Approach and Avoidance Motivation and Achievement Goals

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Achievement goal researchers and theorists have relied primarily on the distinction between performance goals and mastery goals in differentiating competence-based strivings. In this article, an argument is made for incorporating the distinction between approach and avoidance motivation into the performance-mastery dichotomy. Historical, theoretical, and empirical reasons for attending to the approach-avoidance distinction are offered, and a revised, trichotomous framework of achievement goals comprising mastery, performance-approach, and performance-avoidance goals is described and reviewed. This trichotomous framework is discussed in the broader context of a hierarchical model of achievement motivation that attends to the motivational foundation underlying achievement goals per se. Avenues for further theoretical development are also overviewed, including consideration of a mastery-avoidance goal construct.

Achievement motivation may be defined as the energization and direction of competence-based affect, cognition, and behavior. The concept of achievement motivation has been discussed in scientific psychology for over a century (James, 1890, pp. 309–311), and systematic empirical and theoretical work commenced over 60 years ago (Hoppe, 1930; Lewin, Dembo, Festinger, & Sears, 1944; Murray, 1938). Throughout the years, numerous theoretical conceptualizations of achievement motivation have been proffered, but the following have emerged as the most prominent: the achievement motive approach (Atkinson, 1957; McClelland, Atkinson, Clark, & Lowell, 1953), the test anxiety approach (Mandler & Sarason, 1952; Spielberger, 1972), the attributional approach (Weiner & Kukla, 1970), the self-worth approach (Covington & Beery, 1976), and the achievement goal approach (Dweck, 1986; Nicholls, 1984). In the contemporary achievement motivation literature, the achievement goal approach is clearly the most influential and generative of these traditions. Research on achievement goals is burgeoning in developmental, educational, and social-personality psychology; the achievement goal approach is the foundation for much applied work in school, work, and sports settings; and the National Advisory Mental Health Council has recently (1995) identified work on achievement goals as an important component of

their behavioral science research agenda on emotion and motivation.

The achievement goal approach originated in the late 1970s and early 1980s with the pioneering work of Dweck (1986), Nicholls (1984), and others (Ames, 1984; Maehr, 1984). Within this tradition, achievement goals are commonly defined as the purpose (Maehr, 1989) of task engagement, and the specific type of goal adopted is posited to create a framework for how individuals interpret and experience achievement settings. Dweck, Nicholls, and most other achievement goal theorists have delineated two distinct types of goals that vary as a function of how competence is *defined*. Although different theorists have used different labels for their two goal types (e.g., Dweck contrasts performance goals and learning goals; Nicholls differentiates between ego involvement and task involvement), the various frameworks have been viewed as conceptually similar enough to justify convergence in the form of a performance goal versus mastery goal dichotomy (Ames & Archer, 1987). Performance goals focus on the demonstration of competence relative to others, whereas mastery goals focus on the development of competence or task mastery. Achievement goal theorists contend that performance and mastery goals are associated with a divergent set of competence-relevant affect, cognition, and behavior. Performance goals are hypothesized to be linked to a negative set of processes and outcomes (e.g., withdrawal of effort in the face of failure, surface processing of study material, decreased task enjoyment); mastery goals are hypothesized to be linked to a positive set of processes and outcomes

(e.g., persistence in the face of failure, deep processing of study material, enhanced task enjoyment; Ames, 1992; Dweck & Leggett, 1988; Nicholls, 1989; Nolen, 1988).

In introducing and seeking to establish the performance goal versus mastery goal dichotomy, achievement goal theorists, Dweck and Nicholls in particular, spent a good deal of time marshaling evidence for the conceptual importance and utility of this framework. Dweck drew on her attributional research with children and her findings regarding mastery and helpless responses to failure in making the case for her performance–learning goal distinction (see Dweck, 1984, 1986; Dweck & Bempechat, 1983; Dweck & Elliott, 1983), whereas Nicholls drew on his developmental work distinguishing between differentiated and undifferentiated conceptions of ability in making the case for his ego–task involvement distinction (see Nicholls, 1983, 1984, 1989; Nicholls & Miller, 1984). Both theorists also relied on overviews of existing theoretical and empirical work, noting conceptual parallels in other areas of psychology and using the dichotomous framework to (re)interpret various findings in the achievement motivation literature. The evidence they presented in support of the performance-mastery goal dichotomy was impressive and compelling and clearly laid the groundwork for this framework to become the dominant theoretical approach in the contemporary achievement motivation literature.

APPROACH AND AVOIDANCE MOTIVATION

Approach and avoidance motivation differ as a function of *valence*: In approach motivation, behavior is instigated or directed by a positive or desirable event or possibility, whereas in avoidance motivation, behavior is instigated or directed by a negative or undesirable event or possibility. In their early work on achievement goals, both Dweck and Nicholls discussed the distinction between approach and avoidance motivation to some degree. Dweck and Bempechat (1983) suggested that persons with a performance goal and high competence perceptions try to demonstrate their competence relative to others, whereas those with a performance goal and low competence perceptions try to avoid demonstrating their lack of competence relative to others. In similar fashion, Nicholls (1984) suggested that individuals who are ego involved and have high perceived competence seek to attain high normative ability judgments, whereas those who are ego involved and have low perceived competence seek to avoid low normative ability judgments. Nevertheless, in presenting their achievement goal frameworks, neither theorist attended to the approach-avoidance distinction—Dweck and Bempechat focused on the dichotomous distinction between performance and learning goals, and Nicholls (1984) focused on the ego–task involvement dichotomy. In essence, for both theorists, the performance–ego involvement goal was construed

as an omnibus construct that included a combination of approach and avoidance tendencies. In subsequent theorizing, Dweck has continued to maintain this same omnibus conceptualization of performance goals; Nicholls apparently abandoned the avoidance aspect of ego involvement altogether, characterizing the ego and task orientations as "two forms of approach motivation" (Nicholls, Patashnick, Cheung, Thorkildsen, & Lauer, 1989, p. 188). The achievement goal literature has clearly followed the lead of Dweck and Nicholls, in that nearly all researchers and theorists either implicitly construe performance goals as omnibus constructs that include approach and avoidance motivational tendencies (Deci & Ryan, 1985) or explicitly view both performance and mastery goals as approach forms of motivation (Ames, 1992; Meece, Blumenfeld, & Hoyle, 1988; Nolen & Haladyna, 1990).

The primary question addressed in this discourse is whether the achievement goal tradition should incorporate the approach-avoidance distinction into the prevailing performance-mastery dichotomy. Dweck and colleagues (Bergen & Dweck, 1989; Henderson & Dweck, 1990) have explicitly stated that the performance-mastery goal dichotomy represents a rudimentary, simplified conceptual framework that will need to evolve toward greater complexity to more comprehensively account for motivated achievement behavior. Many evolutionary options are available, as a multitude of other goal dimensions could be (see Austin & Vancouver, 1996) and are starting to be (see Urdan, 1997) considered as candidates for inclusion. In the interest of parsimony, any such candidate should be carefully scrutinized, and theorists who desire to nominate a candidate should marshal evidence for its conceptual importance and utility, much as Dweck and Nichols marshaled evidence for the conceptual importance and utility of the performance-mastery distinction. I believe that the distinction between approach and avoidance motivation indeed warrants incorporation into the prevailing performance-mastery goal dichotomy and contend that a viable account of motivated achievement behavior will not only address the way competence is defined, but also how it is valenced. In the following, a rationale is offered for attending to the approach-avoidance distinction on the basis of historical, theoretical, and empirical considerations.

Historical Considerations

The distinction between approach and avoidance motivation was acknowledged by researchers and theorists early in the study of achievement behavior. From the first experiment on level of aspiration conducted by Hoppe (1930) in Kurt Lewin's laboratory, two independent motivational orientations were proposed to account for achievement behavior—the desire for success and the desire to avoid failure. Lewin and his colleagues (Lewin et al., 1944) incorporated these approach and avoidance motivational orientations into their theory of resultant valence (the first formal model of

achievement motivation), in which achievement behavior was hypothesized to be a function of, in part, dispositional tendencies to seek success and avoid failure. Murray (1938) conceptualized dispositional tendencies in terms of psychogenic needs and included two achievement-based needs in his taxonomic framework—the need for achievement (the desire to attain success) and the need for infavoidance (the desire to avoid failure). McClelland (1951) explicitly posited that there are two distinct types of achievement motivation, a negative form oriented toward the possibility of failure and a positive form oriented toward the possibility of success. In their classic work, *The Achievement Motive*, McClelland et al. (1953) focused primarily on the positive form of motivation (specifically the motive to achieve success), but the importance of considering a separate motive to avoid failure was highlighted several times throughout their monograph. In 1957, Atkinson introduced his classic need achievement theory, a mathematical framework that designated the desire to approach success and the desire to avoid failure (conceptualized in terms of both motive dispositions and resultant achievement tendencies) to be equally important determinants of achievement behavior.

Theorists working in the test anxiety, attributional, and self-worth traditions also made early use of the approach-avoidance distinction. Alpert and Haber (1960) proposed two independent types of evaluation anxiety: facilitating test anxiety, conceptualized as a positive form of arousal that enhances performance; and debilitating test anxiety, conceptualized as a negative form of arousal that undermines performance. In his early work, Weiner (1972) developed a cognitive reinterpretation of Atkinson's theory, which maintained Atkinson's notion of approach and avoidance dispositions and tendencies, but recast them in the language of attribution theory. Covington and Beery (1976) posited that classrooms tend to be success oriented or failure oriented and also asserted that students possess two independent achievement dispositions—a success orientation and a failure-avoidant orientation—that combine interactively to produce achievement behavior.

The distinction between approach and avoidance motivation has roots well beyond the achievement motivation literature. In fact, approach-avoidance concepts had their genesis in the ethical hedonism of the ancient Greek philosophers Democritus (460–370 B.C.) and Aristippus (430–360 B.C.; see also Epicurus, 342–270 B.C.), who proscribed the pursuit of pleasure and avoidance of pain as the primary guide for human conduct. The British philosopher Jeremy Bentham (1748–1832) was the first thinker to clearly articulate a psychological hedonism in which the pursuit of pleasure and avoidance of pain not only represents an ethical proscription, but a "scientific" description of how we actually behave. In his *Introduction to the Principles of Morals and Legislation*, Bentham (1779/1879) stated: "Nature has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to point out what we ought to do, as well as to determine what we shall do" (p. 1).

From the advent of psychology as a discipline, most, if not all, of the major theorists who proposed conceptualizations of motivation incorporated approach-avoidance concepts or principles. James (1890) discussed pleasure as a "tremendous reinforcer" and pain as a "tremendous inhibitor" of behavior and even provided speculation regarding the neural mechanisms underlying "impulsive" and "inhibitory" tendencies (p. 550). Freud (1915/1957, 1920) viewed the procurement of pleasure and the avoidance of pain (i.e., unpleasure) as the fundamental motivation underlying psychodynamic activity, and he divided the superego into two parts—the ego ideal, representing what the person should do, and the conscience, representing what the person should not do (Freud, 1923/1947). In his "law of effect," Thorndike (1911) described the processes whereby responses followed by satisfaction are more likely to recur, and responses followed by discomfort are less likely to recur; in similar fashion, Skinner (1938, 1953) distinguished between reinforcers that strengthen responses and punishing stimuli that weaken responses and also differentiated positive reinforcement (the provision of a positive) from negative reinforcement (the removal of a negative). Tolman (1923) asserted that all response tendencies fall into one of two classes, those "tending to remove" and those "tending to continue and get more of" the stimulus (p. 223).

Lewin (1935) posited that goal-objects in the life space have positive valences that attract and negative valences that repel and discussed the dynamic conflicts that can result from incompatible valences (e.g., approach-avoidance conflicts; see also Miller, 1944). Hull (1943) proposed two classes of acquired drives, conditioned appetitive drives (e.g., involving food) and conditioned aversive drives (e.g., involving pain avoidance), and his mathematical theory of instrumental behavior included parameters representing the tendency to respond (reaction potential) and the tendency to inhibit responding (inhibitory potential). Maslow (1955) asserted that human beings have two basic sets of needs, deficit needs (e.g., safety), that involve striving to eliminate a negative life situation, and growth needs (specifically, self-actualization), that involve striving to attain a more positive life situation. Eysenck (1967) posited that introverts have a high baseline level of cortical arousal and, therefore, typically avoid additional stimulation ("stimulus shyness"), whereas extraverts have a low baseline level of arousal and, therefore, typically seek additional stimulation ("stimulus hunger"). Bowlby (1969) proposed two distinct types of attachment, secure attachment, which promotes challenge seeking and exploration, and insecure attachment, which leads to caution and a preoccupation with safety and protection. The aforementioned are but a sampling of the historically prominent theorists who have implemented approach-avoidance concepts or principles; a summary of these and additional theorists is provided in Table 1. Clearly, the distinction between approach

and avoidance motivation has a rich history, both within the achievement motivation literature and (far) beyond.

Theoretical Considerations

The preceding section not only attests to the historical significance of the approach-avoidance distinction, it also clearly illustrates its theoretical utility. Excepting the achievement goal tradition, approach and avoidance are conceptualized as independent motivational tendencies in each of the prominent theoretical traditions in the achievement motivation literature. In addition, Table 1 reveals that approach and avoidance concepts or principles are represented in each of the major theoretical approaches to personhood: psychodynamic (e.g., Freud), learning theory (e.g., Skinner), dispositional (e.g., Cattell), neoanalytic (e.g., Erickson), humanistic (e.g., Maslow), social-cognitive (e.g., Rotter), biological (e.g., Eysenck), and cognitive (e.g., Heider). Furthermore, the approach-avoidance distinction is proving to be a useful conceptual guide in a host of literatures across diverse areas of psychology, including the following: animal learning (Gray, 1982; Overmier & Archer, 1989), attitudes (Cacioppo & Berntson, 1994; Tesser & Martin, 1996), cognitive appraisal (Lazarus, 1991; Tomaka & Blascovich, 1994), coping (Moos & Schaeffer, 1993; Roth & Cohen, 1986), emotion (Roseman,

1984; Stein & Jewett, 1986), decision making (Kahneman & Tversky, 1979; Messick & McClintock, 1968), goals (Carver & Scheier, 1998; Elliot & Sheldon, 1998), health behavior (Rogers, 1975; Rothman & Salovey, 1997), memory (Forster & Strack, 1996; Kuiper & Derry, 1982), mental control (Newman, Wolff, & Hearst, 1980; Wegner, 1994), perception-attention (Derryberry, 1991; Dixon, 1981), psychobiology (Davidson, 1993; Depue & Iacono, 1989), psycholinguistics (Clark, 1974; Just & Carpenter, 1971), psychopathology (Fowles, 1988; Newman, 1987), the self (Higgins, 1996; Markus & Nurius, 1986), social interaction (Arkin, 1981; Tedeschi & Norman, 1985), temperament (Goldsmith & Campos, 1990; Rothbart & Mauro, 1990), and traits (Tellegen, 1985; Zuckerman, 1991).

One reason for the conceptual popularity of the approach-avoidance distinction is that it is an intuitive, "person on the street" approach to motivation (Atkinson, 1964). That is, most persons experience themselves as being motivated by positive and negative incentives or possibilities, and the notion of approach and avoidance motivation represents common sense for most theorists, lay and trained alike. Theory development in psychology typically starts with intuition and common sense, which is only supplanted if and when a more appealing alternative emerges and is empirically validated. Such an alternative does not appear to be on the horizon.

TABLE 1
Major Theorists Who Have Utilized the Approach/Avoidance Distinction

Theorist	Type of Construct or Principle: Approach/Avoidance
James (1890)	The "springs of action": Pleasure has impulsive power/pain has inhibitory power
McDougal (1908)	Two of the basic instincts (propensities): curiosity/flight
Thorndike (1911)	The law of effect: Satisfaction "stamps in" connections/discomfort "stamps out" connections
Freud (1915)	Basic motivation underlying psychodynamics: seeking pleasure/avoiding pain (unpleasure)
Freud (1923)	Components of the superego: ego ideal/conscience
Tolman (1923)	Response tendencies: to continue and get more of the stimulus or to remove the stimulus
	Types of drives: appetites/aversions
Adler (1927)	Approach strategy serving avoidance motive: superiority striving/inferiority feelings
Pavlov (1927)	Types of conditioned stimuli: positive (elicit responses)/negative (inhibit responses)
Lewin (1935)	Directionality of goal seeking behavior: toward/away
	Valence of goal-object: positive (attractor)/negative (repellent)
Horney (1937)	Strategies to cope with basic anxiety: moving toward/moving away
Skinner (1938)	Types of operant learning: reinforcement/punishment
Skinner (1953)	Types of reinforcement: positive/negative
Hull (1943)	Types of acquired drives: conditioned appetitive/conditioned aversive
	Response tendencies: to respond (reaction potential) or to inhibit responding (inhibitory potential)
Miller (1944)	Goal gradients: approach/avoidance
Hebb (1949)	Stimulation relative to threshold: Below leads to pleasure and approach behavior/above leads to pain and avoidance behavior
Sullivan (1953)	Self-personifications: good me/bad me
Rotter (1954)	Two of the basic needs: recognition-status/protection-dependency
Maslow (1955)	Types of motives: growth/deficit
Cattell (1957)	Two of the innate motives (ergs): exploration/escape to security
Heider (1958)	Distinction between "can" and "may": If "p" tries, "p" will succeed/if "p" tries, "p" will not be punished
Mowrer (1960)	Types of emotion-based learning: hope learning/fear learning
Rogers (1961)	Direction of personal goals: moving toward positive/moving away from negative
Erickson (1963)	Crisis of first psychosocial stage: basic trust/mistrust
Eysenck (1967)	Basic trait dimension: extroversion (stimulus hungry)/introversion (stimulus shy)
Bowlby (1969)	Attachment styles: secure/insecure

If anything, in fact, theoretical interest in the distinction between approach and avoidance motivation seems to have waxed rather than waned in recent years. This is undoubtedly attributable to the impressive research emerging from an assortment of literatures (e.g., emotion, individual differences, psychopathology) on the neuroanatomical systems subserving approach and avoidance motivation and behavior. Theoretical speculation regarding the neuropsychological underpinnings of approach and avoidance has been available at least since the time of James (1890, pp. 579ff.), and several detailed formulations have been proposed over the years (Cloninger, 1987; Depue & Iacono, 1989; Dickinson & Dearing, 1979; Gray, 1990; Konorski, 1967; LeDoux, 1987; Masterson & Crawford, 1982; Panksepp, 1982; Schneirla, 1959; Solomon & Corbit, 1974). However, it is only in the past 15 years that researchers, using advanced technologies and methodologies, have been able to acquire data from human subjects that compellingly attest to the validity of such proposals. The picture emerging from the cumulative empirical yield is that approach and avoidance represent (at least partially) independent motivational systems that are located in the left and right frontal regions of the cerebral cortex, respectively (for reviews, see Cacioppo & Berntson, 1994; Davidson, 1993). Thus, there appear to be both "soft" (intuitive appeal) and "hard" (neurophysiological data) reasons for considering approach-avoidance a basic conceptual distinction, and the fact that researchers and theorists across time, conceptual foundations, and specific literatures utilize this distinction bears testimony to its theoretical power.

Empirical Considerations

Even if one grants that the approach-avoidance distinction has historical significance and theoretical utility both within and beyond the achievement motivation domain, an important question remains: Can the prevailing performance-mastery goal distinction alone, or with perceived competence as a moderator, satisfactorily predict achievement-relevant processes and outcomes? If the answer is yes, the value of incorporating the approach-avoidance distinction may be overridden by the need to maintain conceptual parsimony. If the answer is no, the follow-up question is whether incorporation of the approach-avoidance distinction indeed enhances the predictive utility of the performance-mastery goal framework.

The extant literature provides clear support for the proposition that mastery goals promote a host of positive processes and outcomes (see Ames, 1992; Dweck & Leggett, 1988; Harackiewicz, Barron, & Elliot, 1998; Pintrich & Schunk, 1996; Urdan, 1997). For example, in the experimental laboratory, mastery goal manipulations have been linked to persistence in the face of failure, choice of moderately challenging tasks, adaptive attributional patterns, deep processing of information, task absorption, creativity, and intrinsic motiva-

tion. In the field (e.g., the classroom), mastery goals have been linked to effort, persistence when obstacles are encountered, elaborative processing and self-regulatory strategies during studying, long-term retention of information, adaptive attributional patterns, appropriate help-seeking behavior, and intrinsic motivation. Interestingly, mastery goals are consistently associated with positive outcomes in field research, in which their influence is determined independently of performance goals; their positive effects are less consistently witnessed in experimental research, in which the two goals are typically contrasted with each other. The adaptive nature of mastery goal regulation is observed across levels of perceived competence.

The empirical picture is less clear for the proposition that performance goals elicit negative processes and outcomes (see Harackiewicz et al., 1998; Urdan, 1997; Wolters, Yu, & Pintrich, 1996). Although many studies indeed reveal that performance goals have negative consequences, a substantial number indicate that performance goals have no discernable influence, and some field studies even indicate that performance goals facilitate adaptive achievement behavior. This is the case for many, if not most, of the variables listed in the preceding paragraph. Of course, a mixed pattern of results for performance goals may be expected if, as presumed by many in the achievement goal literature, the effects of performance goals vary as a function of perceived competence. Some studies have found support for this moderator variable hypothesis, revealing that performance goals only have deleterious consequences when accompanied by low perceived competence (Butler, 1992; Covington & Omleich, 1984; Elliot & Church, 1997; Elliott & Dweck, 1988; Smiley & Dweck, 1994). However, a majority of the studies conducted to date have not produced data supportive of this hypothesis (Elliot & Harackiewicz, 1996; Harackiewicz & Elliot, 1993; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Kaplan & Midgley, 1997; Miller, Behrens, Greene, & Newman, 1993; Miller, Greene, Montalvo, Ravindran, & Nichols, 1996). Thus, at present, it does not seem feasible to attribute the mixed empirical picture for performance goals to a failure to consider the moderating influence of perceived competence.

From this overview, it seems that the performance-mastery distinction is not able to fully account for the extant empirical data, either alone or in conjunction with perceived competence. Although hypotheses regarding mastery goals are clearly and rather reliably supported, the same cannot be stated for performance goals. Thus, it appears that the performance goal construct is in need of differentiation, and the question at hand is whether differentiating performance goals in terms of approach and avoidance leads to enhanced predictive utility. This question may be addressed by taking a second look at the existing research with an eye toward the approach-avoidance distinction. Specifically, for experimental studies, it is possible to distinguish between performance goal manipulations that draw participants' attention to the possibility of a positive outcome (approach) and those that

draw participants' attention to the possibility of a negative outcome (avoidance). Likewise, for field studies, it is possible to distinguish between performance goal measures composed of items focused on the possibility of a positive outcome (approach) and those that include items focused on the possibility of a negative outcome (avoidance).

Reexamining the research on performance goals from this perspective indeed appears to clarify the empirical picture. In general, performance goal manipulations or measures classified as approach tend to be linked to a more positive, adaptive set of processes and outcomes; those classified as avoidance tend to be linked to a more negative, maladaptive set of processes and outcomes. Research on intrinsic motivation is illustrative in this regard. Elliot (1994) reviewed the experimental literature and found that performance goal manipulations classified as approach tended to lead to intrinsic motivation comparable to that of mastery goal manipulations or control groups, whereas performance goal manipulations classified as avoidance tended to undermine intrinsic motivation relative to mastery goal manipulations or control groups. Elliot and Church (1997) reviewed the field literature and found that performance goal measures classified as approach tended to evidence positive or null relations with intrinsic motivation, whereas those classified as avoidance tended to yield negative or null relations with intrinsic motivation. If, as this analysis suggests, approach and avoidance performance goals produce divergent processes and outcomes, it is easy to see how collapsing them together into an omnibus performance goal would produce a mixed empirical pattern. Of course, the aforementioned conclusions represent a post hoc attempt to (re)interpret the existing data; ideally, the utility of incorporating the approach-avoidance distinction into the performance-mastery framework would be documented in a priori fashion.

The Trichotomous Achievement Goal Framework

The preceding historical, theoretical, and empirical considerations led Elliot and colleagues (Elliot, 1994, 1997; Elliot & Church, 1997; Elliot & Harackiewicz, 1996) to propose a revised achievement goal conceptualization, a trichotomous framework that makes use of both the performance-mastery and approach-avoidance distinctions. In this framework, the conventional performance goal construct is partitioned into separate approach and avoidance orientations, and three independent achievement goals are delineated: a *mastery goal,* focused on attaining self- or task-referential competence (i.e., developing competence or attaining task mastery); a *performance-approach goal,* focused on attaining normative competence; and a *performance-avoidance goal,* focused on avoiding normative incompetence. Mastery goals and performance-approach goals are construed as approach orientations, because both entail striving to attain

positive possibilities; these goals differ in terms of how competence is defined. The performance-avoidance goal is construed as an avoidance orientation, because it entails striving to avoid a negative possibility; this goal differs from the performance-approach goal in terms of how competence is valenced, whereas it differs from the mastery goal in terms of how competence is both defined and valenced.

This trichotomous achievement goal framework is the centerpiece of a hierarchical model of achievement motivation proffered by Elliot and Church (1997) that sheds light on the motivational ontology of each achievement goal. In the model, achievement goals are viewed as (relatively) specific standards for competence, the cognitive representations that focus individuals on a competence-based possibility. Achievement goals are presumed to be distinct from achievement motives—need for achievement and fear of failure—that are viewed as more general, affectively based dispositions that energize achievement activity and orient individuals toward success or failure. Achievement motives are posited to prompt the adoption of achievement goals, and these goals, in turn, are used to directly regulate achievement behavior. Thus, achievement goals are construed as midlevel surrogates for their underlying achievement motives, the cognitive-dynamic representations that proximally influence achievement-relevant processes and outcomes.

Need for achievement is an approach motive that orients individuals toward success (McClelland et al., 1953); thus, it is hypothesized to prompt the adoption of achievement goals that focus on the attainment of positive possibilities—mastery and performance-approach. Fear of failure is an avoidance motive that orients individuals toward failure (Birney, Burdick, & Teevan, 1969); thus, it is hypothesized to prompt the adoption of performance-avoidance goals that focus on the avoidance of a negative possibility. Fear of failure is also posited to lead to performance-approach goals, a motive-goal pairing in which the desire to avoid failure is strategically served by striving to attain success. Therefore, in the model, mastery goal pursuit and performance-avoidance goal pursuit are both viewed as motivationally congruent forms of regulation, in that both goals are undergirded by a single achievement motive, and the focus of the goal matches the valence of its underlying motive. The pursuit of performance-approach goals, in contrast, is portrayed as a more complex form of regulation, in that these goals can be undergirded by one or two achievement motives, and the focus of the goal does not always match the valence of its underlying motive or motives.

Competence perceptions as well as achievement motives are posited as antecedents of achievement goal adoption in the hierarchical model. Achievement motives and competence perceptions are viewed as distinct, independent constructs that account for unique variance in the adoption of achievement goals. Like achievement motives, competence perceptions are presumed to orient individuals toward suc-

cess or failure and are posited to have an indirect influence on achievement behavior through their effect on achievement goal adoption. The hypothesized links between competence perceptions and achievement goals are straightforward: Individuals with high competence perceptions are expected to orient toward success and adopt approach goals, mastery, and performance-approach, whereas those with low competence perceptions are expected to orient toward failure and adopt a performance-avoidance goal. Parenthetically, actual competence or ability (as imperfectly indicated by variables such as standardized test scores or grade point averages) is construed as distinct from competence perceptions, but is presumed to function in the same manner as competence perceptions in the model.

The hierarchical model's use of competence perceptions is similar to that proposed in the classic need achievement theory (see Atkinson, 1957), but it is quite different from that proposed in the achievement goal literature. In Dweck's and Nicholls' initial work and in the contemporary moderator variable hypothesis, competence perceptions and approach and avoidance tendencies are implicitly equated. Given the mutual exclusivity of high and low perceived competence, equating approach tendencies (high perceived competence) and avoidance tendencies (low perceived competence) necessitates that approach and avoidance also be construed as mutually exclusive, thereby precluding the possibility that individuals can be simultaneously motivated by approach and avoidance tendencies. In the hierarchical model, competence perceptions are viewed as one of a set of antecedents of approach and avoidance goals. Competence perceptions can only contribute to approach or avoidance goal adoption, but the other antecedents (such as need for achievement and fear of failure) make their own independent contribution, thereby allowing the possibility that individuals could simultaneously adopt both approach and avoidance goals.

Although to date the focus in the hierarchical model has been on achievement motives and competence perceptions as antecedents of achievement goals, other intrapsychic and environmental variables are also presumed to exert an influence on the goal adoption process. Dweck's (1990) implicit theories of ability, for example, may be construed as more cognitively based dispositional variables that complement the more affectively based achievement motives as predictors of achievement goals. Incremental beliefs about ability (i.e., that ability is malleable) are likely to lead to the adoption of mastery goals; entity beliefs about ability (i.e., that ability is immutable) are likely to lead to the adoption of performance goals, both performance-approach and performance-avoidance. Individuals also vary in the degree to which they desire diagnostic information about their skills and abilities (see Sorrentino & Hewitt, 1984; Trope, 1986), and this cognitively based disposition is also worthy of consideration as a predictor of achievement goals. Normative evaluation typically provides the most diagnostic ability in-

formation (Butler, 1993; Festinger, 1954); thus, it is likely that the dispositional desire for such information would lead to the adoption of performance-approach goals and, perhaps, performance-avoidance goals.

Variables beyond competence-based constructs per se are also likely to affect achievement goal adoption. Likely and noteworthy antecedents include self-based and relationally based variables, such as self-esteem (level and stability; Baumeister, Tice, & Hutton, 1989; Kernis, 1993), self-validation (Dykman, 1998), self-worth contingency (Covington & Beery, 1976), self-monitoring (Snyder, 1979), need for approval (Harter, 1975), need for affiliation (Boyatzis, 1973), fear of rejection (Mehrabian & Ksionsky, 1974), and attachment style (Hazan & Shaver, 1990), as well as demographic variables such as sex (Dweck, 1986), ethnicity (Urdan, 1997), and socioeconomic or sociocultural background (Maehr & Nicholls, 1980). Space limitations preclude individual consideration of these variables, but in general it may be stated that performance goals (both approach and avoidance) are more likely to be linked to self-based and relationally based variables, given that the pursuit of such goals often entails self-focused attention and the goals themselves are inherently interpersonally oriented. Research on various forms of avoidance motivation (see Markus, Kitayama, & Heimen, 1996; Stein & Bailey, 1973; Willig, Harnisch, Hill, & Maehr, 1983; Zigler, Abelson, & Seitz, 1973) suggests that women, ethnic minorities, and individuals from lower socioeconomic backgrounds and interdependent cultures may be most susceptible to performance-avoidance regulation.

Behavioral activation system and behavioral inhibition system sensitivity (Gray, 1982), positive or negative temperament (Watson & Clark, 1993), and extraversion–neuroticism (Eysenck, 1967; Tellegen, 1985) are additional variables that are likely to influence achievement goal adoption. Each of these variables is a broad disposition that represents (at least in part) a neurophysiological predisposition to orient toward negative or positive stimuli, and it is likely that such "hard wiring" exerts an important and independent influence on goal adoption of any sort, including that in the achievement domain (see Elliot & Sheldon, 1997; Elliot, Sheldon, & Church, 1997). Individuals predisposed to orient toward positive stimuli would seem more likely to adopt mastery and performance-approach goals, whereas those predisposed to orient toward negative stimuli would seem more likely to adopt performance-avoidance goals. The aforementioned competence perceptions, implicit theories, diagnosticity preferences, self-based and relationally based variables, and, to some degree, achievement motives, are likely to be acquired through the process of socialization and accumulated experience in achievement situations and beyond; these variables are presumed to overlay and be rooted in the individuals' neuroanatomical foundation present at birth.

To this point, the variables proposed as antecedents of achievement goals have been discussed in terms of their di-

rect, linear influence. However, it is also possible that some of the antecedent variables combine together to jointly and interactively predict achievement goal adoption. For example, it may be the case that competence perceptions moderate the effects of entity and incremental theories on achievement goal adoption. That is, incremental theory may predict mastery goal adoption regardless of perceived competence, whereas entity theorists with high competence perceptions may adopt performance-approach goals and entity theorists with low competence perceptions may adopt performance-avoidance goals. Interestingly, this possibility stands in contradistinction to Dweck's (1990) hypothesis that perceived competence moderates the effect of performance and mastery goals on various processes and outcomes.

Environmental factors are also presumed to play an important role in the goal adoption process in three primary ways. First, the achievement environment can have a direct effect on the adoption of achievement goals (see Ames, 1992; Maehr, 1984; Meece, 1991; Midgley, 1993), independent of any "motivational baggage" (e.g., hard wiring, chronically accessible motive dispositions or implicit theories) that the individual carries into the setting. That is, if the achievement setting is "strong" enough (Caspi & Moffit, 1993), it alone can establish situation-specific concerns that lead to goal preferences for the individual, either in the absence of a priori propensities or by overwhelming such propensities. Second, the achievement environment can have an indirect effect on the adoption of achievement goals by determining the degree to which motivationally relevant dispositions are activated (see Murray, 1938, for a discussion of need-press interactions) or by altering individuals' perceptions of competence. For instance, achievement contexts that are structured toward challenge (e.g., the possibility of success is made salient) are likely to activate the need for achievement, that in turn leads to mastery and performance-approach goal adoption, whereas achievement contexts that are structured toward threat (e.g., the possibility of failure is made salient) are likely to activate fear of failure, that in turn leads to performance-avoidance and performance-approach goal pursuit (Elliot, 1997).

Third, the achievement environment not only influences the activation of dispositions, it also affects the precise type of goal selected in service of the disposition that is activated. For example, once need for achievement is activated (due to its chronic accessibility or the presence of particular environmental cues), characteristics of the achievement context (e.g., the degree to which evaluation is norm- or task-based) determine whether this motivational energy will be channeled toward performance-approach or mastery goals. Likewise, once entity beliefs are activated (due to their chronic accessibility or the presence of particular environmental cues), characteristics of the achievement setting (e.g., the degree to which the possibility of success or the possibility of failure is made salient) determine whether performance-approach or performance-avoidance goals will be recruited. Of course,

achievement environments often possess multifarious characteristics, thereby leading (through both direct and indirect means) to the simultaneous adoption and pursuit of multiple goals (see Wentzel, 1989).

Throughout this section, the primary emphasis has been on motivationally relevant dispositions and environmentally induced concerns as antecedents, but it is important to note that these dispositions and concerns may also be represented as more cognitively focused goals that themselves lead to mastery, performance-approach, and performance-avoidance goals. To illustrate, for a student in a math class, the need for approval could impel the goal of impressing one's friends, that could lead to the goal of performing better than others in the class. Thus, the impact of the aforementioned dispositional and environmental variables on the mastery, performance-approach, and performance-avoidance goal adoption may, in some instances, be mediated by other goals, and together these dispositions, concerns, and goals form the motivational foundation for achievement goal pursuit.

Incorporating these additional antecedents of achievement goals into the hierarchical model highlights the complexity of achievement goal adoption and, indeed, achievement goal regulation. Mastery, performance-approach, and performance-avoidance goals (per se) may be essentially the same across achievement contexts, but the process of regulating according to these goals is likely to be somewhat different across situations as a function of the motivational foundation of the goal. Goals that emerge from environmental cues alone are likely to be weaker and less stable over the course of the achievement situation than those that have a dispositional underpinning. The specific intrapsychically or environmentally induced motivational orientation underlying the goal is presumed to "remain in communication with" the goal (see Lewin, 1935, for a discussion of needs and quasi-needs) and exert its influence throughout the process of goal pursuit. In essence, although the achievement goal itself establishes how competence is defined and valenced, its motivational foundation establishes the psychological context for and broader meaning of competence in the achievement setting. Achievement goals are posited to function as channels for their underlying motivation (Elliot, 1997); the goal itself is construed as the proximal predictor of achievement-relevant processes and outcomes (and beyond; Elliot & Sheldon, 1997). Thus, as displayed in Figure 1, the effects of competence-based variables, self-based variables, relationally based variables, demographic variables, and environmental variables are hypothesized to run through their midlevel regulatory surrogates: achievement goals. Only neurophysiological variables (with their neuroanatomical substrates) are posited to maintain a proximal predictive role (Elliot & Sheldon, 1998).

The variability in the motivational foundation of achievement goals is likely to be translated into variability in the effect that achievement goals have on achievement-relevant processes and outcomes. Nevertheless, mastery goals are expected to produce a rather consistent empirical pattern, be-
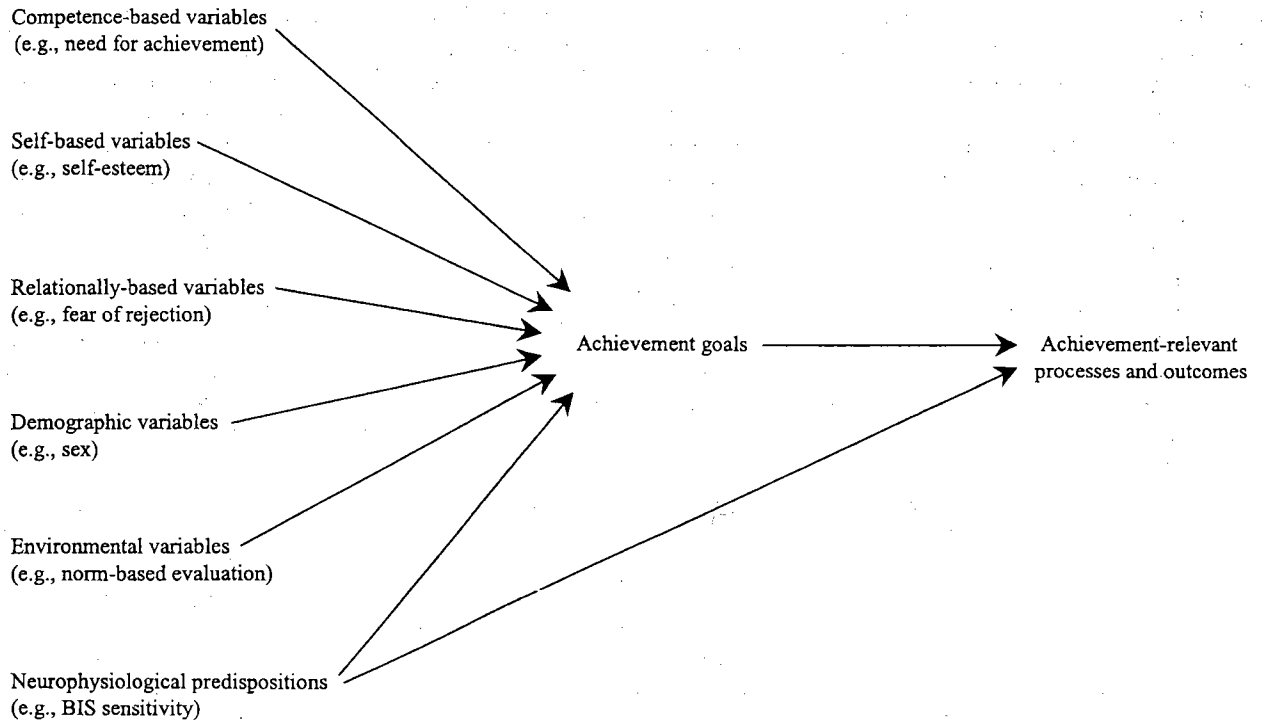
Antecedent variables:

FIGURE 1   Achievement goals in the context of the hierarchical model of achievement motivation.

cause each of the primary sources of mastery goals is motivationally congruent with the focus inherent in its representation. That is, mastery goals are focused on the development of competence or attainment of task mastery, and the potential sources of these goals are likewise structured in a manner that orients the individual toward a positive possibility or implicitly defines competence in terms of improvement–task mastery. Thus, the pursuit of mastery goals is portrayed as fundamentally appetitive and challenge-based and is posited to elicit positive affective, cognitive, and behavioral processes that lead to a host of positive outcomes. The positive consequences of mastery goal pursuit are likely to be observed across a wide range of processes and outcomes, including both quantitative (e.g., persistence, effort expenditure) and phenomenologically based (e.g., intrinsic motivation, self-determination) variables. However, mastery goals are not likely to be positively related to variables that necessitate attention to extrinsic considerations, even when such considerations are adaptive. For example, in a classroom setting in which normative evaluation prevails, mastery goals (to the extent that they are adopted) are not expected to be a positive predictor of test performance or instrumental processes therein (e.g., the rote memorization of test-relevant material). Few, if any, negative consequences are anticipated as a function of the pursuit of mastery goals.

Like mastery goals, performance-avoidance goals are expected to produce a rather consistent empirical pattern, be-

cause each of the primary sources of these goals is either explicitly or dynamically congruent with the focus inherent in its representation. Many of the antecedents (e.g., fear of failure, fear of rejection) are explicitly congruent in that they, like performance-avoidance goals, are structured in a manner that orients the individual toward a negative possibility. Other antecedents are dynamically congruent (e.g., self-validation, self-worth contingency) or become so when linked to achievement strivings (e.g., need for affiliation, need for approval), in that the placement of a competence-based contingency on one's global self or affiliative bonds would seem to manifest a fundamental apprehension and anxiety about one's inherent value as a person or worthiness as a relational other (Birney et al., 1969; Burhans & Dweck, 1995; Covington & Beery, 1976; Rogers, 1959; Ryan, 1982). Thus, the pursuit of performance-avoidance goals is portrayed as fundamentally aversive and threat-based and is posited to elicit negative affective, cognitive, and behavioral processes that lead to a host of negative outcomes. The negative consequences of performance-avoidance goal pursuit are likely to be observed across a wide array of processes and outcomes, including quantitative, phenomenologically based, and performance-relevant variables. Few, if any, positive consequences are expected to accrue from the pursuit of performance-avoidance goals.

Performance-approach goals are expected to produce a more variable and complex empirical pattern than mastery

and performance-avoidance goals, because the focus of these goals can be congruent or incongruent with their motivational foundation. When congruent (e.g., when undergirded by need for achievement, evoked by challenge cues), the pursuit of performance-approach goals may be seen as fundamentally appetitive and challenge-based and is posited to produce processes and outcomes similar to those yielded by mastery goals. Some differences are expected, however, given the differential foci of the two types of goals. For example, using others as a referent of evaluation necessitates attention to extrinsic considerations that may facilitate performance in many achievement settings, but minimize the likelihood that the process of self-regulation will be experienced as self-determined. Few, if any, negative consequences are anticipated as a function of this type of performance-approach goal pursuit.

When incongruent with their underlying motivational foundation (e.g., when undergirded by fear of failure, evoked by threat cues), the pursuit of performance-approach goals represents approach in order to avoid something aversive and is posited to engender a more circumscribed set of positive processes and outcomes and even some negative processes and outcomes. For example, when pursuing a performance-approach goal in order to avoid failure, the positive focus inherent in the goal may promote vigorous effort leading to successful accomplishment, but the underlying anxiety involved in pursuing the goal in order to avoid failure may also produce some negative outcomes, particularly in the long run (e.g., reduced intrinsic motivation; see the defensive pessimism literature). In similar fashion, when pursuing a performance-approach goal in order to win the approval of one's parents, the positive focus inherent in the goal may spur great effort and accomplishment, but the underlying apprehension involved in pursuing the goal in order to garner parental approval may also have some negative consequences, again, particularly in the long run (e.g., compromised psychological or physical well-being or both; see the Type A personality literature). In general, this type of performance-approach goal pursuit is expected to have positive consequences for performance-relevant and quantitative variables and null or even negative consequences for phenomenologically based variables. Negative consequences would probably be restricted to the case in which performance-approach goals were undergirded by aversive motivation alone, in the absence of any appetitive motivation.

From this overview, it can be seen that despite the presence of variability in their motivational foundations, it is possible to predict rather clear and distinct nomological networks for each goal orientation. Stated differently, the variability in empirical patterns within mastery, performance-approach, and performance-avoidance goals is expected to be considerably less than the variability in empirical patterns between these three goal types.

EMPIRICAL SUPPORT FOR THE TRICHOTOMOUS ACHIEVEMENT GOAL FRAMEWORK

The research that has been conducted to date on the trichotomous conceptualization of achievement goals has provided clear support for the utility of the framework. An overview of this research follows.

A fundamental premise of the trichotomous framework is that performance-approach and performance-avoidance goals represent separate, independent achievement orientations. In two experiments, Elliot and Harackiewicz (1996) demonstrated that the two types of performance goals could be manipulated separately by focusing participants' attention on the possibility of a positive (performance-approach) or negative (performance-avoidance) normative outcome in an achievement setting. In Experiment 1, the two goals were instantiated by establishing a normative referent for performance evaluation and then describing the achievement task as diagnostic of success only (performance-approach) or failure only (performance-avoidance). A more subtle manipulation was used in Experiment 2. As in the first experiment, a normative referent for evaluation was established for both goals, but then the two goals were bifurcated by simply making mention of the possibility of success (performance-approach) or failure (performance-avoidance). In both experiments, differential results were obtained for the two performance goal manipulations, thereby supporting the contention that different goal orientations were established. Mastery goals were also manipulated in the two experiments, and the central components of each of the three goal manipulations for both experiments are presented in Table 2.

Elliot and Church (1997) demonstrated that the two types of performance goals could also be measured separately by developing self-report scales of performance-approach and performance-avoidance goals for use in the classroom setting (see also Middleton & Midgley, 1997; Skaalvik, 1997; Vandewalle, 1997). Elliot and Church presented these performance goal measures and a mastery goal measure to undergraduates in a psychology class and submitted the obtained data to a principal components factor analysis. The analysis yielded three factors with an eigenvalue greater than 1. All items loaded higher than .40 on their expected factor, and for the performance-approach and performance-avoidance items, there was an average difference of .60 between each item's primary loading and its loading on the other factor. Each of the three achievement goal measures evidenced a moderate to high degree of internal consistency (all Cronbach's alphas were .77 or above). Furthermore, each of the achievement goals yielded differential results in a series of simultaneous regression analyses, thereby providing further evidence of the independence of these three forms of regulation (see Table 3 for a listing of the items for the three achievement goal scales).

TABLE 2
Achievement Goal Manipulations

Elliot and Harackiewicz (1996)—Experiment 1

Performance-approach goal

   The purpose of this project is to compare college students to one another in their ability to solve hidden figure puzzles—specifically, our Nina puzzles. In our previous work, we have found that most (university) students are fairly comparable in their ability to solve Nina puzzles, but some students stand out because they do quite well on the puzzles. This session will give you the opportunity to demonstrate that you are a good puzzle solver.... When you have completed the four puzzles, you will be provided with information regarding how you did compared to other (university) students.

Performance-avoidance goal

   The purpose of this project is to compare college students to one another in their ability to solve hidden figure puzzles—specifically, our Nina puzzles. In our previous work, we have found that most (university) students are fairly comparable in their ability to solve Nina puzzles, but some students stand out because they do quite poorly on the puzzles. This session will give you the opportunity to demonstrate that you are not a poor puzzle solver.... When you have completed the four puzzles, you will be provided with information regarding how you did compared to other (university) students.

Mastery goal

   The purpose of this project is to collect data on college students' reactions to hidden figure puzzles—specifically, our Nina puzzles.... When you have completed the four puzzles, you will be provided with information regarding the percentage of the total hidden Ninas that you found in today's session.

Elliot and Harackiewicz (1996)—Experiment 2

Performance-approach goal

   The purpose of this project is to compare college students to one another in their ability to solve hidden figure puzzles—specifically, our Nina puzzles. Your performance in today's session will show your level of puzzle solving ability. For instance, if you find more Ninas than a majority of (university) students, you will demonstrate that you have good puzzle solving ability.... When you have completed the four puzzles, you will be provided with information regarding how you did compared to other (university) students.

Performance-avoidance goal

   The purpose of this project is to compare college students to one another in their ability to solve hidden figure puzzles—specifically, our Nina puzzles. Your performance in today's session will show your level of puzzle solving ability. For instance, if you find fewer Ninas than a majority of (university) students, you will demonstrate that you have poor puzzle solving ability.... When you have completed the four puzzles, you will be provided with information regarding how you did compared to other (university) students.

Mastery goal

   See Experiment 1

Note. Adapted from *Advances in Motivation and Achievement* (Vol. 10), 1997, with the permission of JAI Press, Inc. All rights reserved.

Data regarding the antecedents of the three achievement goals were also acquired in the study by Elliot and Church (1997). Students completed self-report measures of need for achievement, fear of failure, and competence expectancies, and each achievement goal was simultaneously regressed on these three predictor variables. The results supported the hierarchical model's hypotheses regarding the motivational ontology of each goal, and validated achievement motives and competence perceptions as independent antecedents of achievement goal adoption. Mastery goals were undergirded by need for achievement and high competence expectancies, performance-avoidance goals were undergirded by fear of failure and low competence expectancies, and performance-approach goals were undergirded by need for achievement, fear of failure, and high competence expectancies. This dual-motive foundation for performance-approach goals was sensible, given that both success and failure were clearly plausible outcomes in the class.

Elliot and McGregor (in press) conceptually replicated the motive-to-goal component of the Elliot and Church (1997) study by using a projective motive assessment and also conceptually replicated Elliot and Church's competence expectancy findings by using more objective indicators of competence (standardized test scores and grade point averages). Vandewalle (1997) reported zero-order correlations consistent with the Elliot and Church results and also reported that mastery goals were negatively associated with entity beliefs about intelligence, whereas performance-approach and performance-avoidance goals were positively associated with such beliefs. Skaalvik (1997) assessed the correlation between global self-esteem and each of the three achievement goals and found that self-esteem was positively related to mastery and performance-approach goals and negatively related to performance-avoidance goals.

Church (1999) recently examined the role of several environmental variables as predictors of mastery, performance-approach, and performance-avoidance goals. In this research, undergraduates in chemistry classes reported their perceptions of three dimensions of the classroom environment—facilitation of interest, evaluation focus, and harsh evaluation—and indicated the degree to which they were pursuing each of the three achievement goals in the class. The results indicated that mastery goals were positively related to the facilitation of interest and negatively related to evaluation focus and harsh evaluation, performance-approach goals were positively related to evaluation focus, and performance-avoidance goals were positively related to evaluation focus and harsh evaluation.

The majority of the research conducted using the trichotomous achievement goal framework has focused on the consequences of pursuing different achievement goals and, as hypothesized, each of the three goals has been linked to a dis-

TABLE 3
Achievement Goal Items

Performance-approach goal

1. It is important to me to do better than the other students.
2. My goal in this class is to get a better grade than most of the students.
3. I am striving to demonstrate my ability relative to others in this class.
4. I am motivated by the thought of outperforming my peers.
5. It is important to me to do well compared to others in this class.
6. I want to do well in this class to show my ability to my family, friends, advisors, or others.

Performance-avoidance goal

1. I often think to myself, "What if I do badly in this class?"
2. I worry about the possibility of getting a bad grade in this class.
3. My fear of performing poorly in this class is often what motivates me.
4. I just want to avoid doing poorly in this class.
5. I'm afraid that if I ask my TA or instructor a "dumb" question, they might not think I'm very smart.
6. My goal for this class is to avoid performing poorly.[a]

Mastery goal

1. I want to learn as much as possible from this class.
2. It is important for me to understand the content of this course as thoroughly as possible.
3. I hope to have gained a broader and deeper knowledge of psychology when I am done with this class.
4. I desire to completely master the material presented in this class.
5. In a class like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.
6. In a class like this, I prefer course material that really challenges me so I can learn new things.

Note. Adapted from A. Elliot and M. Church, 1997, *Journal of Personality and Social Psychology, 70,* pp. 218–232. Copyright 1997 by the American Psychological Association.

[a]This item is recommended as a replacement for the item, "I wish this class was not graded," used in the original Elliot and Church (1997) measure. This item has more face value than the original, and a pilot study (*n* = 195) demonstrated that its inclusion slightly improved the psychometrics of the measure (the factor analysis accounted for more variance, the eigenvalues more strongly supported the three factor solution, and the reliability of the performance-avoidance goal scale was improved). The revised and original performance-avoidance goal scales were highly correlated (*r* = .96). Parenthetically, additional revision of this measure may be necessary to attend to the theoretical issues raised in the latter sections of this article.

tinct predictive profile. Mastery goals have been linked to an assortment of positive processes and outcomes, including challenge construals, absorption during task engagement, effort while studying, persistence while studying, self-determination while studying, challenge-related affect while studying, absorption in study material, self-regulated learning, willingness to seek help with schoolwork, deep processing of information, long-term retention of information, and intrinsic motivation (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Elliot & McGregor, in press; Elliot, McGregor, & Gable, in press; McGregor & Elliot, 1999; Middleton & Midgley, 1997). Mastery goals have been found to be unrelated to performance outcomes in several studies (Elliot & Church, 1997; Elliot & McGregor, in press; Elliot et al., in press; Skaalvik, 1997). Mediational research has documented task absorption as a mediator of the relation between mastery goals and both behavioral and self-report indicators of intrinsic motivation (Elliot & Harackiewicz, 1996).

Performance-avoidance goals have been linked to a host of negative processes and outcomes, including threat construals, low absorption during task engagement, low self-determination while studying, threat-related affect while studying, distraction while studying, disorganized studying, less self-regulated learning, procrastination, an unwillingness to seek help with schoolwork, shallow processing of information, wanting to escape evaluation, anxiety prior to

evaluation, anxiety (worry and emotionality) during evaluation, poor retention of information, poor performance, and reduced intrinsic motivation (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Elliot & McGregor, in press; Elliot et al., in press; McGregor & Elliot, 1999; Middleton & Midgley, 1997; Skaalvik, 1997). Mediational research has identified low absorption during task engagement as a mediator of the relation between performance-avoidance goals and intrinsic motivation (Elliot & Harckiewicz, 1996), and anxiety (worry) during evaluation and disorganized studying have been documented as mediators of the relation between performance-avoidance goals and performance outcomes (Elliot & McGregor, in press; Elliot et al., in press).

Performance-approach goals have been shown to be related to numerous positive and a few negative processes and outcomes. These goals have been linked to the following positive consequences: challenge construals, higher levels of aspiration, absorption during task engagement, challenge-related affect while studying, effort while studying, persistence while studying, calmness during evaluation due to adequate preparation, high performance outcomes, and intrinsic motivation (Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Elliot & McGregor, in press; Elliot et al., in press; McGregor & Elliot, 1999; Middleton & Midgley, 1997; Skaalvik, 1997). Performance-approach goals have been linked to the following negative consequences: test anxiety (emotionality only) during

evaluation, the shallow processing of information (although this can be adaptive in some settings), and an unwillingness to seek help with schoolwork (Elliot et al., in press; Middleton & Midgley, 1997). Mediational research has documented task absorption as a mediator of the relation between performance-approach goals and intrinsic motivation (Elliot & Harackiewicz, 1996) and effort and persistence during studying as mediators of the relation between performance-approach goals and performance outcomes (Elliot et al., in press).

These findings on the consequences of achievement goal pursuit clearly reveal that each of the three goals in the trichotomous framework is linked to a differential set of processes and outcomes. Interestingly, for several variables, the influence of performance-approach and performance-avoidance goals is actually reciprocal, meaning that null results would probably have been obtained had these two goals been collapsed together into a single, omnibus performance goal construct. Three other points are noteworthy with regard to the extant data. First, nearly all of the relations delineated previously were obtained controlling for subjective (i.e., competence perceptions) or more objective (e.g., standardized test scores) indicators of ability. Second, several of the relations delineated previously were obtained controlling for achievement motives. Third, neither ability constructs nor achievement motives exerted a direct influence on the processes and outcomes in question when they were tested in conjunction with achievement goals (see Elliot & McGregor, in press, for a measurement-based exception). Thus, the influence of achievement goals is clearly not an epiphenomenon of ability constructs or motive dispositions and, as hypothesized, achievement goals appear to serve as proximal predictors of achievement-relevant processes and outcomes. The extent to which achievement goals serve as cognitive-dynamic carriers of and proximal predictors for other motivationally relevant antecedent variables remains an open question.

A 2 × 2 ACHIEVEMENT GOAL CONCEPTUALIZATION: FULLY CROSSING THE PERFORMANCE-MASTERY AND APPROACH-AVOIDANCE DISTINCTIONS

The trichotomous conceptualization of achievement goals distinguishes between approach and avoidance forms of performance goals but portrays mastery goals as a unitary, approach orientation. These three types of achievement goals—performance-approach, performance-avoidance, and mastery—are highlighted because they are presumed to be the most prevalent forms of competence-based goals in a majority of achievement settings, at least for the populations typically studied in the literature (grade-school and college-age participants and students). However, like performance goals, mastery goals may be separated into approach and avoidance

orientations. The notion of a mastery-avoidance goal is likely to be counterintuitive to many, given the predominantly positive characteristics associated with mastery goals in the literature to date. Nevertheless, a full 2 × 2 crossing of the performance-mastery and approach-avoidance distinctions seems necessary to account for the broad spectrum of competence-based strivings (see also Pintrich, in press-a, in press-b).

Mastery-avoidance goals are focused on avoiding self-referential or task-referential incompetence. That is, whereas mastery-approach goals entail striving to develop one's skills and abilities, advance one's learning, understand material, or complete or master a task, mastery-avoidance goals entail striving to avoid losing one's skills and abilities (or having their development stagnate), forgetting what one has learned, misunderstanding material, or leaving a task incomplete or unmastered. Mastery-avoidance goals differ from mastery-approach goals in terms of how competence is valenced, they differ from performance-avoidance goals in terms of how competence is defined, and they differ from performance-approach goals in terms of how competence is both defined and valenced.

Given the somewhat counterintuitive notion of mastery-avoidance goals, it may be helpful to provide some concrete illustrations of their use. Mastery-avoidance goals are likely to be pursued when individuals discover, or become concerned, that their skills or abilities are in a state of deterioration. Consider, for example, the case of perennial all-star basketball player Michael Jordan, as he entered the twilight of his brilliant National Basketball Association career. As age inevitably took its toll on Jordan and he began to show signs of "losing a step," it is possible that he started focusing on his (slightly) diminishing capabilities and adopted the goal of not falling short of his own past (stellar) level of performance. This would represent a mastery-avoidance goal in that competence is defined in terms of Jordan's own past level of competence, and the focus of evaluation is a negative possibility. Importantly, the pursuit of this type of goal is not limited to the case of the superstar professional athlete nor is it the domain of athletics. On the contrary, mastery-avoidance regulation may be rather common among elderly individuals who find their physical and cognitive abilities to be in decline and encounter difficulties carrying out the activities of their youth.

Mastery-avoidance goals may also be pursued in achievement settings in which the task itself is the standard of evaluation. For example, a person attempting a novel or difficult task (e.g., a Rubic's Cube puzzle) may consider the possibility that he or she may fail to complete or master the activity and, therefore, may adopt the goal of avoiding such an occurrence (i.e., avoid leaving the task incomplete or unmastered). In an academic setting, a student may be deeply invested in mastering a particular content area but may also be concerned with (and strive according to) the possibility that he or she will misunderstand the requisite material, forget important

aspects of the material, or fail to learn the material in the amount of time allotted. These examples involve a mastery-avoidance goal, in that the evaluative standard is the task requirement itself and the focus of evaluation is a negative possibility.

As with mastery-approach, performance-approach, and performance-avoidance goals, it is important to consider the intrapsychic and environmental factors that may lead to the adoption of mastery-avoidance goals. Given the valence of these goals, it seems reasonable to posit that they emerge from fear of failure, neuroticism, negative temperament, BIS sensitivity, etc.; given the way competence is defined in these goals, it is likely that they are undergirded by incremental beliefs about ability. These goals are also likely to be linked to low competence perceptions, and the preceding Michael Jordan example suggests they may be particularly associated with a longitudinal decrease in competence perceptions or a diminishing confidence in one's skills and abilities. The environmental cues that are likely to evoke mastery-avoidance goals include those that highlight improvement and task mastery rather than norm-based evaluation, and, as illustrated previously, the possibility of encountering difficulty or failure rather than the possibility of encountering success. Actually, mastery-avoidance goal adoption may be most likely when the environmental cues in an achievement situation and the individual's motivationally relevant dispositions are seemingly incompatible. For example, a person with chronically accessible fear of failure or BIS sensitivity in an achievement setting that focuses exclusively on improvement or task mastery may be inclined to adopt a mastery-avoidance goal, or a person with incremental beliefs placed in a situation in which task mastery is extremely difficult or unlikely may succumb to mastery-avoidance regulation.

Empirical data regarding mastery-avoidance goals are not yet available, and predictions are somewhat difficult to generate, because the two components of these goals would seem to evoke a rather divergent set of processes. That is, the mastery component of goals is typically thought to facilitate positive processes (Ames, 1992) and the avoidance component is usually thought to impel negative processes (Elliot, 1997); therefore, it is difficult to anticipate the exact nature of the processes that will be evoked by this somewhat hybrid regulatory structure. Furthermore, like performance-approach goals, mastery-avoidance goals are likely to produce a (relatively) variable empirical pattern as a function of their variable motivational foundation. For example, the effects of mastery-avoidance goals may be somewhat positive when undergirded by incremental beliefs (in which the negative possibilities being avoided merely represent obstacles or setbacks, rather than indicators of an immutable lack of ability), whereas their effects may be rather negative when undergirded by fear of failure (in which the negative possibilities being avoided represent shame-inducing experiences) or other aversive motivational orientations. Despite the fact that

mastery-avoidance goals are likely to produce a somewhat complex and variable empirical pattern, the following general hypotheses may be (tentatively) offered: The pursuit of mastery-avoidance goals will be linked to some positive and some negative consequences, with the most positive consequences being for quantitative variables, such as persistence and effort expenditure, and the most negative consequences being for phenomenological variables such as intrinsic motivation and self-determination. Overall, mastery-avoidance goals (like performance-approach goals) are likely to be associated with a more optimal nomological network than performance-avoidance goals, but a less optimal nomological network than mastery-approach goals.

At present, it seems reasonable to focus exclusively on the three goals in the trichotomous achievement goal framework in most achievement goal research and to retain the generic "mastery goal" appellation, but it is important to bear in mind that in some situations or for some populations, the fourth cell of the full 2 × 2 framework is also likely to be operative. As stated earlier, the existing data on mastery goals are quite consistent, which on the surface would seem to call into question the need to differentiate the mastery goal construct. However, this consistency may be due to the exclusive use of positively focused mastery goal manipulations and measures or may simply reflect the fact that most research has been limited to certain types of achievement situations or conducted with certain types of populations. Clearly, empirical work is needed to investigate the antecedents and consequences of mastery-avoidance goals as well as the prevalence of mastery-avoidance regulation. To the extent that such research documents the construct, discriminant, and predictive validity of mastery-avoidance goals, it will be important to fully attend to this construct (in theory and label) in the achievement goal literature.

OTHER EVOLUTIONARY OPTIONS

The basic premise of this article is that the achievement goal approach to achievement motivation should incorporate the approach-avoidance distinction into the prevailing performance-mastery dichotomy, thereby attending to two basic competence-based dimensions—the way competence is defined and the way competence is valenced. An obvious next question is which, if any, additional distinctions and dimensions should be considered for inclusion? One possibility is to examine the performance-mastery dichotomy itself to determine whether there is value in further differentiating the performance or mastery goal constructs; another possibility is to move beyond the performance-mastery and approach-avoidance distinctions to consider other, independent, dimensions. Both of these possibilities warrant discussion.

In the 1980s, several theorists offered social-cognitive accounts of achievement motivation that posited two primary

orientations toward competence. As noted earlier, Ames and Archer (1987) observed that despite their terminological differences, the various accounts seemed to possess sufficient conceptual overlap to justify convergence in the form of a performance goal versus mastery goal dichotomy. This conceptual convergence was important, as it provided coherence to the nascent achievement goal perspective. However, this emphasis on convergence appears to have been coupled with a relative lack of scrutiny into the precise nature of the performance and mastery goal orientations, and it seems time to bring this important issue to the fore. Clearly, this issue bears directly on the question of whether the performance or mastery goal constructs are in need of further differentiation.

Achievement goals, specifically performance and mastery goals, have typically been conceptualized in terms of the way competence is defined (Ames, 1984; Dweck & Elliott, 1983; Maehr, 1983; Nicholls, 1984). Competence may be defined differently as a function of the type of standard or referent that is used in evaluation, and there are three basic standards or referents that can be used: the requirements of the task itself (task as referent), one's own performance history (past as referent), or the performance of others (others as referent). That is, to determine if one has performed competently on a task, it is necessary to compare one's performance to what the task inherently requires, to how one has performed in the past, or to how others have performed (see Heckhausen, Schmalt, & Schneider, 1985), and the type of comparison that one makes defines competence in that situation. Stated more broadly, competence may be evaluated, and therefore defined, according to whether one has acquired understanding or fully completed (i.e., mastered) a task, one has improved one's performance or developed one's skills or knowledge, or one has outperformed others or attained greater skill or knowledge than others. This issue of the standard or referent used in evaluation is integral and fundamental to the competence construct, and explicitly establishing it as the conceptual core of the achievement goal framework promises to yield theoretical clarity and provide guidance as this approach matures and develops.

From this standpoint, the mastery goal construct in the contemporary literature represents a composite of two distinct referents of evaluation—task and past. Although some theorists emphasize deep understanding or task mastery (task as referent) and others emphasize improving one's performance or developing one's skills and knowledge (past as referent), most include or interweave both referents of evaluation in their description of the mastery goal orientation (see Dweck, 1986; Nicholls, 1989). Should these two referents of evaluation be separated into independent achievement goal orientations? On the one hand, it seems likely that task and past-referential goals are commonly pursued together in many (if not most) achievement settings. For the modal student, for example, the goal of mastering new course material and that of expanding his or her knowledge base are probably closely intertwined. In addition, despite their distinct

evaluative standards, task and past-referential goals share several common features (e.g., both use a standard readily available within the achievement setting, and both afford a private, intrapersonal evaluative process) that are likely to encourage a similar set of achievement-relevant processes.

On the other hand, it seems clear that in some instances, task- and past-referential goals can be pursued independently of each other, and it is possible that their different referents could lead to somewhat different processes and outcomes. A person completing a crossword puzzle in the daily newspaper, for example, may simply be striving to find each and every word (task as referent) without considering his or her previous puzzle-solving experiences (past as referent); another person completing the same puzzle may be focused on finding more words in today's puzzle than he or she found in yesterday's puzzle without aspiring to find each and every word. Using the task itself as referent may more readily promote and support a total cognitive and affective immersion in the process of task engagement, thereby facilitating self-determination, effort expenditure, intrinsic motivation, and a host of other positive processes and outcomes. Using the past as referent may have similar consequences, but the fact that the standard of evaluation is embedded in one's personal performance history rather than in the task itself could interfere with task absorption to some degree and even open the door to the infiltration of self-worth or self-presentation concerns. As such, past-referential goals may be more weakly linked to the aforementioned processes, and outcomes and in some instances may even evidence null effects.

At present, it is clearly optimal to keep task- and past-referential goals together under the mastery goal rubric, but if empirical evidence of their factorial separability and unique predictive utility (and, perhaps, unique antecedent profile) is obtained, bifurcation would seem the reasonable response. As illustrated in the previous section, the approach-avoidance distinction is presumed to be applicable to mastery as well as performance goals and, as such, it is also likely to be applicable to both task- and past-referential goals. That is, task-referential goals may be focused on approaching a positive possibility (e.g., mastery of a task) or avoiding a negative possibility (e.g., failing to master a task), and past-referential goals may likewise be positively focused (e.g., on improving one's past performance) or negatively focused (e.g., on not doing worse than one's past performance). Thus, bifurcation of the mastery goal construct would raise the possibility of expanding the aforementioned 2 × 2 framework to a fully crossed 3 × 2 conceptualization.

Over the years, the performance goal rubric has come to represent an amalgam of different motivational concepts, such as normative comparison, self-presentation, self-assessment, need for approval, self-worth contingency, and so forth. Normative comparison is an implicit (e.g., Elliott & Dweck, 1988) or explicit (e.g., Nicholls, 1984) feature of most if not all performance goal conceptualizations, and from the evaluative referent standpoint, it is normative comparison

.that is at the core of the performance goal construct. The other motivational concepts are certainly relevant to and important in many achievement settings, but they are not inherently competence-based and, therefore, cannot be considered a defining component of an achievement goal construct. To illustrate, performance goals are often described in the literature in terms of demonstrating or proving one's competence relative to others. Such goals may be broken into two distinct parts—a self-presentation (if the demonstrating or proving is to others) or self-assessment (if the demonstrating or proving is to oneself) component and a competence-based (attaining normative competence) component per se. Thus, this type of goal construct may be (re)construed as a performance (i.e., other-referential) goal operating in conjunction with or, functionally, in the service of a self-presentation or self-assessment goal (or disposition or concern).

Using others as the standard of comparison entails contrasting information about oneself or one's performance with information about another person (group) or another person's (group's) performance. As alluded to earlier, it is easy to see how this interpersonally competitive form of (external) evaluation can become associated with the desire to make a good impression, acquire knowledge about one's attributes, gain the approval of others, or validate one's self-worth. Thus, although performance goals (per se) are defined exclusively in terms of normative comparison, performance goal regulation (the process of pursuing these goals) often entails norm-based striving in the service of one or more of the aforementioned (i.e., to demonstrate or prove one's capacity or that one is worthy of attention, approval, or regard), and the effects of performance goals (avoidance and, particularly, approach) may be somewhat different as a function of which of the aforementioned they are serving. Distinguishing between performance goals and performance goal regulation is important, because it simultaneously affords a precise goal definition and a broad accounting of motivated behavior in achievement settings. More important, it also clearly indicates that the performance goal construct is not in need of differentiation (just careful delineation).[1]

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[1] In this discussion, a normative referent of evaluation is viewed as the conceptual core of the performance goal construct, and the term *performance goals* is used to refer to norm-based achievement goals per se. It should be noted that this use of the *performance goals* label diverges somewhat from that of the originator of the construct, Carol Dweck. Dweck (1990) views the notion of demonstrating or proving one's competence (to self or others) as a central part of the performance goal construct and, accordingly, it may be optimal to reserve the *performance goals* label for goals that include this self-presentation or self-assessment component. Likewise, it may be optimal to reserve the term *ego involvement* (Nicholls' term) for goals and orientations that link competence to global self-concerns or self-worth. In other words, it may be best to use a term such as *other-referential goals* or *norm-based goals* when referring to competence-based goals per se, and to retain the terms *performance goals, ego involvement,* and so forth, when referring to specific combinations of competence-based goals and other motivational concerns beyond the competence domain itself.

Moving beyond the performance-mastery and approach-avoidance distinctions, other types of goals have been introduced as candidates for inclusion into the achievement goal framework. Three such candidates are discussed, as they seem to be receiving the most attention in the contemporary achievement goal literature: work avoidance goals, extrinsic goals, and social goals.

Work avoidance goals (also labeled *academic alienation*; Meece et al., 1988; Nicholls, Patashnick, & Nolen, 1985; Nolen, 1988) are typically defined in terms of trying to get away with putting as little work or effort as possible into the achievement task. A person with this type of goal is simply endorsing a behavioral strategy aimed at "getting through" or "bearing with" the requirements of the achievement situation and does not seem to be invested in any competence-based concerns per se (Archer, 1994). In essence, the work avoidance construct appears to represent the absence of an achievement goal in an achievement setting, rather than the presence of a particular type of achievement goal (avoidant or otherwise). Accordingly, although work avoidance goals may be worthy of empirical attention in achievement settings to determine the consequences of a lack of investment in competence or a divestment from competence (Ogbu, 1986; Steele & Aronson, 1995), their conceptual value with regard to qualitatively distinct orientations to competence would seem rather limited (see also Urdan, 1997).

Extrinsic goals (Maehr, 1983; Midgley et al., 1996; Pintrich & Garcia, 1991) are defined in terms of striving to earn a reward or avoid a punishment. A sampling of extrinsic goals in achievement settings include striving to win a trophy, to earn money from one's parents, to avoid losing one's athletic eligibility, or to avoid getting grounded by one's parents.[2] Extrinsic goals and motivation are clearly operative in many achievement settings, and researchers and theorists have argued for and demonstrated the utility of the intrinsic–extrinsic motivation distinction for decades (Deci, 1971; Harter, 1981; Lepper, 1981). Nevertheless, it is important to distinguish between achievement goals per se and goals adopted in achievement settings, and to recognize that extrinsic goals are a member of the latter, but not the former, category (see Maehr, 1983; Urdan, 1997). Extrinsic goals focus on a reward or punishment rather than competence itself; therefore, although these goals may often lead to achievement goals in hierarchical fashion (i.e., the adoption of achievement goals in the service of extrinsic goals), they are not achievement goals themselves. As such, the extrinsic goal construct (and the notion of extrinsic motivation more gener-

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[2] A grade may represent an extrinsic reward (a good grade) or punishment (a bad grade) in some instances, but a grade may also simply represent a marker for whether one has or has not attained competence. Accordingly, striving to get a good grade or avoid getting a bad grade may at times represent an extrinsic goal, but in many instances it is likely to represent an achievement goal per se.

ally) certainly deserves theoretical and empirical attention in the literature on achievement and motivation, but it does not appear to be a viable candidate for inclusion into the actual achievement goal framework.

Social goals (Maehr & Nicholls, 1980; Wentzel, 1989) may be broadly defined as strivings focused on interpersonal relationships, and several different variants of social goals have been delineated: social approval goals, social responsibility goals, social status goals, prosocial goals, and affiliation goals (Urdan & Maehr, 1995). Social goals and motives are quite prevalent in achievement settings, and the importance of attending to social motivation in the achievement domain has been documented by a number of researchers and theorists over the years (see Birney et al., 1969; McClelland, 1985; Murray, 1938). However, like extrinsic goals, social goals are not focused on competence and, therefore, cannot be considered achievement goals per se (see Maehr, 1983; Wentzel, 1998). Also, like extrinsic goals, social goals (and social motives and concerns more generally) are often linked to achievement goals hierarchically, such that achievement strivings represent attempts to attain competence or avoid incompetence in order to accomplish some social agenda (Wentzel & Wigfield, 1998). Thus, although social goals are not relevant to the achievement goal framework proper, any comprehensive account of motivation in achievement settings will need to consider the important role of social goals and motivation. Parenthetically, although extrinsic and social goals are not inherently based in competence, it is interesting to note that they, like achievement goals per se, may be differentiated in terms of approach-avoidance (attaining a reward or avoiding a punishment for extrinsic goals, and establishing a relationship or avoiding rejection for social goals).

In sum, from this overview, differentiation of the mastery goal construct would appear to stand as the main evolutionary option beyond the 2 × 2 achievement goal conceptualization. Bifurcating mastery goals into task- and past-referential orientations would entail extending the performance-mastery distinction from two to three definitions of competence; it would not necessitate adding a new dimension to the achievement goal framework. Thus, although other alternatives may emerge in the future, at present it seems that two basic dimensions—the way competence is defined and the way competence is valenced—are sufficient to comprehensively model qualitatively distinct competence-based strivings.

CONCLUDING COMMENTS

Most achievement goal researchers and theorists have relied exclusively on the distinction between performance goals and mastery goals in differentiating competence-based strivings. This performance-mastery dichotomy has paid handsome dividends on the theoretical, empirical, and applied fronts and has propelled the achievement goal approach to the forefront of the contemporary achievement motivation literature. In this article, an argument is made for incorporation of the approach-avoidance distinction into the performance-mastery dichotomy. Historical, theoretical, and empirical reasons for attending to the approach-avoidance distinction are offered, and a revised, trichotomous achievement goal framework is described and reviewed. The trichotomous conceptualization represents an integrative synthesis of the performance-mastery and approach-avoidance distinctions; it does not call into question the necessity of the performance-mastery dichotomy, only its sufficiency. Performance and mastery goals vary as a function of how competence is defined, whereas approach and avoidance goals vary as a function of how competence is valenced. Both dimensions—definition and valence—are viewed as necessary in the conceptualization of competence-based goals.

The trichotomous framework is discussed in the broader context of a hierarchical model of achievement motivation that attends to the motivational foundation underlying achievement goals per se. In this model, achievement goals are viewed as concrete competence-based standards that serve an assortment of intrapsychically and environmentally based variables. This hierarchical separation of goals and underlying motivation is important, because it affords both definitional precision and explanatory breadth—it allows achievement goals to be conceptualized in a clear, precise, and unitary fashion, while simultaneously delineating the central role that these goals play in a broad and diverse range of motivated action in achievement settings.

In the latter part of this article, avenues for further theoretical development of the achievement goal framework are considered, and options ranging from fully crossing the performance-mastery and approach-avoidance distinctions by including a mastery-avoidance construct (a 2 × 2 conceptualization) to differentiating the mastery goal construct into task- and past-referential goals (a 3 × 2 conceptualization) are discussed. As these and perhaps other evolutionary options are contemplated, it will be important to proceed with great care and thoughtfulness. Parsimony (and popularity) could easily be lost if additional variables and distinctions are added indiscriminately or out of an unchecked desire to comprehensively cover the conceptual space under consideration. On the basis of the evidence available at present, it seems that the trichotomous achievement goal framework is the conceptualization that strikes the optimal balance between simplicity and conceptual coverage, but I suspect other combinations of the definition and valence dimensions will eventually "make the cut" of Ockham's razor.

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