Learning, Prove, and Avoid Goal Orientations in Academics and Athletics: Cross-Structure Analysis and Domain Specificity

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Abstract

Despite the growing popularity of goal orientation research, three questions remain largely unanswered: (1) are there 3 factors of goal orientation or only 2; (2) what predicts goal orientation; and (3) is goal orientation domain specific? To help answer these questions, 177 undergraduates were given a questionnaire assessing, in both the academic and athletic domains, (a) learning, prove, and avoid goals, (b) self-perceived ability, ability, and implicit theories, and (c) high-school grade point average, intrinsic motivation, internal motivation, self-efficacy, locus of control, need for achievement, desire to win, and fear of negative evaluation. The results suggest that learning, prove, and avoid goals can be empirically distinguished, that they are domain specific, but that they are not predicted well by ability, self-perceived ability, or implicit theories. Discussion centers on the need for a pattern approach to the prediction of goal orientation and stresses the importance of examining the interactions among learning, prove, and avoid goals. The overriding conclusion, however, is that goal orientation is not a useful construct.

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Whoever thought a thesis could be so much work? I certainly didn't. I figured, hey, I'll write up a proposal, get it accepted, do the study, and defend. Easy, right? Well, having an idea is one thing, but formulating a plan to test it, actually testing it, and drawing conclusions from the results is something else entirely. For helping bring this thesis to an acceptable conclusion, I am eternally grateful to Roseanne, Neil, and John. Their advise, suggestions, and insight have been invaluable. Not only is the paper much better as a result of their participation, but I am now a wiser, shrewder, and much more patient researcher. I am indebted to them for much more than my thesis.

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INTRODUCTION

Contemporary goal orientation research has identified two broad classes of behavior. Those who persist in the face of failure, who judge their performance with internal standards, and who appear to be concerned with developing their competence, are said to have learning goals and a task orientation. In contrast, those who withdraw in the face of failure, judge their performance in reference to that of others, and who appear concerned with displaying their competence or avoiding displays of incompetence, are said to have performance goals and an ego orientation. However, some of those who utilize normatively referenced performance standards do not withdraw in the face of failure (Elliot & Harackiewicz, 1996). And some authors have noted that wanting to display competence is distinct from wanting to avoid displays of incompetence (VandeWalle, 1997). Hence, those with prove goals use normatively-referenced standards, tend to persist in the face of failure, and concern themselves with demonstrating their competence. Those with avoid goals, on the other hand, use normatively-referenced standards but tend to withdraw in the face of failure and to concern themselves with avoiding displays of low ability.

Following calls that goal orientation be applied to industrial and organizational psychology (e.g., Button, Mathieu, & Zajac 1996; Farr, Hofmann, & Ringenbach, 1993), the literature has seen a bloom in research on such topics as negotiation (Stevens & Gist, 1997), goal setting (Phillips & Gully, 1997), feedback-seeking (VandeWalle & Cummings, 1997), performance (Kohli, Shervani, & Challagalla, 1998; VandeWalle, Brown, Cron, & Slocum, 1998), and training (Colquitt & Simmering, 1998; Fisher & Ford, 1998; Ford, Smith, Weissbein,

Gully, & Salas, 1998; Martocchio, 1994; Myers, Vigil-King, Long, & Russell, 1997). Nevertheless, the construct of goal orientation remains inchoate, ill-defined, and insufficiently delimited. One reason for the muddled state of goal orientation theory is that it was developed from behavioral observations (Diener & Dweck, 1978, 1980; Nicholls, 1978, 1980), rather than from any a priori theoretical formulation. As a consequence, goal orientation theory has been "retrofit" to the data (Dweck & Leggett, 1988; Nicholls, 1984). Unfortunately, doing so has led to much confusion over five loosely related questions: (1) are there three goal orientations (learning, prove, and avoid) or only two (learning and performance); (2) are they domain specific; (3) are they independent; (4) are they mutually exclusive; and (5) is goal orientation a state or a trait? Given the mounting attention placed on goal orientation, these questions should be answered sooner rather than later. Although the present research focuses on the first and second questions, the third, fourth and fifth will be addressed conceptually.

Current goal orientation research draws on two distinct but clearly related theories, those of Nicholls (1984) and Dweck and Leggett (1988). Although they both account for the behavioral patterns described above, they ascribe different antecedents to them. And although they both account for three goal orientations, they focus instead on only two. According to Nicholls, everyone wants to appear competent and not incompetent. One group of people, those with a task focus, define performance in relation to self-referenced standards. Another group of people, those with an ego focus, judge their performance in relation to that of others. According to Dweck and Leggett (1988), one group of people, those with learning goals, tend to believe that their ability is malleable, that it can be changed. In contrast, those with performance goals tend to believe that their ability is fixed and stable, that it cannot be changed. Because those with learning goals tend to believe their ability can be changed, they use self-referenced performance

as an indication of their ability. Because those with performance goals tend to believe their ability cannot be changed, they judge their ability relative to that of others. Dweck and Leggett's theory can therefore be seen to subsume that of Nicholls.

Both performance goals and an ego focus can be subdivided according to whether an individual perceives him or herself to have high or low ability. Those with low self-perceived ability (avoid goal oriented) tend to withdraw from difficult tasks because they believe they are likely to fail. They cannot demonstrate high ability, so they remove themselves from challenging situations. In contrast, those with high self-perceived ability (prove goal oriented) tend to persist on difficult tasks because they believe they can succeed. Succeeding on a difficult task demonstrates high ability.

Unfortunately, most researchers have ignored the distinction between prove and avoid goals, dealing instead with the more general performance goals. Although prove and avoid goals may elicit similar behavior, they may also elicit behaviors that are vastly different. As a consequence, looking only at performance goals may mask meaningful differences between the two sub-populations.

Because such little research has been conducted on prove and avoid goals, these differences are, at this time, not well established. In addition to self-perceived ability, prove goals and avoid goals may differ in relation to performance, self-efficacy, locus of control, need for achievement, the desire to win, intrinsic motivation, and fear of negative evaluation (see the Literature Review). A full examination of goal orientation must therefore examine not only learning and performance goals, but prove and avoid goals as well.

In addition, most research has been conducted under the implicit assumption that goal orientation operates the same in all domains. Given differences in domains, and the putative

domain-specificity of goal orientation, this assumption may not be tenable. Academic performance, for example, appears to be linked to learning goals, whereas the performance of salespeople appears related to performance goals. One purpose of this study, therefore, is to explore the pattern of relationships between goal orientation and other variables across two different domains, academic and athletic.

LITERATURE REVIEW

History and Background of Goal Orientation

The distinction between approach and avoidance has a long history in psychology (see Higgins, 1997). The early theories of achievement motivation (e.g., Atkinson, 1957; McClelland, 1951; Revelle & Michaels, 1976), for example, distinguished between the desire to succeed and the desire to avoid failure. As motivational end-points, these desires are manifested in the direction of behavior (what a person does), the intensity of that behavior (how hard a person works), and the persistence of that behavior (how long the behavior is maintained; Kanfer, 1991, p. 78). Implicit in this definition of motivation is the requirement that an individual have a goal, a desired end-point that directs attention, effort, persistence, and strategy development (Locke, Shaw, Saari, & Latham, 1981). A goal is thus the impetus behind motivated behavior.

The more recent approach to achievement motivation has emphasized the goals individuals pursue. This achievement, or goal, orientation approach has as its foundation the premise that different goals elicit different patterns of behavior. To the extent that people tend to adopt a specific goal, they will be oriented toward specific patterns of behavior. Three broad goals were identified in the early goal orientation literature (Dweck & Elliot, 1983; Nicholls, 1984; Nicholls, 1989; the terms used here are from VandeWalle, 1997), two of which can be

considered approach orientations, and the other an avoidance orientation. In the approach category are task or learning goals which focus on the development of competence and ability, and ego-approach or prove goals which focus on the demonstration of competence (cf. the desire to succeed). Ego-avoidant or avoid goals, on the other hand, focus on avoiding evaluations of incompetence or lack of ability (cf. the desire to avoid failure).

As noted by Elliot and Harackiewicz (1996), however, this tripartite classification fell into disuse, as no research was conducted on the difference between prove and avoid goals. In the more recent goal orientation literature, Dweck (1986) combined prove and avoid goals into one overriding ego or performance goal orientation, defined as either a concern with demonstrating competence or avoiding negative evaluations, while Nicholls (Nicholls, Patashnick, Cheung, Thorkildsen, & Lauer, 1989) dismissed the avoid goal component of his model, focussing instead on the two approach orientations (cf. Ames, 1984; Deci & Ryan, 1985).

Most recently, however, the tripartite classification has experienced somewhat of a renaissance, as seen in the work of Elliot and Harackiewicz (1996) and VandeWalle (1997), among others (e.g., Midgley et al., 1998; Skaalvik, 1997). Although theory and research, both past and present, suggest that goal orientation may best be thought of as a three-factor construct, no research yet exists explicitly comparing one conceptualization with the other. To fill this gap in the research, the present study will assess the degree to which demographic, ability and personality variables differentially affect, and are affected by, learning and performance goals on the one hand, and learning, prove, and avoid goals on the other.

Goal Orientation Theory

Implicit Theories

According to Dweck (Dweck, Chiu, & Hong, 1995a, 1995b; Dweck, Hong, & Chiu, 1993; Dweck & Leggett, 1988), people tend to hold one of two implicit theories about any particular attribute. Those with incremental theories view intelligence, for example, as malleable, and therefore controllable. Those with entity theories, on the other hand, view it as stable, and therefore uncontrollable. As a consequence, those with incremental theories tend to ascribe failure to a lack of effort or to the use of ineffective strategies. In contrast, those with entity theories blame failure on absolutes, such as the amount of intelligence a person possesses. To those with incremental theories, therefore, failure implies a need for improvement; to those with entity theories, failure implies low ability. Viewing attributes in such ways creates patterns of judgments, reactions, goals, and behaviors.

Two-Factors of Goal Orientation

Because those with incremental theories believe their abilities can be improved or developed, they tend to adopt learning goals. They concern themselves with mastering tasks, rather than with establishing an absolute level of competence. Those with entity theories, however, because they believe their abilities are fixed, are more concerned with establishing the level of their competence. Hence, those with entity theories tend to adopt performance goals.

As noted by Nicholls (1984), those with performance goals and those with learning goals both want to demonstrate high ability while avoiding the demonstration of low ability. The difference is that success is self-referenced for those with learning goals, but normatively referenced for those with performance goals (Butler, 1993). As a consequence, self-esteem for those with learning goals is tied to progress toward mastery, whereas self-esteem for those with performance goals is derived from successful performance per se (Dweck & Leggett, 1984).

Studies consistently find that, in response to failure, those with learning goals display a "mastery" pattern of behavior, whereas those with performance goals display a "helpless" pattern of behavior. This pattern has been found both among children (Ablard & Lipschultz, 1998; Ames & Ames, 1981; Ames & Archer, 1988; Butler, 1987; Diener & Dweck, 1978, 1980; Elliot & Dweck, 1988; Harackiewicz, Abrahams, & Wageman, 1987; Kaplan & Midgley, 1997; Licht & Dweck, 1984; Meece, Blumenfeld, & Hoyle, 1988; Smiley & Dweck, 1994; Stipek & Kowalski, 1989) and adults (Bandura & Wood, 1989; Button et al., 1994, Study 4; Elliot, Sheldon, & Church, 1997; Ford et al., 1998; Greene & Miller, 1996; Harackiewicz & Elliot, 1993; Hofmann, 1993; Jagacinski & Nicholls, 1984, 1987; Koestner & Zuckerman, 1994; Martocchio, 1994; Miller, Behrens, Greene, & Newman, 1993; Newton & Duda, 1995; Rhodewalt, 1994; Roedel, Schraw, & Plake, 1994; Ryan, Koestner, & Deci, 1991; VandeWalle et al., 1998; Wolters, 1998; Wood & Bandura, 1989). The mastery pattern, characterized by persistence, positive affect, task-related verbalizations, and task-related cognition (e.g., strategy development) grows out of the belief that ability, and therefore performance, can be improved upon. In contrast, the helpless pattern is characterized by ineffective strategy use, negative affect, withdrawal from the task, and task-irrelevant cognitions and verbalizations (e.g., emphasizing strengths in unrelated domains). This pattern stems from the belief that ability is fixed.

Three-Factors of Goal Orientation

However, in the first study to document these behaviors, Diener and Dweck (1978) noted that some of the children who showed the mastery pattern could have persisted in order to forestall the admission of failure (p. 461). In other words, some of the mastery oriented children could have had prove goals. Although Dweck and Leggett (1988) limited their discussion to

only two goal orientations, learning and performance, their theoretical formulation clearly distinguishes among three, learning, prove, and avoid. According to both Dweck and Leggett and Nicholls (1984), the key moderator is self-perceived ability. Elliot and Dweck (1988) found that those with learning goals adopted the mastery orientation whether they perceived themselves (as manipulated) to have high or low ability. If a person's goal is to develop competence, self-perceived level of ability is irrelevant. Those with performance goals and high self-perceived ability also adopted the mastery pattern of behavior. Only those with performance goals and low self-perceived ability showed the helpless response. Note that a performance goal is defined as a desire to gain favorable or to avoid negative evaluations of one's ability. Those with high self-perceived ability believed they could succeed on the task, and therefore strove to gain favorable evaluations by displaying that success. Those with low self-perceived ability, on the other hand, believed they could not succeed, and therefore withdrew to avoid failure and the accompanying negative evaluations.

Because those with performance goals (both prove and avoid) tend to believe that their ability is fixed, effort and failure imply low ability whereas success achieved with little effort implies high ability (Jagacinski & Nicholls, 1984, 1987). The difference between those with prove goals and those with avoid goals is that the former believe they can succeed, and so are likely to attempt challenging, difficult tasks. The latter believe they cannot succeed, and so are likely to withdraw in the face of difficulties, or to avoid challenging tasks altogether (Ames, 1992; Dweck, 1986; Heyman & Dweck, 1992). In contrast, those with learning goals approach challenging tasks and persist in the face of difficulties because their aim is to develop their competence.

Goal Orientation as Both Two Factors and Three

The position advanced here is that goal orientation is both a two-factor and a three-factor construct. Given the similarities between prove and avoid goals, and because they both arise from entity theories of ability, a more general performance goal may be considered a higher-order factor of prove and avoid goals (cf. Dweck, 1996). That is, prove and avoid goals are similar enough to be grouped together, but different enough to be treated separately. Nicholls (1984) and Dweck and Leggett (1988) both implicitly treat it as such. In the one study to test this proposition, Roberson, Moye, and Locke (1998) found that a preference for easy tasks (i.e., to avoid failure) and the desire to impress others (i.e., to demonstrate competence) did, indeed, form a higher-order factor. At one level, then, goal orientation may be a two-factor construct. At another level, however, it may be a three-factor construct.

Goal Orientation as neither State nor Trait

There is an unfortunate confusion over whether goal orientation is a state or trait variable, stemming, perhaps, from a failure to consider goal orientation as a motivational variable, as a component of personality, rather than a personality variable per se. Dweck and Leggett (1988) describe their social-cognitive approach—in which implicit theories influence goal orientation—as representing "an approach to motivation in that it is built around goals and goal-oriented behavior. At the same time, it represents an approach to personality in that it identifies individual differences in beliefs and values that appear to generate individual differences in behavior" (p. 257). In other words, implicit theories should be seen as personality variables, whereas goal orientation should be treated as a motivation variable. Nicholls (1984) also treats goal orientation as a motivational variable, representing a rational goal-directed pattern of behavior aimed at either judging one's ability relative to the self (learning goals) or relative to others (performance goals). According to Nicholls, whether an individual adopts a learning or a

performance goal depends simply on whether an individual wishes to compare his or her ability to an internal or an external standard. For example, emphasizing competition tends to elicit performance goals, whereas emphasizing learning for its own sake tends to elicit learning goals (e.g., Ames & Ames, 1981). Together, then, goal orientation may be seen as influenced by both personality and situations.

This implies that goal orientation is a somewhat stable individual difference (Button et al., 1996). An individual's implicit theories and the situation combine to determine one's goal orientation. As suggested by Dweck and Leggett (1988; see also Dweck et al., 1995b), an individual may have a default goal orientation that can be influenced by situational cues (e.g., Ames, 1992). Button et al., for example, found correlations of .51 and .48 between dispositional and situational measures of learning and performance goals, respectively. Fisher, Delbridge, and DeShon (1997), likewise, found correlations of between .50 and .58 for learning goals, and between .34 and .50 for performance. Fisher et al. also found test-retest correlations of .65 at one month and .52 at two months for learning goals, and .70 and .61 for performance goals. These results suggest that goal orientation is neither a trait nor a state, but rather a dispositional characteristic that predisposes an individual to adopt one orientation or another, as moderated by the situation.

Goal Orientation as Domain Specific

Treating goal orientation as a dispositional characteristic does not, however, imply that the same disposition applies to every domain. As noted by Dweck et al. (1995a), although some people tend to have generalized implicit theories (e.g., people cannot change), others have theories that are attribute-specific (e.g., intelligence cannot be changed, but athletic ability can be). As a consequence, an individual may be oriented toward learning goals in one domain (e.g.,

sports), and toward performance goals in another (e.g., school). Individuals may be more likely, however, to hold the same implicit theories, and therefore dispositional goal orientations, in conceptually similar domains. Duda and Nicholls (1992), for example, found correlations of .67 and .62 between sport and academic learning and performance goals, respectively. Both of these domains are achievement-oriented. Dweck et al. (1995a), on the other hand, reported three clearly distinct implicit theory factors for intelligence, morality, and the world in general, in each of five separate studies. To some degree, therefore, individuals' implicit theories and goal orientations are domain specific.

Goal Orientations as Independent but not Mutually Exclusive

Two related issues not yet addressed are whether learning and performance goals are independent or opposite ends of a single continuum, and whether individuals can hold both at the same time. (These questions in relation to the three-factor conceptualization will be considered below.) Most authors erroneously believe that Dweck treats them as opposite ends of single continuum. Although never addressed explicitly, Dweck (Dweck & Leggett, 1988; Heyman & Dweck, 1992) speaks of the value of coordinating learning and performance goals, something impossible to do if they are at opposite ends of a single continuum. According to Dweck, then, learning and performance goals are independent. Nicholls (1984; Nicholls, Cheung, Lauer, & Patashnick, 1989), too, treats them as independent, differing, as they do, qualitatively rather than quantitatively (i.e., self-referenced vs. other-referenced assessment of ability). Research on this question has generally supported the independence of learning and performance goals. Button et al. (1996), for example, found that a two-factor model (i.e., learning goals and performance goals) fit better than a one-factor model. In addition, correlations between learning and performance goals tend to be nonsignificant. Only two authors have reported significant

negative correlations (Kaplan & Midgley, 1997; Wolters, 1998), and only one has reported a significant positive correlation (Hofmann & Strickland, 1995). The evidence thus suggests that performance and learning goals are independent.

But can an individual have more than one goal orientation at the same time? That they are independent suggests that they need not be mutually exclusive, a position advocated by Dweck (e.g., Heyman and Dweck, 1992). Duda (1988), for example, found that individuals who had participated in a sport for the longest period of time tended to report both high learning and performance goals. Hofmann and Strickland (1995) found learning goal × performance goal interactions for task performance and satisfaction. An individual can thus score high or low on both learning goals and performance goals, or high on one but not the other.

It is less clear, however, whether or not this same pattern holds for learning, prove, and avoid goals. Although they are different dimensions (Skaalvik, 1997; VandeWalle, 1997), the argument that a performance goal is a higher-order factor of prove and avoid goals suggests than prove and avoid goals must necessarily not be independent. Indeed, prove and avoid goals have tended to be positively correlated (e.g., .41; VandeWalle & Cummings, 1997, Study 2). What does this imply for the independence of learning and avoid and prove goals? Interestingly, learning and prove goals have tended to be uncorrelated (e.g., .07; VandeWalle, 1997), whereas learning and avoid goals have tended to be negatively correlated (e.g., −.35; VandeWalle & Cummings, 1997). It thus appears as though individuals with a strong learning goal orientation may or may not also have a strong prove goal orientation. Those with strong learning goals, however, appear to be less likely to also have avoid goals. In contrast, those with prove goals also tend to have avoid goals. Given the relationship between self-perceived ability and avoid and prove goals, it may be that those less certain of their ability, or those who perceive

themselves to be of moderate ability, are more likely to have both avoid goals and prove goals at the same time. That is, those certain that they are of high ability may be less likely to adopt avoid goals, whereas those certain that they are of low ability may be less likely to adopt prove goals. Because those with learning goals can be of either high or low self-perceived ability, it should be possible for them to also hold avoid goals. However, because those with learning goals believe they can improve their performance, perceiving themselves to have low ability may often not affect the manner in which they approach their work. Their perceived control over their performance may override the tendency for those with low ability to concern themselves with avoiding the demonstration of failure. If they don't believe they will fail, they have nothing to worry about. Certainty of self-perceived ability may thus moderate the relationships among learning, prove, and avoid goals. In this sense, they are independent but not mutually exclusive.

Is One Goal Orientation "Better" than the Others?

Closely tied to the issue of independence is whether one goal orientation is better than another. Because people may, it appears, simultaneously have learning and performance goals, and some combination of learning, prove, and avoid goals, the question may be rephrased as, Are some combinations of goals better than others? According to Dweck and Leggett (1988), problems arise from an overconcern with either learning or performance goals (e.g., Rascle, Coulomb, & Pfister, 1998). Emphasizing performance goals in the absence of learning goals could lead individuals to ignore, avoid, or abandon potentially valuable learning experiences. Heyman and Dweck (1992) suggest that having learning and performance goals may orient individuals toward striving to meet performance requirements needed to gain access to learning opportunities. Having both learning and performance goals may also allow an individual to gain the acceptance of significant others without sacrificing opportunities to learn. Prove goals may

thus be valuable whenever positive rewards are linked to successful performance. Avoid goals, too, may be valuable, such as by orienting individuals away from those tasks on which they perform poorly or show little potential. The positive aspects of a learning goal orientation are useless if one cannot progress toward mastery. In college, for example, having prove goals would lead to an emphasis on success (i.e., grades); avoid goals would steer individuals away from those courses in which they do poorly; and learning goals would emphasize mastery of subject matter. To some extent, therefore, having both learning and performance goals, or learning, prove, and avoid goals, is adaptive.

Goal Orientation Research

As noted by Phillips and Gully (1997) and Button et al. (1996), research on goal orientation is limited by several methodological and conceptual factors. First, much of the research on goal orientation has used children or adolescent samples. Although an increasing number of studies have used undergraduates, only a few have used adults in work settings. Given sample-specific differences in the consequences of and propensity to adopt various goal orientations (Nicholls, 1984; cf. Norem, 1989), results from one study may not always generalize to others. However, most findings appear fairly robust, being similar in children, adolescents, undergraduates, and adults. Nevertheless—and especially in regard to work samples—more research is needed to establish the viability of goal orientation theory.

Second, goal orientation has been measured in a plethora of ways (see Table 1). Some researchers conceptualize goal orientation as two factors, whereas others view it as three. Some researchers treat it as a trait, others as a state. And some researchers (especially those applying it to academic domains) adopt Nicholls' view more than Dweck's, whereas others (those interested in work settings) adopt Dweck's view more than Nicholls'. As a consequence, goal orientation

has been measured as two factors and three, and has been assessed using behavior and causal attributions, manipulations, and questionnaires. Because those studies that do not use questionnaires typically have not actually measured goal orientation (e.g., manipulation checks), it is not always clear what is being assessed or manipulated. Nevertheless, the results of these studies are generally consistent with goal orientation theory.

In those studies that have used causal attributions as a measure of goal orientation, participants who attributed failure to effort or other internal causes were assumed to have learning goals; those who attributed failure to external causes were assumed to have performance goals. Operationalizing goal orientation in terms of task choice assumes that participants have learning goals if they choose to work on tasks that enable them to learn, but that have the potential for failure, and that participants have performance goals if they choose tasks that would allow them to demonstrate their ability or to avoid negative evaluations of it. Studies that have manipulated goal orientation tend to emphasize the evaluative or normative aspects of performance goal tasks, and the self-referenced or intrinsically interesting aspects of learning goal tasks. Stevens and Gist (1997), in a sample of full-time MBA students with an average of 5 years full-time work experience, compared learning and performance goal training conditions. In the former, the emphasis was on improving one's skills; in the latter, it was on achieving one's best outcome. Only Elliot and Harackiewicz (1996) have manipulated three goal orientations. The prove goal task was described as allowing participants to demonstrate that they were good performers; the avoid goal task was described as providing the opportunity to demonstrate that participants were not poor performers; and participants in the learning goal condition were told that they would receive information on their self-referenced performance.

The majority of studies have used questionnaire measures of goal orientation. Unfortunately at least 17 different scales have been used. A review of these scales is beyond the scope of this paper; suffice it to say that these scales are not all interchangeable, and that most have not undergone any formal validation. Exceptions are the Button et al. (1996) and VandeWalle (1997) scales. Although both were developed primarily for work-related samples, the VandeWalle scale is more work-specific than the Button et al. scale. An examination of the items that make up these questionnaires reveals that items in the performance goal scale of Button et al. are worded more generally than are those of the avoid and prove goal scales of VandeWalle. For example, the item "The opinions others have about how well I can do certain things are important to me" can be interpreted in terms of both avoid goals and prove goals. That is, both those with avoid goals and those with prove goals would be likely to endorse this item. In contrast, the avoid goal and prove goal items of VandeWalle add an evaluative focus, by, for example, emphasizing that positive opinions are important for those with prove goals, and that the absence of negative opinions is important for those with avoid goals. The wording of these scales, therefore, mirrors the conceptualization of performance goals as a higher-order factor of avoid and prove goals.

Empirical Support for Three Factors of Goal Orientation

A substantial literature attests to the distinction between performance and learning goals. In addition to the variables discussed below, differential relationships have been found for ego-resiliency (Facteau et al., 1997), self-monitoring (Fisher et al., 1997), depression (Martinez-Pons, 1997), self-handicapping (Rhodewalt, 1994), emotional intelligence (Martinez-Pons, 1997), and the Big 5 factors of personality (Colquitt & Simmering, 1998; Fisher et al., 1997). Research on the three factor conceptualization of goal orientation, however, is in its infancy . As such, it is

not yet clear how avoid and prove goals differentially relate to other variables. The few studies that have examined avoid, prove, and learning goals, however, have generally found that these three orientations can be empirically distinguished (Elliot & Harackiewicz, 1996; VandeWalle, 1997; VandeWalle & Cummings, 1997; Skaalvik, 1997). Described below are several variables—which are measured in this study—that hold promise for distinguishing among avoid, prove, performance, and learning goals.

Self-Perceived Ability

Surprisingly little research has explicitly examined the influence of self-perceived ability on goal orientation, despite its central role in both Dweck's (Dweck & Leggett, 1988) and Nicholls' (1984) theories. That is, self-perceived ability is expected to moderate the relation between performance goals and patterns of behavior: those with high self-perceived ability (prove goals) are expected to adopt mastery-oriented behaviors, whereas those with low self-perceived ability (avoid goals) are expected to adopt helpless-oriented behaviors. The few studies that have examined the role of self-perceived ability have produced inconsistent results. Among children, Elliot and Dweck (1988), but neither Ames and Archer (1988) nor Kaplan and Midgley (1997), found the hypothesized interaction. Among adults, Miller et al. (1993) found the expected interaction for performance goals, but, unexpectedly, also for learning goals. Koestner and Zuckerman (1994) found that those with learning goals tended to rate their behavior as self-determined, whereas those with performance goals and high self-perceived ability (prove goals) rated their behavior as internally controlled, and those with performance goals and low self-perceived ability (avoid goals) rated their behavior as uncontrollable. Finally, Vlachopoulos and Biddle (1997) found that whereas learning goals were positively related to perceived success regardless of self-perceived ability, performance goals and perceived success

were negatively related for those with low self-perceived ability but positively related for those with high self-perceived ability.

Although no study has explicitly examined self-perceived ability in relation to three factors of goal orientation, Skaalvik (1997) used a similar measure called academic self-concept. The items of this scale assessed the degree to which students perceived themselves as doing well vs. doing poorly in school. In each of two samples of children, this measure was positively related to prove goals and learning goals, but negatively related to avoid goals. Existing evidence thus provides some support for the mediating role of self-perceived ability in goal orientation, although additional research is needed.

Objective ability

Objective ability is an indicant of what one is capable of doing, and as such is independent of motivational factors. The measurement of ability, however, is not. The results of Steele and Aronson's (1995) study, for example, suggest that concern with performance can paradoxically impair it by shifting one's attention off the task and onto ancillary aspects such as it's implications for perceptions of competence (cf. Baumeister, 1984; Diener & Dweck, 1978; Dweck, 1986; Wine, 1982). As a consequence, having performance goals may result in artificially deflated scores, if a test-taker's attention shifts from the test onto ancillary factors. Thus, although most studies have found no relationship between achievement tests and goal orientation (Ablard & Lipschultz, 1998; Button et al., 1996, Study 1; Fisher & Ford, 1998; Hofmann, 1993; Hofmann & Strickland, 1995; Phillips & Gully, 1997), Button et al. (study 4) and Meece et al. (1988), though finding no relationship between learning goals and ability, found negative correlations between ability and performance goals. So although actual ability should

not be related to goal orientation, there may be a negative relationship between performance goals and measures of that ability.

Another possibility, however, is that those of high and low self-perceived ability have been more or less equally distributed within performance and learning goal groups. To the extent that people of high self-perceived ability actually are of high ability, and vice versa, then no relationship would be expected between goal orientation and measures of ability. However, if those of high ability are more likely to perceive themselves as being of high ability, and vice versa, then those with high ability should be more strongly represented among those with prove goals than among those with avoid goals, and those of low ability should be more strongly represented among those with avoid goals than among those with prove goals. In the one study to have examined actual ability in relation to avoid and prove goals, Skaalvik (1997) found that it was negatively related avoid goals, positively related to prove goals, and not related to learning goals. Those with prove goals, therefore, may as a group be of higher ability than those with avoid goals.

Performance

Whereas objective ability indicates what one is capable of doing, performance indicates what one actually does. As such, performance incorporates a motivational component absent in objective ability. Because those with learning goals tend to adopt incremental theories of ability, they are more likely to believe they can control those factors necessary for success (Bandura & Wood, 1989). When faced with challenges or difficulties, therefore, those with learning goals show greater persistence, exert more effort, and are more likely to change their strategies, or to develop new ones, than are those with either of the other orientations. Those with learning goals are thus more likely to perform well as a result of trying harder and employing alternative

problem-solving strategies (Colquitt & Simmering, 1998; Fisher & Ford, 1998; Mills, 1996; Stevens & Gist, 1997). The effect of performance goals on performance, however, should be moderated by self-perceived ability. Those with prove goals—who have high self-perceived ability—are more likely than those with avoid goals to believe they can successfully perform a task (i.e., they have high self-efficacy). As a consequence, they are more likely to persist in the face of difficulties, and, to the extent they are confident in their abilities, to seek challenging tasks. Those with avoid goals, on the other hand, tend not to believe they have the ability to succeed. As a result, they are likely to withdraw from challenging and difficult tasks. Given their mastery orientation and preference for challenge, those with prove goals are likely to perform well, at least as long as their effort is rewarded with success. Avoid goals, on the other hand, are detrimental to performance by increasing the chance of withdrawal and task-irrelevant behavior (Butler, 1992; Hofmann, 1993). Performance goals should thus not be related to performance, because the effects of prove goals offset those of avoid goals (cf. Vlachopoulos & Biddle, 1997).

This has generally been the pattern when academic performance is used as the criterion: learning goals tend to be positively related, and performance goals unrelated, to performance (Button et al., 1996; Colquitt & Simmering, 1998; Phillips & Gully, 1997; Wolters, 1998; but see Greene & Miller, 1996, for a negative effect of performance goals on performance). When training performance is used as the criterion, results tend to be mixed. Wood and Bandura (1989), for example, but not Martocchio (1994), found that those with incremental theories performed significantly better than those with entity theories. Myers et al. (1997) and Ford et al. (1998), however, found no effect of either learning or performance goals on training performance (cf. Bare-Eli et al., 1995, for athletic performance). Hofmann and Strickland (1995)

found no significant bivariate correlation between performance (the time taken to solve a water-jar task) and either learning or performance goals. However, there was a significant performance goal by learning goal interaction: those with high learning goals and low performance goals performed better than those with high learning goals and high performance goals; those with low learning goals and high performance goals performed better than those with low learning goals and low performance goals. Examining three goal orientations, rather than two, may help clarify these inconsistent findings.

Intrinsic Motivation and Internally Controlled Behaviors

According to Deci and Ryan (1991), intrinsic motivation is the prototypical form of self-determination, characterized by task involvement and engaging in enjoyable and interesting behavior without coercion or compulsion (p. 253). Intrinsic motivation is usually accompanied by such affective correlates as interest, enjoyment, and perceived choice. Studies have repeatedly shown intrinsic motivation to be positively related to learning goals, and unrelated, or less strongly related, to performance goals (Archer, 1994; Butler, 1992; Duda & Nicholls, 1992; Elliot & Harackiewicz, 1994; Hofmann & Strickland, 1995; Meece et al., 1988; Miller et al., 1993; Myers et al., 1997; Ryan, 1982; Ryan et al., 1991; Wolters, 1998).

One reason for the lack of a relationship between performance goals and intrinsic motivation is that the effects of avoid and prove goals may offset each other. Elliot & Harackiewicz (1996) found that those with avoid goals displayed significantly less intrinsic motivation than either those with prove or learning goals; the intrinsic motivation of those with prove goals, however, was equal to that of those with learning goals. They attributed these findings to the mediational role of task involvement: specifically, those with learning goals were task-involved by virtue of their desire to develop their competence; those with prove goals were

task-involved because they perceived the task as an opportunity to display their competence; and those with avoid goals were not task-involved because the tasks represented a threat to their self-esteem. Intrinsic motivation, therefore, should be positively related to both learning and prove goals, but negatively related to avoid goals. In the one study to measure (as opposed to manipulate) three factors of goal orientation, Skaalvik (1997) found that intrinsic motivation was positively related to prove goals, negatively related to avoid goals, and unrelated to learning goals. More research is needed to clarify these results.

In contrast to intrinsically motivated behaviors, those that are internally controlled result from some internal pressure, and are not accompanied by positive affectivity (Deci & Ryan, 1991). Because both those with avoid goals and those with prove goals tie their self-esteem to their performance, their task behavior should be internally controlled. That is, their task behavior results from either the desire to avoid failure or to prove competence. In contrast, the task behavior of those with learning goals should not be internally controlled, because, for them, performance does not connote evaluations of their self-worth. They engage in tasks simply because they want to. Although no study has yet examined internal motivation in relation to prove and avoid goals, Ryan et al. (1991) found that the free-choice behavior of those with performance goals lacked the positive affectivity associated with intrinsic motivation. These subjects were therefore likely to be internally, rather than intrinsically, motivated.

Self-Efficacy

Self-efficacy is the belief that one can successfully perform a given behavior, not only as a consequence of one's skills, but as a consequence of how those skills are utilized (Bandura, 1986; Early & Lituchy, 1991). In two studies (Martocchio, 1994; Wood & Bandura, 1989) training interventions stressing entity theories lead to a decrease in self-efficacy, whereas

interventions stressing incremental theories lead to an increase in self-efficacy. Given that implicit theories and goal orientation are correlated, it can be extrapolated that self-efficacy would have been more likely to remain stable among those with learning goals, and more likely to decline among those with performance goals. Indeed, Fisher et al. (1997), Phillips and Gully (1997) and Ford et al. (1998) each found a negative relationship between self-efficacy and performance goals, and a positive relationship between self-efficacy and learning goals (cf. Roedel et al., 1994).

Those with learning goals are expected to have high self-efficacy because even if they do not, at present, possess the requisite skills, they can always develop them. To them, ability is not just the possession of task-related skills, but the belief that those skills can be acquired. Those with performance goals, on the hand, tend to believe that skills cannot be acquired. To them, ability is either present or absent. Because high ability implies probable success, and low ability implies probable failure, those with performance goals and high self-perceived ability (prove goals) are likely to have high self-efficacy, whereas those with performance goals and low self-perceived ability (avoid goals) are likely to have low self-efficacy. Skaalvik (1997) and Middleton and Midgley (1997) provide evidence in favor of these arguments.

Locus of Control

Whereas those with an internal locus of control believe that their outcomes are determined by their own efforts and characteristics, those with an external locus of control view their outcomes as due to chance, luck, or other external events (Rotter, 1966; Spector, 1988). Dweck and Leggett (1988; cf. Deci & Ryan, 1985; Koestner & Zuckerman, 1994) proposed that self-perceived ability (of the attribute relevant to the outcome) will moderate the relation between goal orientation and locus of control. In general, those with performance goals believe

that their ability is fixed. For those with low self-perceived ability (avoid goals), this means that their outcomes are not under their control; no matter how much effort they exert, they will still fail. Those with high self-perceived ability (prove goals), on the other hand, believe they have the skills needed for success, and, therefore, are likely to have an internal locus of control. Those with learning goals are likely to have an internal locus of control because they tend to see outcome-relevant attributes as malleable. Those with high self-perceived ability and learning goals believe control is possible because, like those with prove goals, they believe they have what is needed for success. Those with low self-perceived ability and learning goals also believe control is possible, but only through further effort.

Unfortunately the studies that have so far examined locus of control have only used the two-factor conceptualization of goal orientation. Button et al. (1996, Study 3) found work locus of control to be highly correlated with learning goals ($\underline{r}$ = .90), and less highly, but still significantly, with performance goals ($\underline{r}$ = .28). Fisher et al. (1997) and Phillips and Gully (1997) found locus of control to be significantly correlated with learning goals but uncorrelated with performance goals (cf. Koestner & Zuckerman, 1994; Roedel et al., 1994). Because of possible difference in the distribution of prove and avoid goals within the performance goal classification, these results cannot be readily interpreted in terms of the three-factor conceptualization. One possibility, however, is that those in the Button et al. sample were more likely to have prove goals than avoid goals, and that those in the other samples were equally likely to have avoid goals as they were to have prove goals, thus canceling out the effects of one another. Measuring three goal orientations in the present study will help clarify this.

Need for Achievement and Desire to Win

Two related, but distinct, constructs are need for achievement and the desire to win. Need for achievement is the desire to succeed at a task, irrespective of the success of others, whereas the desire to win is the desire to out-perform others in competitive situations (Helmreich & Spence, 1978). Need for achievement is therefore self-referenced, whereas the desire to win is other-referenced. Those high on need for achievement generally prefer task-related feedback (Steers, 1987), moderately challenging tasks, and tasks on which success depends on effort (Koestner & McClelland, 1990).

Given these differences, learning goals should be positively related to need for achievement, but unrelated to the desire to win. Those with learning goals enjoy challenge (VandeWalle, 1997), feedback (VandeWalle & Cummings, 1997), and generally assess their performance using internal standards (Nicholls, 1984). Although need for achievement may also be somewhat related to performance goals—especially to the extent that achievement signifies success relative to others—performance goals should be most strongly related to the desire to win. Those with prove goals judge success and failure relative to the performance of others (Nicholls, 1984). The self-verification of their perceived ability, therefore, requires comparison with some external referent. Given the pattern of relationships between avoid goals and the preference (or the lack thereof) for challenge, feedback, and effort, avoid goals should be unrelated to need for achievement. Similarly, because those with avoid goals are concerned with avoiding situations that might demonstrate their low self-perceived ability, they should shy away from competition. As such, avoid goals should also be unrelated to the desire to win.

Although need for achievement has not been assessed in relation to three goal orientations, Elliot and Harackiewicz (1994), Fisher et al. (1997) and Phillips and Gully (1997) have found it to be positively related to learning goals, but unrelated to performance goals. In

the one study to assess the desire to win in relation to the three goal orientations, VandeWalle (1997) found that it was related to neither learning nor avoid goals, but was significantly and positively related to prove goals.

Anxiety and Fear of Negative Evaluation

Research with both children and adults has consistently shown that whereas those with performance goals tend to feel anxiety, those with learning goals do not; and whereas those with performance goals tend to engage in task-irrelevant cognitions, those with learning goals tend to engage in task-relevant cognitions (Button et al., 1996; Diener & Dweck, 1978, 1980; Elliot & Dweck, 1988; Fisher et al., 1997; Harackiewicz & Elliot, 1993; Hofmann, 1993; Jagacinski & Nicholls, 1984, 1987; Meece et al., 1988; Middleton & Midgley, 1997; Miller et al., 1993; Newton & Duda, 1995; Roedel et al., 1994; Smiley & Dweck, 1994; Stipek & Kowalski, 1989; Wolters, 1998). Because those with performance goals derive their self-worth from their performance, they have more at stake than do those with learning goals, for whom performance is a guide to self-improvement. As a consequence, when failure is a possibility those with performance goals tend to become anxious and to lose their task-focus; those with learning goals, in contrast, do not become anxious, but rather redouble their efforts. Task-irrelevant cognitions among those with performance goals are therefore symptomatic of anxiety; among those with learning goals, task-relevant cognitions reflect both the absence of anxiety and greater task-focus.

Because those with prove goals perceive themselves to be of high ability, they may not feel anxiety to the extent that those with avoid goals do. In support of this argument, Skaalvik (1997) found that anxiety was positively related to avoid goals and negatively related to learning goals in two samples of students, and that prove goals were unrelated to anxiety in one sample,

but negatively related in the other. Because those with avoid goals and those with prove goals share a concern with how they are judged, both avoid and prove goals should be positively related to the fear of negative evaluation. In support of this argument, VandeWalle (1997) found that whereas both prove and avoid goals were significantly and positively correlated with a fear of negative evaluation, such a fear was unrelated to learning goals.

THE PRESENT STUDY

Overview and Hypotheses

Undergraduate psychology students completed a questionnaire instrument assessing the variables discussed above. In addition to these variables, several demographics variables (age, gender, ethnicity, academic level, work experience) were measured as exploratory variables, and social desirability was measured as a control variable. As such, no hypotheses are made for them. In addition, team membership and participation in intramurals were measured as proxy variables for athletic ability. Formal hypotheses are listed below.

Hypothesis 1a. Self-perceived ability will not be related to learning goals.
Hypothesis 1b. Self-perceived ability will be positively related prove goals.
Hypothesis 1c. Self-perceived ability will be negatively related to avoid goals.

Hypothesis 2a. Ability will not be related to learning goals.
Hypothesis 2b. Ability will be positively related to prove goals
Hypothesis 2c. Ability will be negatively related to avoid goals.

Hypothesis 3a. Self-perceived academic ability will account for variance in academic prove and avoid goal orientations beyond that accounted for by academic ability.
Hypothesis 3b. Self-perceived athletic ability will account for variance in athletic prove and avoid goal orientations beyond that accounted for by team membership and participation in intramurals.

Hypothesis 4a. Implicit theories of ability as fixed will be negatively related to learning goals.
Hypothesis 4b. Implicit theories of ability as fixed will be positively related to prove goals.
Hypothesis 4c. Implicit theories of ability as fixed will be positively related to avoid goals.

Hypothesis 5a. Implicit theories will account for variance in academic goal orientation beyond that accounted for by academic ability and self-perceived ability.

Hypothesis 5b. Implicit theories will account for variance in athletic goal orientation beyond that accounted for by team membership, participation in intramurals, and self-perceived athletic ability.

Hypothesis 6a. Performance will be positively related to learning goals.
Hypothesis 6b. Performance will be positively related to prove goals.
Hypothesis 6c. Performance will be negatively related to avoid goals.

Hypothesis 7a. Intrinsic motivation will be positively related to learning.
Hypothesis 7b. Intrinsic motivation will be positively related to prove goals.
Hypothesis 7c. Intrinsic motivation will be negatively related to avoid goals.

Hypothesis 8a. Internal motivation will be positively related to avoid goals.
Hypothesis 8b. Internal motivation will be positively related to prove goals.
Hypothesis 8c. Internal motivation will be unrelated to learning goals.

Hypothesis 9a. Self-efficacy will be positively related to learning goals.
Hypothesis 9b. Self-efficacy will be positively related to prove goals.
Hypothesis 9c. Self-efficacy will be negatively related to avoid goals.

Hypothesis 10a. Locus of control will be positively related to learning goals.
Hypothesis 10b. Locus of control will be positively related to prove goals
Hypothesis 10c. Locus of control will be negatively related to avoid goals.

Hypothesis 11a. Need for achievement will be positively related to learning goals.
Hypothesis 11b. Need for achievement will be positively related to prove goals.
Hypothesis 11c. Need for achievement will be negatively related to avoid goals.

Hypothesis 12a. Desire to win will be positively related to prove goals.
Hypothesis 12b. Desire to win will not be related to avoid goals
Hypothesis 12c. Desire to win will not be related to learning goals.

Hypothesis 13a. Fear of negative evaluations will not be related to learning goals.
Hypothesis 13b. Fear of negative evaluations will be positively related to avoid goals
Hypothesis 13c. Fear of negative evaluations will be positively related to prove goals.

Hypothesis 14. Academic goal orientation will be moderately and positively correlated with athletic goal orientation.

Hypothesis 15a. Academic goal orientation will not be a significant predictor of variables in the athletic domain.
Hypothesis 15b. Athletic goal orientation will not be a significant predictor of variables in the academic domain.

Method

Participants

A total of 186 undergraduate psychology students participated for extra credit. Six cases were dropped because of missing data, and three were dropped because responses did not correspond to the given scale (e.g., answering 7 to an item scored from 0 to 6), yielding a final sample of size of 177. The majority of participants were women (58.76%, N = 104) and White (76.84%, N = 136); 33% were 18 years old, 26% were 19 years old, 24% were 20 years old, and 17 were 21 years old or older; 38% were freshmen, 27% were sophomores, 25% were juniors, and 10% were seniors; 8% had less the one year of work experience, 23% had between 1-2 years of experience, 18% had between 2 and 3 years of experience, 20% had between 3 and 4 years of experience, 18% had between 4 and 5 years of experience, and 14% had more than 5 years of experience. Most students were not members of athletic teams (80.79%, N = 143), and most did not participate in intramurals (79.66%, N = 141): 63.28% did neither; 16.38% were team members but did not participate in intramurals; 17.51% participated in intramurals but were not team members; and 2.82% did both.

Measures

All scales are given in the Appendix, in the order described here.

Social Desirability. The Short form of the Crowne and Marlowe (1960) scale, as given in Ballard (1992), was used to measure social desirability (i.e., need for approval, or impression management; Hogan, 1991; Paulhus, 1984). This 13-item scale rather than the full 33-item Marlowe-Crowne Social Desirability Scale was used in order to keep the length of the questionnaire manageable. Because Ballard reported a relatively low reliability ($\alpha = .70$) for the short form, in the present study social desirability was measured using a Likert format (0 = completely untrue of me to 5 = completely true of me) rather than the traditional true/false

format. Nevertheless, the reliability for this study was low, α = .65. This scale is items 145-157 in the Appendix.

Ability and Performance. Participants were asked to self-report their SAT scores (as a measure of academic ability) and high-school GPA (as a measure of performance). (College GPA was not asked for because of the large number of freshmen in the sample.) For SAT scores, the options ranged from 400 to 1600 in increments of 200. For GPA, options ranged from 1.0 or less to 3.6-4.0, in increments of 0.4. Team membership served as a proxy for athletic ability.

Six participants indicated that they did not know their SAT scores or that they did not take the SAT, and so were note included in the relevant analyses. As a consequence n = 171 for analyses involving SAT scores. In addition, although there were only six categories of SAT scores, responses were approximately normally distributed. To facilitate analyses, SAT score was treated as a continuous variable (the analyses were also run with SAT score as a discrete variable, but in all cases the results were similar). Unfortunately the GPA scale did not allow for fine distinctions among participants: 14% reported a GPA of 2.6-3.0, 45% reported a GPA of 3.1-3.5, and 41% reported a GPA of 3.6-4.0. Only 2% reported a GPA of less than 2.6. As a consequence, three groupings were made: 3.0 or less, 3.1-3.5, and 3.6-4.0.

Self-Perceived Ability. Three items created for this study were used to measure self-perceived academic ability, and three were created to measure self-perceived athletic ability. The mean was taken to from scale scores. The items asked participants to rate their ability relative to others. These items were given first, to prime the relevant (academic or athletic) domain. The coefficient alpha reliability for the academic scale was α = .91, and α = .94 for the athletic scale.

Implicit Theories of Ability. Implicit theories of ability were measured using the three items given in Dweck et al. (1995a), as modified to be germane to academic and athletic ability (i.e., by replacing "intelligence" with "academic ability" or "athletic ability"). The items assess the degree to which individuals believe their ability is malleable. Dweck et al. reported coefficient alpha reliabilities of .94 to .98 for their scales. In this study the reliabilities were somewhat lower, at $\alpha = .89$ in academics and $\alpha = .90$ in athletics. The items were scored on a six-point scale (0 = strongly disagree to 5 = strongly agree), with the mean of the three items taken as a scale score. Although Dweck et al. note that the scale is typically scored such that a mean of 2 or below indicates an entity theory and 3 or above indicates an incremental theory, responses were not dichotomized in the present study (i.e., implicit theory of ability was treated as a continuous variable).

Intrinsic Motivation. Intrinsic motivation was measured with the four item "intrinsic valuing" scale used by Miller et al. (1993), which attained a coefficient alpha reliability of .86 in a sample of statistics students. In the present study, the scale reliabilities were $\alpha = .81$ in academics and $\alpha = .82$ in athletics.

Internal Motivation. Internal motivation was assessed using six items adapted from the Internal Work Motivation scale of Hackman and Oldham (1975). Both scales ranged from 0 (strongly disagree) to 6 (strongly agree). Items were averaged to form scale scores. The reliabilities in the present study were $\alpha = .81$ in academics and $\alpha = .69$ in athletics.

Self-Efficacy. Following Phillips and Gully (1997) and Ford et al. (1998), and based on the categories identified by Wood and Locke (1987), self-efficacy was measured with 10 items scored from 0 (strongly disagree) to 4 (strongly agree). The Likert format was chosen over the traditional format (Bandura, 1986) primarily to keep the questionnaire at a manageable length.

The results of Maurer and Pierce (1998) and Mudgett and Quinones (1997) both attest to the viability of the Likert format. The reliabilities were $\alpha = .90$ for academics and $\alpha = .92$ for athletics.

Locus of Control. Locus of control was measured with nine items, scored from 0 (strongly disagree) to 5 (strongly agree). Five items were taken from Rotter's (1966) Internal-External Locus of Control scale. Response choices (i.e., either statement "a" or "b") were made into their own items, with the exception of Rotter's item 5a, "The idea that teachers are unfair to students is nonsense," which was judged to be too ambiguous with respect to locus of control to stand as a separate item. The remaining four items were taken from Spector's (1988) Work Locus of Control Scale (items 2, 6, 7, and 13) and reworded to reflect an academic setting. Unfortunately three of Rotter's items could not be modified to reflect an athletic focus. These were, "Sometimes I can't understand how teachers arrive at the grades the give," "In the case of the well-prepared student, there is rarely if ever such a thing as an unfair test," and "Many times exam questions tend to be so unrelated to course work that studying is really useless." These items were replaced with three other items adapted from Rotter: " Without the right breaks, one cannot succeed in sports;" "Athletic ability is in the genes';" and "Athletic success is primarily due to practice." The reliabilities were $\alpha = .75$ for the academic scale and $\alpha = .69$ for the athletic scale.

Need for Achievement. Need for achievement was measured with the seven items given by Mathieu (1990), scored on a 5-point scale (0 = not at all characteristic of me to 4 = extremely characteristic of me). Because Mathieu wrote the scale for use with ROTC cadets, some items were reworded to be appropriate for the present study. Mathieu reported a coefficient alpha of .70. In the present study, $\alpha = .87$ in the academic domain and $\alpha = .90$ in the athletic domain.

Desire to Win. The desire to win was measured with the 5-item Competitiveness scale of the Work and Family Orientation Questionnaire (Helmreich & Spence, 1978). The scale was responded to on a five point scale ranging from 0 (strongly disagree) to 4 (strongly agree). VandeWalle (1997) reported a reliability of $\alpha = .82$. In the present study, the reliabilities were $\alpha = .80$ in academics and $\alpha = .84$ in athletics.

Fear of Negative Evaluation. The fear of negative evaluation was measured with the Brief Fear of Negative Evaluation Scale developed by Leary (1983). The items were reworded to create an academic or athletic focus. Leary reported a correlation of .96 between this 12-item measure and the original 30-item measure (Watson & Friend, 1969), with reliability of $\alpha = .90$. The reliabilities were similar in the present study, with $\alpha = .85$ in academics and $\alpha = .89$ in athletics. The measure was scored on a 5-point scale (0 = not at all characteristic of me to 4 = extremely characteristic of me).

Goal Orientation. Goal orientation was measured with the scales developed by VandeWalle (1997), scored on a seven-point scale (0 = strongly disagree to 6 = strongly agree). The VandeWalle scale consists of five items to measure learning goals, four to measure prove goals, and four to measure avoid goals. VandeWalle (1997) found reliabilities of $\alpha = .89$ for the learning goal scale, $\alpha = .85$ for the prove goal scale, and .88 for the avoid goal scale; VandeWalle and Cummings (1997) found reliabilities of $\alpha = .75$ for the learning goal scale, $\alpha = .71$ for the prove goal scale, and $\alpha = .76$ for the avoid goal scale. The reliabilities in the present study were $\alpha = .70$ for academic learning goals, $\alpha = .69$ for academic prove goals, $\alpha = .74$ for academic avoid goals, $\alpha = .89$ for athletic learning goals, $\alpha = .79$ for athletic prove goals, and $\alpha = .82$ for athletic avoid goals.

Procedure and Questionnaire

Participants completed the questionnaire in large groups. The goal orientation, intrinsic motivation, and internal motivation items were randomly interspersed. To help control for order effects, four versions of the questionnaire were developed. In two of these the academic domain came first, followed by the athletic domain; in the other two, the athletic domain came first. Within domains, the order of presentation was either: (1) self-perceived ability, implicit theories, self-efficacy, goal orientation/intrinsic motivation/internal motivation, locus of control, need for achievement, desire to win, and fear of negative evaluations; or (2) self-perceived ability, implicit theories, self-efficacy, need for achievement, goal orientation/intrinsic motivation/internal motivation, locus of control, desire to win, and fear of negative evaluations. The social desirability items were given last.

Analysis Strategy

The analyses were conducted in three main parts. First, each goal orientation was regressed on the predictor variables, ability, self-perceived ability, and implicit theories. This analysis was designed to assess the contribution of each variable to the prediction of goal orientation. The second set of analyses was a cross-structure analysis (Pedhazur & Schmelkin, 1991) in which the remaining variables (e.g., intrinsic motivation) were each regressed, in turn, on all three goal orientations simultaneously. This analysis was designed to assess the degree to which each goal orientation is differentially related to other constructs. The aim of the third analysis was to assess the domain specificity of goal orientation. Accordingly, the dependent variables in one domain (e.g., academic intrinsic motivation) were regressed, first, on goal orientation in the other domain and, second, on all six goal orientations simultaneously. Specifics of each analysis are described in the results section.

Before presenting the specific results, note that the number of significance tests conducted increased the probability of committing a Type I error (i.e., falsely rejecting a null hypothesis). As presented in the tables, 617 significance tests were run. At $\alpha = .05$, this corresponds to 617 * .05 = 31 Type I errors; at $\alpha = .01$, 6 Type I errors; and at $\alpha = .001$, 1 Type I error. Also important is the issue of the practical significance. Adopting the criteria of Cohen (1988), a correlation of $r = .10$ is a small effect, a correlation of $r = .30$ is medium effect, and a correlation of $r = .50$ is a large effect. For regression, likewise, a small effect is given by a unique R^2 (i.e., the change in R^2 obtained when adding the focal variable to the regression equation after all the other variables) of .02, a medium effect is given by an R^2 of .15, and a large effect is given by an R^2 of .35. All else being equal, the chance of committing a Type I error is lower for medium and strong effects than for small effects. In other words, results significant at $p < .05$ should be interpreted with caution.

RESULTS

Preliminary Analyses

To assess the validity of assuming a three-factor dimensionality of the goal orientation scales, exploratory factor analyses were conducted on the goal orientation items using principle axis extraction, squared multiple correlations as prior communality estimates, and Direct Oblimin oblique rotation. As seen in Tables 2 and 3, the factor patterns, although not ideal, were clean enough to support the distinction among learning, prove, and avoid goals.

Table 4 lists the descriptive statistics and coefficient alpha reliabilities for all variables. With the exception of academic prove goal orientation ($\alpha = .69$), athletic internal motivation ($\alpha = .69$), athletic locus of control ($\alpha = .69$), and social desirability ($\alpha = .65$), all reliabilities were above .70. Note that although similar, the reliabilities of the athletic scales are higher than all but

two (internal motivation and locus of control) of the corresponding academic scales. The issue of these low reliabilities is addressed below in the "Supplemental Analyses" section.

Examination of studentized residuals and Cook's D revealed no serious outliers or unduly influential observations. Thus, all 177 participants were retained for the regression analyses. Examination of normal probability plots for each variable revealed no serious departures from normality. However, athletic intrinsic motivation was highly skewed and leptokurtic, with a modal interval of 5.5 to 6.0 out of 6.0. To correct for this, several different transformations were explored. Squaring the original values provided the best correction and resulted in less severe skewness (−.51) and kurtosis (−.54), and improved the normal probability plot. Because parameter estimates in the regression analyses (described below) were similar for both the original and transformed variables, only the analyses based on the original scores appear in the tables. The results for both variables, though, are mentioned in the text.

To examine the assumptions of linear regression, histograms of regression standardized residuals and plots of standardized residuals against standardized predicted values were examined. The former showed no evidence of nonnormality of residuals (supporting the use of significance tests) and the latter showed no evidence of nonlinearity or heteroscedasticity. In addition, the regression analyses showed no signs of multicollinearity (e.g., low tolerance). The conditions were therefore satisfied for the regression analyses described below.

Exploratory Variables

As seen in Table 5, in only two cases did gender, race, age, academic level, and work experience correlate even moderately with goal orientation. First, the correlation of $r = .19$ between gender and athletic learning goals reflected higher learning goals among men ($M = 4.41$, $SD = 1.12$) than among women ($M = 3.94$, $SD = 1.10$). A t-test confirmed that this difference

was significant $t(175) = 2.61$, $p < .01$, suggesting that men are more involved in athletics than are women (Timmer, Eccles, & O'Brien, 1985). Second, the correlation of $r = .22$ between work experience and academic learning goals was due to those having worked between 3-4 years ($M = 3.88$, $SD = 0.70$) scoring higher than those having worked between 1-2 years ($M = 3.31$, $SD = 0.88$). A general linear model analysis of variance yielded a significant overall main effect, $F(5, 171) = 2.91$, $p < .05$, and post hoc Games-Howell multiple comparisons ($\alpha = .05$; as recommneded by Toothaker, 1991, this procedure was used to control for unequal variances and sample sizes) showed that these two groups were significantly different. Overall, then, these demographic variables were not strongly related to goal orientation, and produced no anomolous effects.

Tests of Hypotheses

Correlations among variables within the academic and athletic domains are given in Table 6, and those between domains are given in Table 7.

Predicting goal orientation

Hypotheses 1, 2, and 3 were tested with a series of hierarchical regression analyses. The aim was to determine the unique effects of self-perceived ability and ability. In both domains, each goal orientation served as the sole dependent variable in separate regression equations. In the academic domain, either self-reported SAT scores or self-perceived ability was entered on the first step (the analyses were run both ways). The other variable was entered on the second step, with the change in R^2 taken as the unique contribution of the second variable entered. In the athletic domain, either team membership and participation in intramurals, together, or self-perceived ability was entered on the first step. Again, the other variable(s) were entered on the

second step, with the change in R^2 taken as the unique effect. The results are shown in Table 8 for the academic domain, and Table 9 for the athletic domain.

In the academic domain, Hypothesis 1a was not supported. The zero-order correlation between academic learning goals and self-perceived ability was $r = .27$ ($p < .01$). In addition, after controlling for self-reported ability (i.e., SAT scores), self-perceived ability was a significant predictor of learning goals ($\beta = .24$, $p < .01$). Hypothesis 1b was not supported, although there was a trend in the predicted direction: the zero-order correlation between prove goals and self-perceived ability was positive ($r = .13$, $p < .10$), and, after controlling for SAT scores, self-perceived ability was positively related to prove goals ($\beta = .14$, $p < .10$). Hypothesis 1c was partially supported. Although the zero-order correlation between avoid goals and self-perceived ability was significant and in the direction expected ($r = -.16$, $p < .05$), self-perceived ability did not significantly predict prove goals after controlling for SAT scores ($\beta = -.13$, $p > .10$).

In the athletic domain, Hypothesis 1a was again not supported. The zero-order correlation between athletic learning goals and self-perceived ability was positive and significant ($r = .59$, $p < .01$), and self-perceived ability was a significant predictor of learning goals after controlling for team membership and participation in intramurals ($\beta = .52$, $p < .001$). Hypothesis 1b was supported. As predicted, prove goals and self-perceived ability were significantly and positively correlated ($r = .38$, $p < .001$), and self-perceived ability was a significant predictor of prove goals after controlling for team membership and participation in intramurals ($\beta = .35$, $p < .001$). Hypothesis 1c was also supported. Avoid goals and self-perceived ability were significantly and negatively correlated ($r = -.33$, $p < .01$), and self-perceived ability was a

significant predictor of avoid goals after controlling for team membership and participation in intramurals ($\beta = -.25$, $p < .001$).

In the academic domain, Hypothesis 2a was not supported. Learning goals and ability (i.e., self-reported SAT scores) were positively and significantly correlated ($r = .19$, $p < .05$), and ability was positively, though not significantly, related to learning goals after controlling for self-perceived ability ($\beta = .11$, $p > .10$). Hypothesis 2b was also not supported. Prove goals and ability were positively, though not significantly, correlated ($r = .13$, $p < .10$), and were not related after controlling for self-reported ability ($\beta = .03$, $p > .10$). Hypothesis 2c was only partially supported, as avoid goals and ability were significantly and negatively correlated ($r = -.16$, $p < .01$), and negatively related, though not significantly so, after controlling for ability ($\beta = -.13$, $p > .10$).

In the athletic domain, Hypothesis 2a was not supported. Learning goals and ability (i.e., team membership) were positively correlated ($r = .36$, $p < .01$), positively related after controlling for participation in intramurals ($\beta = .37$, $p < .001$), and positively related after controlling for both participation in intramurals and self-reported ability ($\beta = .18$, $p < .01$). Hypothesis 2b was supported. Prove goals and team membership were positively correlated ($r = .32$, $p < .01$), and positively related after controlling for participation in intramurals ($\beta = .32$, $p < .001$) and after participation in intramurals and self-reported ability ($\beta = .19$, $p < .05$). Finally, Hypothesis 3c was not supported, as avoid goals and team membership were uncorrelated ($r = -.07$, $p > .10$), and unrelated after controlling for participation in intramurals ($\beta = -.09$, $p > .10$) and after participation in intramurals and self-reported ability ($\beta = .00$, $p > .10$). Although no predictions were made for participation in intramurals, after controlling for team membership

and self-perceived ability it was strongly and negatively related to avoid goals ($\beta = -.27$, $p < .001$), but not related to either learning ($\beta = .01$, $p > .10$) or prove goals ($\beta = -.11$, $p > .10$).

Examination of the ΔR^2 values given in Table 8 shows that Hypothesis 3a was not supported for either academic prove ($\Delta R^2 = .02$, $p < .10$) or avoid goals ($\Delta R^2 = .01$, $p > .10$). Although not hypothesized, self-perceived ability did account for incremental variance in academic learning goals ($\Delta R^2 = .05$, $p < .01$). That is, only for learning goals did self-perceived ability account for variance in goal orientation beyond that accounted for by ability. In no case did ability account for variance beyond that accounted for by self-perceived ability. In contrast, Hypothesis 3b, for the athletic domain, was fully supported. Self-perceived ability accounted for variance in prove goals ($\Delta R^2 = .09$, $p < .001$) and avoid goals ($\Delta R^2 = .05$, $p < .01$) beyond that accounted for by team membership and participation in intramurals. Again, although not predicted, self-perceived ability added to the variance explained in learning goals ($\Delta R^2 = .22$, $p < .001$). Self-perceived athletic ability, therefore, accounted for variance in athletic goal orientation beyond that accounted for by team membership and participation in intramurals. The reverse, however, was also true: team membership and participation in intramurals accounted for significant increments in the variance of learning ($\Delta R^2 = .03$, $p < .05$), prove ($\Delta R^2 = .05$, $p < .01$), and avoid goals ($\Delta R^2 = .07$, $p < .001$). Self-perceived ability, team membership, and participation in intramurals, therefore, each explains unique variance in goal orientation.

To summarize, self-reported SAT scores did not predict academic learning, prove, or avoid goals. Team membership, on the hand, predicted both athletic learning and prove goals, and participation in intramurals predicted avoid goals, even after controlling for self-perceived ability. Nevertheless, self-perceived ability was the best predictor across both domains.

To assess the unique contribution of implicit theories to the prediction of goal orientation a further series of hierarchical regression analyses were run. In the academic domain, self-perceived ability and self-reported SAT scores were entered as a group. In the athletic domain, team membership, participation in intramurals, and self-perceived ability were entered as a group. Entering implicit theories on the second step shows its unique contribution; entering implicit theories on the first step shows the unique contribution of the ability variables. The results are presented in Table 10 for the academic domain, Table 11 for the athletic domain, and are summarized, along with the hypothesized results, in Table 12. For comparison, Table 12 also shows the unique contribution of each of the other predictors (i.e., each entered by itself on the last step). Note that the results presented here are for implicit theories treated as a continuous variable. Running the analyses with dichotomous implicit theories (Dweck et al., 1995a) resulted in similar, though generally less strong, effects.

In the academic domain, Hypothesis 4 was not supported. That is, implicit theories were not significantly correlated with learning goals ($r = -.13$, $p < .10$), prove goals ($r = -.05$, $p > .10$), or avoid goals ($r = .05$, $p > .10$). Likewise, after controlling for ability and self-perceived ability, implicit theories were not related to learning goals ($\beta = -.11$, $p > .10$), prove goals ($\beta = -.05$, $p > .10$), or avoid goals ($\beta = .03$, $p > .10$). In the athletic domain, athletic learning goals ($r = .23$, $p < .01$) and athletic avoid goals ($r = .21$, $p < .01$) were correlated with implicit theories in accordance with hypotheses 4a and 4b. Hypothesis 4b was not supported in the athletic domain, however, as prove goals and implicit theories were uncorrelated ($r = -.04$, $p > .10$). After controlling for team membership, participation in intramurals, and self-perceived ability, implicit theories were still related to learning goals ($\beta = -.13$, $p < .05$) and avoid goals ($\beta = .15$, $p < .05$), but unrelated to prove goals ($\beta = .03$, $p > .10$).

In the academic domain, Hypothesis 5 was not supported, as implicit theories did not add to the variance explained in learning goals ($\Delta R^2 = .01$, $p > .10$), prove goals ($\Delta R^2 = .00$, $p > .10$), or avoid goals ($\Delta R^2 = .00$, $p > .10$) beyond that explained by ability and self-perceived ability. Ability and self-perceived ability did, however, add to the variance in learning goals explained by implicit theories alone ($\Delta R^2 = .09$, $p < .001$). The increment due to ability and self-perceived ability, though, was not significant for prove ($\Delta R^2 = .02$, $p > .10$) or avoid goals ($\Delta R^2 = .03$, $p < .10$).

In the athletic domain, hypotheses 5a and 5c were supported. Implicit theories added slightly, though significantly, to the variance explained in learning goals ($\Delta R^2 = .02$, $p < .05$) and in avoid goals ($\Delta R^2 = .02$, $p < .05$). Contrary to Hypothesis 5b, implicit theories did not add to the variance explained in prove goals ($\Delta R^2 = .00$, $p > .10$). In contrast, team membership, participation in intramurals, and self-perceived ability added substantially to the prediction of learning ($\Delta R^2 = .34$, $p < .001$), prove ($\Delta R^2 = .20$, $p < .001$), and avoid goals ($\Delta R^2 = .16$, $p < .001$), beyond implicit theories alone.

Implicit theory, then, was a surprisingly poor predictor of goal orientation. In the academic domain, implicit theory did not explain a significant proportion of variance in goal orientation beyond ability and self-perceived ability. Although implicit theories did add to the prediction of athletic learning and avoid goals, the effect was small compared to the ability variables.

Cross-Structure Analysis

This set of analyses tested the ability of learning, prove, and avoid goals to differentially predict theoretically related variables. Because GPA, unlike the other criterion variables, was a categorical variable, it is presented first and separately. Hypothesis 6 for GPA as the criterion

was tested with multivariate analysis of variance with social desirability as a covariate. The overall model was significant, Wilks' $\Lambda = .88$, $F(6, 344) = 3.65$, $p < .01$, indicating that goal orientation contributes to differences in GPA. For the groups 3.0 or less, 3.1-3.5, and 3.6-4.0, respectively, the means were $M = 3.26$, $M = 3.69$, and $M = 3.94$ for learning goals, $M = 3.02$, $M = 3.61$, and $M = 3.59$ for prove goals, and $M = 2.84$, $M = 3.37$, and $M = 2.99$ for avoid goals.

To examine specific group difference, a discriminant analysis was conducted in which all three goal orientations and social desirability were included. Both functions were significant (function 1 $\chi^2(8) = 21.84$, $p < .01$; function 2 $\chi^2(3) = 6.52$, $p < .05$). Examination of the function plot and centroids indicated that the first function discriminated between 3.0 or less and the other two groups, whereas the second function discriminated, to a lesser degree, between 3.1-3.5 and 3.6-4.0. The standardized discriminant function coefficients showed that those scoring high on learning goals have the highest discriminant scores on function one ($\beta = .84$), followed by avoid goals ($\beta = .47$) and prove goals ($\beta = .27$). In other words, discrimination between 3.0 or less and the other two groups was highest for those with strong learning goals, second highest for those with avoid goals, and lowest for those with prove goals. Examination of the second function showed that discrimination between 3.1-3.5 and 3.6-4.0 was highest for those with avoid goals ($\beta = .78$), less strong for those with learning goals ($\beta = -.31$), and virtually nonexistent for those with prove goals ($\beta = .04$).

Taken together, and given the pattern of means (viz., that each goal orientation was lowest for those with a GPA of 3.0 or less), these results indicate that GPA was more strongly affected by learning goals than by prove or avoid goals. That is, in support of Hypothesis 6a, learning goals were positively related to GPA. Prove goals were also positively related to GPA, as predicted in Hypothesis 6b, such that those with prove goals were more likely to report a GPA

of 3.1 or above than 3.0 or below. Prove goals, in other words, discriminated between C (i.e., 3.0 or less) and B or A (i.e., 3.1 or above) students, but not between B and A students. Avoid goals, interestingly, discriminated between C and B students, B and A students, but not between A and C students. In other words, B students were more likely to have avoid goals that were C or A students. Hypothesis 6c, then, was partially supported.

The analyses for the other criteria (hypotheses 7-13) were conducted using hierarchical multiple regression. The results are presented in Table 13 and are summarized, along with the hypothesized results, in Table 14. Because social desirability was negatively correlated with prove and avoid goals ($\underline{r} = -.19$, $\underline{p} < .05$ and $\underline{r} = -.16$, $\underline{p} < .05$, for academics; $\underline{r} = -.28$, $\underline{p} < .01$, and $\underline{r} = -.34$, $\underline{p} < .01$, for athletics), it was included as a covariate (cf. Button et al., 1996). Accordingly, separate hierarchical regression analyses were conducted for each criterion variable. Social desirability was entered on the first step; the three goal orientations were entered on the second step; and the goal orientation × social desirability interactions were entered on the third step. As seen in Table 13, goal orientation added significantly to the variance explained in each dependent variable, beyond that accounted for by social desirability alone. In addition, the interactions did not add significantly to the variance explained in any dependent variable (all $\Delta\underline{R}^2$s ≤ .03, all $\underline{p}$s ≥.09). Hence, the conditions for analysis of covariance (rather than an attribute × treatment interaction design) were satisfied. For simplicity, only the results of the second step are shown in Table 13.

In support of Hypothesis 7a, intrinsic motivation and learning goals were positively related in both the academic ($\beta = .58$, $\underline{p} < .001$) and athletic ($\beta = .54$, $\underline{p} < .001$) domains. The estimate was similar when transformed athletic intrinsic motivation was used ($\beta = .53$, $\underline{t} = 6.75$, $\underline{p} < .001$). Hypothesis 7c was also supported in both domains: intrinsic motivation and avoid goals

were negatively related in both academics ($\beta = -.17$, $p < .05$) and athletics ($\beta = -.15$, $p < .05$). Again, the estimate derived from using the transformed variable was similar ($\beta = -.19$, $t = -2.84$, $p < .01$). Hypothesis 7b, however, was only partially supported. That is, intrinsic motivation and prove goals were unrelated in the academic domain ($\beta = -.02$, $p > .10$), whereas, in the athletic domain, there was a trend in the expected direction ($\beta = .15$, $p < .10$). Using the transformed variable, this trend between prove goals and intrinsic motivation was significant ($\beta = .16$, $t = 2.03$, $p < .05$). Intrinsic motivation thus was positively related to learning goals in both domains, negatively related to avoid goals in both domains, and positively related to prove goals, but only in the athletic domain.

Hypothesis 8a was not supported. Although not expected, internal motivation and learning goals were positively related in both the academic ($\beta = .40$, $p < .001$) and athletic ($\beta = .46$, $p < .001$) domains. Hypothesis 8b, likewise, was not supported. Internal motivation and prove goals were not related in the academic domain ($\beta = -.05$, $p > .10$), and were nonsignificantly, though positively, related in the athletic domain ($\beta = .12$, $p > .10$). In support of hypotheses 8c, athletic avoid goals and internal motivation were positively related ($\beta = .29$, $p < .001$). Contrary to Hypothesis 8c, however, academic avoid goals and internal motivation were not related ($\beta = -.03$, $p > .10$). Contrary to expectation, then, internal motivation was positively related to learning goals, and not related to prove goals in both domains. Internal motivation was, as expected, positively related to avoid goals, but only in the athletic domain.

In support of Hypothesis 9a, self-efficacy and learning goals were positively related in both the academic ($\beta = .35$, $p < .001$) and athletic domains ($\beta = .55$, $p < .001$). Hypothesis 9c, however, was only partially supported. Avoid goals and self-efficacy were, as expected, negatively related in the athletic domain ($\beta = -.28$, $p < .001$), but, unexpectedly, unrelated in the

academic domain (β = −.08, p > .10). Hypothesis 9b was not supported, as prove goals and self-efficacy were not significantly related in either domain (β = .11, p > .10, for academics; β = .07, p > .10, for athletics). In both domains, then, those with learning goals were likely to have high self-efficacy. In the athletic domain, those with avoid goals were likely to have lower self-efficacy.

As predicted in Hypothesis 10a, external locus of control and learning goals were negatively related (β = −.18, p < .05, for academics; β = −.25, p < .05, for athletics) . Hypothesis 10c was partially supported, as avoid goals and locus of control were positively related in the academic domain (β = .22, p < .05), but not in the athletic domain, although there was a trend in this direction (β = .13, p > .10). Hypothesis 10b was not supported: prove goals and locus of control were not related in either the academic (β = .04, p > .10) or athletic domains (β = .06, p > .10). Overall then, those with learning goals, in both domains, tended to have an internal locus of control, whereas those with academic avoid goals tended to have an external locus of control. Prove goal orientation, however, was not related to locus of control.

In support of Hypothesis 11a, need for achievement and learning goals were positively related in both the academic (β = .28, p < .001) and athletic (β = .51, p < .001) domains. Hypothesis 11b was partially supported, as need for achievement and prove goals were positively related in the athletic domain (β = .31, p < .001), but unrelated in the academic domain, although there was a trend in the predicted direction (β = .15, p < .10). Hypothesis 11c was supported in the athletic domain, where avoid goals and need for achievement were negatively related (β = −.17, p < .01). Contrary to Hypothesis 11c, however, need for achievement and avoid goals were significantly and positively related in the academic domain (β = .26, p < .01). The pattern for learning goals and prove goals was therefore similar across domains. However, avoid goals and

need for achievement were positively related in the academic domain, and negatively related in the athletic domain.

Although Hypothesis 12a predicted no relationship, desire to win was positively related to learning goals in both domains ($\beta = .31$, $p < .001$, for academics; $\beta = .23$, $p < .01$, for athletics). Hypothesis 12b, however, was supported, as prove goals and desire to win were positively related in both the academic ($\beta = .21$, $p < .01$) and athletic ($\beta = .53$, $p < .001$) domains. Hypothesis 12c was also supported: desire to win was not related to avoid goals ($\beta = .07$, $p > .10$, for academics; $\beta = .04$, $p > .10$, for athletics). The pattern of results was therefore similar for academics and athletics: desire to win was positively related to learning goals and prove goals, and not related to avoid goals.

Contrary to Hypothesis 13a, fear of negative evaluation and learning goals were not related ($\beta = -.01$, $p > .10$, for academics; $\beta = -.01$, $p > .10$, for athletics). Hypothesis 13b, was only partially supported. As predicted, fear of negative evaluation and prove goals were positively related in the athletic domain ($\beta = .24$, $p < .01$). In the academic domain, however, they were not related, although there was a trend in the predicted direction ($\beta = .13$, $p > .10$). Finally, Hypothesis 13c was supported, as avoid goals were positively related to fear of negative evaluation in both the academic ($\beta = .27$, $p < .001$) and athletic ($\beta = .42$, $p < .001$) domains. Again, the pattern of results was similar across domains: fear of negative evaluation was not related to learning goals, and positively related to prove (though not significantly in academics) and avoid goals.

Domain Specificity

To test the domain specificity of goal orientation, zero-order correlations were first examined. In support of Hypothesis 14, the learning ($r = .20$, $p < .01$), prove ($r = .33$, $p < .01$),

and avoid (r = .34, p < .01) scales were moderately and positively correlated across domains. Individuals oriented toward one goal in academics were somewhat likely to be oriented toward the same goal in athletics. Note, however, that goal orientation in one domain explained at most only 12% of the variance in goal orientation in the other.

To test Hypothesis 15, a further series of hierarchical regression analyses were conducted. On the first step, each dependent variable was regressed separately on the opposite-domain goal orientations (e.g., academic dependent variables were regressed on athletic goal orientation). On the second step, the same-domain goal orientations were added (e.g., regressing academic dependent variables on both athletic and academic goal orientation). The first step shows the total effect of opposite-domain goal orientation on each dependent variable, without regard to variance shared with same-domain goal orientation. Small R^2 values on step 1, relative to those obtained in the cross-structure analysis, suggest that opposite-domain goal orientation (a) does not share much variance with same-domain goal orientation and (b) does not strongly influence the dependent variables. Large R^2 values, on the other hand, suggest that opposite-domain goal orientation (a) has a large effect on the dependent variables and/or (b) shares a lot of variance with same-domain goal orientation. The ΔR^2 values obtained on the second step indicate the unique contribution (i.e., above and beyond variance specific to opposite-domain goal orientation and shared variance) of same-domain goal orientation. In addition, because the second step is equivalent to adding the opposite-domain goal orientations to the regression equations used in the previous section, these analyses also show the unique effects of opposite-domain goal orientation. If a large R^2 is found on the first step, and a large ΔR^2 on the second, then goal orientation in both domains contribute to the dependent variable. If a large R^2 on the first step is followed by a small ΔR^2 on the second, then goal orientation in the two domains

overlap. The results for step 1 are shown in Table 15. The results for step 2 are shown in Table 16. Summaries of the results, including the information shown in Table 14, appear in Table 17 for academic dependent variables and Table 18 for athletic dependent variables.

Looking first at Table 15, note that very few opposite-domain goal orientations were good predictors. Athletic prove goals predicted academic internal motivation ($\beta = .26$, $p < .05$) and academic desire to win ($\beta = .44$, $p < .001$). Athletic avoid goals predicted academic fear of negative evaluations ($\beta = .35$, $p < .001$). Academic learning goals predicted athletic intrinsic motivation ($\beta = .20$, $p < .05$). Both academic learning goals ($\beta = .19$, $p < .05$) and academic avoid goals ($\beta = .22$, $p < .01$) predicted athletic internal motivation. Finally, academic avoid goals predicted athletic fear of negative evaluation ($\beta = .25$, $p < .01$). Although athletic goal orientation explained 18% of the variance in academic desire to win and 20% in academic fear of negative evaluation, for no other dependent variable in either domain was more than 15% of the variance accounted for. Goal orientation in one domain, therefore, predicted dependent variables in the other domain rather poorly.

Looking at Table 16, note first the similarity between the pattern of beta weights obtained for same-domain goal orientation (e.g., academic dependent variable regressed on academic goal orientation) in these analyses and those described in the previous section (see Table 13). That is, adding opposite-domain goal orientation did not substantially affect the results described above.

Adding athletic goal orientation to the prediction of academic variables did not account for a significant increment in the variance of intrinsic motivation, self-efficacy, locus of control, or need for achievement (all ΔR^2s $\leq .03$, all ps $> .07$). Adding athletic goal orientation did, however, lead to significant increases in R^2 for internal motivation ($\Delta R^2 = .05$, $p < .01$), desire to win ($\Delta R^2 = .07$, $p < .001$), and fear of negative evaluation ($\Delta R^2 = .06$, $p < .01$). In contrast,

academic goal orientation added significantly to intrinsic motivation (ΔR^2 = .03, p < .05, for the untransformed variable; ΔR^2 = .03, F = 4.03, p < .01, for the transformed variable), but to no other athletic variable (all ΔR^2s ≤ .02, all ps > .10). Hypothesis 14, then, received mixed support. Support was stronger for academic goal orientation, which only added significantly to the variance explained in athletic internal motivation. Athletic goal orientation, in contrast, added to the prediction of three of the seven academic variables: internal motivation, desire to win, and fear of negative evaluation.

An examination of the beta weights shows that athletic goal orientation added to the prediction of academic internal motivation through the effect of prove goals (β = .28, p < .01), athletic goal orientation added to the prediction of academic desire to win primarily through the effect of prove goals (β = .38, p < .001), and athletic avoid goals (β = .27, p < .01) accounted for the added prediction of academic fear of negative evaluation. The added prediction in athletic intrinsic motivation was due to the significant effect of academic avoid goals (β = .19, p < .01). Although the changes in R^2 were not significant, athletic learning goals were a significant predictor of academic intrinsic motivation (β = −.19, p < .05), athletic prove goals were a significant predictor of academic need for achievement (β = −.23, p < .05), and academic avoid goals were a significant predictor of athletic internal motivation (β = .16, p < .05).

Note, however, that in three cases the sign of the beta weight associated with an opposite-domain goal orientation was contrary to both Hypothesis and the analogous effect of the same-domain goal orientation. First, athletic learning goals had a negative effect (β = −.19) on academic intrinsic motivation, whereas academic learning goals, in accordance with Hypothesis 7, had a positive effect (β = .61). Second, athletic prove goals had a negative effect on academic need for achievement (β = −.23), whereas, in accordance with Hypothesis 11, academic prove

goals had a positive effect (β = .20). Third, although athletic avoid goals, as predicted, had a negative effect (β = −.22) on athletic intrinsic motivation, academic avoid goals had a positive effect (β = .19). Given that the zero-order correlations for these variables were each nonsignificant and close to zero (see Table 6), a suppressor effect appears to have occurred. In support of this proposition, regressing academic intrinsic motivation on social desirability and athletic goal orientation (i.e., without academic goal orientation in the equation) resulted in a β of −.08 ($p > .10$); regressing academic need for achievement on social desirability and athletic goal orientation resulted in a β of −.16 ($p > .10$); and regressing athletic intrinsic motivation on social desirability and academic goal orientation resulted in a β of .10 ($p > .10$). Although this is evidence for suppression, it does not explain the anomalous directions of the effects. The results suggest that those oriented toward learning goals and prove goals in athletics may have less interest in academics, as manifested in lower academic intrinsic motivation and less need for academic achievement. Equally likely, those oriented toward academic avoid goals may have a greater interest in sports, as seen in greater athletic intrinsic motivation. Team membership and intramurals, however, appear not to have played a part in these results: the effects were similar and still significant when team membership and participation in intramurals were entered into the regression equations.

Regardless, the important point is that athletic goal orientation did not add much (at most 7%) to the variance explained in academic variables, and academic goal orientation did not add much (at most 3%) to the variance explained in athletic variables. In contrast, same-domain goal orientation always added a significant increment. This suggests that athletic and academic goal orientation do not overlap to a significant degree. That opposite-domain goal orientation was a weak predictor, especially compared to same-domain goal orientation, suggests that goal

orientation in the two domain do not share much variance. Goal orientation, therefore, appears to be domain specific.

Supplemental Analyses

Self-Perceived Ability as a Mediator

The results described in the "Predicting Goal Orientation" section showed the unique contributions of ability and self-perceived ability to goal orientation. However, given that self-perceived ability is, in part, a function of actual ability, an explicit test of the mediating role of self-perceived ability seemed appropriate. For mediation to hold, (1) the independent variable must influence the mediator, (2) the independent variable must influence the dependent variable, and (3) the influence of the independent variable on the dependent variable must decrease when the mediator is included in the regression equation (Baron & Kenny, 1986). To control for other variables, implicit theories were included as an independent variable in the academic domain, and implicit theories and participation in intramurals were included as independent variables in the athletic domain.

In the academic domain, condition 1 was supported as SAT scores were positively related to academic self-perceived ability ($\beta = .35$, $p < .001$) after controlling for implicit theories. For both prove and avoid goals, however, condition 2 was not supported, as SAT scores were not related to goal orientation after controlling for implicit theories ($\beta = .08$, $p > .10$, and $\beta = -.13$, $p < .10$, respectively). The conditions for mediation, therefore, did not hold for prove or avoid goals. Learning goals and SAT scores, however, were related ($\beta = .24$, $p < .01$) after controlling for implicit theories. Including self-perceived ability in the equation reduced this effect to nonsignificance ($\beta = .12$, $p > .10$). Self-perceived ability, therefore, fully mediated the effect of SAT scores on learning goals.

In the athletic domain, the first condition was supported, as team membership was positively related to self-perceived ability ($\beta = .36$, $p < .001$) after controlling for implicit theories and participation in intramurals. Mediation could not be tested for avoid goals because the second condition was not supported: team membership was not related to avoid goals ($\beta = -.08$, $p > .10$) after controlling for implicit theories and participation intramurals. Conditions two and three, however, were both supported for learning and prove goals. Without self-perceived ability in the equation, team membership was positively related to learning goals ($\beta = .37$, $p < .001$), but was less strongly related when self-perceived ability was included ($\beta = .19$, $p < .05$). Team membership, similarly, was positively related to prove goals in the second equation ($\beta = .31$, $p < .001$), but not in the third when self-perceived ability was added ($\beta = .19$, $p < .05$). In the athletic domain, then, self-perceived ability partially mediated the influence of team membership on learning and prove goals.

Exploration of Variables with Low Reliability

The variables with reliabilities below .70—academic prove goals ($\alpha = .69$), athletic internal motivation ($\alpha = .69$), and athletic locus of control ($\alpha = .69$)—were examined to determine the cause of the low reliability. (Social desirability was not examined because its reliability, $\alpha = .65$, was similar to that found in other studies.) Accordingly, factor analyses using principal axis extraction and squared multiple correlations as prior communality estimates were conducted on each variable. These are summarized in Table 19.

First, factoring the academic prove goal scale provided a good one-factor solution. As before (see Table 2), the item "I prefer to participate in sports that allow me to prove my athletic ability to others" had the lowest loading, .46, but dropping it did not improve the reliability: $\alpha = .69$. As a consequence no further analyses were conducted.

For athletic internal motivation, the item "My own feelings generally are not affected much one way or the other by how well I do in sports" had a loading of .24 and a communality of only .06. In contrast the other items had loadings greater than .45 and communalities greater than .20. Dropping this variable from the scale resulted in a coefficient alpha reliability of α = .78.

Factoring the athletic locus of control items did not produce a satisfactory one-factor solution. To explore further, a two-factor oblique solution, using Direct Oblimin rotation, was extracted. This produced two cleanly interpretable factors, labeled hereafter as "luck" (factor 1) and "practice" (factor 2). Because the item "The ability to succeed in athletics is 'in the genes'" loaded highly on neither factor, it was not included in either scale. The coefficient alpha reliability of the luck scale improved to α = .81. The coefficient alpha reliability of the practice scale, however, was still low at α = .67.

The regression analyses from the cross-structure and domain specificity sections were rerun with the new athletic internal motivation, luck, and practice scales. For ease of presentation, the cross-structure analysis and domain specificity regression results are shown together in Table 20. As seen in the table, the pattern of results for the modified internal motivation scale were similar to those based on the original scale, although the magnitude of the effects were stronger for athletic goal orientation, and weaker for academic goal orientation, in the former than in the latter. For the luck scale the effects of athletic learning and prove goals were similar to those based on the full locus of control scale. The effect of avoid goals, though, was significant for the luck scale (β = .26, p < .01) but not for the locus of control scale. The results of the domain-specificity analysis were similar across the two scales. No goal orientation was significantly related to the practice scale.

Examination of Difference Scores

Given the poor and inconsistent performance of prove and avoid goals, it seemed desirable to look at potential interactions among the goal orientations. Unfortunately, the sample size did not provide enough power for such an analysis. As a step in this direction, however, difference scores were calculated as learning minus prove, learning minus avoid, and prove minus avoid. Although not isomorphic with an interaction perspective (e.g., individuals high on two goal orientations would receive the same difference score as individuals low on the two orientations), these difference scores do reflect the extent to which an individual has a dominant goal orientation. VandeWalle and Cummings (1997) conducted a similar analysis. Because of a linear dependency (i.e., knowledge of two of the difference scores could produce the third), regression analyses could not be conducted. Accordingly, bivariate correlations were computed. These appear in Table 21.

The reader should bear in mind, however, that among the many shortcomings of difference scores (see Edwards, 1994) are the assumptions that the variables have similar variances (which they appear to; see Table 4) and that they have effects of the same magnitude but opposite direction. When the latter assumption is not met, the interpretation of the difference score as indicating dominance is confounded with the independent effects of the component variables. Caution, therefore, should be exercised in interpreting these results.

Looking first at the exploratory variables, high learning goals relative to avoid goals (r = .20, $p < .01$), and high prove goals relative to avoid goals (r = .22, $p < .01$), were positively correlated with gender in the athletic domain, but not in the academic domain. This indicates that men, more than women, are likely to be oriented toward athletic learning and prove goals

than toward avoid goals. There were no significant correlations with race, age, academic level, or work experience.

An examination of the correlations with the predictors of goal orientation, shows several interesting results. Ability, in both domains, was positively correlated with having higher learning than avoid goals ($r = .20$, $p < .01$, for academics; $r = .26$, $p < .01$, for athletics), and with having higher prove than avoid goals ($r = .18$, $p < .05$, for academics; $r = .31$, $p < .01$, for athletics). This is in contrast to the analyses reported above, in which both prove and avoid goals were unrelated to ability in the academic domain. Similarly, self-perceived ability, in both domains, was higher among those for whom learning goals dominated avoid goals ($r = .26$, $p < .01$, for academics; $r = .57$, $p < .01$, for athletics), and for whom prove goals dominated avoid goals ($r = .25$, $p < .01$, for academics, $r = .57$, $p < .01$, for athletics). Both ability and self-perceived ability, therefore, are higher for those for whom learning or prove goals dominate avoid goals. In addition, in the athletic domain, self-perceived ability was positively correlated with having a higher learning than prove goal orientation ($r = .20$, $p < .01$). Those with a dominant athletic learning goals, then, were of the highest self-perceived ability. Participation in intramurals was highest for those oriented more strongly toward learning than prove goals ($r = .18$, $p < .05$), for those oriented more strongly toward learning than avoid goals ($r = .31$, $p < .01$), and for those oriented more strongly toward prove than avoid goals ($r = .25$, $p < .01$). In other words, those with a dominant learning goal were the most active in intramurals. Finally, although academic implicit theories were not related to the academic difference scores (all rs $\leq |.10|$), an athletic entity theory was negatively correlated with having higher learning than prove goals ($r = -.21$, $p < .01$), higher learning than avoid goals ($r = -.28$, $p < .01$), and higher prove than avoid goals ($r = -.20$, $p < .01$). Those with dominant learning goals, therefore, are the most

likely to have an incremental implicit theory, whereas those with dominant avoid goals are the least likely to.

The results also help clarify the cross-structure analysis. In both domains, intrinsic motivation, self-efficacy, and an internal locus of control were higher among those whose learning goals dominated prove goals, learning goals dominated avoid goals, and prove goals dominated avoid goals (all $\underline{r}$s ≥ .17, $\underline{p}$ < .05). Fear of negative evaluation, similarly, was lowest among those for whom learning goals dominated prove ($\underline{r}$ = −.28, $\underline{p}$ < .01, in academics, $\underline{r}$ = −.37, $\underline{p}$ < .01, in athletics) or avoid goals ($\underline{r}$ = −.16, $\underline{p}$ < .05, in academics; $\underline{r}$ = −.32, $\underline{p}$ < .01, for athletics). In the academic domain, internal motivation was positively correlated with having learning goals dominate prove goals ($\underline{r}$ = .22, $\underline{p}$ < .01), learning goals dominate avoid goals ($\underline{r}$ = .31, $\underline{p}$ < .01), and prove goals dominate avoid goals ($\underline{r}$ = .19, $\underline{p}$ < .05). In the athletic domain, internal motivation was only correlated with having prove goals dominate avoid goals ($\underline{r}$ = .19, $\underline{p}$ < .05). Although need for achievement was not related to any academic difference score (all $\underline{r}$s ≤ |.06|), it was negatively related to having a dominant athletic avoid goal orientation; that is, those whose learning goals dominated avoid goals ($\underline{r}$ = .58, $\underline{p}$ < .01) or whose prove goals dominated avoid goals ($\underline{r}$ = .63, $\underline{p}$ < .01) reported higher need for achievement. Finally, in both domains, having a higher prove goal orientation relative to an avoid goal orientation was positively correlated with desire to win ($\underline{r}$ = .23, $\underline{p}$ < .01, for academics; $\underline{r}$ = .43, $\underline{p}$ < .01, for athletics). In addition, athletic desire to win was positively related to having learning goals dominate avoid goals ($\underline{r}$ = .21, $\underline{p}$ < .01), and negatively related to having learning goals dominate prove goals ($\underline{r}$ = −.24, $\underline{p}$ < .01).

DISCUSSION

The purpose of this study was to assess the construct validity of a three-factor conceptualization of goal orientation by examining (1) differential patterns of prediction both of and by goal orientation, (2) the extent to which these patterns vary by achievement domain, and (3) the domain specificity of goal orientation. Overall, the results show that learning, prove, and avoid goals can be empirically distinguished through their relations with other variables, although the patterns of these relations differ somewhat in the academic and athletic domains. That goal orientation in one domain generally did not predict variables in the other domain provides evidence of the domain specificity of learning, prove, and avoid goals. Knowing a person's goal orientation in one domain does little to predict their attitudes in another domain. In addition, goal orientation in academics appears to be predicted differently, or at least less well, than goal orientation in athletics. Both the antecedents and correlates of goal orientation, as well as goal orientation itself, appear to be largely domain specific.

These generalizations, however, must be qualified by two caveats. First, prove goals performed rather poorly in the cross-structure analysis. That is, prove goal orientation was generally not a good predictor of other variables. When it did predict, the magnitude tended to be twice as great in the athletic domain than in the academic domain. The difference in magnitude may be partially explained by the poor reliability of the academic prove goal scale. Stated differently, the scale may not have sufficiently tapped the underlying latent prove goal construct. As a consequence, true relationships may have been masked by excessive error. Nevertheless, that the athletic prove goal scale showed adequate reliability but still was a poor predictor suggests that either prove goals truly are not related to these variables or that third variables moderate the relationships. This point will be considered more fully below in the context of interactions between goal orientations.

The second caveat is that the results were clearest, strongest, and most consistent with theory in the athletic domain. Again, part of the reason may be the better reliability of the scales in the athletic domain. One explanation for both these findings—the pattern of results and the scale reliabilities—is that, as measured here, academics may be more "internally" differentiated than athletics. College study, and school in general, involves different subjects, different classes, and different instructors. Academic goal orientation, therefore, may differ from subject to subject, class to class, and instructor to instructor. In athletics there are different activities and different level of formalization (e.g., teams, intramurals, aerobics at the gym). Athletic goal orientation may vary from sport to sport and from context to context. However, because most people in the present sample were not team members, most did not participate in intramurals, and very few did both, for most people athletics was probably fairly unidimensional. In addition, the majority of participants listed as their non-team and non-intramural activities working out at the gym and one or two other sports (e.g., tennis, swimming). The athletic domain, therefore, was probably fairly homogenous. In contrast, because most if not every participant took many different classes, in different subject areas, and with different instructors, the academic domain was probably fairly heterogeneous. Together, then, this line of reasoning suggests that the heterogeneity of the academic domain may have introduced error into the analyses. As a consequence, the results were not as strong or as clear as in the athletic domain.

With these caveats in mind, the specific results will now be considered more fully. The prediction of goal orientation will be considered first, followed by the cross-structure analysis, and then the examination of domain specificity. For simplicity, each independent variable (for predicting goal orientation) and each dependent variable (for the cross-structure analysis) will be

considered separately. The specific results will then be discussed in terms of the implications they hold for current goal orientation research and theory.

Main Findings

Predicting Goal Orientation

Overall, academic goal orientation is not predicted well by self-perceived ability, self-reported SAT scores, or implicit theories. In fact, these variables account for only 3% of the variance in prove goals, 3% of the variance in avoid goals, and 10% of the variance in learning goals. Self-perceived ability, team membership, participation in intramurals, and implicit theories are relatively more effective in predicting athletic goal orientation. These athletic variables account for the most variance in learning goals (39%), and somewhat less in prove (20%) and avoid goals (20%). Each of the predictors will now be considered in turn.

Self-perceived ability predicts academic and athletic goal orientation better than either ability or, surprisingly, implicit theories. Self-perceived ability, though, was not expected to predict learning goals. That it did—strongly and positively—suggests either a peculiarity of this sample of undergraduates or a shortcoming of existing goal orientation theory. Arguing against the peculiarity explanation, Miller et al. (1993) found a positive, though not significant, correlation in a sample of undergraduates, and Duda and Nicholls (1992) found positive correlations in a sample of high-school students for both academics and athletics. Perhaps self-perceived ability and learning goals are only unrelated for novel tasks. In such situations, those with incremental implicit theories may adopt learning goals to see how much their competence could improve. After a while, though, if competence does not improve, learning goals may be abandoned. In academics and athletics, therefore, those who consistently perform less well than

others and develop a sense of low self-perceived ability may be less oriented toward learning goals.

In contrast, as predicted, prove goals and self-perceived ability appear to be positively related, although more strongly so in athletics than in academics. Although no other study has yet examined self-perceived ability and prove goals, the relations found here support the notion that wanting to display high competence presupposes high self-perceived ability. Likewise, and also as predicted, avoid goals appear to be negatively related to self-perceived ability, at least in athletics. That is, those who perceive themselves to be of low ability are likely to avoid situations and tasks that may draw attention to their competence. Note that unlike learning goals, both prove and avoid goals should have these effects regardless of the novelty of the task. The reason is that consistent failure (e.g., in academics) and low self-perceived ability (e.g., on a novel task) both lead to avoid goals, whereas consistent success and high self-perceived ability both lead to prove goals.

As with self-perceived ability, actual ability appears to be positively related to learning goals. As the supplemental analysis of mediation showed, however, self-perceived ability fully mediates this effect in the academic domain, and partially mediates it in the athletic domain. The difference may lie in using team membership as a proxy for ability. Team membership may contribute to goal orientation above and beyond the athletic ability it implies. The role of ability per se may be its contribution to self-perceptions of ability. In other words, ability only has an effect to the extent it influences self-perceived ability. Nevertheless, finding any significant relation between learning goals and ability departs somewhat from previous research. Although previous studies have not found correlations between learning goals and ability, two of these studies (Button et al., 1996; Phillips & Gully, 1997) used a measure of goal orientation (viz., the

scales of Button et al.) more general than the scales used here. Two other studies (Fisher & Ford, 1998; Hofmann & Strickland, 1995) have found no relation between learning goals and ability, but both of these involved novel tasks. The existing evidence, therefore, suggests that learning goals and ability are not related when the task or domain is novel, or when general measures of goal orientation are used. When ability does influence learning goals, however, it appears to do so through self-perceived ability.

The role of ability in predicting prove goals is less clear. In the academic domain, the two were unrelated; but in the athletic domain they were positively related, though partially mediated by self-perceived ability. Again, the partial mediation in the athletic domain may be due to the effects of team membership apart from ability itself. This says nothing, however, about the null relation between ability and prove goals in the academic domain. Note that factors other than actual ability contribute to perceptions of ability, and that self-perceived ability did not significantly predict prove goals ($p < .10$) in the present study. Whatever influence ability has on perceptions of competence may not translate into the prediction of prove goals. If this holds in both academics and athletics, then the positive effect of team membership on athletic prove goals may result from the influence of team membership per se, rather than from athletic ability.

Surprisingly, ability did not predict avoid goals in either academics or athletics. The weak relations between ability and academic learning and prove goals hints that a similar process may operate for academic avoid goals. Given the positive relations between team membership and athletic learning and prove goals, however, the lack of a relationship between team membership and avoid goals is perplexing. In line with the argument that team membership, rather than ability qua ability, influences athletic learning and prove goals, team membership and

avoid goals may simply be unrelated. Team members are no more likely than non-members to be oriented toward avoid goals. The spirit of competition and skill-development inherent in formal athletics neither represses nor promotes the adoption of an avoid goal orientation. On the other hand, as might be expected, those who participate in informal athletics (i.e., intramurals) are less likely to adopt avoid goals. Such voluntary, "for fun" activity is the antithesis of avoid goals.

The most surprising result to emerge from these analyses is the inability of implicit theories to predict goal orientation above and beyond the ability variables. Only for athletic learning and avoid goals were implicit theories a significant predictor, although, in both cases, they accounted for only 2% of the variance—hardly a large effect. Because few participants scored high on the entity end of the scale, however, there may not have been enough variance to produce a strong effect. Regardless, consistent with theory, learning goals appear to be positively related to incremental theories, although more strongly so in athletics than in academics. Avoid goals, likewise, appear to be related to entity theories, but only in the athletic domain. The lack of a relation between implicit theories and prove goals is in contrast to studies (Leggett, 1985; VandeWalle, 1997) that have shown prove goals to be positively related to incremental theories.

The results of the difference score analysis shed some light on the inconsistent and unpredicted findings discussed so far. First, although prove and avoid goals are unrelated to SAT scores, they are positively related for those having learning goals that dominate avoid goals, and for those having prove goals that dominate avoid goals. The same pattern was observed in the athletic domain using team membership as a proxy for ability. In other words, those oriented primarily toward learning or prove goals, as opposed to avoid goals, have higher

ability than those with less differentiated orientations. Second, although participation in intramurals is related to neither learning nor prove goals, participation is higher for those whose learning goals dominate their prove goals, whose learning goals dominate their avoid goals, and whose prove goals dominate their avoid goals. That is, those with dominant learning goal orientations are the most likely to participate in intramurals, whereas those with dominant avoid goals are the least likely to. Finally, although athletic prove goals are not related to implicit theories, those whose prove goals dominate their avoid goals are likely to have an incremental implicit theory. Having a strong prove goal, relative to an avoid goal, therefore, is positively related to incremental theories of ability.

Cross-Structure Analysis

Although previous studies have tended to find academic performance to be positively related to learning goals and unrelated to performance goals (e.g., Button et al., 1996), the present results suggest that learning, prove, and avoid goals may each contribute to academic performance, although not necessarily in a linear fashion. That each goal orientation was lowest for those with a GPA of 3.0 or less indicates that each goal orientation can be adaptive—that is, learning, prove and avoid goals are each associated with higher GPAs. However, prove goals appear to have diminishing returns, in that B and A students exhibited similarly strong prove goals, and avoid goals appear to be beneficial only to a certain point (viz., a GPA of 3.1-3.5), after which they may hamper academic achievement.

Consistent with previous research (e.g., Harackiewicz & Elliot, 1993), the present results show that intrinsic motivation is positively related to learning goals and negatively related to avoid goals. Those with learning goals, but not those with avoid goals, find academics and athletics both interesting and enjoyable. The results are less clear, however, for prove goals.

Prove goals and intrinsic motivation appear to be positively related in the athletic domain, mirroring results of previous research (Harackiewicz & Elliot, 1993), but unrelated in the academic domain. Note that if a performance goal orientation collapses over prove and avoid goal orientations, then athletic intrinsic motivation and performance goals would not have been related. Thus, differentiating prove and avoid goals clarifies the relation between intrinsic motivation and performance goals.

An attempt was made in the present study to differentiate intrinsic motivation from internal motivation, and the results indicate some success in doing so. As hypothesized, avoid goals and internal motivation appear to be positively related, but only in the athletic domain. As with intrinsic motivation, prove goals and internal motivation were unrelated. Finally, although not expected, learning goals and internal motivation appear to be positively related. Internal motivation, for those with learning goals, may reflect the importance placed on moving toward mastery. To the extent that successful performance signifies mastery, those with learning goals should feel upset when they fail, and satisfied when they succeed. In addition, the scale used to measure internal motivation in the present study may not have sufficiently tapped the reason for engaging in behavior. Feeling bad when one fails and satisfied when one succeeds is not the same as engaging in a task <u>because of</u> those feelings. The internal motivation scale used in the present study, therefore, may not have adequately reflected what it was intended to.

The present results accord with previous findings (e.g., Phillips & Gully, 1997) of a positive relation between learning goals and self-efficacy. The results for prove and avoid goals, however, were somewhat ambiguous. Although it was predicted that the high self-perceived ability of those with prove goals would impart a sense of agency, in neither domain were prove goals significantly related to self-efficacy. Because prove goals and self-perceived ability were

positively related, the explanation for the null results is not readily apparent. The low self-perceived ability of those with avoid goals, similarly, was expected not to impart a sense of agency; thus, avoid goals and self-efficacy were expected to be negatively related. This line of reasoning appears to hold for the athletic domain, but not for the academic domain, in which avoid goals were, as expected, negatively related to self-perceived ability, but unrelated to self-efficacy.

Because locus of control has not previously been studied in relation to prove and avoid goals, the present results cannot be readily compared. As in previous studies (e.g., Phillips & Gully, 1997), however, learning goals appear to be positively related to an internal locus of control. Avoid goals, on the other hand, appear to be related to an external locus of control, but more strongly so in the academic domain. This may be due to less variance in athletic locus of control ($\underline{M}$ = 1.67, $\underline{SD}$ = .61) than in academic locus of control ($\underline{M}$ = 2.07, $\underline{SD}$ = .75). In support of this argument, using only the luck items ($\underline{M}$ = 1.72, $\underline{SD}$ = .97), avoid goals were significantly and positively related to an external locus of control. In both domains, however, and with both athletic measures, prove goals and locus of control were unrelated.

As predicted, need for achievement appears to be positively related to both learning goals and prove goals in both domains. Need for achievement and avoid goals appear to be negatively related in the athletic domain, but positively related in the academic domain. Although puzzling, this result may reflect the degree to which those with a high need for achievement avoid classes in which they may fail. In athletics, on the other hand, people may, by college age, participate only in those sports in which they are unlikely to fail.. Note that in the athletic domain, avoid goals and prove goals would have offset each other, resulting in no relationship with need for

achievement, if an omnibus measure of performance goals were used (e.g., Phillips & Gully, 1997).

Based on the present findings and those of VandeWalle (1997), desire to win appears to be positively related to prove goals, and unrelated to avoid goals. The same pattern holds in both the academic and athletic domains. Because those with learning goals are thought to use internal standards, however, it was not expected that they would be related to the desire to win. That they were, in both domains and in both the present sample and VandeWalle's, suggests that those with learning goals may use the performance of others as a guide to their own, as a yardstick by which to adjust their own internal standards. Because setting an internal standard requires some external referent, beating others implies that one's internal standards are adequate; losing, in contrast, implies that one's internal standards are too low, and may need to be raised. In other words, winning, but not losing, implies mastery.

An emerging, consistent finding is that avoid goals are positively related to anxiety, whether operationalized as psychosomatic symptoms (Skaalvik, 1997), worrisome thoughts (Middleton & Midgley, 1997), or, as in the presents study, fear of negative evaluation (VandeWalle, 1997). Prove goals, as well, appear to be positively related to anxiety, although Skaalvik found a negative relation in one sample and no relation in another. Perhaps the relation between prove goals and anxiety is less strong when measures of psychosomatic symptoms are used. The least consistent results have been for learning goals. In both the present study and Middleton and Midgley's, learning goals and anxiety were not related, whereas they were negatively related in Skaalvik's and VandeWalle's studies. Given the methodological differences between studies, the reason for the inconsistent findings is not clear.

Again, the difference scores help clarify some of these results. First, although academic prove goals and intrinsic motivation are unrelated, having a prove goal that dominates an avoid goal is positively related to intrinsic motivation. In other words, having a high prove goal relative to an avoid goal is beneficial to intrinsic motivation. This matches the pattern found in the athletic domain. Second, although academic prove goals are unrelated to internal motivation, those whose prove goals dominate their avoid goals (in both domains) are likely to be internally motivated. This implies, however, that those whose avoid goals dominate their prove goals are unlikely to be internally motivated. It may be that in the absence of either learning or prove goals, those with avoid goals are simply unmotivated (i.e., those with dominant avoid goals may not engage in an activity). Third, although neither academic prove nor avoid goals were related to self-efficacy, having prove goals that dominate avoid goals (in both domains) is positively related to self-efficacy. This implies, in accord with the results of the cross-structure analysis in the athletic domains, that those with dominant avoid goals have lower self-efficacy. Fourth, although in neither domain were locus of control and prove goals related, having higher prove than avoid goals is related to an internal locus of control. As found in the cross structure analysis, those with dominant avoid goals are likely to have an external locus of control. Finally, although learning goals and fear of negative evaluation are related in neither domain, a dominant learning goal (relative to prove or avoid goals) is negatively related to fear of negative evaluation.

The results of the difference score analysis, therefore, suggest that some of the null results observed in the cross-structure analysis may be due to the main-effects model regression analyses. Looking at effects of one goal orientation, controlling for the effects of the others, masks the interplay between goal orientations. In other words, the results suggest that it may not

be enough to simply ask whether a person has one goal orientation or another; rather, the complete picture requires consideration of goal orientations operating in tandem. This may be particularly useful for understanding the roles of prove and avoid goals.

Domain Specificity

Goal orientation appears to be domain specific. In the current study, evidence comes from three main findings. First, academic goal orientation was only moderately correlated with athletic goal orientation, one accounting for at most only 12% of the variance in the other. Second, the pattern of results obtained in the cross-structure analysis did not change substantially after adding opposite-domain goal orientation. Third, individual orientations did not predict well across domains, and added at most only 7% to the variance explained in opposite-domain dependent variables. Each of these points will be examined in turn.

Goal orientations in different domains appear to be moderately and positively correlated. The correlations observed here are lower than those reported by Duda and Nicholls (1992; between sports and academics among a sample of high-school students) and Anderman and Midgley (1997; between English and math among a sample of fifth graders). In both of these studies, the correlations were near .70. The higher correlations in these studies may reflect the degree to which the orientations are dispositional. Goal orientation may become less dispositional with age as individuals find their own strengths, weakness, and interests. In other words, the domain specificity of goal orientation may vary by age.

If goal orientation is not domain specific, then goal orientation measured in one domain should overlap with goal orientation measured in another domain. As a consequence, the unique effects of goal orientation in one domain would decrease after controlling for the effects of goal orientation in the other. That the pattern of results obtained in the cross-structure analysis did

not change substantially after adding the opposite-domain goal orientation provides evidence for the domain specificity of goal orientation. In addition, regardless of the $\underline{R}^2$ obtained using opposite-domain goal orientation as the sole predictors, adding same-domain goal orientation always resulted in a significant change in $\underline{R}^2$. Academic and athletic goal orientation, therefore, do not appear to overlap.

In a similar vain, if goal orientation is not domain specific, then goal orientation measured in one domain should predict dependent variables measured in another. Again, that this did not happen suggests that goal orientation is domain specific. As a qualification, however, some goal orientations do appear to predict certain dependent variables across domains. Athletic prove goals predict academic internal motivation and desire to win, even after controlling for academic prove goals. Athletic avoid goals, likewise, predict academic fear of negative evaluations, and academic avoid goals predict athletic internal motivation, even after controlling for academic and athletic avoid goals, respectively. In addition, although the signs of the effects are opposite those expected, athletic learning goals predict academic intrinsic motivation, athletic prove goals predict need for achievement, and academic avoid goals predict athletic intrinsic motivation. Finding effects opposite of those expected adds further wait to the argument that goal orientation is domain specific: if goal orientation is not domain specific, then all the effects would be of the same direction. Taken together, these results suggest that although goal orientation is domain specific, goal orientation in one domain need not be independent of variables in another.

Implications

Implications for Goal Orientation Research

This study provides additional evidence than learning, prove, and avoid goals are distinct factors of goal orientation. They differentially predicted, and were differentially predicted by, other variables. The results make clear, however, that a learning goal orientation is the strongest component of the model. Not only were the results most consistent for learning goals, but learning goals were more strongly related to other variables than were prove or avoid goals. This was true when goal orientation served as the criteria and in the cross-structure analysis.

Although prove and avoid goals were less consistent and rather weakly related to other variables in the cross-structure analyses, considering dominant goal orientation revealed strong consistency between domains and generally strong relations with the criterion variables. This suggests that the main effects of prove and avoid goals may be limited. In particular, prove goals appear to represent an "undifferentiated" motivation style, in that prove goals were generally not related to variables other than need for achievement, desire to win, and fear of negative evaluation. Avoid goals, on the other hand, behaved erratically: very seldom were avoid goals related to other variables in the same direction or with the same magnitude in academics as they were in athletics. Again, however, the results were much more consistent when difference scores were analyzed.

The consistency of the results when dominant goal orientation was considered underscores the importance of the interplay between orientations. Although the present results do not address the effects of high-high or low-low combinations, they do illustrate the impact of high-low combinations. If, as theory suggests, individuals can be orientated toward different goals at the same time, then the question is not whether one goal orientation is in some sense better than another, but how competing drives ultimately shape behavior and attitudes. Having an avoid goal, for example, may only be detrimental to intrinsic motivation when it dominates a

learning goal. For this reason, future research must consider interactions among goal orientations.

To this author's knowledge, only one study has examined interaction effects, and these were between learning and performance goals, rather than learning, prove, and avoid goals. Hofmann and Strickland (1995) found that performance on a simulated water-jar task, controlling for ability, was highest for those with either high learning goals and low performance goals, or high performance goals and low learning goals. In addition, task satisfaction decreased for those with high performance goals and low learning goals, but not for those with both high performance and high learning goals. Given the differential effects of prove and avoid goals observed in the present study, it is interesting to speculate on the potential form of the interaction if all three orientations had been examined. Very likely the magnitude of the interactions would have been greater, to the extent that prove and avoid goals have different effects on performance and satisfaction. Dominant avoid goals, for example, may be particular detrimental to both performance and satisfaction, whereas dominant prove goals may enhance both performance and satisfaction. That performance goals are not entirely unidimensional does not mean prove and avoid goals can be considered in isolation from each other.

Looking at such interactions between learning, prove, and avoid goals, therefore, can do nothing but further understanding of both goal orientation in general, and performance goals in particular. Unfortunately, the lack of research on the three factors of goal orientation, the absence (with the partial exception of the present study) of research on their interactions, and the generally poor state of goal orientation theory make it difficult to hypothesize how learning, prove, and avoid goals might interact.

Implications for Goal Orientation Theory

The results of the present study illustrate several short-comings of existing goal orientation theory. Most obvious, perhaps, is the need for better predictors of goal orientation. Although Dweck and Leggett (1988) mention that implicit theories are consistent predictors of goal orientation, most of the research her claim is based on has involved novel tasks. Because so few studies have examined the effect of implicit theories on goal orientation for non-novel tasks, the veracity of the claim cannot be easily checked. The existing evidence, though, suggests that implicit theories are not that influential on more general goal orientations. King and Williams (1997), for example, found implicit theories to explain 12% of the variance in learning goals and 6% of the variance in performance goals. Rhodewalt (1994), similarly, found implicit theories to explain 11% of the variance in learning goals and 7% of the variance in performance goals. In the only study to examine implicit theories and three factors of goals orientation (VandeWalle, 1997), implicit theories explained 2% of the variance in learning goals, 3% of the variance in prove goals, and 8% of the variance in avoid goals. Although Button et al. (1996), using their "dispositional" scales, found implicit theories to explain between 20 and 25% of the variance in learning goals, implicit theories explained only about 3% of the variance in performance goals. In the present study, controlling for ability variables, implicit theories accounted for 1% of the variance in academic learning goals and less than 1% in academic prove and avoid goals. In the athletic domain, implicit theories accounted for 2% of the variance in learning and avoid goals and less than 1% of the variance in prove goals. Obviously, with the exception of learning goals in the Button et al. study, implicit theories are not strong predictors of goal orientation.

It should be noted that the strength of the relation between implicit theories and goal orientation appears not to depend on the focus of the implicit theories. That is, "level of analysis" appears not to be an issue (Ajzen & Fishbein, 1977). More specifically, the focus of

implicit theories in both the present study and King and Williams (1997) was domain-specific, whereas that of Button et al. (1996), Rhodewalt (1994), and VandeWalle (1997) was more general. Goal orientation, then, is not strongly predicted by either general or more domain-focussed implicit theories.

If implicit theories do not predict goal orientation, then what does? The results of the present study suggest that self-perceived ability should be reconsidered as a more central component of goal orientation, rather than simply as a moderator of performance goals. Although self-perceived ability may not explain much variance in academic goal orientation (at most 5% in present study), it appears to explain much more in athletic goal orientation (up to 20% in the present study). High self-perceived ability appears to promote the adoption of both learning and prove goals, and to repress the adoption of avoid goals. In addition, several studies (see Ames, 1992) have shown how the learning environment can influence the goals one adopts. Emphasizing normative comparisons (such as competition) elicits prove and avoid goals, whereas emphasizing self-referenced standards (such as self-improvement) elicits learning goals. Viewing self-perceived ability and task/domain characteristics as antecedents suggests that goal orientation may be more situation-specific than dispositional.

Treating goal orientation as situation-specific, however, is too simplistic. Dispositional and situational factors undoubtedly interact to determine what goal orientation a person will adopt. Confounding this issue, however, is the degree to which dispositional characteristics cause or are caused by goal orientation. For example, do those with high self-efficacy adopt learning goals, or do those with learning goals develop high self-efficacy? That the relation in probably reciprocal does not help clarify the issue. Regardless, that dispositional and situational

factors interact suggests that a pattern approach to the study of goal orientation may be more instructive than traditional variable-centered approaches.

Depending on the interactive strength of dispositional variables, situational cues will be more or less important in determining goal orientation. Dispositions may be less important once an individual has experience with a task (e.g., academics). Even on familiar tasks, though, situational cues may become more salient. Athletes, for example, may be more strongly oriented toward prove goals in competition, or when trying out for a team. In such situations proving or demonstrating one's ability is more goal-relevant (e.g., winning, making the team) than is learning a new skill. On novel tasks, the antecedents of goal orientation may depend on the characterization of the task. Telling someone a puzzle is indicative of their intelligence will tend to elicit performance goals, whereas telling someone a puzzle is "for fun" will likely elicit learning goals. In contrast, the goals adopted for tasks characterized as neutral (e.g., "play with this puzzle for a while") will depend on one's disposition. To fully understand the antecedents of goal orientation, and the degree to which it is task-specific or dispositional, therefore, clearly requires additional research on the interaction between personality and situational variables.

Another, perhaps more enigmatic, implication of the present results is that the learning goal orientation is in some sense a better construct than performance, prove, or avoid goals. As in the present study, results for learning goals have, in previous studies, been the strongest and most consistent. In contrast, results for performance goals have been inconsistent and generally weaker than for learning goals. It was hoped that examining prove and avoid goals would clarify the inconsistent results previously obtained using performance goals, but instead more questions have been raised. Relative to learning goals, why are prove and avoid goals so poorly predicted;

and why are prove goals so weakly related to, and avoid goals so inconsistently related to, other constructs?

The answer to these questions may be the degree to which those with prove and avoid goals are complete systems within themselves; that is, the degree to which the adoption of learning, prove, and avoid goals depends on factors exogenous to the individual. Whereas learning goals depend on the characteristics of the self, prove and avoid goals depend more on the characteristics of other people and what tasks say about other people. To the extent that antecedents and correlates are tied to the self, learning goals should be better predicted and should have stronger relations with other variables. In other words, to understand learning goals, look at the self; to understand avoid and prove goals, look at other people and the task. In the present study, for example, the variables most strongly related to prove and avoid goals were those with implications for other people: need for achievement, desire to win, and fear of negative evaluation. This argument is somewhat paradoxical in that those with learning goals are generally task-focussed, whereas those with prove and avoid goals are generally self-focussed. The resolution lies in why individuals are task- or self-focussed. Those with learning goals are task-focussed by virtue of their concern with the self. Those with prove and avoid goals are also concerned with the self, but vis-à-vis how the self relates to others. To truly understand learning goals, therefore, requires knowledge of the person. To truly understand those with prove and avoid goals, on the other hand, requires knowledge of the complete system in which the person acts.

Is Goal Orientation a Unitary Construct?

There comes a point, however, when the effects of a variable depend so strongly on the presence of others that the variable itself becomes useless. For goal orientation to be considered

a useful variable, it must have consistent and predictable effects in the absence of myriad moderating variables. The results of the present study clearly demonstrate that goal orientation—especially prove and avoid goals—is not predictably related to other variables and that the relations are not consistent, even within the broad achievement domain. The effects of prove and avoid goals in particular may be so situation specific as to relegate goal orientation to a contextual phenomenon. If such is the case, then goal orientation is really an inane construct.

Of course, if goal orientation is found to strongly predict important outcome variables then it can be useful, even if only within a narrow domain. The results of past research, however, suggest that other variables have stronger effects than goal orientation. Self-efficacy, for example, appears to play a much larger role than goal orientation in predicting performance outcomes in a variety of domains (Ford et al., 1998; Phillips & Gully, 1997; Robeson et al., 1998; Stevens & Gist, 1997; Sujan et al., 1994). Looking at self-efficacy—a well established construct—rather than goal orientation may save researchers and practitioners both time and effort.

So what is goal orientation? The most likely answer is that goal orientation is a second-order factor of other variables, such as those examined here in the cross-structure analysis. From this perspective, goal orientation represents a general pattern of attitudes, needs, and goals. Learning, prove, and avoid goals, however, need not be higher-order factors of the same set of variables. Prove goals, for example, appear to represent a higher-order factor of need for achievement, desire to win, and fear of negative evaluation. The comparatively strong performance of learning goals in the cross-structure analysis may simply reflect a motivational style clearly defined by the variables studied. Avoid goals, on the other hand, are less clearly

defined: the only commonality across the two domains is low intrinsic motivation and high fear of negative evaluation.

To illustrate the conceptualization of goal orientation as a higher-order factor, the cross-structure analysis variables were used to predict goal orientation. In the academic domain, these variables explained 53% of the variance in learning goals, 23% of the variables in prove goals, and 26% of the variance in avoid goals. In the athletic domain, they explained 68% of the variance in learning goals, 58% of the variance in prove goals, and 48% of the variance in avoid goals. (In neither domain did adding the theoretical antecedents lead to a significant change in $\underline{R}^2$.) Goal orientation, therefore, may be dependent on other variables. To the extent that these other variables vary from situation to situation, goal orientation is bound to the context. This is perhaps most evident in the large difference in the variance explained in prove and avoid goals in academics as compared to athletics. In other words, considering goal orientation a higher-order factor does not relieve it of situational influence. The situation may moderate the degree to which self-efficacy, locus of control, and other variables contribute to the higher-order factor of goal orientation. Again, however, the greater the influence of situational characteristics, the less useful is the concept of goal orientation, at whatever level of abstraction it may fall.

Limitations

A number of limitations, however, temper these conclusions and limit the generalizability of this study. First, academic prove goals and athletic internal motivation were hampered by poor reliability, and the dimensionality of athletic locus of control was suspect. Second, the relatively small sample size limits the confidence to be placed in these results, and increases the standard error of statistical tests, reducing power, and making it difficult to examine interactions. Third, common method bias may have resulted from having the participants complete all

questionnaire items in a single sitting. That the scales—especially goal orientation—were not correlated highly across domains, however, suggests that this was not a problem. Fourth, assessing the variables at only one point in time precludes the identification of longitudinal effects. Does the pattern of relationships change from freshman to senior? Does the pattern change for one domain but not the other? Fifth, the nature of the study made it difficult to determine what aspects of the situation may have influenced the present findings. Despite these limitations, several conclusions seem warranted.

Conclusions

Most generally, goal orientation is not a good construct. The variables that theoretically should predict it do not, and the relations between goal orientation and other variables are neither predictable nor consistent. Although, potentially, goal orientation could be fruitfully applied to narrow domains, doing so would require a goal orientation theory for every situation. A more parsimonious, and likely much more useful approach, is to consider goal orientation a higher-order factor of other variables. To the extent that the variables contributing to goal orientation vary by situation, however, a higher-order goal orientation is just as intractable as a first-order goal orientation. Researchers are therefore advised to focus their attention on traditional and well established variables, such as self-efficacy. If researchers do continue to explore goal orientation, then they should look for interactions among learning, prove, and avoid goals, and among the antecedents of goal orientation. It should be born in mind, however, that looking for interactions among higher-order factors invariably confounds the interactions among the first-order factors. Given that it predicts outcomes no better than its components, there is little reason for continued study of goal orientation.

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Appendix

Scales Included in the Questionnaire

Social Desirability

0	1	2	3	4	5
Completely untrue of me	Somewhat untrue of me	Slightly untrue of me	Slightly true of me	Somewhat true of me	Completely true of me

1. I sometimes feel resentful when I don't get my way.

2. On a few occasions, I have given up doing something because I thought too little of my ability.

3. There have been times when I felt like rebelling against people in authority even though I knew they were right.

4. No matter who I'm talking to, I'm always a good listener.

5. I can remember "playing sick" to get out of something.

6. There have been occasions when I took advantage of someone.

7. I'm always willing to admit it when I make a mistake.

8. I sometimes try to get even, rather than forgive and forget.

9. I am always courteous, even to people who are disagreeable.

10. I have never been irked when people expressed ideas very different from my own.

11. There have been times when I was quite jealous of the good fortune of others.

12. I am sometimes irritated by people who ask favors of me.

13. I have never deliberately said something that hurts someone's feelings.

Self-Perceived Ability

Athletic	Academic
1. How would you rate your athletic ability, compared to the average person? (0) My athletic ability is much worse. (1) My athletic ability is worse. (2) My athletic ability is about the same. (3) My athletic ability is better. (4) My athletic ability is much better.	1. How would you rate your academic ability, compared to the average student? (0) My academic ability is much worse. (1) My academic ability is worse. (2) My academic ability is about the same. (3) My academic ability is better. (4) My academic ability is much better.
2. Your athletic ability is: (0) Much less than average. (1) Less than average. (2) About average. (3) Above average. (4) Much above average.	2. Your academic ability is: (0) Much below average. (1) Below average. (2) About average. (3) Above average. (4) Much above average.
3. The average person is: (0) Much more athletically gifted than you. (1) More athletically gifted than you. (2) About as athletically gifted as you. (3) Less athletically gifted than you. (4) Much less athletically gifted than you.	3. The average student is: (0) Much more academically gifted than you. (1) More academically gifted than you. (2) About as academically gifted as you. (3) Less academically gifted than you. (4) Much less academically gifted than you.

Implicit Theories of Ability

0	1	2	3	4	5
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

Athletic

1. You have a certain amount of athletic ability and really can't do much to change it.
2. Your athletic ability is something about you that you can't change very much.
3. You can practice, but you can't really change your basic athletic ability.

Academic

1. You have a certain amount of academic ability and really can't do much to change it.
2. Your academic ability is something about you that you can't change very much.
3. You can learn new things, but you can't really change your basic academic ability.

Intrinsic Motivation

0	1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Athletic

1. I find participating in sports personally satisfying.
2. I find participating in sports enjoyable.
3. I find participating in sports interesting.
4. Participating in sports does not hold my interest.

Academic

1. I find school personally satisfying.
2. I find school enjoyable.
3. I find school interesting.
4. School does not hold my interest.

Internal Motivation

0	1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Athletic

1. I feel bad and unhappy when I discover that I have performed poorly in sports.
2. My own feelings generally are <u>not</u> affected much one way or the other by how well I do in sports.
3. Most people feel a great sense of personal satisfaction when they do well in sports.
4. I feel a great sense of personal satisfaction when I perform well in sports.
5. Most people feel bad or unhappy when they find they have performed poorly in sports.
6. My opinion of myself goes up when I do well in sports.

Academic

1. I feel bad and unhappy when I discover that I have performed poorly in school.
2. My own feelings generally are <u>not</u> affected much one way or the other by how well I do in school.
3. Most people feel a great sense of personal satisfaction when they do well in school.
4. I feel a great sense of personal satisfaction when I do my school work well.
5. Most people feel bad or unhappy when they find they have performed poorly in school.
6. My opinion of myself goes up when I do well in school.

Self-Efficacy

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Athletic

1. I am confident in my ability to perform well in sports.
2. I am confident in my ability to learn new athletic skills.
3. I am confident in my ability to meet the challenges sports have to offer.
4. I am confident in my ability to excel in sports.
5. I am confident in my ability to maintain my focus when participating in sports.
6. I am confident in my ability to learn a sport well enough to coach others.
7. I am confident in my ability to perform well in competition.
8. I am confident in my ability to apply the suggestions of others and what I learn in practice to sports.
9. I am confident in my ability to learn the truly important points made in practice or by others.
10. I am confident in my ability to understand how practice can improve my athletic performance.

Academic

1. I am confident in my ability to perform well in school.
2. I am confident in my ability to perform well on tests.
3. I am confident in my ability to perform well on homework assignments.
4. I am confident in my ability to meet the challenges school has to offer.
5. I am confident in my ability to learn most of the material covered in my classes.
6. I am confident in my ability to memorize the facts needed for my classes.
7. I am confident in my ability to take notes effectively.
8. I am confident in my ability to discriminate between the more important and the less important material covered in my classes.
9. I am confident in my ability to learn the material covered in my classes well enough to be able to explain it to someone else.
10. I am confident in my ability to concentrate on the material presented during lectures.

Locus of Control

0	1	2	3	4	5
Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree

Athletic

1. Without the right breaks, one cannot succeed in sports.
2. There is a direct connection between how hard I practice and how well I do in sports.
3. In sports, athletes can pretty much accomplish whatever they set out to accomplish.
4. Performing well in sports is primarily a matter of luck.
5. Most athletes are able excel if they make the effort.
6. It takes a lot of luck to be an outstanding athlete.
7. Athletic performance is often influenced by accidental happenings.
8. The ability to succeed in athletics is "in the genes."
9. Athletic success is primarily due to practice.

Academic

1. Sometimes I can't understand how teachers arrive at the grades they give.
2. There is a direct connection between how hard I study and the grades I get.
3. In school, students can pretty much accomplish whatever they set out to accomplish.
4. Getting good grades is primarily a matter of luck.
5. Most students are able to get good grades if they make the effort.
6. It takes a lot of luck to be an outstanding student.
7. Grades are often influenced by accidental happenings.
8. In the case of the well prepared student, there is rarely if ever such a thing as an unfair test.
9. Many times exam questions tend to be so unrelated to course work that studying is really useless.

Need for Achievement

0	1	2	3	4
Not at all characteristic of me	Slightly characteristic of me	Moderately characteristic of me	Very characteristic of me	Extremely characteristic of me

Athletic

1. I take moderate risks and stick my neck out to get ahead in sports.
2. I enjoy working hard in sports as much as I do relaxing.
3. I perform best in sports when I have a difficult goal to reach.
4. I set difficult goals for myself in sports, and then I attempt to meet them.
5. I try to perform better than other people I participate in sports with.
6. I feel the spirit of competition in most of my athletic activities.
7. I try very hard to improve on my previous athletic performance.

Academic

1. I take moderate risks and stick my neck out to get ahead on my school assignments.
2. I enjoy working hard on my school work as much as I do relaxing.
3. I do my best work when my assignments are fairly difficult.
4. I set difficult goals for myself in school, and then I attempt to meet them.
5. I try to perform better than other students in my classes.
6. I feel the spirit of competition in most of my academic activities.
7. I try very hard to improve on my previous academic performance.

Desire to Win

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Athletic

1. I enjoy being in situations in sports that involve competition with others.
2. It is important to me to perform better than others in sports.
3. I feel that winning is important in both sports and academics.
4. It annoys me when other people perform better in sports than I do.
5. I try harder in sports when I'm in competition with other people.

Academic

1. I enjoy being in situations in school that involve competition with others.
2. It is important to me to perform better than others in school.
3. I feel that winning is important in both academics and games.
4. It annoys me when other people perform better in school than I do.
5. I try harder in school when I'm in competition with other people.

Fear of Negative Evaluation

0	1	2	3	4
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Athletic

1. I worry about what other people will think of my athletic ability even when I know it doesn't make a difference.
2. I am unconcerned if I know people are forming an unfavorable impression of my athletic abilities.
3. I am frequently afraid of other people noticing my athletic shortcomings.
4. I rarely worry about what kind of impression I make in sports.
5. I am afraid that others will not approve of my athletic performance.
6. I am afraid that people will find fault with my athletic performance.
7. Other people's opinions of my athletic ability do not bother me.
8. When I am participating in a sport, I worry about what other people may be thinking about me.
9. I am usually worried about what kind of impression I make in sports.
10. If I know someone is judging me in sports, it has little effect on me.
11. Sometimes I think I am too concerned with what other people think of my athletic ability.
12. I often worry that I will do the wrong things in sports.

Academic

1. I worry about what other people will think of my academic ability even when I know it doesn't make a difference.
2. I am unconcerned if I know people are forming an unfavorable impression of my academic abilities.
3. I am frequently afraid of other people noticing my academic shortcomings.
4. I rarely worry about what kind of impression I make in class.
5. I am afraid that others will not approve of my academic work.
6. I am afraid that people will find fault with my academic work.
7. Other people's opinions of my academic ability do not bother me.
8. When I am talking in class, I worry about what other people may be thinking about me.
9. I am usually worried about what kind of impression I make in class.
10. If I know someone is judging me in class, it has little effect on me.
11. Sometimes I think I am too concerned with what other people think of my academic ability.
12. I often worry that I will say or do the wrong things in class.

Learning Goal Orientation

0	1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Athletic

1. For me, development of my athletic ability is important enough to take risks.
2. I prefer to be in situations in sports that require a high level of athletic ability and talent.
3. I enjoy challenging and difficult tasks in sports, and situations in sports, that allow me to learn new skills.
4. I often look for opportunities to develop new athletic skills and knowledge
5. I am willing to practice a challenging sport to learn a new skill.

Academic

1. For me, development of my academic ability is important enough to take risks.
2. I prefer to be in situations in school that require a high level of academic ability and talent.
3. I enjoy challenging and difficult tasks in school that allow me to learn new skills.
4. I often look for opportunities to develop new skills and knowledge in school.
5. I am willing to select a challenging school assignment that I can learn a lot from.

Prove Goal Orientation

0	1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Athletic

1. I prefer to participate in sports that allow me to prove my athletic ability to others.
2. I try to figure out what it takes to prove my athletic ability to others.
3. I enjoy it when others are aware of how well I am doing in sports and athletics.
4. I'm concerned with showing that I can perform better than other athletes.

Academic

1. I prefer to work on school projects that allow me to prove my ability to others.
2. I try to figure out what it takes to prove my ability to others in school.
3. I enjoy it when others in my classes are aware of how well I am doing.
4. I'm concerned with showing that I can perform better than other students.

Avoid Goal Orientation

0	1	2	3	4	5	6
Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree

Athletic

1. I prefer to avoid situations in sports where I might perform poorly.
2. I would avoid participating in a sport if there was a chance that I would appear rather incompetent to others.
3. I'm concerned about participating in sports if my performance would reveal that I have low ability.
4. In sports, avoiding a show of low ability is more important to me than learning a new skill.

Academic

1. I prefer to avoid situations in school where I might perform poorly.
2. I would avoid taking on a new task in school if there was a chance that I would appear rather incompetent to others.
3. I'm concerned about taking on assignments in school if my performance would reveal that I have low ability.
4. In school, avoiding a show of low ability is more important to me than learning something new.