievement goals are critical determinants of these patterns. When these achievement goals were fostered experimentally, the constellation of mastery-oriented and helpless achievement responses were created in their entirety. Specifically, when the value of the performance goal was highlighted and children believed they had low ability, they responded to feedback about mistakes in the characteristic learned helpless manner: making the attribution that mistakes reflected a lack of ability, responding to them with negative affect, and giving up attempts to find effective ways of overcoming those mistakes despite "ability to learn."

When the value of a performance goal was highlighted and children believed their current skills were high, they responded in a mastery-oriented manner in the face of obstacles. These children persisted in attempts to find solutions and did not make attributions for failure or express negative affect. Yet, like the performance-goal children who believed their current skills were low, performance-goal children with high perceived ability also passed up the opportunity to increase their skills on a task that entailed public mistakes.

In contrast to the condition in which the value of the performance goal was highlighted, when the learning goal value was salient, children's beliefs about their current skills were irrelevant in determining their achievement behavior. Regardless of whether they perceived their skills to be high or low, they sought to increase competence. That is, they opted for challenging tasks and did not forego opportunities to learn new skills, even with public errors. These children, regardless of their beliefs about their current skills, responded to failure in a mastery-oriented manner—their problem-solving strategies became more sophisticated.

Future studies are necessary to tease apart the aspects of the manipulations that affected the observed results. For example, our attempts to increase the salience of evaluation could have heightened concern about evaluation by adult experts or could have increased feelings of competition with peers. Regardless, we assume this would impact on the value of the performance goal. Dweck and Elliott (1983) considered other factors (e.g., intrinsic motivation and expectancies) that may influence goal values and confidence.

More generally, the results of our study suggest that learning and performance goals may be a very useful approach to under-

stand achievement patterns (see also Dweck & Elliott, 1983; and Nicholls, 1984, for further discussion of this approach). Our research suggests that each of the achievement goals runs off a different "program" with different commands, decision rules, and inference rules, and hence, with different cognitive, affective, and behavioral consequences. Each goal, in a sense, creates and organizes its own world—each evoking different thoughts and emotions and calling forth different behaviors.

We believe this learning and performance goals framework has the potential to build and expand on past approaches to achievement behavior. Past studies may be classified into two categories: (a) approaches that focus on specific mediators of achievement, which include the attributional approach (Weiner, 1972, 1982; Weiner, Frieze, Kukla, Reed, Rest, & Rosenbaum, 1971), the evaluation anxiety approach (Mandler & Sarason, 1952; Sarason, Davidson, Lighthall, Waite, & Ruebush, 1960; Sarason & Mandler, 1952; Wine, 1971, 1982), and the social learning approach (Battle, 1965, 1966; V. C. Crandall, 1967, 1969; V. J. Crandall, 1963; V. J. Crandall, Katkovsky, & Preston, 1960); and (b) approaches that focus on general energizers of achievement behavior, which include the work within the need for achievement tradition (Atkinson, 1957, 1964; Atkinson & Feather, 1966; Heckhausen, 1967; McClelland, Atkinson, Clark, & Lowell, 1953).

Similar to researchers in the first category, we attempted to precisely delineate specific mediators and link these to specific achievement behaviors in testable ways. Our approach, however, puts specific motivational measures within a broader context of a more general theory of achievement goals and attempts to show how mediators such as attributions and anxiety follow from a focus on particular goals and how they represent part of a coherent pattern of mediators.

As to the second category of researchers who have attempted to measure the underlying motives by using global measures (such as the Thematic Apperception Test [Murray, 1938]) and then to use these to predict achievement behavior, we suggest these global motive measures may be viewed as the "grand sum" of the cognitive and affective measures that are found by researchers focusing on specific mediators. It may be that this property makes their approach useful for prediction (e.g., task choice) but less useful for understanding the specific motivational mediators and for precisely elucidating the pattern of individual and situational influences. Our approach, instead, suggests the ways in which goal orientation interacts with confidence to set in motion a sequence of specific processes that influence, in turn, task choice, performance, and persistence.

In conclusion, our experiment provides support for an approach to achievement behavior that emphasizes learning and performance achievement goals as the critical determinants of achievement patterns. It is suggested that this framework can provide a general, yet precise, context for systematically understanding the specific mediators of individual differences in and situational influences on motivational patterns. To the extent that performance and learning goals can be adopted with respect to any personal attribute and not just ability (to judge/validate the attribute vs. to develop the attribute), our framework may provide a useful tool for the general study of motivation.

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The Publications and Communications Board has opened nominations for the editorship of the *Journal of Abnormal Psychology* for the years 1990–1995. Don Fowles is the incumbent editor. Candidates must be members of APA and should be available to start receiving manuscripts in early 1989 to prepare for issues published in 1990. Please note that the P&C Board encourages more participation by women and ethnic minority men and women in the publication process, and would particularly welcome such nominees. To nominate candidates, prepare a statement of one page or less in support of each candidate. Submit nominations no later than March 1, 1988 to

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