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**Achievement-Related  
Motives and Behaviors**

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## EDITOR'S OVERVIEW

The study of achievement by behavioral scientists is ordinarily confined to activities relevant to academic and vocational attainments. In this chapter, Spence and Helmreich adopt a broader definition of achievement that admits any type of performance that may be evaluated by the individual or by others according to its excellence and that may occur in a wide variety of settings. Proceeding from this perspective, the authors examine certain achievement-related motives and goals and their implications for real-life behaviors. Particular attention is given to individual differences in these motives and to a comparison of the motivational systems of women and men.

The authors first present a conceptual analysis of intrinsic versus extrinsic motives and incentives, noting that little is known about the interactions of these two types of motives in determining achievement-related behaviors. They review two very different research literatures with indirect relevance to this question: one concerned with the nature of on-the-job worker motivation, and the other with the experimental study of the influence of external rewards on intrinsic motives, as observed in laboratory and other time-limited settings. The authors conclude that intrinsic and extrinsic motives and goals are not necessarily additive or mutually facilitative in their effects on achievement-oriented behavior.

The bulk of the chapter is addressed to intrinsic achievement motives which, following the personality theorist Henry Murray, the authors define as a striving toward performance excellence and which they regard as stable personality characteristics whose strength varies from one individual to the next. After describing the highly influential expectancy-value theory of John Atkinson and his colleagues, which incorporates Murray's conceptions, the authors present their multidimensional conception of achievement motivation. By means of their objective self-report

instrument, the Work and Family Orientation Questionnaire (WFO), they identify three relatively independent motives: mastery (the preference for challenging tasks and for meeting internal standards of excellence), work (the desire to work hard), and competitiveness (the enjoyment of interpersonal competition).

Contrary to the implications of theories suggesting that the genders differ in the nature of their achievement motives, the authors' data with the WFO suggest that the structure of men's and women's achievement motives is similar. However, they report that, in unselected groups, sex differences in motive strength emerge, women tending to be somewhat higher than men in work, and men tending to be somewhat higher in mastery and substantially higher in competitiveness. A series of studies relating these achievement motives to measures of quality of academic performance in college students and of vocational performance in several occupational groups shows that, in both sexes, individuals high in work and mastery achieve more than those whose motive strengths are relatively low. Contrary to the belief that interpersonal competitiveness facilitates successful attainment, the authors' data indicate that, in the groups studied, highly competitive individuals do less well, especially if they are also high in work and mastery. The authors caution, however, that the processes by which competitiveness results in deleterious effects are not known and that competitiveness may not have negative consequences in all individuals or types of endeavors.

The authors' conceptions of achievement and achievement motives suggest that these motives can find expression not merely in academic and vocational pursuits but in a variety of everyday activities in which individuals elect to participate. They report data from several studies that give credence to these hypotheses.

**A**mbition and the drive to achieve excellence are widely recognized as crucial ingredients in successful attainment. Education, ability, social background, and opportunity—being at the right place at the right time—make important contributions to success; but even among individuals who are similar in all these respects, wide differences in accomplishments may still be observed. If we are to understand what makes some people more successful than others, we must also take into account the intensity and the nature of their achievement-related motives.

This chapter is devoted to an examination of certain of these achievement-related motives and their implications for real-life achievement behaviors. Our principal concern is with *intrinsic* achievement motives—the enjoyment of achievement-related activities and of striving toward performance excellence. However, we also consider *extrinsic* motives and goals—the desire for the tangible or intangible rewards that are often obtained as a consequence of successful performance—and their possible interactions with intrinsic motives in determining achievement behavior.

Individual differences in intrinsic achievement motives have been the subject of extensive theorizing and empirical investigation by psychologists and other behavioral scientists. Perhaps the best-known and most highly influential of these theories has been developed by Murray (1938) and by Atkinson and McClelland and their colleagues (Atkinson, 1958; Atkinson and Raynor, 1974; McClelland, Atkinson, Clark, and Lowell, 1953). Our conception of intrinsic achievement motivation as a striving toward excellence is in the classical tradition of these investigators, although we view achievement motivation as a cluster of interacting factors rather than as a single, unitary dimension. In the course of this chapter, we describe our operationalization of these constructs and present some of our empirical studies showing the relationship between our measures and naturally occurring achievement behaviors. We also attempt to place intrinsic achievement motivation in a broad conceptual framework as a guide to future theoretical analysis and empirical research. The task we have set

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ourselves here is not to present a comprehensive theory of achievement behavior or even a preliminary sketch for such a theory. Instead, we have chosen to focus on several types of achievement-related motives and to explore in a preliminary way some of their implications for real-life achievement-oriented activities. In the absence of systematic empirical data, much of this exploration is perforce descriptive and speculative.

A recurring theme in our discussion is the relationship between achievement motivation and gender. Until quite recently, research on achievement-related motives in late adolescents and adults has concentrated primarily on males. This male-dominated approach is rapidly being remedied. Economic, political, and social forces that have propelled or lured an increasing proportion of women into the labor force, combined (not entirely coincidentally) with the rise of the feminist movement and a shift in societal attitudes toward a more egalitarian view of men's and women's roles, have belatedly forced recognition that many women not only may be motivated to achieve but also may desire to express these motives in the same kinds of activities as men engage in.

Women, however, have yet to achieve as much as men vocationally. Those who enter the labor force in full-time jobs tend to congregate in positions that are simultaneously low in prestige and female-dominated; further, within a given type of position, men as a group typically rise higher than their female colleagues (Schrank and Riley, 1976; see also Chapter 5, this volume). The identification of the internal and external social-psychological factors that act to suppress, facilitate, or channel women's achievement-oriented activities is thus a topic of growing concern to social scientists.

The implicit or explicit aim of most inquiries into achievement-related motives has been to predict or to bring theoretical understanding to very limited types of real-world behaviors, namely, those occurring in academic and vocational settings. Other forms of attainment in which achievement strivings could theoretically find expression have received scant attention, particularly as they occur in women. Women—or at least those women who elect not to pursue careers—have often been viewed as lacking in the same intrinsic achievement motives as men have or as being able to satisfy their achievement needs vicariously through their husband's accomplishments. This dismissal appears to denigrate as genuine accomplishments women's contributions to the home and family and to organizations to which they give unpaid labor and at the same time to disallow the capacity of these activities to satisfy achievement needs. However, women high in achievement motivation may find an outlet for these motives in tasks associated with their traditional role responsibilities, such

as child care, housekeeping, and other domestic activities, whether or not they also have paid employment (Veroff and Feld, 1970). We have therefore adopted the position, which we share with such writers as Stein and Bailey (1973), that nontraditional activities may provide significant avenues of expression for intrinsic achievement motives, particularly in noncareer women perhaps, but also in men. We will therefore attempt to consider achievement motives and their implications for behavior from a broad perspective that goes beyond work and school.

### **ACHIEVEMENT NOMINALLY DEFINED**

Guiding our discussion is the following nominal definition of achievement (modified from Smith, 1969): *Achievement is task-oriented behavior that allows the individual's performance to be evaluated according to some internally or externally imposed criterion, that involves the individual in competing with others, or that otherwise involves some standard of excellence.*

Our definition of achievement admits two types of behaviors. The first is composed of activities occurring in settings in which there are generally agreed-upon standards by which to judge the quality of performance and in which evaluation of the performer routinely occurs. Performance on the job, in school, or in other formal training programs provides the major examples of this type of behavior. In light of the social significance of these activities, it is understandable that formal investigations of the effect of achievement motives on behavior have almost exclusively been limited to school and work performance or to performance on laboratory tasks relevant to these settings. Our definition also encompasses, however, achievement-oriented behavior occurring in avocational and extracurricular contexts. Common examples are hobbies or amateur sports; participation in civic, religious, or professional groups on a volunteer, nonpaying basis; and domestic activities, such as gardening, home maintenance and decoration, sewing and cooking, and childrearing.

Our definition also permits either the participating individual or an outside agency to specify whether the individual's performance is being evaluated according to some standard of excellence as well as to designate what that standard is. In conventional areas such as the workplace, society and its organized institutions define the situation as being achievement-related, expecting the participants to do their best on their assigned tasks or to meet some minimal standard of performance, and devise systems of tangible and intangible rewards for successful attainment that simultaneously provide the partici-

pants with evaluative feedback about the quality of their performance. The participants, although typically aware that they are expected to perform well, do not necessarily share these aspirations, usually because they are low in achievement motivation or because their achievement motives are not aroused by the particular activities being demanded of them.

Although achievement-oriented individuals often express their achievement motives in conventional job- and school-related activities, they may also find an outlet for their achievement strivings in other activities in which they voluntarily engage. As the Guinness book of records amusingly attests, human beings can turn performance in almost any situation into a challenge—a task to be mastered, a record to be established, a skill to be perfected, a race to be won. Often these activities engage the individual's interest over substantial periods of time, provide deep personal satisfaction, and have considerable social value. Although some writers have intimated that individuals are unlikely to express their intrinsic achievement motives in nontraditional ways because of the relative absence of recognized standards of performance excellence and the unavailability of clear performance feedback from external sources, it seems more likely that most people have the capacity to establish their own performance standards and to evaluate the quality of their own behaviors. We have therefore made our definition of achievement broad enough to include activities that the individual specifies as the target of his or her own achievement strivings and may thus provide outlets for achievement motives that are personally gratifying.

### **TYPES OF ACHIEVEMENT-RELATED MOTIVES AND REWARDS**

In the following sections, we discuss intrinsic and extrinsic motives and rewards and consider the relationship that may exist between them.

#### **Intrinsic Versus Extrinsic Motives and Goals**

Behavior is ordinarily described as intrinsically motivated if it is pleasurable in its own right and is not being undertaken merely to obtain some external reward; the reward for performing is inherent in the performance itself. When the individual's goal is more specifically to meet some standard of performance excellence and part of the reward for indulging in the activity is striving toward and reaching this goal, we refer to intrinsic achievement motivation.

Successful achievement often brings about consequences that are gratifying to their recipients, such as a pay raise and social recognition. Achievement-oriented behaviors whose goal is to obtain these external or extrinsic rewards can be described as extrinsically motivated. It is possible, of course, for a single set of behaviors to be driven simultaneously by both intrinsic and extrinsic motives.

### Extrinsic Motives and Goals

In American society, worldly success has always been widely admired, and ambition (at least in males) is considered praiseworthy. This emphasis on success can be seen in the reward systems operating in recognized areas of achievement. Our society has set up countless prizes, titles, elite societies, and honorific awards whose primary function is to call attention to academically and vocationally successful individuals and their accomplishments. Success in the vocational sphere typically brings higher salary, status, privileges, and prestige, and access to still more advantageous positions in which the extrinsic rewards are even greater.

The existence of these formal mechanisms for honoring accomplishment mirrors the value our society places on individual achievement and the expectation that it be recognized and encouraged. We tend to be ambivalent, however, toward achievement that is obviously extrinsically motivated. On the one hand, we seem to view the individual who is driven by intrinsic motives and whose goals are fundamentally unselfish as more deserving of reward than is the individual whose goals are crassly materialistic or self-aggrandizing. On the other hand, we tend to regard individuals who are indifferent to the worldly consequences of their achievement as deviant—as amusing eccentrics, otherworldly saints, or even as dangerous radicals—and to be uncertain about whether much useful work would be accomplished in the absence of external incentives. We expect people to want and be pleased by extrinsic rewards but not to work too conspicuously with no other goal but to obtain them.

Although individual differences in the strength of intrinsic achievement motives have been extensively investigated, surprisingly few formal attempts have been made to measure individual differences in the strength of extrinsic motives and to determine their effects on achievement-related behaviors. It seems undeniable, however, that people vary in the degree to which they value for their own sake the various kinds of tangible and intangible consequences of successful accomplishment and hence the degree to which these outcomes are inherently rewarding. Some individuals are relatively unconcerned with financial rewards, desiring only enough income

to maintain a modest standard of living; whereas others are greedy for money, prizing it for what it can buy or for the security it offers. Some are indifferent to high status and position, and some hunger after them. People also vary in the degree to which their behaviors are shaped and stimulated by their strivings after these external rewards, that is, the degree to which their achievement-oriented behavior is extrinsically motivated. While the value that individuals place on receiving these various kinds of rewards and the intensity of their motivation to achieve them are undoubtedly correlated, the reward value and the motivational value of things not only are conceptually separate but very probably also have a substantial degree of independence.

In the extreme case in which an individual's behavior is motivated only by the expectation of extrinsic rewards, his or her achievement-oriented activities have nothing but instrumental significance. That is, the behaviors are undertaken solely to gain these rewards, the individual finding no inherent pleasure in engaging in these behaviors but only in anticipating their consequences. The person engages in activities that eventuate in extrinsic rewards only because the rewards are not otherwise available. The pure case is probably rare, most individuals wanting, if nothing else, to assure themselves and others that they personally deserve the fruits of success because those fruits were obtained through their own efforts. It is also unlikely that anyone would work hard and successfully over long periods of time at tasks of any consequence for purely extrinsic reasons.

Whether those with strong extrinsic motives in performing some task are any more or less likely than others simultaneously to have strong intrinsic achievement motives is unknown. Observation suggests, however, that it is possible for individuals with substantial intrinsic motivation to place considerable value on the tangible or intangible benefits of successful attainment at the same time and to be highly motivated to obtain them. Those who are jointly motivated by intrinsic and extrinsic motives may choose their jobs or plan their whole educational and vocational careers to maximize the probability that they will obtain not only intrinsic satisfactions but also the monetary rewards or the kinds of recognition and prestige to which they aspire. One may choose to become a physician, for example, rather than a Ph.D. biologist, because M.D.'s ("real" doctors) tend to be more highly regarded by many segments of society and to have higher incomes than "mere" doctors of philosophy, particularly if the latter are employed in academic institutions.

Activities and occupations that are equally demanding vary in the probability of various kinds of "payoffs," and individuals who allow extrinsic considerations to guide their choices of career or career

activity are likely to improve their chances of obtaining the rewards they desire. However, if only individuals who are engaged in a specific endeavor are considered, those who have strongly extrinsic motivations do not necessarily have a greater probability of success than those whose behaviors are more exclusively motivated by intrinsic considerations. In fact, several sources of evidence, which are reviewed in later sections, indirectly suggest that the contrary may often be the case.

It should again be emphasized that those whose achievement-related activities are primarily motivated by intrinsic factors are not necessarily indifferent to the extrinsic rewards their accomplishments may bring them. Reflecting our society's stress on the value of individual accomplishment, many whose achievement behaviors are driven and shaped primarily by intrinsic considerations may nonetheless expect and highly prize recognition of their accomplishments. Having weighed their accomplishments and found them worthy in their own eyes, they may demand that their achievements be acknowledged by others in the form of tangible or intangible rewards. In many instances, the actual value of the reward may be less important than the recognition it signifies. The salary a person is paid often has this symbolic function; beyond a certain level, the absolute amount is less important than the amount relative to that earned by members of the person's reference group. Often, of course, there are discrepancies between people's evaluation of their performance and the recognition they believe is therefore owed them and the rewards they actually receive. These disparities may have the effect of decreasing individuals' intrinsic interest in their job responsibilities (Adams, 1965).

Extrinsic rewards may also be useful in allowing individuals to evaluate their own efforts. Excellence in performance is sometimes obvious, but often the yardstick by which quality can be measured is not clear-cut. In the face of ambiguity, people may compare themselves with others or seek the judgments of others to verify or to correct uncertain self-evaluations (Festinger, 1954; Smith, 1968). The consequences of successful achievement—good grades in school, salary raises, promotions, honorific awards, the respect of others, and the like—are sources of information that may be used in this process. For those who simultaneously hold a high but uncertain opinion of themselves, the need for constant reassurance and recognition may be almost insatiable.

To summarize these distinctions, individuals differ in the inherent value they place on extrinsic factors such as money, prestige, and status, and in the degree to which their achievement-related behaviors are actively motivated and shaped by their desires for these exter-

nal rewards. The achievement-oriented behaviors of those whose intrinsic motives are weak and who are trapped in situations that do not provide satisfactory outlets for their achievement needs may be driven only by external incentives; the work involved is sheer drudgery and to be avoided if their extrinsic needs can be satisfied in other ways. For persons with some degree of intrinsic motivation, these extrinsic outcomes may also have additional functions, providing information about the quality of their performance and personal competence and serving as ego-gratifying recognition of their accomplishments.

In actuality, most people's achievement efforts are probably spurred by a number of interacting motives that vary in strength and saliency across individuals, and within individuals, across situations. Similarly, the consequences of successful performance may have multiple meanings and values to their recipients. Although these various aspects of motives and rewards may in practice be difficult to disentangle and measure separately, it is imperative that distinctions be maintained since they may have different implications for achievement behaviors.

### Peripheral Motives and Goals

We have been discussing the external benefits that are direct consequences of achievement behavior and their functions in motivating and rewarding behavior. Other aspects of particular achievement settings that are only incidental or peripherally related to the execution of assigned responsibilities may be satisfying to other kinds of motives. The fulfillment of affiliative and other similar needs is a major example, some achievement-related situations permitting the individual to interact with others, to develop friendships, or to be helpful to others.

Affiliative needs, although found in both sexes, are most frequently mentioned in discussions of the motives underlying girls' and women's achievement-oriented behaviors. Some theorists (e.g., Hoffman, 1974) have proposed that, in general, females tend to be deficient in intrinsic achievement motivation in comparison with males but simultaneously to have stronger needs than males to affiliate with others. Correlatively, females are also described as being more motivated than males by the need for social approval. Thus, the motivations underlying the achievement-related behaviors of males and females in school or on the job may not be identical.

In this context, the implication seems to be that females more often than males seek the favor of teachers, employers, or others of higher status for being dutiful and doing what is expected of them in

order to please—much as a child seeks to please the parent by being “good.” Another kind of need for social approval, however, may be more likely to affect men in their occupational lives. In this society, men are expected to work, and a good deal of significance is attached to their abilities to support themselves and their families adequately. Men who live up to this masculine role expectation receive society’s approval and bolster their own self-esteem. They may thus gain considerable satisfaction from their work roles even in the absence of intrinsic gratifications provided by their actual job responsibilities (Lawler and Hall, 1970; Veroff and Feld, 1970).

## NATURE OF WORK MOTIVATION

Although the significance of both intrinsic and extrinsic factors for achievement has been widely recognized by social scientists, we noted earlier that little is known not only about individual differences in the intensity of extrinsic motivation within each sex but also about the interactions between intrinsic and extrinsic motives and rewards in determining real-life achievement behaviors. We will review briefly two areas of research that have some indirect relevance to these issues. The first has to do with the nature of work motivation, based on the reactions of individuals to their jobs. The second, discussed in the following section, is more theoretically and experimentally oriented and considers the influence of extrinsic rewards on intrinsic motivation, as observed in time-limited, contrived settings.

Most men—and an increasing proportion of women—must have paid employment in order to support themselves and their dependents. Work is not an option, freely undertaken, but a necessity, and jobs are typically structured and defined by persons and organizations rather than the workers themselves. At the same time, the economic and political health of an industrialized society is dependent on having a productive, effective work force. Enlightened self-interest suggests that conditions should be arranged to promote worker motivation and satisfaction and, ultimately, worker production. As a result, extensive theoretical and empirical attention has been paid to the contribution of intrinsic and extrinsic factors to work behavior both by social theorists and by those interested in organizational effectiveness.

McGregor (1960) has contrasted two extreme views about work motivation, which he calls Theory X and Theory Y, that have very different implications for managerial strategies. According to Theory X, which has guided managerial policy until relatively recently, people work primarily because they must; most have little ambition and

prefer to avoid responsibility. This theory implies that the way to increase work motivation and hence productivity is to improve pay, working conditions, and other benefits external to the job itself. Theory Y, which has roots in the sociological theories of Karl Marx and Max Weber and is related to the Protestant ethic, holds that work is inherently good and self-fulfilling. As Marx wrote, work is the “existential activity of man, his free conscious activity—not as a means of maintaining his life but for developing his universal nature” (1844).

More contemporary versions of this latter theory stress the significance of work in bolstering self-esteem and in fulfilling needs for self-realization and self-actualization (e.g., Argyris, 1964; Maslow, 1954). In an analysis of the concepts of job alienation and involvement, Kanungo (1979) has noted that theories postulating the inherently self-fulfilling properties of work imply that, ideally, work should be voluntary, noninstrumental in fulfilling basic physical needs, and designed to permit individuals to develop and express their fullest potential. This type of theoretical approach suggests that the failure of workers to be satisfied and productive fundamentally lies within the system. Jobs that permit the worker no autonomy or sense of personal achievement are stultifying and destroy motivation; this state of affairs cannot be remedied by increasing material incentives or improving the quality of the work environment. The key to maintaining adequate levels of motivation and productivity is to restructure jobs to permit self-direction and self-actualization.

Empirical attempts to identify sources of job satisfaction have left unsettled the question of the relative importance of factors quite directly pertinent to the nature of the job and the individual’s performance in it, versus factors more external to job performance. Based largely on the results of a study by Herzberg, Mausner, and Snyderman (1959), in which employees were asked to describe a positive and a negative situation in their job, Herzberg (1966) has proposed a highly influential theory that distinguishes between two categories of events, identified as satisfiers and dissatisfiers. Self-actualizing factors associated with the work itself, such as recognition, advancement, and achievement, serve as satisfiers and motivators. In contrast, work conditions, pay, and other factors external to the job (which Herzberg has identified as needs to avoid discomfort) do not provide positive gratification or act as motivators. If they are perceived as inadequate, however, they lead to worker dissatisfaction.

A number of studies involving blue-collar as well as white-collar and professional workers have confirmed that individuals holding jobs in which they can use their abilities, have more autonomy in structuring their work, and gain feedback about their accomplishments tend to be more satisfied not only with their work but also

with their lives in general (e.g., Hackman and Lawler, 1971; Kornhauser, 1965). However, the validity of the categorical system of satisfiers versus dissatisfiers has been questioned on both empirical and methodological grounds, as has the assumption of a linkage among satisfaction, motivation, and job performance (e.g., Dunnette, Campbell, and Hakel, 1967; House and Wigdor, 1967; Vroom, 1964). More specifically, later studies have provided little support for the hypothesis that external factors can serve only as dissatisfiers, and not as possible sources of gratification or motivation. After reviewing the evidence, Lawler (1973), for example, has concluded that pay and factors related to the job context rank higher as sources of satisfaction than suggested by Herzberg (1966), especially when jobs are not structured to provide intrinsic satisfactions.

Responding to theoretical analyses stressing the importance of intrinsic factors in motivating job performance, a number of companies have introduced job innovations designed to reduce monotony and to permit workers greater autonomy and flexibility in executing their job responsibilities or in planning their schedules. The effectiveness of these job-enrichment programs has not been uniform, the outcome being related to the nature of the jobs and those who hold them (e.g., Hackman and Lawler, 1971; Hullin and Blood, 1968; Oldham, Hackman, and Pearce, 1978). Lawler (1973) has concluded that individuals vary in the nature of their motives and needs, so that no single method of promoting work motivation and effectiveness is equally successful with all workers. For individuals who are low in intrinsic motives, who are trapped in jobs that do not allow the expression of intrinsic motives, or who are unsuccessful in their jobs, the only real incentive to work may be the necessity of earning a living, and extrinsic factors may be the only source of job satisfaction. For those who find their jobs challenging and their efforts recognized, salary and characteristics of the work setting may be perceived as less important sources of satisfaction, becoming salient only if they fall below an acceptable level.

This conclusion is congruent with the stance implicitly taken in our earlier discussion. However, some of the consequences or accompaniments of achievement-related behavior that we have labeled extrinsic rewards are often considered intrinsic in the work-motivation literature. Factors such as advancement to positions of greater responsibility, status, and recognition by others are directly job-related and, in the sense of being performance-contingent, are "intrinsic" to the job. But, unlike undertaking an activity because of the pleasure inherent in the activity itself or in doing it successfully, advancement and other forms of recognition are consequences of performance. In this sense, they constitute extrinsic rewards for achievement. Accord-

ing to our theoretical schema, if individuals are motivated to perform in order to earn the coinage of status and recognition, they are extrinsically motivated in the same way as when they perform in order to earn money.

The finer distinctions we have imposed may be unessential or impractical in making managerial decisions about how to restructure or enrich jobs or about how to improve the work setting in order to maximize worker motivation, morale, and productivity. Conclusions on this point cannot be drawn confidently until more is known about the interaction between intrinsic and extrinsic motives and rewards (as we have defined them).

### Sex Differences

The increasing numbers of women who not only have full-time employment but also are entering positions and occupations traditionally almost exclusively occupied by men have prompted the investigation of possible sex differences in work-related motives and goals. Comparisons of male and female employees and job applicants on these variables have been complicated by their interaction with such variables as type of occupation, organizational level, and the individual's age and educational background. The results of investigations in which these variables are held constant or controlled indicate that sex differences are small, some studies finding no significant differences at all (e.g., Brief and Oliver, 1976; Brief, Rose, and Aldag, 1977). However, studies in which discrepancies between men and women have been found report similar findings. Men tend to place higher value than do women on factors related to career advancement and recognition, such as opportunity for promotion, high pay, and increasing responsibilities; whereas women tend to place a higher value than do men on characteristics of the work environment, such as pleasant working conditions and congenial co-workers (Bartol, 1976; Bartol and Manhardt, 1979; Jurgensen, 1978; Manhardt, 1972; Schuler, 1975). However, these same studies also indicate that factors related to intrinsic job satisfaction, such as intellectual challenge, the opportunity to be creative, and the chance to feel a sense of accomplishment, do not discriminate between men and women.

Manhardt (1972), one of the investigators finding the sex differences just described, has suggested that many women in his sample did not have a long-term investment in their jobs, expecting to work only a short time or regarding their work as less important than other aspects of their lives. The differences between men and women that emerged in his study, Manhardt speculated, may have been brought about solely by this subset of women with little or no long-term career



involvement. Data reported by Bartol and Manhardt (1979) indicate that women's overall commitment to their careers may be on the rise, at least at some occupational levels. From 1966 to 1974, these investigators questioned new employees of a large insurance company, all college graduates, about their preferences in job outcomes. Women who were hired in the 1970s rated interpersonal factors and working conditions lower and career goals higher than women who joined the company in the 1960s. Men's ratings on these variables did not change over the eight-year period. Thus, the discrepancy between male and female employees systematically decreased with year of employment.

On the whole, these investigations suggest that, within a given type of occupation, only minor sex differences in work-related motives and goals are likely to be found and that, with changes in sex-role attitudes, even these differences may be on the wane. It would be premature to conclude from this evidence alone that men and women are essentially the same in the nature of their motives. There continue to be striking differences in the occupations that the sexes enter, proportionately more women being found in types of jobs that are relatively unchallenging, ill-paying, nonprestigious, and often filled almost exclusively by women. It could be argued that one of the factors responsible for this discrepancy is the lower intrinsic motivation and, even more particularly, the lower achievement motivation displayed by women in general in comparison with men. Thus, while women who aspire to demanding professional and managerial careers may be motivationally similar to their male counterparts, it may still be true that relatively few women "have what it takes" and, if they enter the job market, gravitate in larger numbers than do men to lower-level positions. Evidence relevant to this general issue will be presented in a later section.

### EFFECTS OF EXTRINSIC REWARDS ON MOTIVATION AND PERFORMANCE

While motivational theorists differ in the exact role they assign to salary and other external factors, most appear to agree that intrinsic and extrinsic motivational systems essentially operate in parallel and that, if extrinsic rewards do not necessarily facilitate work performance, they at least do not detract from it. Other psychological theorists have explicitly postulated that extrinsic rewards facilitate performance and that intrinsic and extrinsic motives are essentially additive in their effects (e.g., Atkinson, 1974).

Although the powerful influence of rewarding outcomes on performance is beyond dispute, serious questions have arisen about whether their effects are uniformly benign, particularly in circumstances in which individuals are performing a task that they find intrinsically motivating, i.e., activities that they find enjoyable and will perform without expectation of reward. Data demonstrating that positive reinforcers do not always have beneficial effects come primarily from experimental investigations of reactions to specific tasks, often studied within the laboratory. We examine some of these data here, with an eye toward their possible implications for real-life achievement behaviors.

### Effects on Intrinsic Motives

One extensive group of studies has been addressed to the proposition that, under some circumstances, the introduction of extrinsic rewards may actually reduce the individual's intrinsic motivation. (For reviews of these studies and the theories developed to explain their results, see Deci, 1980; Lepper and Greene, 1978). These investigations have employed tasks presumed to be enjoyable or challenging to the participants and, as such, intrinsically motivating. The measure of intrinsic motivation to perform the task has typically been participants' ratings of its interest value or the amount of time they voluntarily devote to it in the absence of any external incentives.

In the first of these studies, Deci (1971) had college students (most of them male) work on a series of puzzles under one of three conditions. Subjects in the first condition received a monetary reward for each puzzle they completed. Subjects in the second condition received praise. In the third, control condition, subjects received neither monetary reward nor verbal feedback. Unobtrusive observation of each subject immediately after the experimental session indicated that those who had been praised for their performance spontaneously played with the puzzles more than did those in the other experimental conditions, whereas subjects given monetary reward played with them least. From these results, it was concluded that the introduction of extrinsic, material rewards for performance reduced intrinsic motivation. In another prototypic study, Lepper, Greene, and Nisbett (1973) found that nursery-school children who were promised an award for playing with drawing materials less frequently chose those materials during a later free play period in the classroom than did children in a nonrewarded control group.

The phenomenon demonstrated in these studies has been shown to be dependent on the initial interest value of the tasks (Calder and

Staw, 1975; Loveland and Olley, 1979; McLoyd, 1979). Individuals given tangible rewards for performing interesting tasks subsequently showed a drop in indices of intrinsic motivation in comparison with nonrewarded individuals. However, the reverse was found in groups given tasks that had low interest value. Loveland and Olley (1979), who employed preschool children as subjects, found these changes in intrinsic motivation one week after the children performed the task. By seven weeks, however, the influence of rewards had dissipated, indicating that the reward effects, while persistent, are not permanent.

In explaining their results, Lepper and his colleagues (e.g., Lepper and Greene, 1978; Lepper, Greene, and Nisbett, 1973) have appealed to self-attributional processes, as outlined by Bem (1967) and Kelley (1967). Basically, attribution theory proposes that individuals seek reasons to explain or justify the activities in which they engage and that these attributions guide their future behaviors. Under conditions in which external pressures to perform are weak and are thus perceived as insufficient to explain or justify their behavior, people are likely to attribute their behaviors to causes within themselves, such as their interests and desires. On the other hand, under conditions in which marked external pressure to perform is perceived, people are likely to ascribe their behaviors to this external cause. The deleterious effects of introducing a tangible reward into a situation in which intrinsic motivation would otherwise be sufficient to guarantee performance is hypothesized to be due to this attributional process. According to this hypothesis, the anticipation of reward leads people to reevaluate their reasons for performing an initially interesting task and to attribute their behaviors to the controlling influence of the reward—a phenomenon that has been called the *overjustification effect*. Behavior comes to be perceived as an instrumental means to an end rather than as an end in itself (Kruglanski, 1975), which, in the hands of attribution theorists, is tantamount to saying that behavior becomes extrinsically rather than intrinsically motivated.

Deci (1975, 1980; Deci and Porac, 1978) has proposed a theory of cognitive evaluation that is not incompatible with the attributional analysis just described but is cast in a broader conceptual framework. A central tenet of cognitive-evaluation theory is that human beings have an innate need to be competent, effective, and self-determining (deCharms, 1968; White, 1959). These strivings form the psychological basis for intrinsic motivation, which in turn "underlies an ongoing cyclical pattern in which people seek out and conquer challenges that are optimal for their capacities" (Deci and Porac, 1978, p. 151; emphasis in original). This hypothesis, which closely resembles the

hypothesis, discussed earlier, that work motivation is inborn, implies that neither a striving toward competence nor the motivation to master challenges (achievement motivation) needs to be acquired but that life experiences may weaken or destroy these motives.

While extrinsic rewards may decrease the intrinsic motivation to perform a particular task, cognitive-evaluation theory implies that this is not an inevitable effect. Rewards, according to Deci, have two properties or aspects: the control of behavior, and the communication of information about competence. Individuals who receive material rewards for performance may begin to perceive them as the cause of their behaviors and their behaviors as controlled by reward. However, rewards may also convey information about the individual's competence. In instances in which the reinforcers enhance feelings of competence, intrinsic motivation may actually be increased rather than decreased by their use.

According to cognitive-evaluation theory, the relative salience of the controlling versus the informational properties of rewards in any given situation determines their influence on intrinsic motivation. Praise and other similar events used to signal that the person has done well are likely to enhance intrinsic motivation. Tangible rewards, such as money, food, and prizes, are more likely to be perceived as controlling events and to decrease intrinsic motivation. However, if their receipt is made contingent not merely on performing but on performing well, the informational aspect of these tangible rewards may become strengthened so that it minimizes or overrides the controlling aspect. The net result may be that intrinsic motivation is left relatively intact or even enhanced. Some studies investigating this aspect of cognitive-evaluation theory have confirmed these predictions (e.g., Boggiano and Ruble, 1979; Enzel and Ross, 1978), but others (e.g., Harackiewicz, 1979) have not. In explaining her negative results, Harackiewicz has suggested that the informational properties of tangible rewards may become salient only when the task involves skills that individuals value and thus arouses their competency concerns, as opposed to tasks that they regard as merely entertaining.

A series of studies by Deci and his colleagues (1971, 1972; Deci, Cascio, and Krusell, 1975) has suggested that, in predicting the influence of extrinsic rewards on intrinsic motivation, individual differences in the value and the meaning of the feedback events should also be taken into account. The first of these studies (Deci, 1971) was described earlier: college students, most of them male, who were praised for performance on interesting puzzles subsequently showed greater spontaneous interest in the puzzles than did tangibly rewarded or nonreinforced students. In later studies in which substantial numbers of both sexes were tested, males showed this increase in intrinsic

motivation following praise, but females who were praised showed the opposite effect, exhibiting less spontaneous interest in the task than did women who received no reinforcement. Deci and his colleagues interpreted these results within the context of theories about personality differences between the sexes, suggesting that females have stronger needs for social approval and weaker achievement motives than do males. For males, praise may have been interpreted as signaling their personal competency and, as such, it enhanced their feelings of self-efficacy and the strength of their intrinsic motivation. For many of the women, on the other hand, praise may have signaled the experimenter's approval and aroused their needs to please and to gain the experimenter's continued approbation. As this aspect of the reinforcer became salient, the reattributional process may have occurred, the women coming to perceive their behaviors as being caused or controlled by the praise they received. Recalling Harackiewicz's (1979) suggestion, it also seems possible that the use of puzzles rather than more ego-involving tasks that elicit competency concerns may have made the women more sensitive to the experimenter and to receiving the latter's approval.

It is theoretically important, in our view, to distinguish even more sharply than is implied in these attributional accounts between the meaning an individual gives to extrinsic rewards and the degree to which their receipt is gratifying versus the capacity of these events to act as motivators of behavior in anticipation of their receipt. It is also important to identify the several components of the motivational complex. In accord with classical theories of motivation, we suggest first that motivators serve to activate behavior and have hedonic accompaniments. Other crucial properties of the motivational complex determine the direction of behavior; these include *expectancies* about the outcomes of performance (i.e., response-reinforcer contingencies) and *behavioral intentions* (the purposes and goals that the behavior is meant to fulfill).

Attributional analyses of intrinsic motivation have tended to limit themselves to the expectancy and intentional aspects of the motivational complex and to posit that reinforcer salience determines behavioral intentions. Thus, in the case in which an attractive tangible reward is given for performing an otherwise interesting task, it has been proposed that individuals not only develop *expectancies* about receiving rewards after the required performance but also change their perceptions of their *intentions* in performing the task. Task activity comes to be seen as a means to an end, as behavior whose purpose is to obtain the external reward. As a consequence, the task itself is perceived as less inherently interesting than it had been and is less likely to be performed when reinforcers are withdrawn.

This attributional formulation also implies a close reciprocal linkage between the strength of intrinsic motives and that of extrinsic motives: as one goes up, the other goes down, and behavior is governed primarily by one or the other. However, it seems likely that there is often considerable independence between the intensities of the two types of motives and that they may influence behavior simultaneously. Attributional theories also appear to exaggerate the inevitability of an association between expectations about the reward consequences of behavior and behavioral intentions. Even when tangible extrinsic rewards for performance are anticipated and their receipt is valued for their own sake, these events do not necessarily lead to a shift in behavioral intentions.

The conditions under which the introduction of extrinsic reinforcers simultaneously reduce intrinsic motivation and increase extrinsic motivation are not well understood. However, the context of the experimental situations that have been used to investigate changes in intrinsic motivation seems particularly favorable for demonstrating this phenomenon. Generally speaking, tangible rewards may be particularly likely to weaken intrinsic motivation and to encourage the development of extrinsic motives in instances in which intrinsic interest in an activity is shallow or in the process of developing. Intrinsic motivation implies that performance is self-initiated, self-sustaining, and self-rewarding; whereas extrinsic motivation implies that performance is externally driven and is likely to be extinguished or diminished in the absence of reward (e.g., Kazdin and Bootzin, 1972). At least in some settings, the maintenance of behavior that is purely extrinsically motivated requires quite constant surveillance and monitoring by an external reinforcing agent—a condition that is often difficult to meet practically and that may itself have adverse effects (e.g., Lepper and Greene, 1976). For these reasons, parents and teachers would be well advised to encourage the development in their charges of intrinsic motivation for performing desirable behaviors and to use extrinsic rewards judiciously.

Noting the findings of the types of experiments we have reviewed above, some investigators interested in industrial and organizational problems (e.g., Notz, 1975) have suggested that extrinsic rewards may undermine intrinsic interest in job performance in adults. Although this possibility cannot be discounted, it is unlikely. Once stable motivational systems and interest patterns have become established, it seems improbable that individuals' intrinsic interests would be easily corrupted by the introduction of or increases in extrinsic rewards. Even if tangible extrinsic reinforcers come to be expected and their receipt is gratifying, the behavior itself may continue to be intrinsically motivated and have as its immediate goal successful perfor-

mance. In the vocabulary used earlier, expectancy of reward is not inexorably linked to behavioral intention. During the performance sequence, intrinsic and extrinsic reinforcers may change in salience—intrinsic motives and goals being in the ascendancy during task performance, and expectancies of extrinsic rewards becoming important at task completion.

An important addendum to attribution theory that supports these suggestions has been proposed and given some experimental confirmation by Kruglanski (1975) and by Staw, Calder, and Hess (1974). These investigators have proposed that, under conditions in which rewards are ordinarily associated with task performance, standards of rewards have been established, and rewards are appropriate in the context of these standards, the introduction of rewards is unlikely to result in reattribution, i.e., in a shift from intrinsically to extrinsically motivated behavior. Performance in vocational settings and, at least in older children and adults, in academic situations seems particularly likely to fulfill these conditions.

#### Effects on Performance

In addition to studies of the effects of tangible rewards such as money or prizes on intrinsic motivation, investigations have been conducted to determine the effects of rewards on actual task performance. Typically, these tasks require mastery, e.g., memorizing words, solving problems. In some of these studies, experimental subjects (children or adults) were given a tangible reward for each correct response, which also served to inform them they were correct; whereas control subjects were given symbolic feedback that served the same informational function but had no inherent value. In other studies, the experimental subjects were promised tangible rewards for completing the task, and the control subjects were given no such incentive. In many of these investigations, subjects given tangible rewards did not perform as well as control subjects (e.g., Loveland and Olley, 1979; McGraw and McCullers, 1976; Miller and Estes, 1961; Spence, 1970). After reviewing the evidence, McGraw (1978) and Condry and Chambers (1978) concluded that the use of material reinforcers leads to performance decrement when the task holds some intrinsic interest for the individual (and would thus be performed without the reward) and mastery of the task requires the acquisition of a novel response or method of solution rather than the application of previously learned, well-perfected strategies. In the absence of one or both of these conditions, performance may be facilitated or unaffected by the use of tangible rewards.

The results of the studies of intrinsic motivation reviewed earlier suggest that, with the introduction of extrinsic rewards, subjects' motives in these laboratory experiments may have shifted from being primarily intrinsic to being primarily extrinsic. Few studies have included measures of both intrinsic motivation and task performance. The evidence presently available suggests that tangible reinforcers may produce performance decrement even when intrinsic interest is not damaged (McCullers, 1978) and, conversely, that a drop in intrinsic interest accompanying the introduction of reinforcers may not produce a decrement in performance (Harackiewicz, 1979). Thus the performance inferiority of individuals given or promised tangible rewards cannot be attributed simply to a decrease in the intensity of their overall motivation to perform.

It has been suggested that, on tasks requiring new solutions extrinsically rewarded individuals may be distracted from central features of the task in a way that hinders their performance (McGraw and McCullers, 1976; Reiss and Sushinsky, 1975; Spence, 1971) or may shift to performance strategies that are aimed at earning tangible rewards but that turn out to be less effective than those used by individuals who are unrewarded and thus perform for more intrinsic reasons (Condry and Chambers, 1978). Evidence showing that the introduction of material incentives leads subjects to adopt different approaches to the task at hand has been provided by Condry and Chambers (1978), Garbarino (1975), and Loveland and Olley (1979).

It is a large leap from the laboratory study of performance on contrived tasks to the naturalistic study of long-term achievement behaviors. We are nonetheless stimulated by the results of these studies to suggest, by analogy, that individuals whose aspirations have a heavy dose of extrinsic motivation may not only tend to use different "career strategies" than do those who are more purely intrinsically motivated but may also sometimes use strategies that produce less adequate performance than is found in their more intrinsically motivated peers.

Perhaps the most valuable contribution to date of these experimental studies of extrinsic reinforcers is the demonstration that intrinsic and extrinsic motives and goals are not necessarily additive or mutually facilitative in their effects on performance. Thus, those interested in intrinsic achievement motivation can no longer safely ignore the role of extrinsic incentives in determining naturally occurring achievement behavior. However, our current understanding of the development of individual differences in these motives and goals and in the interaction between intrinsic and extrinsic factors in determining achievement-related behavior can most charitably be described as limited.

## INTRINSIC ACHIEVEMENT MOTIVES AND EXPECTANCY-VALUE THEORY

We turn now to a more detailed consideration of intrinsic achievement motives, which we have defined as striving toward performance excellence and which we regard as stable personality characteristics whose strengths differ from one individual to the next. This general conception of achievement motivation, which owes much to the seminal work of the personality theorist Henry Murray, is at the heart of the highly influential theories of achievement proposed by John Atkinson, David McClelland, and their colleagues that are the most immediate precursors of our own work on achievement motivation.

### Achievement Motivation and the Thematic Apperception Test

Murray conceived of personality as a series of needs, described as an "organic potentiality or readiness to respond in a certain way under given conditions" (1938, p. 60). Among these needs is the need to achieve, which Murray described as "the desire or tendency to do things as rapidly and/or as well as possible . . . to accomplish something difficult. To master, manipulate and organize physical objects, human beings, or ideas . . . To overcome obstacles and attain a high standard. To excel one's self. To rival and surpass others" (1938, p. 164).

Influenced by psychoanalytic thought, Murray postulated that needs are largely unconscious; accordingly, he devised a projective instrument, the Thematic Apperception Test (TAT), to assess them. The TAT consists of a series of ambiguous pictures of one or more people about whom test respondents are asked to tell a story. The fantasy material is then coded for the presence of imagery relating to various needs.

McClelland and Atkinson adopted the TAT technique to measure the need (or motive) to achieve, selecting pictures having the capacity to elicit achievement imagery. The TAT scoring system specifies 10 subcategories of achievement-related themes, representing various components of the motive to achieve as specified in Murray's definition. However, neither they nor other investigators using the TAT have attempted to determine the relationships of these separate themes to one another or to achievement behavior. Instead, a single score is obtained for each individual by summing the number of achievement themes occurring in all subcategories.

In adopting the TAT as their measure of the motive to achieve, McClelland and Atkinson accepted Murray's view that motives are

acquired dispositional tendencies that are general in nature and not tightly linked to specific situations and that they tend to be stable over time. They further conceived of motives as having both activating and affective properties and directive or goal-oriented properties. As Atkinson put it, describing both motives in general and the motive to achieve in particular:

A motive is conceived as a disposition to strive for a certain kind of satisfaction, as a capacity for satisfaction in the attainment of a certain class of incentives. The names given motives—such as achievement—are really names of classes of incentives which produce essentially the same kind of experience of satisfaction (for example, in the case of the achievement motive): pride in accomplishment . . . The general aim of one class of motives, usually referred to as appetites or approach tendencies, is to maximize satisfaction of some kind. The achievement motivation is considered a disposition to approach success (1966, p. 13).

Like other motives, the motive to achieve remains latent until aroused by appropriate internal or environmental cues.

In early work done in the 1950s, environmental conditions under which the TAT was administered were manipulated to determine whether responses varied in a manner consistent with the assumption that what was being measured by the TAT was a motive. The specifics of these studies need not concern us here. We note only that the results from males generally conformed to prediction, thus upholding the construct validity of the TAT as a motivational measure, but that the data from females were inconsistent and difficult to interpret. As a consequence of these findings, the suspicion was voiced that achievement motivation, as it operated in men, might not have an exact counterpart in most women. McClelland went further: "Clearly we need a differential psychology of motivation for men and women" (1966, p. 481). However, the attempt to understand motivation in the Atkinson-McClelland tradition employed male subjects almost exclusively.

### Expectancy-Value Theory

The concept of achievement motive, defined as a stable personality characteristic, was incorporated into a larger theory of achievement motivation proposed by Atkinson (1957). This theory, which has come to be known as expectancy-value theory, specifies that the strength of the achievement motive (or, as it is alternately labeled, the tendency

to achieve) actually aroused in any achievement-oriented situation is determined by the sum of two tendencies with opposing signs:

1. The tendency to approach success ( $T_S$ ), which is manifested by engaging in achievement-oriented activities.
2. The tendency to avoid failure ( $T_{AF}$ ), which is manifested by not engaging in these activities.

The strength of each of these opposing tendencies is determined by three components:

1. The motive to approach success ( $M_S$ ) or the motive to avoid failure ( $M_{AF}$ ).
2. The expectancy (probability) that an achievement-oriented act will result in success ( $P_S$ ) or the probability that it will result in failure ( $P_F$ ).
3. The incentive value of success ( $I_S$ ) or the incentive value of failure ( $I_F$ ).

It is the latter two variables that give Atkinson's theory its expectancy-value label.

The motive to approach success ( $M_S$ ) is an individual-difference variable, typically measured by the TAT. The motive to avoid failure ( $M_{AF}$ ), also called fear of failure, is proposed as a separate dispositional tendency that, like the motive to approach success, is a stable personality characteristic that has been acquired as a result of past experience. Individual differences in the motive to avoid failure have usually been measured by objective self-report instruments, most often the Mandler-Sarason Test Anxiety Questionnaire (Mandler and Sarason, 1952) or the Alpert-Haber Debilitating Anxiety Scale (Alpert and Haber, 1960). Heckhausen (1963) has attempted to bring more symmetry into the measurement of the two motivational constructs by extending the TAT projective technique to include a measure of the motive to avoid failure, but the measure has not been widely adopted.

The second component determining the tendency to approach success or the tendency to avoid failure is expectancy, defined as the probability that engaging in an achievement-oriented activity will result in success ( $P_S$ ) or in failure ( $P_F$ ). Since success and failure exhaust all possibilities, their probabilities add up to unity ( $P_S + P_F = 1$ ). The probability of failure,  $P_F$ , can therefore be expressed as  $(1 - P_S)$ . In experimental situations designed to test the implications of expectancy-value theory, the expectancy variable either has been subjectively defined by having subjects give their estimate, prior to undertaking the task, of the probability that they will succeed or has

been experimentally manipulated by such methods as supplying subjects with performance norms from which the task's level of difficulty can be inferred or first giving them similar tasks on which they succeed or fail.

The third component, incentive value of success or failure, has been described by Atkinson as the degree of anticipated satisfaction or pride in succeeding at a task or the degree of anticipated shame in failing. In practice, Atkinson's operationalization of the incentive factor has usually been reduced to a property of probability of success. Based on the contention of Lewin, Dembo, Festinger, and Sears (1944) that the attractiveness or incentive value of success increases with task difficulty, the incentive value of success ( $I_S$ ) and the incentive value of failure ( $I_F$ ) are  $(1 - P_{FA})$  or  $[1 - (1 - P_S)]$ .

The three components associated with the tendency to approach success ( $T_S$ ) and with the tendency to avoid failure ( $T_F$ )—motive expectancy, and incentive—are assumed to combine multiplicatively to determine the strength of each of these tendencies. These two tendencies (given opposite signs), in turn, sum algebraically to determine the strength of the resultant achievement motivation, or the tendency to achieve ( $T_A = T_S - T_{AF}$ ). When the complete set of assumptions about each component is considered and the formula is algebraically simplified, the tendency to achieve is defined as

$$T_A = (M_S - M_{AF}) [(P_S \times (1 - P_S))]$$

Most of the tests of the implications of the theory have been brief experimental studies that were conducted in the laboratory and that involved the manipulation of such variables as task success and failure. (Reviews of these studies may be found in such sources as Atkinson and Raynor, 1974.) Relatively few attempts have been made to explore the implications of the theory for task performance per se (e.g., number of tasks mastered, speed of mastery, quality of performance). More thoroughly investigated have been the predictions of the theory for such measures as level of aspiration, task persistence and risk taking in choice of task difficulty.

Perhaps the most intriguing aspect of the theory involves predictions about individuals' preferred level of task difficulty. The equation for determining the tendency to achieve ( $T_A$ ) implies that, for individuals in whom the motive to approach success is stronger than the motive to avoid failure ( $M_S > M_{AF}$ ), the tendency to achieve is strongest in situations in which the probability of success is  $\frac{1}{2}$ . These success-oriented individuals are therefore more likely to choose tasks of intermediate difficulty and to persist at them longer than at tasks that are either higher or lower in difficulty. The mathematics of the theory also implies that those in whom the motive to avoid failure

dominates ( $M_S < M_{AF}$ ) are least likely to choose or to persist at tasks of intermediate difficulty. For these failure-avoidant individuals, the tendency to achieve is predicted to be highest when task difficulty is either high or low. The bulk of the evidence suggests, however, that individuals tend to prefer tasks of intermediate difficulty, whatever the strength of their motive to achieve (Weiner, 1972). Other theoretical accounts of task choice have also been developed and have received empirical support (e.g., Buckert, Meyer, and Schmalt, 1979; Trope, 1975).

Although the empirical studies conducted to test the theory's implications have mostly been short-term laboratory experiments, some have involved achievement-related behaviors occurring in real-world settings. Crockett (1962), for example, has shown that, among men whose fathers' occupations are relatively low in prestige, those who score high in achievement motivation, as measured by the TAT, exhibit greater upward occupational mobility than do lower-scoring men. In a study by Malone (1960), vocational aspirations among male college students have also been related to motivational factors. In Malone's study, the difference was found between each student's motive to achieve and motive to avoid failure (defined, as usual, by scores on the TAT and an anxiety measure). Evaluation was made of the realism of the students' vocational choices, as reflected in such measures as the discrepancy between the individual's ability and the ability required by the specified vocation. In correspondence with the theory's prediction about achievement-oriented individuals preferring tasks of intermediate difficulty, men in whom the motive to achieve predominated tended to make more realistic choices than did those in whom the motive to avoid failure was stronger. The latter were more likely either to underaspire or to overaspire.

**Elaborations of the Theory** Following the initial formulation of expectancy-value theory, Atkinson and others working within this framework have proposed a number of revisions, qualifications, and additions in order to improve and extend the theory's predictive utility. Several of these elaborations are important for us to consider here.

The theory as originally stated implied that individuals in whom the tendency to avoid failure was greater than the tendency to approach success would avoid all achievement-related activity. Since the many individuals who are failure-avoidant (as defined by the theory) obviously do engage in achievement-oriented behaviors—in school, on the job, and even in the laboratory—this aspect of the theory was in conspicuous need of repair. To remedy this deficiency, Atkinson (1974) added another construct to the theory: the tendency to seek extrinsic rewards ( $T_E$ ). This tendency combines additively with the

tendencies to approach success ( $T_S$ ) and avoid failure ( $T_{AF}$ ), so that  $T_A = T_S - T_{AF} + T_E$ . The evidence we reviewed in the preceding section, however, suggests that intrinsic and extrinsic motives may be related in a complex manner and do not necessarily add together in any simple way to form a resultant motivational state. It does seem reasonable to assume, however, that extrinsic motives may buoy up achievement-oriented efforts in those whose intrinsic achievement motivation (or the tendency to approach success) is weak and/or in those whose fear of failure is strong.

A second addition to expectancy-value theory is the concept of future orientation proposed by Raynor (1969, 1970). As noted by Vroom (1964) and others, success on a task is often instrumental in allowing the individual to proceed to the next in a sequence of tasks that ultimately lead to a future goal. Building on this observation, Raynor has suggested that each step in the sequence arouses a component tendency, each consisting of the by-now-familiar triad: the motives to approach success and avoid failure (the stable personality factors), the subjective probability that the activity will lead to success or failure, and the incentive value of each of these outcomes. Also following Vroom (1964), Raynor assumed that the component tendencies for all steps in the path to the future goal sum together to determine the strength of the tendency to achieve that is operative in a given task in the sequence. The tendency to achieve is thus a result of both immediate and more distant expectancies and their associated incentive values.

In a test of the implications of these hypotheses for achievement behavior, Raynor (1970) attempted to predict the course grades of students enrolled in introductory psychology. He reasoned that, among success-dominated individuals ( $M_S > M_{AF}$ ), higher course grades would be earned by those who believed that doing well was important to the fulfillment of their career aspirations than by those who perceived grades as unimportant to their future plans. Raynor derived a very different prediction for individuals in whom  $M_{AF} > M_S$ . Among these failure-avoidant individuals, the perceived instrumentality of grades was expected to act as an inhibitory factor, depressing course performance. However, Raynor qualified this prediction by noting that extrinsic incentives might overcome this negative effect to some degree. In the first of a pair of studies (Raynor, 1970), these hypotheses were confirmed: success-motivated students who rated their course grade as important to future career success earned a significantly better grade than those who rated the course as unimportant; failure-avoidant students showed a trend in the opposite direction. Significant differences in grades between success-oriented and failure-avoidant students thus appeared only among those who perceived



the course as being instrumental to their future success. For those who rated it as unimportant, course grades of the two motivational groups were similar.

In Raynor's (1970) second study, introductory psychology students were asked to specify the relative importance of all their courses for their future plans. Those who ranked the psychology course high in this list earned a higher grade than those who ranked it low. However, no significant effects were found for the motivational measures—a result Raynor attributed to the offsetting effects of extrinsic motives.

The best-known addition to expectancy-value theory is Horner's (1968) motive to avoid success. This motive (also commonly identified as fear of success) is described as a stable dispositional tendency, acquired relatively early in life, to become anxious about achieving success. Like fear of failure, fear of success is postulated to reduce resultant achievement motivation (or the tendency to achieve) and hence to inhibit achievement-related behavior.

The addition of this third personality variable to expectancy-value theory represented an attempt to reconcile the puzzling findings that had been obtained from females with the tenets of expectancy-value theory by expanding the theory so that it would be applicable to both sexes. Women are particularly likely to develop fear of success, Horner contended, their sex-role socialization leading them to believe that achievement strivings are incompatible with femininity and that women incur a number of social penalties if they violate role expectations by attempting to become successful.

To measure fear of success, Horner (1968) developed a TAT-like method that utilizes a verbal rather than a pictorial cue and depicts an individual of the same sex as the respondent who is successful in a competitive situation: "At the end of the first term, (Anne) (John) finds (herself) (himself) at the top of (her) (his) medical school class." Using a simple present-absent method of scoring, Horner found that the stories of female college students contained fear-of-success imagery far more often than those of their male peers.

Horner's hypotheses quickly commanded both popular and scientific attention and led to an outpouring of empirical studies. As reviews of this literature have indicated (Condry and Dyer, 1976; Tresemer, 1977; Zuckerman and Wheeler, 1975), subsequent studies have produced conflicting outcomes. Whereas some investigators have reported significantly more fear of success in women than in men, although not in the lopsided proportions that occurred in Horner's original 1968 study, many others have reported either the reverse or no differences between the sexes. Contradictory results have also been found in studies investigating the effects of fear of success on

behavior in competitive situations with same- versus opposite-sex partners, while expected relationships between fear of success and measures of achievement motivation, vocational aspirations, and other indices of achievement strivings have turned out to be minimal.

The consensus is that the inconsistency in the data can be partially attributed to the lack of reliability and validity in the method used to measure fear of success (e.g., Condry and Dyer, 1976; Zuckerman and Wheeler, 1975). The amount and kind of negative imagery have also been shown to vary in a predictable manner with changes in cue content, such as from medical to nursing school (e.g., Alper, 1974; Spence, 1974). These data have led several investigators (e.g., Condry and Dyer, 1976; Monahan, Kuhn, and Shaver, 1974; Spence, 1974; Zuckerman and Wheeler, 1975) to conclude that the fantasy material elicited from women by the story-telling technique has relatively little relationship to a gender-differentiating personality characteristic but instead largely reflects the respondents' perceptions of society's current sex-role attitudes and their expectations about the consequences of role conformity or violation under the particular circumstances described in the verbal cue. With greater societal acceptance of women's educational and vocational aspirations, sex differences in fear-of-success studies appear to be evaporating.

A number of objective self-report instruments have been devised in an effort to overcome some of the psychometric difficulties associated with the projective method of measuring fear of success. A factor-analytic study of several of these instruments by Sadd, Lenauer, Shaver, and Dunivant (1978) has yielded two factors. The first has to do with insecurity, self-doubt, and inhibition of assertiveness; the investigators noted that these characteristics seemed to touch on the conception of the neurotic success-fearing personality described by Canavan-Gumpert, Garner, and Gumpert (1978). The second factor has to do with concerns about the negative consequences of success and appears to be closer to Horner's original theoretical conception of fear of success. Investigations of the relationships of objective measures of the fear of the consequences of success to measures of achievement motivation and to achievement behavior are just beginning to be undertaken.

**Current Status of the Theory** Especially during the 10–15 years following its initial presentation, expectancy-value theory stimulated a large volume of research aimed at verifying its predictions. Although some of the theory's detailed predictions have received only equivocal support, the usefulness of the general theory has been well established.



The theory has also served as a springboard for still further theoretical developments. Many of these formulations have focused on the expectancy-value components of the theory, stressing the importance of cognitive factors and attributional processes in determining achievement-related behaviors (e.g., Weiner, 1972) and downplaying the role of motivational factors, as represented by Murray's original conceptualization of the need to achieve. Increasing attention has also been given to these cognitive variables as they operate naturally in real-life settings. A major example of this type of theory may be found in Chapter 2, this volume, in which Parsons presents a theoretical model of achievement-related behavior that stresses subjective expectancies, task values, and causal attributions and the application of this model to the study of achievement in courses in mathematics.

Other investigators, such as the present authors, have chosen to focus on individual differences in achievement motivation but have attempted to develop more satisfactory measures of this concept than the TAT. Investigators have been especially critical of the TAT's low reliability, noting that respondents' stories are overly responsive both to the particular pictorial material used to elicit them and to the situational conditions under which the test is taken, and that scores derived from respondents' stories are not stable from one testing occasion to another. Atkinson (1981; Atkinson and Raynor, 1974) has countered this criticism by arguing that, since the achievement themes appearing in individuals' stories vary predictably with variations in conditions expected to arouse or engage their achievement motivation, the responsiveness of the TAT technique to transient factors constitutes evidence for the validity of the achievement-motive construct. While this contention is reasonable, the sensitivity of the instrument to testing conditions and the resulting instability of scores reduce its usefulness as a measure of the strength of an underlying disposition that is postulated to be enduring over time and is to be used to predict individual differences in real-life achievement that occurs at other times and places. Use of projective devices such as the TAT also has a practical drawback. The amount of time required to administer such measures and, even more critically, the time required of judges to read and properly score the respondents' stories are often prohibitive and may make large-scale research impossible.

Another aspect of the TAT measure is perhaps more theoretically critical. As mentioned earlier, the scoring manual lists a number of achievement themes, but in practice a single score is derived from respondents' stories to reflect the intensity of their achievement motivation. This scoring method presupposes that achievement motivation is unifactorial; i.e., it is assumed that, underlying the several kinds of achievement-oriented themes, there is a single, broad dis-

position that influences a variety of behaviors in achievement-related situations. However, several factor-analytic studies (e.g., Jackson, Ahmed, and Heapy, 1976; Veroff, McClelland, and Ruhland, 1975; Weinstein, 1969), each employing a number of projective and/or objective measures of achievement motivation, have revealed the presence of a number of more or less independent factors. Some of the factors identified in these studies go beyond the conception of achievement motivation as a striving toward excellence into other types of achievement-related motives and attitudes, some of which appear to be more related to extrinsic motives, e.g., the need to achieve status. Other factors, however, do appear to be related to Murray's original conception of the need to achieve. These findings suggest that it may be more useful to try to identify and measure components of intrinsic achievement motivation than to postulate a single, unitary dimension.

A number of objective self-report measures of achievement motivation have been developed that overcome some of the practical limitations of the TAT. Illustrative of these efforts are the scales developed by Mehrabian (1968), which incorporate items tapping both the motive to approach success ( $M_S$ ) and the motive to avoid failure ( $M_{AF}$ ) and thus were designed to yield a measure of resultant achievement motivation. In apparent support of the contention that the sexes are not identical in the nature of their achievement motivation, Mehrabian found it useful to develop different scales for males and females. While some items are common to both scales, others are unique.

Objective measures, such as Mehrabian's, have tended to be substituted for the TAT in recent research and have been shown to have some modest degree of predictive validity in both laboratory and field studies (e.g., Covington and Omelich, 1979). However, the correlations of these objective instruments with one another and with projective devices are generally found to be low (e.g., Weinstein, 1969).

## RECONCEPTUALIZATION OF INTRINSIC ACHIEVEMENT MOTIVATION

Several years ago, the present authors became interested in the topic of achievement motivation as an outgrowth of a program of research investigating certain core dimensions of personality said to differentiate the sexes (masculine instrumentality and feminine expressiveness) and the implications of these clusters of characteristics for other attributes and behaviors. Central among the latter have been achievement motivation and achievement-related behaviors.

As has been discussed earlier, we conceived of intrinsic achievement motivation in the classical sense as a striving toward excellence

in performance for its own sake. However, like many other investigators, we were dissatisfied with the limitations of the TAT and sought an objective measure that was both reliable (and thus more likely to reflect stable individual differences) and simple to administer and score. Examination of the evidence also suggested to us that intrinsic achievement motivation was not necessarily a unitary phenomenon. Building on the work of others (e.g., Mehrabian, 1968), we set out to devise an objective measure, being particularly alert to the possibility of multidimensionality in its content. It was also our hope that an instrument could be perfected that would be valid for both males and females. Success in achieving this goal was contingent on the two sexes having similar motivational structures, differing (if at all) only quantitatively rather than qualitatively, as some theorists (e.g., McClelland, 1966) would have it.

### Work and Family Orientation Questionnaire

The ultimate outcome of our psychometric efforts is an objective self-report instrument called the Work and Family Orientation Questionnaire (WFO) (Helmreich and Spence, 1978). The WFO consists of two parts, the second of which is used primarily with student groups and contains items that gave the instrument its name. These items are mixed in content, inquiring about the respondents' educational aspirations, the relative importance of work versus marriage as anticipated sources of life satisfaction, and extrinsic goals such as the desire for pay, prestige, or job advancement for oneself and one's spouse. These latter items were initially included because of our interest in vicarious achievement aspirations in females, but they have also permitted some preliminary exploration of the relationship between intrinsic and extrinsic achievement motives.

The first part of the WFO contains items dealing with attitudes toward achievement-related activities. Factor analyses of these motivational items, conducted on the responses of male and female college students, revealed three major oblique factors<sup>1</sup> (i.e., factors that are modestly correlated but still show substantial independence) that are similar in each sex (Helmreich and Spence, 1978). This latter finding is of considerable theoretical significance in and of itself,

<sup>1</sup>Factor analyses revealed a fourth factor in each sex that is conceptually similar to Horner's fear-of-success concept, containing items expressing concern about others' negative reactions to the individual's success. These items have been assigned to a scale labeled Personal Unconcern. Comparisons of men's and women's scores on this scale have rarely yielded sex differences and, within each sex, few relationships of scores with other variables have been uncovered. For this reason, we do not discuss this scale further.

suggesting that, at least with respect to the particular components of achievement motivation tapped by this pool of items, the structures of men's and women's motivational systems are not qualitatively different. The factor analyses also confirmed the suspicion, voiced earlier, that achievement motivation is a multidimensional phenomenon.

Based on the results of the factor analyses, items have been assigned to one of three scales, designated as work orientation, mastery, and competitiveness. (The items and the scale to which each belongs are shown in Table 1-1.) The work factor represents an effort dimension, the desire to work hard and to do a good job of what one does. The mastery factor reflects a preference for difficult, challenging tasks and for meeting internally prescribed standards of performance excellence. The competitiveness factor describes the enjoyment of interpersonal competition and the desire to win and be better than others. Unlike mastery, which involves a task-oriented standard of excellence, competitiveness involves pitting oneself against other individuals. In the scoring of these scales, items are keyed so that high scores reflect a high degree of work, mastery, or competitiveness.

Like the TAT, the WFO scales of intrinsic achievement motive are intended to measure general personality traits. That is, the WFO items are relatively free of references to specific situational contexts, and individuals' responses to the items are assumed to reflect dispositional tendencies that may influence behavior in a variety of settings. It is further assumed that, once established, these tendencies are relatively stable over time, rarely showing sudden changes or developmental discontinuities. This kind of measure of achievement motivation is to be contrasted with measures that are situationally constrained, attempting only to measure intensity of achievement striving in very particular contexts (e.g., Crandall, 1969).

### Traits Versus Behavior

It does not follow from a general-trait approach that individuals are necessarily expected to show a high degree of behavioral consistency over all situations in which a trait could be overtly manifested. In the instance of achievement, we noted earlier that almost any situation can be turned into an achievement-oriented challenge by anyone sufficiently ingenious or interested in doing so. Common-sense observation indicates that even highly motivated individuals do not bring the same degree of achievement striving to every situation they encounter, even within conventional types of activities in which performance standards have been clearly established and high levels of achievement are encouraged and rewarded. Achievement motives, to

**Table 1-1**  
Items on work, mastery, and competitiveness scales of Work and Family Orientation Questionnaire

#### Work

1. It is important for me to do my work as well as I can even if it isn't popular with my co-workers.
2. I find satisfaction in working as well as I can.
3. There is satisfaction in a job well done.
4. I find satisfaction in exceeding my previous performance even if I don't outperform others.
5. I like to work hard.
6. Part of my enjoyment in doing things is improving my past performance.

#### Mastery

1. I would rather do something at which I feel confident and relaxed than something which is challenging and difficult.
2. When a group I belong to plans an activity, I would rather direct it myself than just help out and have someone else organize it.
3. I would rather learn easy fun games than difficult thought games.
4. If I am not good at something, I would rather keep struggling to master it than move on to something I may be good at.
5. Once I undertake a task, I persist.
6. I prefer to work in situations that require a high level of skill.
7. I more often attempt tasks that I am not sure I can do than tasks that I believe I can do.
8. I like to be busy all the time.

#### Competitiveness

1. I enjoy working in situations involving competition with others.
2. It is important to me to perform better than others on a task.
3. I feel that winning is important in both work and games.
4. It annoys me when other people perform better than I do.
5. I try harder when I'm in competition with other people.

Note: Each item is accompanied by a 5-point rating scale ranging from "Strongly agree" to "Strongly disagree."

affect behavior, must be aroused or engaged. Such interlocking variables as individuals' interests, abilities, educational levels, expectations of success, and long-term goals determine the achievement-related tasks or roles in which the individual elects to participate (e.g., vocational choice or the kind or amount of education sought) or the degree to which particular activities in which the individual takes part elicit behaviors designed to satisfy achievement needs as opposed to other kinds of needs, such as gregariousness.

Role expectations also channel the overt expression of achievement needs. For example, paid employment is both literally and figuratively obligatory for men in this society; a major outlet for achievement motives in most men is their jobs. For many adult women, achievement needs are more likely to be expressed in other directions, such as volunteer work and activities associated with the care of home and family. Men may also be achievement-oriented in their leisure activities, but their specific interests often differ from women's. The effects of sex-role expectations on academic choices have also been demonstrated (see Chapter 3, this volume).

In both sexes, individuals vary in the number of activities that engage their achievement motives. Some focus on doing well in one type of task or role. "Workaholics," who voluntarily devote most of their waking hours to their jobs or professions, are an extreme example. Others attempt to become expert or to develop their capacities in many areas.

Since we have conceded that, as a result of choice as well as circumstance, individuals of both sexes vary in the specific activities that engage their achievement motives, it is reasonable to ask whether it is either theoretically meaningful or empirically useful to conceive of achievement motives as general dispositional tendencies or response styles rather than as a series of more or less independent tendencies or response styles that are situation-specific. Although our answer to both questions is affirmative, we should point out that, if an investigator's intent is to predict only one type of achievement behavior, it is probably more parsimonious to tailor devices assessing achievement motivation and other relevant person variables to the behavior being scrutinized and the situation in which it occurs. One might measure, for example, academic achievement motivation or, even more narrowly, motivation with respect to a specific subject-matter area, such as mathematics. Although an individual's motivation to do well in, for example, mathematics may theoretically be represented as the result of more general achievement motives interacting with constellations of other factors such as interest, self-concepts of ability, and prior success in the subject, it may be more useful to act as if there were a highly specific "mathematics achievement motive."

One implication of our conceptualization of achievement motives as general tendencies is that changes in such internal factors as interests or in such external factors as job opportunities may occur relatively independently of variations in achievement motives. Individuals may make a radical career shift, for example, not because of changes in the intensity of their achievement motives but because they have for the first time a chance at a desired job, have developed new interests, or have exhausted the challenges in their previous

position, to name but a few possibilities. As a still further example, relatively sudden shifts in academically oriented behaviors are quite frequently observed in adolescents (particularly males) who, as the time for applying to college approaches, become motivated to do well in school rather than expending most of their energies in sports or other extracurricular activities. It is also not unusual to find, in the biographies of eminent scholars, that academically oriented intellectual interests developed relatively late in their undergraduate careers, their prior academic histories having been mediocre if not disgraceful; nonetheless, they showed early signs of strong achievement striving but expressed it in nonacademic directions.

To restate the basic assumptions of our theoretical model: achievement motivation is conceived as a series of more or less independent motives, each reflecting general dispositional tendencies or traits that are relatively enduring over time and that remain latent until engaged or aroused by particular tasks or situations. Since individuals differ not only in the strengths of their motives but also in the tasks or roles that elicit them, achievement behavior cannot necessarily be predicted either cross-sectionally or longitudinally, only from information about individuals' motives. To test the implications of this conception, it is necessary both to assess the strength of general achievement motives and to have some information about the individuals' specific interests and aspirations or the activities in which they voluntarily engage. Over groups of individuals at various levels of achievement motivation, we would nonetheless expect some cross-situational consistency, as, for example, in their work and their leisure-time activities.

## RESULTS WITH THE WORK AND FAMILY ORIENTATION QUESTIONNAIRE

### Sex Differences in Unselected Groups

Psychological theorists, we have mentioned, have often proposed that personality differences between men and women contribute to women's lesser worldly success. Women are said to be more expressive and interpersonally sensitive than men and, simultaneously, to be lower in instrumental qualities reflecting self-assertiveness and independence. This constellation of characteristics allegedly leads women to be less self-confident and to develop weaker intrinsic achievement motives than men and to be more motivated in their achievement-related activities by their needs for affiliation and social approval than by intrinsic motives.

Data relevant to these speculations were obtained in our research from the achievement-motivation scales of the WOFO and from a second self-report measure, the Personal Attributes Questionnaire (PAQ) (Spence and Helmreich, 1978). The PAQ contains two major scales: one consisting of socially desirable instrumental traits (e.g., independence, decisiveness) that are stereotypically more characteristic of males than females (*M* scale), and the other consisting of socially desirable expressive traits (e.g., tactfulness, awareness of others' feelings) that are stereotypically more characteristic of females (*F* scale).

Self-report data from unselected groups of individuals varying widely in age and socioeconomic level have uniformly revealed significant sex differences in the predicted direction on both the *M* and the *F* scale (Spence and Helmreich, 1978, 1979). However, the differences are of degree: men are somewhat less expressive than women (rather than being nonexpressive), and women are somewhat less instrumental than men, with the distributions of the sexes showing considerable overlap. Further, the common belief that instrumental and expressive characteristics tend to be mutually incompatible (Foushee, Helmreich, and Spence, 1979) has been found to be erroneous. In each sex, correlations between individuals' scores on the two scales are close to zero, indicating that "masculine" instrumentality and "feminine" expressiveness are essentially independent dimensions and that many individuals of both sexes are relatively high in both trait clusters (and others relatively low on both clusters).

The theoretical explanations of sex differences in achievement that stress the relationship between these personality dimensions and intrinsic achievement motivation imply that men, as a group, should be higher in motive strength than women and that, within each sex, instrumentality should be positively correlated with achievement motives. The predictions of these theories about the relationships between expressiveness and achievement motivation are more ambiguous, but, presumably, any correlation that occurs should be negative.

Data obtained from the PAQ and the WOFO provide some support for these expectations. Illustrative data are shown in Tables 1-2 and 1-3. Table 1-2 reports the correlations between the WOFO and PAQ scales within each sex. Reported in Table 1-3 are the means for the three WOFO scales obtained from large groups of male and female college students. Examining first the pattern of means, we note that men were significantly higher than women on the mastery scale and on the competitiveness scale. However, they were significantly lower than women on the work scale. Within each sex, the anticipated pos-

**Table 1-2**  
Correlations of PAQ masculinity (instrumentality) and femininity (expressiveness) scales with WOFO achievement scales for male and female introductory psychology students

WOFO	PAQ	
	Masculinity (Instrumentality)	Femininity (Expressiveness)
<b>Males</b>		
Work	.27	.20
Mastery	.48	.16
Competitiveness	.36	-.03
<b>Females</b>		
Work	.24	.20
Mastery	.49	.09
Competitiveness	.31	-.14

Note:  $N$  per sex > 600. For  $N = 600$ ,  $r_{.05} = .08$  (2-tailed);  $r_{.01} = .11$  (2-tailed).  
Source: Data from Helmreich and Spence, 1978.

itive correlations were found between instrumentality and each of the three achievement scales. Relationships with expressiveness were both weaker and inconsistent in direction: expressivity was positively correlated with work and with mastery, and negatively correlated with competitiveness.

Statistical analyses indicated that, when scores on the two PAQ scales were held constant, men and women no longer differed on work and mastery; i.e., sex differences on these two achievement scales could be attributed to sex differences in instrumentality and expressiveness. However, men remained significantly more competitive than women, even when instrumentality and expressiveness were taken into account. This result may reflect the emphasis that many American parents place on competitiveness in rearing their sons (e.g., Block, 1973, 1979) in the belief that this characteristics is needed for future career success.

These results are not unique to college students. We have obtained similar data from high school students, having a wide range of socioeconomic backgrounds (Spence and Helmreich, 1978), and from middle-class married couples. This pattern of sex differences appears to be established early, having been found in fifth- and sixth-grade children given a simplified version of the WOFO (Helmreich, Spence, and Hill, in preparation). These findings all suggest that, in general,

**Table 1-3**  
Mean scores on WOFO work, mastery, and competitiveness scales for college students, male varsity athletes, businesspersons, and academic psychologists

	Work		Mastery		Competitiveness	
	Males	Females	Males	Females	Males	Females
College students	19.8	20.3	19.3	18.0	13.6	12.2
Varsity athletes	21.2	21.9	20.4	20.9	15.7	14.3
Businesspersons	21.1	20.7	22.3	22.1	14.6	13.8
Academic psychologists	21.1	21.9	21.5	22.4	11.7	11.1

males tend to have an edge in mastery and competitive motives and in related instrumental personality characteristics. However, sex differences are not marked (the distribution of scores show a high degree of overlap) and do not uniformly favor males (women are higher in work orientation).

Theories attributing women's lesser vocational achievement in part to their relative deficiency in instrumental qualities and in achievement motivation thus received only weak support. These theories also appear to imply that affiliative needs, which are presumed to be stronger in women than in men, are incompatible with achievement motivation. Our data give little support for this assumption, only competitiveness showing a (small) negative correlation with expressiveness.

### Achievement Motives in Selected Groups

Some achievement-related activities are more demanding than others, their successful accomplishment requiring talent and training as well as a high degree of achievement motivation. Achievement motivation is a multidimensional phenomenon, however, and different profiles of motives may characterize achieving individuals, depending on the particular arena in which the individuals express them.

To explore these possibilities, we administered the WOFO to several groups of specially selected individuals. Data obtained from three such groups are shown in Table 1-3. These groups consisted of male varsity athletes (many of them football players) and female varsity athletes (representing a variety of sports) from a large state university

whose teams were nationally ranked; male and female businesspersons, all graduates of a master's program in business administration who had been out of school ten years or less; and groups of male and female Ph.D. psychologists with academic appointments. For purposes of comparison, the data from the sample of male and female college students, described earlier, are also included in the table.

Looking first at the work factor, we see that the mean scores of athletes, businesspersons, and academic psychologists are all higher than the means of same-sex individuals in the unselected sample of college students. The same is true of the mastery factor. On mastery, athletes of both sexes scored lower than businesspeople and academic psychologists—a fact that may reflect the bias of the questions on this scale toward the mastery of intellectual challenges. Within-group comparisons of the sexes indicate that, with two exceptions (businesswomen on work and women psychologists on mastery), females continued to score somewhat higher on work and lower on mastery than did their male counterparts.

In all the groups, males reported themselves to be more competitive than females. Within each sex, athletes scored highest on competitiveness, followed by businesspeople, unselected students, and, lowest of all, academic psychologists. The low degree of competitiveness reported by this sample of psychologists is not unique to this academic discipline; similar results have been obtained from a group of academics drawn from a broad spectrum of the behavioral and physical sciences (Helmreich, Beane, Lucker, and Spence, 1978). These group differences are hardly surprising. In athletics—particularly in varsity athletics of this caliber—winning is the name of the game. The value of competition between business organizations is heavily stressed in our capitalistic system—an attitude that appears to filter down to the level of the individual businessperson. At the other extreme, the academic and scholarly enterprise is not aimed at head-to-head contests. Obviously, some academicians are competitive individuals, even in their professional roles. However, striving to “beat” someone else is not encouraged by the scholarly value system, which honors instead the ideal of the dispassionate pursuit of knowledge.

### Contribution of Motives to Attainment

It seems likely that the differences in work, mastery, and competitiveness reported in Table 1-3 between unselected students and members of highly achieving groups reflect the role of achievement motives in promoting successful attainment. We would thus expect that, even within groups having relatively similar abilities and interests, achievement motives are related to level of real-life attainment.

**Academic Achievement in College Students** In collaboration with our students and colleagues, we conducted several studies to determine the relationship between patterns of achievement motives and actual achievement behavior. In one of these, scores on the work, mastery, and competitiveness scales were used to predict college students' grades. The WOFO was administered to over 1300 students enrolled in introductory psychology courses, most of whom were first- or second-semester freshmen. Two semesters after the one in which the testing took place, data were obtained about the students' cumulative grade-point averages (GPAs). This procedure was followed because it seemed likely that a measure of academic performance based on three or more semesters of course work would be more stable than a measure based on performance in a single course or during a single semester, particularly one that occurred early in the students' academic careers. One important consequence of using this measure is that most of the courses that entered into the students' GPAs were taken after the WOFO was administered; the achievement-motive scores were thus largely being used to predict future academic performance.

The nature of the relationship between GPA and the WOFO scales turned out to be interactive. As a device for illustrating the nature of this interaction, the students of each sex were divided into four groups on the following basis. Since work and mastery scores were similarly related to GPA, they were combined to form a single work-mastery score for each individual. Students of each sex were then divided into two groups: those scoring above the median composite (those scoring in the upper 50% of the total group), and those scoring below the median composite. Each of these groups was then broken down into those scoring above and below the median (for the total sample) on competitiveness. Four groups of each sex thus resulted: those above the median on both work-mastery and competitiveness, those above on work-mastery and below on competitiveness, those below on work-mastery and above on competitiveness, and those below on both. The mean GPAs for the four groups of male and female students are plotted in Figure 1-1.

In both sexes, relatively low grades were earned by those who were low (below the median) in both work-mastery and competitiveness—a not-surprising outcome. What was unexpected was the pattern exhibited by the motive group with the highest GPAs. In both sexes, these were students high in work-mastery but low in competitiveness. Those high not only in work-mastery but also in competitiveness did not do as well academically; in fact, of the males these individuals were the poorest of the four groups.

One of the factors that determines how well an individual does academically is scholastic ability. It might be claimed that, because

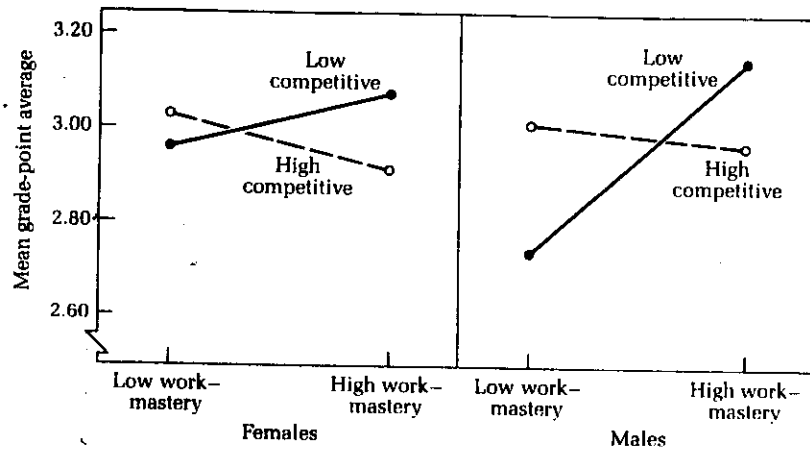


Figure 1-1

Mean grade-point average in the four achievement-motive groups of male and female undergraduates.

able students tend to do better than their less-talented peers, their positive attitudes about working hard and attempting to master challenging materials are reinforced and they have less need to try to prove themselves by competing with others. Motivational differences between students of different degrees of academic success may thus be merely a consequence of attainment; the basic cause of the obtained performance differences may be ability level or self-concept of ability. In an attempt to evaluate this possibility, we obtained male and female students' scores on the Scholastic Aptitude Test (SAT) and correlated these scores with both GPA's and scores on our achievement scales. As typically occurs, significant correlations of moderate magnitude ( $r's > .30$ ) were found between GPA and SAT score. However, the correlations between SAT score and our achievement-motives scales were around zero, suggesting that there is very little relationship between achievement motives (as we have defined them) and scholastic aptitude. Second, the relationships we uncovered between constellations of achievement motives and GPA's remained even when analyses were performed in which SAT scores were taken into account. Related evidence was reported by Covington and Omelich (1979). These investigators found that, whereas a measure of achievement motivation was significantly related to students' grades in a particular course, the degree to which the students attributed their examination performance to ability factors was unrelated to grades. Without exhausting alternate possibilities, we cannot conclusively state that differences in students' achievement motives directly bring about

differences in academic performance. However, the data we have just presented argue persuasively against the possibility that our findings occurred as an incidental byproduct of a correlation between motivation and academic ability.

It will be recalled that, in addition to the motivational scales, the WOFO contains a number of items describing vocational and educational aspirations. Three of these items relate to what might be considered extrinsic goals: the importance to future satisfaction of having a job or career that pays well, that brings prestige and recognition from others, or that has opportunities for promotion and advancement. Correlations between these items and the achievement-motive scales revealed that, in both sexes, students' work and mastery scores have significant but modest correlations ( $r's$  ranging from .15 to .26) with scores on the promotion-and-advancement item. Even lower correlations were found between work-mastery and the rated importance of prestige and recognition, while correlations close to zero appeared between these motive scores and the importance of pay. These results suggest that intensity of work and mastery motivation has little or no relationship with the value students place on the rewards of successful attainment. Even the modest correlations with importance of promotion and advancement may have been brought about more by the desire for jobs with increasing challenge than by the desire for extrinsic rewards. In contrast, highly significant relationships appeared in both sexes between all three of these items and competitiveness. (The  $r's$  ranged from .28 to .38 for females and from .41 to .45 for males.)

These latter data raise the question of whether the negative association between competitiveness and academic performance might be mediated by extrinsic factors. Students with strong desires for the tangible rewards that often accompany vocational success might have less intrinsic interest in their course work or approach their undergraduate experience differently from students with less concern about these aspects of their future lives. This possibility was given some credence by the finding that, in both sexes, there was a negative correlation ( $r's > .20$ ) between GPA and the importance of a well-paying job—the item that most unambiguously tapped an extrinsic goal. However, a regression analysis for males indicated that both the desire for pay and the constellation of achievement motives made independent contributions to GPA, with the effects of the other partialled out. In other words, the interaction between competitiveness and work-mastery in determining grades was not simply a byproduct of the relationship between competitiveness and the pay variable.

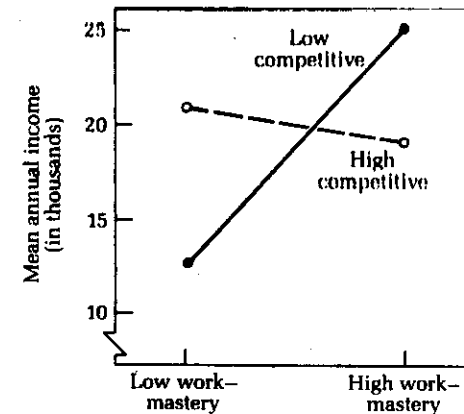
For women, on the other hand, the regression analysis indicated that the effects of the motive variable were no longer significant when



the pay variable was taken into account. The meaning of this apparent sex difference is at present unclear. Further complicating the interpretation of this general set of findings is the fact that the deleterious effects of competitiveness, particularly when combined with high work-mastery needs, are not confined to the academic situation (as will be seen shortly). Although these data raise more questions than they answer, they do suggest that the implications for performance of strength of extrinsic motives and goals and the interactions of these extrinsic variables with intrinsic achievement motives deserve further exploration.

**Academic Achievement in Elementary School Students** The relationship between academic motivation and academic attainment was also explored in the previously mentioned samples of fifth- and sixth-graders (Helmreich, Spence, and Hill, in preparation). Work and mastery were positively related, and competition negatively related, to the children's scores on standardized achievement tests. These relationships could not be explained by IQ. That is, mastery and competitiveness were orthogonal to scores on standardized IQ tests, as was work motivation in the older sample. In the younger sample, however, a significant negative relationship was found between IQ score and work. The etiology of the latter relationship in younger children is unknown at present; it is possible that these bright youngsters were insufficiently challenged by their school work to develop strong needs to work hard. Whether this motivational deficit among the bright is transient or permanent poses an important and challenging research question.

**Salary in Businessmen** The studies just described indicate that, whereas a high level of mastery and work motives is associated with high academic achievement, interpersonal competitiveness tends to be negatively related to academic attainment. To explore the possibility that the negative impact of competitiveness is not restricted to students' scholastic performance, a very different type of group was studied by one of our students, Deborah Sanders (1978). These were the businessmen whose achievement data are reported in Table 1-3. The sample included too few women to permit further analysis of their data—a fact that reflected the small number of women who had obtained M.B.A.'s from the university whose graduates were surveyed. As we pointed out in commenting on Table 1-3, this sample of businessmen (and businesswomen, for that matter) scored relatively high on the competitiveness scale, seeming to verify the widely held belief that, in order to get ahead in the business world, one must have a strong streak of competitiveness. Perhaps in this group, com-



**Figure 1-2**  
Income in the four achievement-motive groups of businessmen corrected for years of experience [Source: Data from Sanders, 1978.]

petitiveness as well as work and mastery would contribute positively to performance.

The measure of attainment was the men's annual salaries, corrected for number of years of postgraduate experience. The salary data, shown in Figure 1-2, dramatically refute the contention that competitiveness is vital to a successful business career. While competitiveness was associated with a higher salary in those who were relatively weak in work-mastery, the high work-mastery groups told a different story. Among the men who scored high in work-mastery, those who scored low in competitiveness earned more than their competitive peers and were the best-paid of all the four groups.

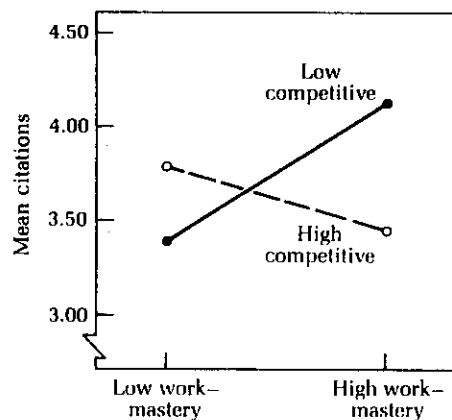
**Citations in Academic Scientists** The motive-performance relationship has also been investigated in a group of behavioral and physical scientists, all with Ph.D.'s and holding academic appointments at a major research university where scholarly publications by faculty members are both expected and rewarded (Helmreich, Beane, Lucker, and Spence, 1978). In this instance, the measure of attainment was number of citations to each individual's published works by other scientists over a specified period of years, the citation count being obtained from the Scientific Citation Index. Citations have been widely used as an objective measure of an individual's scientific influence and visibility and, inferentially, of the quality of the individual's work



(e.g., Clark, 1967; Cole and Cole, 1973; Garfield, 1977). As a method of showing the interaction between patterns of motives and citations, the scientists were classified into four motive groups on the basis of work-mastery and competitiveness scores, using the same procedures described above in the study of students. The results of this analysis are shown in Figure 1-3. Because of the small number of women in the sample, only the data from male scientists are presented. It will be observed that the results are similar to those obtained with students and businessmen, the highest citations being found in the scientists who were high in work-mastery but low in competitiveness. Particularly when combined with a high degree of work and mastery motivation, competitiveness appeared to deter rather than enhance scientific eminence.

It would be premature to conclude that, in all areas of endeavor, the pattern of achievement motives most likely to be associated with successful performance is a relatively low level of competitiveness combined with a high level of work and mastery strivings. For example, the influence of competitiveness on the performance of professional athletes or world-class amateur athletes, particularly participants in individual sports, cries out for exploration.

Further, the mechanisms by which competitiveness has its deleterious effects are not yet known, and we can only speculate about what they might be. To mention a few possibilities, highly competi-



**Figure 1-3**  
Citations to published research in the four achievement-motive groups of male academic scientists. [Source: Data from Helmreich, Beane, Lucker, and Spence, 1978.]

tive individuals may alienate and threaten others who are in a position to assist and support them in their activities. Competitive individuals who are not successful in besting others in a valued activity may stop trying and turn their energies to other areas (a special kind of fear of failure). Or they may become so preoccupied with winning over their rivals—which may take the form of competing with others for the extrinsic badges of success—that they become distracted from the task at hand. It is also unknown whether competitiveness has adverse effects on most individuals or only on a subset of them. Quite possibly, the competitiveness effect is brought about by different factors in different individuals and settings.

In a second investigation (Helmreich, Spence, Beane, Lucker, and Matthews, 1980) of scientists, we studied the relationships between their published work and a number of personality and demographic variables in addition to achievement motivation. The participants were male and female psychologists, whose motivational data are reported in Table 1-3. All had had their doctorates for at least five years, currently held academic appointments, and specialized in personality-social psychology.

Several types of information were collected about these psychologists. In addition to achievement motivation as measured by the WOFO, data were collected on instrumentality and expressiveness, as measured by the Personal Attributes Questionnaire. Information was also obtained about such demographic variables as marital status, number of children, the reputation of the graduate department in which the individuals earned their doctorates, and the reputation of the department in which they currently taught.

Previous investigations have shown that there are differences in achievement between men and women within various scientific disciplines, including psychology. Of those who enter graduate school, women are less likely than men to complete their degree requirements (Hirschberg and Itkin, 1978). Among those who are awarded their doctorates, women are less likely than men to be employed by prestigious departments and they tend both to publish and to have their work cited by others less often than men (Cole, 1979; Cole and Cole, 1973). Many internal and external barriers have been suggested as inhibiting women's academic achievement. (For a review of these factors and a summary of the relevant empirical evidence, see O'Connell, Alpert, Richardson, Rotter, Ruble, and Unger, 1978.)<sup>2</sup> One of our

<sup>2</sup>One factor that does not appear to be responsible for sex differences in the achievements of Ph.D. scientists is ability. Women admitted to graduate departments have been shown to have undergraduate grade-point averages similar to men's and to score at least as well as men on standardized aptitude tests such as the Graduate Record Examination.

major interests was to determine whether gender differences in productivity and citations would be found even in this relatively homogeneous group of male and female academic psychologists and, if they did occur, to determine whether they could be attributed to several variables that have frequently been mentioned as deterring women's scholarly contributions.

A comparison of the sexes revealed the usual differences in favor of men in both productivity (number of publications) and citations by others—differences that were both highly significant statistically and substantial in size.

Although men and women differed in productivity and in citations, the associations between these measures and other variables were parallel within each sex. The two measures of attainment were substantially correlated, but the relationships between these measures and other variables were not identical, indicating that the citation measure is not a mere byproduct of rate of publication.

As in our previous study of scientists (Figure 1-3), the greatest number of citations in both sexes was found for those high in work-mastery and low in competitiveness. At all but the very low levels of work-mastery, competitiveness suppressed the citation measure, its negative effects becoming more marked as work-mastery increased. Competitiveness had a very different relationship, however, with number of publications. As competitiveness (as well as work-mastery) increased, so did publications. This outcome is a particularly convincing demonstration that the productivity and citation measures do not tap the same facets of attainment.

A causal model of the factors leading to scientific visibility, as reflected in citations by others, was developed and evaluated by path analysis. Six variables were entered into the model: a composite of the achievement measures, reputation of graduate department, reputation of current department, sex, number of publications, and number of citations.<sup>3</sup> The theoretical model and the obtained path coefficients, indicating the magnitude of the relationships, are shown in Figure 1-4. The figure shows direct paths between all five predictors and the citation measure, i.e., achievement motives (represented by the work-mastery × competitiveness interaction); the reputation

<sup>3</sup>The demonstration of a correlation between two variables, we are taught in elementary statistics, gives no indication of whether A "causes" B, whether B "causes" A, or whether both are "caused" by a third factor. One can, however, develop a theoretical model of "what leads to what" and then, by applying the path-analytic technique to a matrix of correlations, test the model and trace the series of causal links or paths among variables and their strengths. The theoretical assumptions underlying the model presented in Figure 1-4 may be found in Helmreich, Spence, Beane, Lucker, and Matthews (1980). The numbers in the figure represent significant standardized path coefficients. Two nonsignificant paths have been omitted.

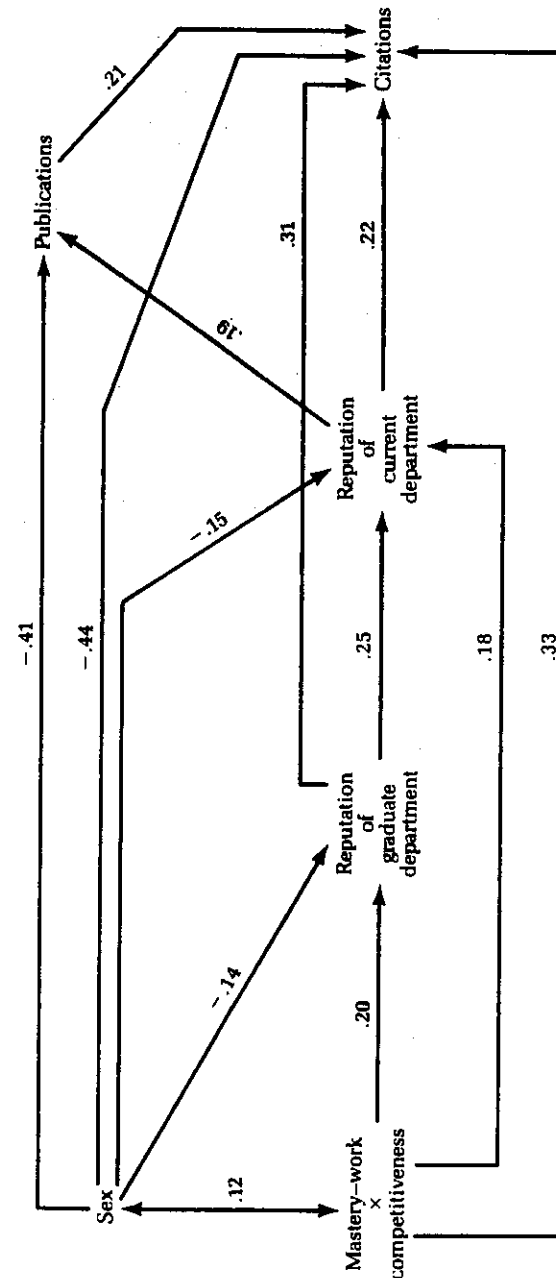


Figure 1-4  
A path model of attainment in academic psychologists. Numbers are standardized path coefficients. [Source: Data from Helmreich, Spence, Beane, Lucker, and Matthews, 1980. Copyright © 1980 by the American Psychological Association.]

measures, number of publications, and sex all make independent contributions to number of citations. The only direct links to publications, however, are sex and reputation of current department.

The relationships revealed by the model are not trivial. The  $R^2$  for citations is .62; i.e., 62% of the variability among individuals in citations has been accounted for by the five predictors. (Even when sex is partialled out,  $R^2$  remains high, .50.) In contrast, the  $R^2$  for publications is only .22.

The sources of sex differences in the criterion measures remain elusive. The citation difference could not be accounted for solely by number of publications; when productivity was controlled, women continued to be cited less often than men. We were singularly unsuccessful in identifying the factors that accounted for these differences. Mean scores on the WOFO achievement scales, seen in Table 1-3, revealed slight sex differences that were all in favor of females, including their somewhat lower scores on the competitiveness factor. Similarly, these men and women did not differ on our PAQ measure of instrumental and expressive personality characteristics.

The greater domestic burdens and child-care responsibilities that married women professionals assume in comparison with their male peers have also been cited as suppressing their scholarly attainments. However, we found no relationships in either sex between marital status and our criterion measures, and only a weak suggestion that number of children influenced a woman's scholarly performance. Finally, the mean reputation rating of the graduate department that awarded the women their degrees was only slightly lower than the mean for men. A larger and highly significant difference in favor of males was found for the ratings of current department, indicating that women were less likely to be employed in prestigious institutions where research is likely to be encouraged and rewarded. However, these differences were traceable largely to the older individuals in the sample. Reflecting changes in societal attitudes and the impact of affirmative-action programs, men and women under the age of 40 were similar in the quality of both their doctoral departments and the departments in which they were employed. However, men's superiority in productivity and visibility could not be attributed solely to these departmental factors. Analyses controlling for differences in the reputation ratings of the doctoral and employing departments continued to show men's greater productivity and number of citations.

Many possible explanations of these sex differences remain to be explored. These range from past and present discrimination against women that may take either overt or subtle forms, to internal factors that differentiate the sexes. For example, as a result of their sociali-

zation training, men's feelings of identity and self-worth are often strongly tied to their work roles. Even when young girls are encouraged by their parents or other influential adults to develop career aspirations, they are simultaneously trained to aspire to the "career" of wife and mother. As a result, women may be less single-minded than men about their careers and less likely to make their work the central focus of their lives.

Data relevant to these speculations are found in a study of work, leisure, and achievement motivation conducted by one of our doctoral students, Thomas Runge (1980). A sample of married male and female university faculty and staff completed a questionnaire that included items on overall life satisfaction and satisfaction with work, leisure activities, and close personal relationships (spouse and other family members). Within both groups of men, satisfaction with work was the highest correlate of life satisfaction. The next highest correlate of life satisfaction in both groups was leisure activities, whereas close personal relationships came in a poor third. These data suggest the greater value that men place on their work than on their other roles. For both faculty and staff women, on the other hand, life satisfaction was most highly correlated with satisfaction with personal relationships ( $r's > .50$ ). For faculty but not staff women, the relationship between life and work satisfaction was a fairly close second. These results suggest that women in demanding careers tend to have heavy investments in both their work and their personal, family relationships; whereas for men, their careers are of singular importance. While the outcome of men's more exclusive dedication to their work may be greater attainment, there may be attendant costs for themselves and their intimates. Whether men's greater single-mindedness is regarded as a virtue or a limitation is, ultimately, a value judgment.

#### Other Factors Affecting Academic Achievement

**Fear of Failure** In the Atkinson expectancy-value model, it will be recalled, resultant achievement motivation or the tendency to approach success is a function of two individual-difference components with opposite signs: the motive to achieve success, which is conceptually parallel to the WOFO achievement-motive factors; and the motive to avoid failure (fear of failure).

One of our students, Peter Gollwitzer, developed an objective measure of fear of failure whose items more closely capture the kinds of themes Heckhausen (1963) specified in his TAT measure of fear of failure and thus might more adequately measure the fear-of-failure concept than do the test-anxiety scales typically used. (Sample items:

"Even when I work my hardest, I worry about being unsuccessful" and "When I work on a problem, I am often distracted by thoughts of failure.") Introductory psychology students were given this fear-of-failure scale, along with three frequently used anxiety scales. Correlations of these measures in each sex with the fear-of-failure scale ranged from .47 to .74, indicating that the new scale was measuring similar but not identical properties.

Correlations were next obtained between each of these measures and the WOFO achievement scales. For the fear-of-failure measure, small but significantly negative relationships were found in both sexes with all achievement-motive scores except for competitiveness in males. This same pattern of results was also found in two additional samples of students. Even smaller relationships were found between the WOFO scales and the other anxiety measures, most of the correlations being nonsignificant.

Expectancy-value theory states that the motive to approach success and the motive to avoid failure have opposite effects on the tendency to approach success ( $T_S = M_S - M_{AF}$ ). This proposition prompted Gollwitzer to determine whether prediction of students' grades would be improved if fear-of-failure scores as well as WOFO scores were taken into account. He therefore obtained the GPAs of students enrolled in an upper-division course in psychology who had been given the several personality measures. Our previous findings of an interactive relationship with the WOFO achievement measures were replicated, the highest GPAs being found in those high in work-mastery but low in competitiveness. Expectancy-value theory implies that a negative relationship should be found between fear-of-failure score and GPA. A negative correlation was indeed found, but it was small and nonsignificant. Finally, a regression analysis was performed to determine the joint contribution of the WOFO and fear-of-failure scores to GPA. This analysis, which included terms for the achievement scores (work-mastery  $\times$  competitiveness), fear-of-failure scores, and the interaction between the achievement and fear-of-failure measures, indicated a significant effect only for the WOFO achievement scales. In short, including fear-of-failure scores did not improve prediction.

These results do not imply that individual differences in fear of failure or evaluation anxiety have no effects on performance. They do cast doubt, however, on the specific proposition that fear of failure acts to lower the individual's overall level of achievement motivation, as specified by Atkinson's original theory.

It is possible, of course, that fear of failure could have the simple subtractive role assigned to it by expectancy-value theory if other types of behavioral measures were employed, such as choice of task

difficulty. It is difficult to evaluate this aspect of expectancy-value theory even on its own terms, since investigators working within this tradition have not usually examined the independent effects of the two personality measures. Typically, predictions from the theory have been tested by obtaining a difference score for each individual and relating only these difference scores to the criterion variable.

**Future Orientation** In addition to the individual difference variables,  $M_S$  and  $M_{AF}$ , expectancy-value theory specifies two other major variables as determinants of resultant achievement motivation: probability of success ( $P_S$ ), and incentive value of success ( $I_S$ ). According to our theoretical perspective, one of the factors that determine the incentive value of success is the inherent interest that an achievement-related activity has for an individual. Tasks that an individual finds attractive or challenging activate achievement-oriented behavior by engaging the individual's achievement motives, and successful performance on such tasks is likely to be particularly satisfying.

As suggested by Raynor (1970), the incentive value of success may also be determined by the degree to which successful accomplishment in a particular setting is perceived as instrumental in reaching future goals. It might be noted parenthetically that instrumental activities often have many features in common with the activities associated with the future goal, so that perceived instrumentality and the inherent interest value of a current activity may be related.

Following Raynor's lead, we have recently begun to explore the contribution of perceived instrumentality to college students' academic performance. An indirect measure of instrumentality can be found in an item on the second part of the WOFO (which inquires about various vocational, educational, and marital aspirations), namely, the minimum amount of education that would satisfy the respondent: some college, completion of college degree, or postgraduate study. It seems reasonable to assume that doing well academically would be perceived as more instrumentally important by those who plan to graduate from college and, even more, by those who aspire to go on to graduate or professional school than by students who would be content not to complete their undergraduate degrees.

Responses to this item by the more than 1300 introductory psychology students whose achievement-motivation and GPA data were reported earlier revealed that, in both sexes, students' educational aspirations were unrelated to their Scholastic Aptitude Test scores (which students submitted as part of their admissions applications). However, even in the absence of measurable differences in scholastic aptitude, students of both sexes who aspired to postgraduate training earned significantly ( $p > .001$ ) higher grades than did those with

lower aspirations, thus confirming the general implications of Raynor's (1970) hypothesis about the role of instrumentality. Educational aspirations also showed small but significant positive correlations with the achievement-motive measures, the largest being with mastery ( $r$ 's of .24 and .25 for males and females, respectively).

A regression analysis of student grades (GPA) was also performed for each sex that took educational aspirations, WOFO achievement motive scores, and SAT scores into account. Inclusion of the educational-aspiration measure significantly increased  $R^2$  (variance accounted for) from .28 to .32. However, the constellation of achievement motives (mastery-work  $\times$  competitiveness) was more predictive of GPA than was educational aspiration.

Finally, it will be recalled that Raynor (1970) found some support for his hypothesis that perceived instrumentality of grades would lead to poorer performance in those with a low motive to achieve. Our regression analyses, however, did not confirm this aspect of Raynor's theory. That is, achievement motives were positively related to GPA at all levels of educational aspiration and, conversely, educational aspirations were positively related to GPA at all levels of achievement motives.

We will mention only briefly the results of a study (Carsrud, Dodd, Helmreich, and Spence, 1982) in which (among other things)<sup>4</sup> introductory psychology students were asked to rate the importance of grades to their future goals—a measure of instrumentality similar to Raynor's. This measure turned out to be unrelated to course performance—an outcome that can be attributed to the extreme skewness in the instrumentality measure. Perhaps in response to the greater concern of contemporary college-age youths with their economic futures than of students tested a decade ago, those in the Carsrud et al. study overwhelmingly rated grades as very important.

### ACHIEVEMENT MOTIVES IN NONSCHOOL AND NONJOB ACTIVITIES

In our introductory remarks, we noted that research on intrinsic achievement motives has been directed almost exclusively toward increasing our understanding of performance in academic and voca-

<sup>4</sup>A major purpose of the Carsrud et al. study was to determine the effects of causal attributions (to ability, effort, and so forth) of prior course performance on subsequent course performance. Analyses indicated that, when only attributions were considered, attributions were significantly related to later examination grades ( $r = .21$ ). However, in regression analyses that also included SAT scores, achievement-motive scores, and prior performance, attributions were not significant predictors of subsequent performance, although each of the other measures was.

tional settings. With few exceptions (e.g., Veroff and Feld, 1970), the implications of achievement motivation for other kinds of activities have gone unexplored. This neglect can in large part be attributed to the value that our society places on vocational success and on education as a stepping-stone to it. However, the tacit presumption of some investigators appears to be that achievement motives rarely find expression outside of school and job. This assumption is particularly likely to appear in discussions of women's achievement. Women with strong achievement motives, it is implied, have the option of expressing them directly through their own vocational activities or of satisfying them vicariously through the accomplishments of their husbands or children.

Our conception of achievement motives as general dispositional tendencies implies, on the contrary, that they have broad implications for behavior and are not narrowly constrained to specific outlets. Further, as our definition of achievement behavior (see page 12) makes clear, we hypothesize that people are capable of setting their own performance standards and that they can transform any activity into the object of self-induced achievement strivings.

Indirect evidence in support of these contentions can be found in a study by Bonjean, Moore, and Macken (1977) of members of a national women's organization. Although the purpose of the organization is to provide community service through its local chapters, membership is also considered to be highly prestigious socially. Statistical analyses of members' reasons for participating in the organization revealed several independent clusters. Two of these—the desire to have an impact in solving community problems, and the opportunity to obtain training and experience in leadership skills and related kinds of self-development—quite clearly reflect the need for accomplishment. A third cluster concerns opportunities to be sociable and to develop friendships—the classic pattern of “feminine” motivation, according to the popular stereotype. A fourth cluster refers to extrinsic motives: gaining social prestige, associating with people who can help their husbands' careers, and the like. For the group as a whole, sociability and friendship received the highest importance ratings. However, these motives did not preclude the desire for community impact and the development and exercise of leadership skills. Absolutely, these latter motives were also rated as important by the group as a whole. Further, in a group of women who were part of the organization's governing councils, motives related to self-development had the highest ratings.

More direct evidence that achievement motives are general qualities that may be manifested in various activities is provided by two recent studies employing the WOFO. In the first of these (Nyquist,

Slivkin, Spence, and Helmreich, submitted for publication), married couples (all parents of at least one first- or second-grade child) were asked about the relative responsibility of husband and wife for a number of domestic decisions and routine household tasks. Scores were also available for the husbands and wives on the WOFO achievement-motive scales and the PAQ measure of instrumental and expressive personality traits. For the group as a whole, there was a conventional division of labor, even working wives assuming most of the responsibility for "feminine" tasks and duties, with husbands assuming most of the responsibility for "masculine" tasks. However, the two individual-difference measures accounted for a significant proportion of the variability among couples in a number of areas. Mastery motives, for example, were related to several kinds of decision making and management of the family's financial affairs. When both husband and wife were high in mastery, these responsibilities were likely to be shared equally; but when scores were discrepant, responsibility tended to gravitate toward the spouse with the higher mastery orientation.

Additional evidence is found in the investigation by Runge (1980) in which the relationships among leisure, work, and achievement motivation were explored. As part of his survey of male and female faculty members and staff members at several universities, Runge asked respondents about their preferences in leisure-time activities and to indicate their sources of satisfaction in these activities. In all four groups, significant correlations were found between a composite of work and mastery scores and the respondents' participation in leisure activities that demanded demonstration of skill, in the number of additional activities in which they would have liked to develop expertise if they had time, in their preference for leisure activities that demanded hard work, and in their desire to keep busy. Parallel results were found in all four groups for competitiveness. Thus, competitiveness scores were significantly related to number of leisure activities inherently involving interpersonal competition, number of competitive activities in which they would have liked to take part if they had time, and the degree to which respondents indicated that the competitive aspects of these activities provided a source of satisfaction (as opposed to being incidental to them).

Other findings in the Runge study are also worthy of note. When asked about their preferred work environments, respondents who were high in mastery and work motives preferred to be challenged and kept busy in their jobs; whereas those high in competitiveness enjoyed aspects of their jobs that allowed them to compete with others and liked to look on their work as a contest with others. Some relationship was found between the work and leisure measures, but they

were weaker than those with achievement motives. Further, statistical analyses demonstrated that significant correlations between motive scores and leisure preferences remained even when work preferences were held constant and, conversely, between motive scores and work performance when leisure preferences were held constant.

These latter findings have several implications. A number of theories of work suggest that, for men, vocational activities are central to their lives. The nature of men's job-related motives and the degree to which their work satisfies these motives affect other aspects of their lives, such as their choice of leisure-time activities.

The Runge findings suggest that, at least with respect to the WOFO measures, achievement motives independently drive both work and leisure-time preferences. The data further indicate that, although the concepts of general achievement motives have considerable scientific utility, men and women do not necessarily manifest these motives in every activity in which they take part. The specific activities that individuals elect or the activities in which they find it possible to express their achievement motives are dictated by additional external and internal factors that must be independently assessed.

## SUMMARY AND DISCUSSION

A multiplicity of historical and contemporaneous factors, some external and some internal to the individual, determine both the particular achievement-oriented activities in which people engage and, in any given activity, the nature of their performance. The primary focus of this chapter is on two types of determinants: intrinsic achievement motives, and extrinsic motives and goals.

The concept of achievement motivation, as formulated by Murray (1938), posits a stable dispositional tendency to strive toward performance excellence—a tendency whose strength varies from one individual to another. As exemplified by the expectancy-value theory of Atkinson and his co-workers, the motive to achieve has traditionally been conceptualized as a unitary dimension. The authors' model traces its lineage to the seminal work of Murray, Atkinson, McClelland, and their colleagues, but conceives of achievement motivation as multifaceted rather than unidimensional. By means of an objective self-report instrument, the Work and Family Orientation Questionnaire (WOFO), we have identified three relatively independent factors: mastery (the preference for challenging tasks and for meeting internal standards of performance), work (the desire to work hard and do a good job), and competitiveness (the enjoyment of interpersonal competition and the desire to do better than others).

Contrary to the implications of early data from the TAT measure of achievement motivation that the concept had utility primarily for men, analyses of data from the WOFO achievement scales suggest that the structure of achievement motives is similar for both sexes. However, in unselected groups, sex differences in the strength of these motives appear, women tending to score higher on work and men higher on mastery and competitiveness. Differences also occur between unselected groups and members of highly achieving groups (e.g., Ph.D. scientists and businesspersons), achieving individuals of both sexes scoring higher on mastery and work than do their same-sex peers. Achieving groups differ, however, in their levels of interpersonal competitiveness.

The implications of individual differences in achievement motivation, as measured by the WOFO scales, for scholastic and vocational success have been demonstrated in a series of studies involving measures of academic performance in elementary school children and college students, of salary in businesspersons, and of number of citations to published work in scientists. These investigations have revealed an interactive relationship between achievement motives and performance: whereas strength of mastery and work motives is positively associated with quality of performance, competitiveness tends to detract from it, particularly when combined with a high degree of work and mastery.

The universality of this interactive effect of achievement motives—whether it holds for all types of achievement-related behavior or only for some—has yet to be established, and the mechanisms by which interpersonal competitiveness interferes with effective performance have yet to be determined. However, the available data unambiguously demonstrate the utility of a multidimensional conception of achievement motivation, as well as the significant contribution of achievement motives to real-life behaviors.

Historically, achievement-motivation research has largely been concerned with predicting behaviors that directly or indirectly have implications for performance in academic and vocational settings. However, the conception of achievement motives as general response tendencies implies that these motives can also be manifested through other activities, many of them of a constructive, socially significant nature. Initial investigations show considerable support for this contention.

The second major topic to which this chapter is addressed concerns extrinsic motives and goals. The value that our society places on achievement, particularly vocational achievement, is reflected in the system of tangible and intangible rewards that has been designed

to recognize successful attainment. In turn, the successful individual is assumed to want and expect these rewards, for both the material benefits and the ego gratification they provide. The degree to which the anticipation of these extrinsic rewards serves to motivate job performance is a matter of continuing debate. Two extreme theories can be identified. One specifies that, for most individuals and jobs, work is drudgery, motivated primarily by the necessity of earning a living and the desire for extrinsic rewards. The other specifies that, when jobs are structured to permit worker autonomy and to encourage a sense of self-worth, work is intrinsically motivated and inherently satisfying, and extrinsic rewards are motivationally ineffective. Most contemporary investigators take an intermediate position between these extremes, proposing that sources of motivation and satisfaction vary according to the characteristics of the individual worker and individual job. Despite this recognition that individuals differ in the degree to which they value extrinsic rewards or are motivated in their job performance by extrinsic considerations, few attempts have been made to measure individual differences in these factors and to determine their significance for vocational choice, worker productivity, job satisfaction, and so forth. In this sense, research on extrinsic motives and goals lags far behind research on intrinsic achievement motivation, which has traditionally been treated as an individual-difference variable.

Psychologists interested in achievement motivation, on the other hand, have failed to consider how extrinsic motives and goals interact with intrinsic motives. Extrinsic rewards are known to have powerful effects on behavior, positively reinforced acts typically increasing in frequency of occurrence. Apparently influenced by such findings, investigators have at least tacitly assumed that extrinsic motives and rewards act in parallel with intrinsic motives; i.e., their relationship is assumed to be essentially additive so that, in order to understand the latter, it is not necessary to take the former into account.

Recent evidence, however, has indicated that the introduction of rewards for performing inherently interesting tasks may undermine intrinsic motivation and/or may lead to poorer rather than better performance. The studies demonstrating these effects have been short-term investigations, most of them conducted in the laboratory. The conditions under which tangible rewards will or will not have deleterious effects, even in these restricted settings, are not yet established. Nonetheless, the available data, as well as common-sense observation, argue compellingly that the interaction between extrinsic motives and intrinsic achievement motivation cannot safely be ignored in future research.



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