

Achievement Motivation: Conceptions of Ability, Subjective Experience, Task Choice, and Performance

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Achievement behavior is defined as behavior directed at developing or demonstrating high rather than low ability. It is shown that ability can be conceived in two ways. First, ability can be judged high or low with reference to the individual's own past performance or knowledge. In this context, gains in mastery indicate competence. Second, ability can be judged as capacity relative to that of others. In this context, a gain in mastery alone does not indicate high ability. To demonstrate high capacity, one must achieve more with equal effort or use less effort than do others for an equal performance. The conditions under which these different conceptions of ability function as individuals' goals and the nature of subjective experience in each case are specified. Different predictions of task choice and performance are derived and tested for each case.

In this article, predictions of task choice, performance, and subjective experience in experimental achievement settings are derived, and relevant evidence is examined. An intentional view of behavior (Dennett, 1978) is adopted. In this, action is construed as a rational attempt to attain goals or incentives. In commonsense terms, individuals' actions serve to achieve purposes efficiently or economically. In the terms of games theory, action maximizes gains and minimizes losses. An action can fail to achieve a purpose but cannot be useless in the sense that it would be if it were not designed to serve a purpose. In other words, the term *rational* refers to the way goals are pursued. Only in a limited sense (e.g., p. 332 of this article), does it imply anything about the adaptive value of any goal.¹

To use this approach to predict behavior

and thought, one must first specify individuals' goals and predict when a given goal will govern behavior. Here, achievement behavior is defined as that behavior in which the goal is to develop or demonstrate—to self or to others—high ability, or to avoid demonstrating low ability. This implies that in achievement situations individuals desire success to the extent that it indicates high ability and seek to avoid failure to the extent that it indicates low ability (Kukla, 1978; McFarland & Ross, 1982). This is more precise than McClelland, Atkinson, Clark, and Lowell's (1953) definition of achievement motivation in terms of affect associated with performance that is evaluated in terms of standards of excellence (p. 79). Standards of excellence apply to moral as well as to achievement behavior. V. J. Crandall, Katkovsky, and Preston (1960), Heckhausen (1967), Kukla (1972, 1978), and Maehr and Nicholls (1980) hold that the distinguishing feature of achievement behavior is that its goal is competence or perception of competence. The present theory adds the assumption that adolescents and adults can construe competence or ability in at least two different ways.

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¹ Consideration of actions in terms of individuals' goals is the stance adopted by naive observers when they empathize with others (Hoffman, Mischel, & Mazze, 1981). This gives derivations within the intentional framework a commonsense or naive flavor and might account for the fact that, despite its long history (Bolles, 1974), the approach may be considered heretical (Garcia, 1981, p. 151).

Two forms of achievement goal are thereby distinguished. According to the intentional framework, our subjective experience and overt behavior should differ in predictable ways when we have different goals. The two conceptions of ability are, therefore, keys to this theory.

Conceptions of Ability

The two conceptions of ability have in common the notions that task mastery is improved by effort or learning and that mastery is not normally lost. In the first and less differentiated conception, levels of ability and task difficulty are judged in relation to one's own perceived mastery, understanding, or knowledge. The more individuals feel they have learned, the more competent they feel. The more differentiated conception is embodied in standard intelligence testing practices (Nicholls, 1978). In this conception, learning is an insufficient basis for perception of competence. Rather, task difficulty and ability are judged high or low with reference to the ability of members of a normative reference group. High ability means above average and low ability means below average. In addition, valid inferences of ability are presumed to require evidence that effort is equal and optimum across individuals. This implies a conception of ability as capacity that is not always revealed in performance. Only optimum effort reveals the present limit of one's capacity and this capacity limits the effect of effort on performance.²

The two conceptions of ability embody different criteria for judging one's ability or chances of demonstrating ability. In the less differentiated conception, difficulty and ability judgments are self-referenced. Tasks are judged difficult if we expect to fail on them, and the more difficult they appear, the more does success indicate high ability. A greater gain in mastery or mastery of a task that one was uncertain of being able to master indicates greater competence. Furthermore, because more effort is seen to lead to more learning (that indicates more ability), the higher the effort needed for mastery, the higher the perceived ability. In the more differentiated conception of ability as capacity, task difficulty (normative difficulty) is judged from the performance of others, and demonstration of high ability demands success on tasks where others

fail. Capacity is inferred by interpersonal comparison of performance and effort. In this case, one could learn through effort or could master a task that was personally very challenging but still fail to demonstrate high ability. Indeed, the more effort or time one needs to learn something (compared to the effort or time it takes others) the less capacity is implied.

These conceptions of ability were first noted in research on the development of the concept of ability (Nicholls, 1978, 1980; Nicholls & Miller, 1983). Young children conceive of ability in a self-referenced manner as learning through effort. For them, to have low ability means mere failure to master a task or to improve as much as one had hoped. After a number of intermediate levels of differentiation, adolescents conceive of ability as capacity (not merely performance) relative to that of others. In this case, perception of low ability more clearly involves perception of inadequacy in the self—lack of capacity that cannot readily be altered. The motivational significance of these conceptions of ability is indicated by concomitant developmental changes in achievement affect, task choice, and performance (Nicholls & Miller, in press). The concern here is with causes and consequences of activation of the different conceptions in adolescents and adults.

To judge our capacity we must compare the effort and attainment of self and others. In other words, we must adopt a relatively external or social self-evaluative perspective. For this reason, the term *ego involvement* is applied to states where individuals seek to demonstrate ability in the differentiated sense. Use of the less differentiated conception involves a less explicitly self-evaluative stance. The concern here is with improving one's mastery of tasks rather than with one's ability relative to that of others. Accordingly, the term *task involve-*

² Among researchers and, no doubt, among naive adults, there are diverse views on the relative importance of heredity and environment in determining the levels of individuals' available or present capacities. These diverse views are not of concern here. There is, however, agreement that a test score does not reveal one's present capacity if one does not apply optimum effort and that it takes much more than optimum effort during a test to improve one's capacity. It is this understanding, which is implicit in intelligence test administration practices, that is embodied in the differentiated conception.

ment is applied to states where individuals seek to demonstrate ability in the less differentiated sense. I do not thereby imply that feelings of competence are absent in task involvement. Young children who lack the differentiated conception gain strong feelings of competence from their accomplishments (Heckhausen, in press); so do adults when they are task involved. However, task involvement requires a less social or external perspective on the self. Studies confirming that both conceptions can define achievement goals for adults are noted after the following two sections.

The foundations of the present theory are now laid. The most general postulate is that overt action and cognitive activity is rational in the sense described. The second postulate is that individuals can have development or demonstration of ability, in either sense, as a goal. We can, therefore, begin derivation of predictions—first, with the factors that engage the more rather than the less differentiated conception of ability.

Conditions of Usage of Each Conception

It has frequently been observed that humans (and monkeys) attempt to improve their level of mastery (a) if they are presented skill tasks offering a moderate challenge and are not placed under physiological or psychological stress and (b) if task-extrinsic incentives are not salient (Csikszentmihalyi, 1977; Deci, 1975; Elkind, 1971; Harlow, 1950; White, 1959). That is, these conditions produce task involvement. Under such relatively neutral conditions, the less differentiated conception of ability is a goal of action, and perception of improved mastery through effort indicates competence. The intentional framework indicates that individuals do not make complex judgments if simple ones serve their purposes. In task involvement, the differentiated conception is superfluous. We do not need to compare our own and others' attainment and effort to establish whether we have gained in mastery. The differentiated conception should not, therefore, be employed. But, as when we seek to assess a person's intelligence, when our goal is to establish whether mastery reflects ability rather than task ease or effort, we must employ the differentiated conception. Only the differentiated conception permits a concep-

tually adequate evaluation of the extent to which mastery reflects ability as opposed to effort or task difficulty.

It follows that, when one faces skill tasks, the basis of performance evaluation shifts from the less to the more differentiated conception as the strength of factors that induce concerns about evaluation of our competence increases. (I do not consider situations involving explicit behavioral standards such as a specific level of achievement or situations where altruistic or other task-extrinsic goals are salient.) Announcements that skill tasks are being used to test subjects should induce concerns about personal competence, especially if important or valued skills such as intelligence are at issue. Interpersonal competition on skill tasks also poses the question, who is best? Competition—especially on valued tasks—is, therefore, predicted to increase use of the differentiated conception to evaluate oneself. Finally, the more differentiated conception involves a more public perspective on the self. Thus, in skill situations, manipulations such as use of an audience (Carver & Scheier, 1981) that increase public self-awareness are likely to increase self-evaluation in terms of the differentiated conception. Tests of these predictions are considered after the following section.

Subjective Experience

Use of the differentiated conception involves a more actively self-evaluative or social view of the self. It is also predicted that learning or mastery through effort is experienced more as an end in itself as task involvement increases and more as a means to an end as ego involvement increases. This follows from consideration of the processes necessary to infer ability in each sense.

To assess their chances of demonstrating ability, ego-involved individuals must assess what they can master and whether this implies higher capacity than that of others. They must judge whether mastery will serve their end. They might, for example, believe they can improve through effort but expect such attempts to imply low capacity more clearly than inactivity would. Mastery, therefore, tends to be experienced as a means to an end rather than an end in itself: Action is more exogenously attributed (Kruglanski, 1975; see also Deci & Ryan, 1980).

In task involvement, however, improvement is the goal. An increase in mastery is, therefore, an end in itself. In task involvement, perception of an opportunity to develop or exercise an increased level of skill, therefore, reliably occasions attempts to do so. Furthermore, as learning is an end in itself, when individuals feel they are mastering a task, they feel they are doing what they want to do. They feel more intrinsically motivated than when they are ego involved.³

Conceptions of Ability and Subjective States: Evidence

First, it is claimed that either conception of ability can be employed by adults to evaluate their performance in skill situations. Second, it is predicted that the differentiated conception is activated as a goal when, instead of being presented in a neutral fashion, (a) tasks are presented as tests of valued skills, (b) interpersonal competition is fostered, and (c) self-awareness is induced. Ego-involving conditions are also predicted to increase exogenous attribution and diminish interest in mastery.

Diener and Srull (1979) used television and voice recordings—a method that appears to induce public self-awareness (Carver & Scheier, 1981, chap. 16). This manipulation produced self-reinforcement when peer norms were surpassed. When self-awareness was not induced, however, subjects self-reinforced on the basis of their own previous performance (indicating self-evaluation in terms of the less differentiated conception). When self-awareness was manipulated and when individual variation in public self-awareness was assessed, Scheier and Carver (1983) also found self-awareness associated with more attention to social comparison norms. These results support the hypotheses that increases in public self-awareness increase use of the differentiated conception to evaluate one's competence.

Jagacinski and Nicholls (in press) asked students to anticipate feelings of competence on passing a language test after high versus low effort. All of the students expected higher effort to lead to greater gains in competence. However, in a competitive (ego-involving) situation, students anticipated feeling less able when effort was high. This indicates use of the differentiated conception where the "fact" that

effort improves mastery conflicts with the "fact" that higher effort implies lower capacity. No such conflict was apparent when a learning for learning's sake situation was simulated. These findings (replicated four times) support the prediction that competitive rather than learning-oriented conditions engage the differentiated conception. Furthermore, pride and a sense of accomplishment were higher when effort was higher in task involvement and lower when effort was higher in ego involvement.

Presentation of tasks as tests of intelligence should induce ego involvement. Test-anxiety researchers have often compared this manipulation with neutral conditions and found it to increase concerns to meet the performance norms (integral to the differentiated conception) implied in the manipulation (I. G. Sarason, 1975; Wine, 1971). (This research is considered in the section on performance.) Patten and White (1977) found that presenting a task as an intelligence test (ego involving) and asking students to make causal attributions for their performance had the same effects on performance. (Performance differed in a neutral condition.) When attributing one's outcomes to ability, effort, or difficulty, the differentiated conception of ability must be activated if one is to respond meaningfully. Thus, Patten and White's finding is also consistent with the hypothesis that presentation of tasks as tests of a valued ability is more likely than is a neutral presentation to activate the differentiated conception.

Comparisons of attributions and affect in competitive (ego-involving) and noncompetitive (task-involving) conditions also indicate more self-evaluation in terms of the less differentiated conception (where what is accomplished through effort is the basis of perceived competence) in noncompetitive conditions. More effort attribution (C. Ames & R. Ames,

³ The exogenous quality of ego-involved action can be distinguished from the examples of exogenously attributed skill behavior most commonly found in the literature but not discussed here. For example, surveillance or offers of prizes can transform endogenous to exogenous involvement (Lepper & Greene, 1975). In ego involvement, the end is to demonstrate superior capacity, whereas in the above examples, demonstration of skill is a means to nonachievement incentives.

1981) and a stronger positive association between perceived effort and satisfaction (C. Ames, R. Ames, & Felker, 1977) emerged in noncompetitive conditions. Competitive conditions produced a positive association between own perceived ability (not effort) and satisfaction with performance (C. Ames et al., 1977). In the above studies, experimenters elicited performance attributions. When subjects could report either attributions or self-instructions (which indicate a focus on mastery), a complementary pattern emerged (C. Ames & McKelvie, 1983). Competition produced more ability and difficulty attributions than did an individual goal condition, which produced more effort attributions and self-instructions. Thus there appears to be more use of the less differentiated conception in noncompetitive conditions and more evaluation of capacity in competitive conditions.

Csikszentmihalyi (1977) has described the subjective states of individuals when they are highly involved in tasks as marked by feelings of competence and reduced public self-awareness. As the concept of task involvement implies, these states required tasks offering a chance to improve or perfect one's mastery. Activities that induced these states were seen as satisfying for endogenous rather than exogenous reasons (p. 17). This was less marked for activities that produced less task involvement. It supports the proposed link between task-involvement and endogenous attribution for action.

Similarly, Deci, Betley, Kahle, Abrams, and Porac (1981) found more interest in puzzles after individual performance (task involvement) than after competitive success. Ryan (1982) found more interest in tasks after performance in a neutral condition than after an intelligence test condition. Diener and Srull's (1979) induction of self-awareness also diminished students' feelings of freedom about dispensing self-reinforcement. Ego involvement appears to increase feelings of constraint about self-evaluation as well as for achievement behavior itself. Evidence of a different type also suggests the link between use of social norms and exogenous attribution. Teacher reports of use of social comparison to control children were more highly correlated with reports of use of coercive (exogenous) methods than with use of noncoercive methods (Deci,

Schwartz, Sheinman, & Ryan, 1981). Furthermore, children whose teachers used coercion and social comparison (not separated in analyses) reported less intrinsic interest in school.

There is, then, support for the claim that both conceptions of ability can be achievement goals and for the predictions of the circumstances under which each goal is activated and of subjective experience in each case. These phenomena are of interest in their own right and are necessary for the derivation and testing of predictions of task choice and performance.

Task Choice

It is assumed that, in achievement situations, each individual's purpose is to demonstrate high ability and to avoid demonstrating low ability. According to the intentional framework, individuals should select those tasks they expect to enable them to maximize their chances of demonstrating high ability and avoiding demonstrating low ability.

Individuals can be committed to goals they do not expect to attain (Klinger, 1975; McFarlin & Blascovich, 1981). But, ultimately, the rational response to an unattainable goal is rejection of that goal and selection of the next most attractive goal (Klinger, 1975). Thus, as individuals become more certain they cannot demonstrate high ability they should tend to adopt the less attractive goal of avoiding demonstrating low ability. This goal should, in turn, be relinquished as hope of attaining it dies.

To ascertain the most economical action for demonstrating ability, individuals must form subjective probabilities of demonstrating high versus low ability on the available tasks. The intentional framework indicates that they employ only the relevant data and process these no more than necessary for this purpose. Because a less differentiated conception of ability is employed in task involvement, the process of forming expectations of demonstrating ability is less complex in this state.

Task Involvement

When individuals are task involved, they see more effort as leading to more mastery and higher ability. Tasks seen as demanding no effort for success and tasks expected to not

yield to maximum effort offer no chance of demonstrating high ability. Tasks that appear likely to yield to high effort offer the optimum balance between high chances of demonstrating little ability and low chances of demonstrating high ability (which would involve waste of much effort). That is, tasks should be most attractive at an intermediate level of expectancy of success where one's highest likely level of competence might be demonstrated. Individuals should differ in the level of objective difficulty at which they have moderate expectancies of success.⁴ They should differ correspondingly in the level of objective difficulty they prefer; however, all should prefer tasks close to their own perceived level of competence.⁵

Ego Involvement

When individuals are ego involved, their chances of demonstrating ability depend on the ability of others. Thus, one might demonstrate incompetence but not competence on normatively easy tasks (on which many can succeed). One might demonstrate ability but not incompetence on normatively difficult tasks. Moderate normative difficulty levels allow the possibility of above- or below-average performance that would indicate high or low capacity.

Individuals with high perceived ability have moderate expectancies of success on normatively moderate to difficult tasks where success indicates high ability. Therefore, they should prefer tasks at or above moderate difficulty levels, depending on how able they believe they are. They do not expect to decline in the level they can attain. Therefore, when repeated success at a given level indicates possession of the corresponding level of ability, they can gain but not lose in perceived ability by attempting more difficult tasks. Thus they should prefer normatively moderate to difficult tasks where their expectations of success are moderate.

The picture is more complex for those with low perceived ability. With tasks of moderate normative difficulty they expect to fail and, thereby, to demonstrate low ability. They should, therefore, avoid such tasks. Choice of either very easy or very difficult tasks enables them to avoid demonstrating low ability. These individuals' preferences for easy versus difficult

tasks are predicted to depend on how certain they are that they lack ability and on their associated level of commitment to demonstrating high ability or to avoiding demonstration of low ability. Consider first those whose doubts about their competence are not firm enough to have extinguished commitment to demonstrating high ability. For these individuals, choice of easy tasks would be irrational in that it could not conceivably lead to demonstration of high ability. Only normatively difficult tasks offer any chance of attaining the more attractive goal of demonstrating high ability as well as the certainty of avoiding the demonstration of low ability. (McFarlin & Blascovich, 1981, show that commitment to achievement goals can exist despite very low expectations of attaining them.) Thus, those who suspect their ability is low but are committed to demonstrating high ability should prefer normatively difficult tasks. Here, their expectation of success is very low but failure cannot imply low ability and the possibility that they have high ability cannot be ruled out.

Repeated failure or other experiences may, however, have produced virtual certainty that one lacks high ability. The intentional framework leads to the prediction that, for individuals in this second category, commitment to demonstrating high ability is low and the goal of avoiding the demonstration of low ability

⁴ Objective difficulty refers to the objective properties of tasks, such as number of pieces in a jigsaw puzzle or distance from a target. This is distinguished from normative difficulty that is inferred from the performance of others (Nicholls & Miller, 1983).

⁵ The less differentiated conception of ability, being self-referenced, does not allow the possibility of demonstrating low ability in the decisive fashion that is possible when ability is judged relative to that of others. Nor does low ability in this sense clearly indicate the personal inadequacy associated with a lack of capacity. Perception of low ability in the less differentiated sense can occur in environments that offer no opportunity to improve one's level of mastery. Consider, for example, the effect of an extremely unresponsive environment on infants, who do not have the differentiated conception of ability. They appear to almost never perceive an opportunity to develop or demonstrate competence and rarely attempt to do so (Hetherington & Parke, 1975). In the framework of the less differentiated conception, this represents something close to absolute zero of perceived ability. This could be termed a state of learned helplessness—perceived noncontingency of action and outcome.

is more salient. Withdrawal from the situation would achieve this. If the situation mandates a choice, the rational choice is a normatively easy task that demands little effort and where success indicates that one does not lack the low level of ability that failure would indicate. Thus, those who are more certain that their ability is not high are predicted to prefer normatively easy tasks where their expectations of success are high. Those in the third and most extreme category—those who are certain their ability is low and who are not committed to avoiding demonstration of low ability—should see very easy tasks as offering the most economical way of leaving the situation.

In summary, three types of individuals with low perceived ability are distinguished. Some are committed to demonstrating high ability. Others, more certain that their ability is not high, lack commitment to demonstrating high ability. Others are certain their ability is low and have accepted this. The first type should tend to select tasks where they have very low expectancies of success. The second and third types should tend to prefer tasks where they have high expectancies of success.⁶

Atkinson's (1957, 1965) theory predicts greater preference for moderate probabilities of success in those with high resultant achievement motivation and preference for high or low probabilities in those with low resultant motivation. These parallel present predictions for high and low perceived ability in ego involvement. However, Atkinson's theory does not distinguish preference for high versus low probabilities of success. Nor does it predict a general preference for challenging tasks in task-involving situations. Others hold that Atkinson is wrong: Kukla (1978), and Meyer, Folkes, and Weiner (1976) predict greater preference for intermediate probabilities in all subjects. The present position is that Atkinson is correct though incomplete in ego involvement and that Kukla and Meyer et al. are correct in task involvement.

Measurement of Perceived Ability

Hypothesis testing does not demand estimates of perceived ability in the undifferentiated sense beyond expectations of success. An index of perceived ability relevant to ego involvement is, however, needed. This should indicate individuals' evaluations of their ability

relative to that of others and predict expectations of success or perceived ability on experimental tasks. Self-esteem or self-concept scales serve this purpose effectively. Such scales refer primarily to the adequacy of one's competence (R. Crandall, 1973), and authors (e.g., Brockner, 1979; McFarlin & Blascovich, 1981; Shrauger, 1975) commonly employ and describe them as perceived-competence measures. The fact that they predict perceived ability on experimental tasks (McFarlin & Blascovich, 1981) supports their validity for the present purpose. Jagacinski and Nicholls (in press) also found that college students interpreted the statement that someone is able as meaning that they have high capacity relative to others. Conversely, a statement that someone succeeds through high effort was not interpreted as implying that they have high ability. This indicates that typical self-esteem items would elicit evaluations of ability in the differentiated sense. Many questions about personal competence would heighten a self-evaluative stance and amplify this trend. An association between a self-concept scale and ratings of own skill relative to that of others (Roberts, Kleiber, & Duda, 1981) also supports this thesis.

⁶ Predictions are stated in terms of normative difficulty and expectancies of success for ego involvement and in terms of expectancy of success for task involvement. Even if normative cues are absent, ego-involved individuals appear able to estimate their chances of demonstrating ability. Individuals with either high perceived attainment, general expectancies, or perceived ability are more inclined than are others to attribute success but not failure to ability on tasks of unspecified normative difficulty (C. Ames, 1978; Feather & Simon, 1971; Nicholls, 1976, 1979a; Simon & Feather, 1973; Valle & Frieze, 1976). It seems that when they have moderate expectancies of success, individuals with high perceived ability see tasks as moderately normatively difficult and infer high ability from success. When individuals with low perceived ability have moderate expectancies of success they appear to see tasks as easy and do not infer high ability from success. Predictions can, therefore, be tested with reference to expectancies of success. This is important because studies of task choice often do not employ normative cues.

⁷ According to Atkinson's (1957) theory, subjective probabilities of success and task difficulty are equivalent. Except in young children (Nicholls & Miller, 1983) and in task involvement, where the less differentiated conception of ability is employed, they are not. This means that Atkinson's predictions (framed in terms of probabilities of success) are ambiguous. In this instance I assume that his predictions refer to subjective probability of success, not to task difficulty.

Test-anxiety scales correlate quite highly with self-concept or self-esteem scales (R. Crandall, 1973) and thus lack discriminant validity. Although one would not guess it from test-anxiety-scale titles, the content of these scales refers directly to perceived ability and expected adequacy of performance. These facts alone provide a case for considering them measures of (low) perceived ability. But there is more. In the case of the Test Anxiety Scale for Children, it has been shown that perceived-competence content accounts for the associations of the scale with performance and other variables that have been presumed to be a consequence of anxiety (Nicholls, 1976). Liebert and Morris (1967) separated test-anxiety-scale content into worry and emotionality components. A number of studies show that worry rather than emotionality is related to performance and that worry but not emotionality scores are influenced by performance feedback in exactly the ways one would expect perceived ability to be affected (Morris, Davis, & Hutchings, 1981; Wine, 1971). Morris et al. characterized the tendency to worry as a tendency toward negative self-evaluation and negative expectation. Indeed, worry items are accurately described as low perceived competence rather than worry items (e.g., "I do not feel confident about my performance on this test", "I do not feel self-confident"; Morris et al., 1981). Thus, the active ingredient of test-anxiety scales is perceived competence. The validity of these scales for the present purpose is further indicated by evidence that test-anxious students perceive themselves as less able on experimental tasks (Arkin, Detchon, & Maruyama, 1982) and as encountering more problems demonstrating ability on exams (Arkin, Kolditz, & Kolditz, 1983).

Resultant achievement-motivation (Atkinson & Feather, 1966) scores incorporate test-anxiety scores. For this reason and in accord with the evidence and arguments of Kukla (1972, 1978), individuals high in need for achievement and low in test anxiety (high resultant achievement motivation) can be considered high in perceived ability, and those low in need for achievement and high in test anxiety (low resultant motivation) can be considered low in perceived ability. Evidence that higher resultant motivation is associated with higher expectancies of success on experimental

tasks (Atkinson, 1957, 1969) supports this view.⁸ Klinger and McNelly's (1969) claim that this motive measure indicates perceived status is also consistent with this thesis.⁹

Although they lack discriminant validity, the above measures are obviously not identical and the unique components of each merit more study (Nicholls, 1976). Yet there is justification for considering them measures of perceived ability. Confirmation of present predictions with these different measures supports their construct validity as indexes of perceived ability and indicates that a theoretical integration has been achieved.

Task Choice: Evidence

In task involvement, preference for intermediate subjective probabilities is predicted for all individuals. In ego involvement, those with high perceived ability are predicted to prefer moderate subjective probabilities and those with low perceived ability are predicted to prefer more extreme probabilities. I consider evidence on the general contrast between task and ego involvement and then the extra predictions for low-perceived-ability individuals when they are ego involved.¹⁰

⁸ Although consistent with the present position, this evidence contradicts a fundamental assumption of Atkinson's mathematical model, namely, that task difficulty and subjective probability of success can be equated. It also threatens the implication of his model that the differences between low- and high-resultant-motive individuals reflect individual differences in the values associated with success and failure rather than individual differences in expectations of success and failure. Alternatively, this evidence could be seen as indicating that, in terms of Atkinson's theory, his measure of resultant motivation lacks construct validity; it produces results contrary to the assumptions of the theory.

⁹ Mehrabian's (1969) resultant achievement-motivation scale has been used extensively. Many of its items elicit preferences for challenging skill tasks versus easy or nonskill tasks. Evidence that higher scorers on this scale choose more challenging tasks might, therefore, merely show that people do what they say they do. Such evidence is of questionable relevance to achievement theory (Nicholls, Licht, & Pearl, 1982). Therefore, studies of task choice using this scale are not considered.

¹⁰ In the method now commonly employed to estimate subjective probabilities of success, individuals who prefer tasks on which they have low or high success rates are assumed to prefer low or high probabilities. By anchoring estimates of subjective probabilities of success to each individual's rate of success, this method takes account of

In an ego-involving condition, Raynor and Smith (1966) presented puzzles as an intelligence measure and emphasized the test's importance. In another condition, the experimenter acted in a nonevaluative manner and minimized the importance of the task. It appeared that subjects experienced the conditions as less different than was intended (Raynor & Smith, p. 187). Nevertheless, as predicted here, there was a strong tendency for low- more than high-resultant-achievement-motive students to select extreme probabilities in the ego-involving condition and a greater general preference for moderate probabilities in the neutral condition.

A similar test arose out of work by Schneider (1973, chap. 4), who, in a series of studies under neutral conditions, found no difference between individuals high and low in resultant motivation. However, in one study (chap. 5), low-motive subjects preferred more extreme probabilities. In this study the experimenter was a teacher in the subjects' school rather than an unfamiliar nonevaluative adult. This led to a comparison of a nonevaluative presentation with presentation of the task as a valid test of ability. Consistent with present predictions, more extreme probability preferences on the part of low- than high-resultant-motive students occurred only the more ego-involving condition (Jopt, 1974, p. 196).

Studies without direct comparisons of two conditions provide less adequate tests of the theory. Nevertheless, such studies could disconfirm it. Seven studies of choice under (apparently) ego-involving conditions were found. DeCharms and Dave (1965), Roberts (1974), and Hamilton (1974) used physical skill tasks with males. The very high value males place on physical skills (Roberts, in press) and the

making of a visible public record of performance outcomes in these studies should have induced ego involvement. Use of academic material (DeCharms & Carpenter 1968) and anagrams (Moulton, 1965) presented as important tests of ability would induce ego involvement. Brody (1963) presented undergraduates with what was said to be a test of their ability, on which they recorded their names. Both actions would induce ego involvement. Finally, Mahone (1960) studied occupational choices that are likely to occur in ego involvement. As predicted here, in these seven studies where there was evidence of factors that would induce ego involvement, low-resultant-motive individuals preferred more extreme probability levels than did high-motive subjects.

Trope (1979) employed a nonevaluative situation in which the task was said to be unrelated to intelligence and anonymity was assured. Thus it is probable that task involvement was maintained. Regardless of perceived ability, all of the subjects in this study preferred tasks that discriminated between levels of ability closest to their own perceived level. With similar conditions, Buckert, Meyer, and Schmalt (1979) obtained the same results. Thus, the available results are consistent with predictions.

The remaining question is whether high versus low subjective probability of success choices occur as predicted. When ego involvement is induced, low-perceived-ability individuals who retain commitment to demonstrating high ability should choose low probabilities. Those who are more certain their ability is low should choose high probabilities. Two studies with relevant data were found.

Sears (1940, 1941) gave 9- to 12-year-olds academic tasks in a testlike ego-involving manner. Children who chose higher and lower probabilities had failed consistently in school. Thus, they would have lower perceived ability (Bloom, 1976; Nicholls, 1979a). Within this group, those selecting very low probabilities of success showed a stronger wish for high achievement in diverse activities and made more negative evaluations of their competence in these activities than did others. They acted "as if they never felt they were doing well enough" (Sears, 1940, p. 523). This indicates the predicted commitment to demonstration

individual differences in subjective probabilities. Deviations of individual preferences from group (rather than individual) performance means have also been employed (e.g., McClelland, 1958). This method appears to reflect the assumption (Atkinson, 1957) that "degree of difficulty can be inferred from the subjective probability of success" (p. 362). Because this method fails to deal with individual differences in expectation of success (Heckhausen, 1968), studies employing it are avoided in this review. Note that studies that use individual rather than group data to test Atkinson's theory (e.g., Hamilton, 1974; Moulton, 1965) embody a rejection of Atkinson's assumption that difficulty and subjective probability are equivalent.

of high ability despite perception of low ability. Those selecting high probabilities showed greater responsiveness to nonachievement incentives and greater readiness to lower their goals after manipulated success (Sears, 1940, 1941). Both phenomena indicate the predicted rejection of the goal of demonstrating high ability.

Further support comes from Moulton's (1965) study of high school students' choices on tasks presented as valid tests of their intellectual ability. Students low and intermediate in resultant motivation chose more extreme subjective probability levels than did high-motive students. Furthermore, the lowest group chose high probabilities more than the intermediate group, who favored low probabilities. Given that the lowest group was most certain that they lacked ability, these results also support the predictions.

In summary, the present theory resolves the contradiction between the predictions of Atkinson and those of Kukla and Meyer et al. It successfully predicts choices in task versus ego involvement. Unlike the above positions, it also predicts high- versus low-probability choices in ego involvement. (See also Heckshausen, 1977.)

Performance or Attainment

Some theories (e.g., Kukla, 1972) hold that level of performance increases with intensity of effort. The present position adds the assumption that performance can be impaired by self-derogatory ability evaluations even when effort is high (Arkin et al., 1982; I. G. Sarason, 1975; Wine, 1971). Consistent with the intentional framework, it is assumed that effort and self-evaluations are a function of expectations that effort leads to demonstration of high rather than low ability. The derivation of performance predictions therefore depends on the previous statements of expectations of demonstrating ability as a function of task difficulty. Ego involvement is considered first and then is contrasted with task involvement.

Performance in Ego Involvement

Predictions. According to the intentional framework, effort should be high (and produce effective performance or attainment) when it is perceived that high effort is necessary for demonstration of high ability in the differ-

entiated sense. For those with high perceived ability, this is on normatively moderate to difficult tasks. For these individuals, effort and thus performance is predicted to be low on tasks that appear to demand little effort and where failure appears certain despite maximum effort—tasks perceived as normatively easy and extremely difficult, respectively.

In ego involvement, individuals with low perceived ability expect to demonstrate low ability in the moderate normative difficulty range. Performance on such tasks should be impaired, but the mechanism involved depends on how certain they are that they lack ability (see Carver & Scheier, 1981, for an analysis in terms of increasing expectancies of failure.) First, consider those whose perceived ability is low, but not low enough to have extinguished commitment to demonstrating high ability. This commitment will maintain effort. However, the aversive expectation of demonstrating lack of personal capacity should produce the self-derogation, negative affect, and impaired performance associated with test anxiety (Arkin et al., 1982; I. G. Sarason, 1975; Wine, 1971).

As predicted in the task-choice section, individuals whose expectations of demonstrating high ability are extremely low should have less commitment to this goal and should be more committed to avoiding demonstration of low ability. The fact that, in ego involvement, failure implies low ability less decisively when effort is low is then relevant. Thus, at moderate normative-difficulty levels, the probability of a self-protective reduction of effort (Frankel & Snyder, 1978) should be higher for these individuals than for others. A more extreme result is predicted for individuals who are so certain that their ability is low that they have relinquished commitment to avoiding demonstration of low ability. Such individuals should avoid becoming ego involved with the tasks in question. In this case, effort is employed only to the degree that other incentives appear contingent on it and even perception of the possibility of demonstrating high ability should not produce high effort. The term *learned helplessness* might be used here, although in practice it has been applied to any performance impairment consequent on perceived noncontingency of action and outcome (Abramson, Seligman, & Teasdale, 1978).

Evidence of the first (Arkin et al., 1982; Brockner, 1979) and last effects (Marecek & Mettee, 1972) exists. Many studies do not distinguish the different levels of low perceived ability or the effects predicted to be associated with them. Nevertheless, because performance impairment is predicted for all levels of low perceived ability (on normatively moderately difficult tasks), such studies can be used to test the more general predictions of performance. Furthermore, it is likely that few individuals with the lowest level of perceived ability would enter or survive college long enough to find their way into subject pools. Thus, it is assumed that they play a negligible role in effects obtained with students simply identified as low in perceived ability.

When low-perceived-ability individuals face normatively easy or difficult tasks, they expect to avoid demonstrating low ability, and self-derogatory evaluations do not occur. Effort is high on easy tasks where failure—which would indicate low ability—appears avoidable by high effort. This effort and, thus, performance is higher for low- than for high-perceived-ability individuals who expect an easier success on easy tasks. If the task is seen as normatively difficult, high effort will (except at the lowest level of perceived ability) be forthcoming because its absence would be inconsistent with commitment to demonstration of high ability. Accordingly, performance of low-perceived-ability individuals is predicted to be higher when tasks are perceived as normatively easy or difficult rather than moderate.

Expectations of demonstrating ability and performance: Evidence. According to the preceding predictions, expectations of failure impair performance to the extent that failure indicates low ability in the differentiated sense. Part of this thesis is supported by Frankel and Snyder (1978). They contrived a series of failures calculated to make subjects doubt their ability and then presented tasks perceived as normatively difficult or moderate. Performance was not impaired in the difficult condition where expectancies of failure and perceived noncontingency would be higher. As predicted, performance was only impaired in the moderately difficult condition where failure would indicate low ability. Miller (1982) replicated these findings (in an evaluative situation) with sixth graders who had mastered the

conception of ability as capacity (Nicholls, 1978). On the other hand, sixth graders who had not yet mastered this conception performed similarly in moderate, high-difficulty, and control conditions. The two groups had similar levels of perceived ability, but expectations of demonstrating low ability only impaired the performance of those who had attained the differentiated conception. These findings support the proposed role of expectations of demonstrating low ability—as opposed to mere expectancies of failure (Carver & Scheier, 1981) or perceived noncontingency (Abramson et al., 1978)—and, more specifically, of the conception of ability as capacity.

Task difficulty, perceived ability, and performance: Evidence. Returning to individual differences under ego involvement, it is predicted that high-perceived-ability individuals perform their worst on tasks perceived as normatively easy, whereas low-perceived-ability individuals perform their worst at moderate-difficulty levels. Furthermore, low-perceived-ability individuals perform better than those with high perceived ability on tasks perceived as normatively easy, whereas this is reversed at intermediate-difficulty levels. These predictions resemble those of Revelle & Michaels's (1976) revision of Atkinson's theory.¹¹

The following studies are relevant to the above hypotheses in that normative difficulty cues were manipulated and ego-involving manipulations, such as presentation of tasks as tests of intelligence, were employed. Karabenick and Youssef (1968) found that low-resultant-achievement-motive students performed most poorly and below high-motive students at an intermediate normative difficulty level. High-motive students performed worst at an easy level, but this performance was not, as predicted, below that of low-motive students. Comparing conditions of easy and intermediate normative difficulty, Kukla (1974) found all relevant predicted effects.¹²

¹¹ Like the original theory, this revision holds that task difficulty and subjective probability of success can be equated. Because they are not equivalent, the predictions of the theory are ambiguous. In this case, I assume that Revelle and Michaels's predictions refer to normative task difficulty—the factor manipulated in relevant studies (c.f. Footnotes 7 and 10).

¹² Kukla employed the Mehrabian (1969) Resultant Achievement Motivation Scale. High scores on this scale

I. G. Sarason (1961) found test-anxious (low-perceived-ability) students' anagram performance lower at moderate to moderately low difficulty than at high-difficulty levels. Low-anxious students performed better with moderate- than with high-difficulty instructions. These results accord with predictions for the anxious, but not the low-anxious students for whom similar performance is expected in each case. However, the task was presented as an intelligence measure only in the moderate-difficulty condition. This could account for low-anxious students' higher performance in the moderate- than the high-difficulty condition. S. B. Sarason, Mandler, and Craighill (1952) found no difference between high- and low-anxious students in a normatively difficult condition, whereas low-anxious students outperformed those high in anxiety in an easy condition. If the easy task was seen as moderately easy, these results accord with predictions. Description of a task as highly difficult produced higher performance in test-anxious students than did a neutral condition where difficulty was presumably seen as moderate (I. G. Sarason, 1958). As predicted, low-anxious students' performance was best in the latter condition. Though not perfectly consistent, most findings support the present predictions.

Feedback and performance: Evidence. Normative difficulty cues are important in that they affect expectancies of demonstrating ability in the differentiated sense. Normative feedback during performance indicates the level of ability the individual is likely to demonstrate with much less ambiguity. It is also likely to increase or maintain ego involvement. Therefore, studies using normative feedback provide better controlled tests of predictions of performance in ego involvement.

When, in ego involvement, feedback indicates that performance is below that of others, low-perceived-ability individuals should expect to appear incompetent and experience anxiety or reduce effort. Performance would thus be

lowered. When feedback indicates above-average performance, these individuals should (if not certain their ability is low) believe that they are demonstrating high ability and apply high effort to maintain this perception. (If subjects are certain they have low ability, success feedback should not produce high effort.) Feedback indicating below-average performance would violate high-perceived-ability individuals' expectancies and produce high effort and performance. High normative feedback should confirm their high perceived ability, imply that less effort is necessary for demonstration of high ability, and lead to lower performance.

Results consistent with all the above predictions (except that in parentheses, which was not tested) were obtained by Weiner (1966) who told high- and low-resultant-motive subjects that they were doing much better or worse than most others during performance on a task described as a test of general ability. These findings were replicated by Weiner and Schneider (1971). Perez (1973) and Schalton (1968) examined performance of high- and low-self-esteem students after they had been told that their initial intelligence test performance was below average. High-self-esteem students' performance improved. Performance of those with low self-esteem declined slightly. Thus, the studies of effects of performance feedback are consistent with predictions.

The further prediction that individuals who are certain their ability is low would avoid demonstrating ability was confirmed by Marecek and Mettee (1972). When told they had displayed above-average ability, subjects with high and low self-concepts, but not those with low self-concepts who were certain of this evaluation, showed improvement on a retest. The additional finding that the latter individuals improved when performance was presented as dependent on luck rather than on ability supports the view that, in the skill condition, they avoided demonstrating high ability. There was, in this study, no evidence of the diminished performance predicted for high-perceived-ability subjects after success feedback. However, ego involvement was probably not aroused on the pretest because the initially stated purpose of the session was to determine group baseline performance levels. Thus, a decline in performance would be unlikely.

are gained by asserting a preference for challenging skill tasks. Thus, the study can be seen as indicating that those who prefer such tasks perform better on them, whereas those who do not prefer such tasks perform better on easy tasks. In this light, the concept resultant achievement motivation is marginally relevant to Kukla's results. With this caveat, the results are consistent with present predictions.

In this section, predictions for individuals with low perceived ability were confirmed with considerable consistency. The expected diminished performance of high-perceived-ability individuals after success feedback was not found in one of three cases. Variation in degree of ego involvement was probably implicated in this exception. In summary, the better controlled tests of this section of the theory support it.

*Performance: Task Involvement
Versus Ego Involvement*

Predictions. When individuals are task involved, effort reflects the extent to which it appears likely to produce improved mastery or mastery of tasks that individuals are uncertain about their ability to master. If individuals believe that high effort is necessary to produce improvement they apply high effort. Effort, and thus performance, is predicted to be lower if they believe that little effort is needed or that high effort has no effect. When individuals differ in the level of difficulty at which they expect gains in mastery, they will correspondingly differ in the level of difficulty at which they perform most effectively. However, provided difficulty levels (normative or objective) are not extreme, all or most individuals will expect to be able to gain in mastery. As this is an end in itself, they should apply high effort to maximize their mastery and perceived ability. Consequently, they should perform effectively. These predictions resemble those of Kukla (1972) more than those of Atkinson.

Many studies that compare ego- and task-involving conditions enable testing of these predictions and of the differences between task involvement and ego involvement. High-perceived-ability ego-involved individuals' concern to perform well compared to others, and their expectancy of being able to do so, was predicted to maintain intense effort and effective performance on tasks of moderate normative difficulty. For low-perceived-ability individuals facing moderate normative difficulty levels, impaired performance is predicted in ego involvement but not in task involvement.

The preceding predictions apply to experimental settings where tasks are of relatively short duration and task requirements are clearly specified. In these cases, the fact that

(in ego involvement) learning is a means to an end is unlikely to impair performance. Indeed, a concern with scoring as high as possible could lead to item-selection strategies that would increase scores at the expense of learning (Harter, 1978). However, task involvement, where learning is more an end in itself, should be superior to ego involvement in sustaining significant real-world achievements such as the development of logical thinking (Piaget, 1960) and original scientific thought (T. S. Kuhn, 1968). Here, individuals must themselves detect problems or inconsistencies in their own logic or in scientific thought. Endogenous attribution appears likely to foster sensitivity to such problems (Condry & Chambers, 1978) and to maintain the necessary long-term involvement (Campbell, 1960; D. Kuhn, 1974). Effort would be less consistent over long periods and sensitivity to contradictions would be reduced by concern with one's score (Condry & Chambers, 1978) when, as in ego involvement, learning is a means to an end.

Task involvement versus ego involvement: Evidence. Here I review studies where brief experimental tasks were presented as moderately normatively difficult or allowed a wide range of scores and would, therefore, allow the possibility of demonstrating high or low capacity. (See Footnote 6.) In such cases, ego involvement is predicted to impair performance for those with low perceived ability so that they perform more poorly than when task involved and more poorly than high-perceived-ability individuals in task or ego involvement. There are strong reasons for not predicting diminished performance in ego involvement for high-perceived-ability individuals and weaker reasons for expecting them to perform better in ego than task involvement. In the following studies, a variety of manipulations that should induce ego involvement were compared with more neutral conditions.

Entin and Raynor (1973) compared high- and low-resultant-motive students in testlike and in neutral conditions.¹³ High-motive sub-

¹³ Entin and Raynor (1973) characterize the ego-involving condition as one where opportunity to work on later problems is contingent on success on the test. However, this, but not the neutral condition, used social comparison norms and was testlike. As identical results occur when there is no reference to a contingent future task, this aspect of the methodology is of uncertain relevance.

jects performed better under ego than task involvement, whereas the reverse occurred for low-resultant-motive students. Similar findings were obtained by Raynor and Rubin (1971). Gjeseme (1974) obtained identical results with anagrams presented as a school test versus a type of problem students would be tested on one year later.

Presentations of tasks as tests (usually of intelligence) have also been compared with neutral conditions with high- and low-test-anxious students. Studies that have reported (a) the presently predicted poorer performance for anxious students in test than in neutral conditions and (b) no condition effect for low-anxious students are Paul and Eriksen (1964), I. G. Sarason (1959), and S. B. Sarason, Mandler, and Craighill (1952). I. G. Sarason and Minard (1962) obtained this result for comprehension but not for three other tests. With a digit-symbol task, I. G. Sarason and Palola (1960) also found lower performance for anxious students and higher performance for low-anxious students in an intelligence test condition. (With very easily discriminable symbols, anxious students, as expected, scored higher than did others in the test condition.) Russell and I. G. Sarason (1965), however, found no effect of testlike instructions on anagram performance. Given the number of factors that could lead to failure to demonstrate the expected effects (e.g., tasks could appear easy), the above studies favor the hypothesis of impaired performance at moderate difficulty levels in low- but not in high-perceived-ability individuals in ego-involving conditions.

Also consistent with present predictions is Perez's (1973) finding that an intelligence test condition led to lower performance for low-self-esteem subjects than did a neutral presentation, whereas high-self-esteem subjects performed similarly in each condition. Similarly, induction of self-awareness produced poorer performance in low-self-esteem subjects than did a task focus (Brockner, 1979; Brockner & Hulton, 1978). High-self-esteem subjects were not affected by conditions, and task focus produced similar performance in high- and in low-self-esteem subjects. Also as predicted, the task condition reduced anxiety in low-self-esteem subjects (Brockner, 1979). The presence of observers also lowered performance in low-perceived-ability (Shrauger, 1972) and in test-

anxious subjects (Ganzer, 1968), but not in high-perceived-ability and low-anxious subjects.

There is, then, good evidence of the predicted effects of ego versus task involvement when difficulty is perceived as moderate, problems are clearly defined, and time periods are relatively short. Compared to task involvement, ego involvement produces lower performance in low-perceived-ability individuals and equal or higher performance in high-perceived-ability individuals.

There appears to be no relevant experimental evidence with tasks involving problem finding or the development of logical thought. However, Amabile (1979) found that an evaluative condition lowered artistic creativity. Furthermore, evidence that individuals who make outstanding creative achievements or who are more successful in school and in science are distinguished from others by higher levels of task involvement rather than ego involvement (Spence & Helmreich, 1983; Nicholls, 1979b) provides support for the present position.

Other Theories of Performance

A major difference between the present theory and those of Atkinson (1965; Atkinson & Raynor, 1974) and Kukla (1972) is that the present one distinguishes and makes separate predictions for task and for ego involvement. The importance of this distinction is sustained by the evidence reviewed above. (This is not to say that further distinctions are unnecessary; e.g., Maehr, 1983, and Roberts, in press.)

The present theory also distinguishes normative difficulty and expectancies of success. They are imperfectly distinguished by Kukla, whose predictions are framed in terms of objective difficulty that cannot be specified as precisely as can normative difficulty. This leads to inconsistent interpretations of data. At one point, Kukla (1972) presents as consistent with his theory, evidence that low-resultant-motive individuals perform better when half of their peers are predicted to fail than when the odds of success are clearly higher or lower (Atkinson, 1958). At another point, evidence (Kukla, 1974) that low-resultant-motive individuals perform better on a normatively easy than on a moderately difficult task is held to support

his theory. Such inconsistency is unlikely when predictions are framed in terms of normative-difficulty cues. The differences between the present position and Kukla's stem largely from his use of the less differentiated conception of ability. Consequently, the predictions of Kukla's theory resemble present predictions for task involvement. There is no place in his formulation for the various performance impairment and enhancement effects that occur in ego involvement.

The predictions of Atkinson's theory as modified by Revelle and Michaels (1976) are more compatible with the present predictions for ego involvement. It seems that in Revelle and Michaels's revision, as in the present theory, low-resultant-motive (or low-perceived-ability) individuals would be predicted to perform their worst at moderate normative-difficulty levels and high-perceived-ability individuals would be expected to perform their worst at easy and at extremely difficult tasks. However, as Revelle and Michaels note (p. 400), their position does not predict higher performance in low- than in high-resultant-motive subjects after feedback indicating above-average performance (Weiner, 1966; Weiner & Schneider, 1971), whereas this theory does. More critical, however, is the failure to deal with task involvement where performance is often, as predicted, as good as or better than in ego involvement.¹⁴

The concept of learned helplessness has been used to account for impaired performance. Abramson et al. (1978) have distinguished personal and universal helplessness. This parallels the present distinction between perception of low capacity and perception of high normative difficulty. However, the claim that impaired performance is a consequence of perceived noncontingency of action and outcome embodies the less differentiated conception of ability. Bandura's (1977) distinction between lack of a sense of efficacy and belief in an unresponsive environment also suggests the differentiated conception of ability. However, when Bandura claims that increased perception of personal efficacy follows improvements in mastery (p. 195), the less differentiated conception is implied. But, neither position explicitly distinguishes the conceptions of ability or makes different predictions for task and for ego involvement. As the theory

and evidence reviewed here show, performance impairment is reduced in task-involved states. Carver and associates have demonstrated similar effects (Carver, Blaney, & Scheier, 1979; Carver, Peterson, Follansbee, & Scheier, 1983; Carver & Scheier, 1981), as has Kuhl (1981).

This very brief comparison of these different positions indicates that the present one deals relatively effectively with the evidence on performance on tasks of relatively short duration, where the problem to be solved is specified and major cognitive restructuring is not required.

Conclusion

I have focused on task choice and performance in experimental settings because these topics have long been of interest to researchers and because data enabling comparisons with previous theories were available. The following examples illustrate the applicability of the approach to other achievement-related phenomena.

First, R. Ames (1983) has analyzed students' requests for academic assistance in terms of (a) ego involvement versus task involvement and (b) individual differences in perceived ability. He proposed that in ego-involving conditions, students with low perceived ability would be more likely than those with high perceived ability to see a request for assistance as a demonstration of lack of capacity. Thus, they would be less likely to seek assistance. In task-involving conditions, on the other hand, Ames predicted that most students would view seeking assistance as a way of learning or demonstrating ability in the less differentiated sense. When task involved, students with low perceived ability should, therefore, not avoid seeking assistance. Ames's (1983) review of the available evidence supports his predictions.

Second, there has been considerable interest in the nature of the associations of attributions of effort, ability, and other factors with different

¹⁴ It might be argued that task-involving situations are not achievement situations. The problem then would be to explain why individuals perform effectively and choose challenging tasks in these situations. This position would also have the anomalous implication that the motivation that makes the most distinctive contribution to outstanding creative achievement is not a form of achievement motivation.

affects (e.g., Weiner, Russell, & Lerman, 1978). In this context, researchers have assumed that the meanings of effort and ability are fixed. However, because the meaning of effort and ability can change, the links between affect and perceived effort and ability may also change. For example, in ego-involving contexts, Jagacinski and Nicholls (in press) found perception of lower effort associated with guilt and perception of higher effort (implying lower capacity) associated with embarrassment. In task-involving contexts—where effort and ability are imperfectly differentiated—perception of lower effort was associated with increases in both guilt and embarrassment. This was expected because lower effort generally implies lower ability in task-involving contexts. Thus, the present approach provides new insights on achievement-related affect.

Finally, the conceptions of ability that play a central role in this theory also play an important role in the development of achievement motivation. As the conception of ability as capacity develops, children's achievement affect and overt behavior increasingly approximates that of adults when both are in ego-involving situations (Nicholls & Miller, in press). Whereas young children and adults differ in ego-involving situations, they react similarly in task-involving situations. There is also evidence that, as children progress through the grades, school environments generally become more ego involving (Eccles, Midgley, & Adler, in press). Thus, there is a close interdependence between the present approach to adult achievement motivation and research on developmental change in achievement motivation.

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