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Clarifying Achievement Goals and Their Impact

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The study of achievement goals has illuminated basic motivational processes, though controversy surrounds their nature and impact. In 5 studies, including a longitudinal study in a difficult premed course, the authors show that the impact of learning and performance goals depends on how they are operationalized. Active *learning goals* predicted active coping, sustained motivation, and higher achievement in the face of challenge. Among performance goals, *ability-linked goals* predicted withdrawal and poorer performance in the face of challenge (but provided a "boost" to performance when students met with success); *normative goals* did not predict decrements in motivation or performance; and *outcome goals* (wanting a good grade) were in fact equally related to learning goals and ability goals. Ways in which the findings address discrepancies in the literature are discussed.

Considerable evidence suggests that much of achievement motivation (e.g., intrinsic interest, strategy use, and persistence) can be understood in terms of the different goals individuals bring to the achievement context (see Ames, 1992; Ames & Archer, 1988; Butler, 1987, 1993; Dweck & Elliott, 1983; Dweck & Leggett, 1988; Elliott & Dweck, 1988; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Kaplan & Maehr, 1999; Middleton & Midgely, 1997; Nicholls, 1984; Pintrich, 2000a; Rawsthorne & Elliot, 1999; Utman, 1997). However, there are some disagreements and some conflicting findings on the nature of these relations. Specifically, researchers disagree on how to best define and operationalize the major classes of goals, and on the precise impact of these goals on motivation and achievement.

In the original goal models, two classes of goals were identified—*performance goals*, where the purpose is to validate one's ability or avoid demonstrating a lack of ability, and *learning goals*, where the aim is to acquire new knowledge or skills (i.e., to increase one's ability; see Dweck & Elliott, 1983). Different researchers have used different labels for these two classes of goals—performance goals have also been called *ego-involved goals* (e.g., Nicholls, 1984) or *ability goals* (e.g., Ames, 1992), and learning goals have also been called *mastery goals* (e.g., Ames, 1992; Butler, 1993; Elliot & Harackiewicz, 1996; Meece & Holt, 1993) or *task goals* (e.g., Middleton & Midgely, 1997; Nicholls, 1984).

These two classes of goals were then linked to motivation and performance in achievement situations. Performance goals, with their emphasis on outcomes as measures of ability, were shown to produce a vulnerability to helplessness and debilitation after a setback or negative feedback, particularly in cases where current perceptions of ability were low (Ames & Archer, 1988; Butler, 1993; Elliott & Dweck, 1988; Jagacinski & Nicholls, 1987; Meece, Blumenfeld, & Hoyle, 1988). That is, when the goal is to validate ability and individuals do not believe they can accomplish this, motivation and performance tend to suffer. Learning goals, with their emphasis on understanding and growth, were shown to facilitate persistence and mastery-oriented behaviors in the face of obstacles, even when perceptions of current ability might be low (Ames & Archer, 1988; Butler, 1993, Elliott & Dweck, 1988; Jagacinski & Nicholls, 1987; Utman, 1997).

Performance and learning goals have also been shown to predict real-world performance, including exam grades, course grades, and achievement test scores, controlling for past performance (Dweck & Sorich, 1999; Greene & Miller, 1996; Kaplan & Maehr, 1999; Meece & Holt, 1993; Midgely & Urdan, 1995; Roeser, Midgely, & Urdan, 1996). In addition, goal effects obtain both when the goals have been experimentally manipulated (Butler, 1987; Elliott & Dweck, 1988; Graham & Golen, 1991), and when students' naturally existing goals have been assessed (Ames & Archer, 1988; Bouffard, Boisvert, Verzeau, & Larouche, 1995; Midgely, Anderman, & Hicks, 1995; Miller, Behrens, Greene, & Newman, 1993; Pintrich & DeGroot, 1990; Pintrich & Garcia, 1991). The fact that induced goals have been found to have strong impact is important for two reasons. First, it means that goals can have a causal role in producing achievement patterns. Second, it means that learning environments can be constructed in ways that enhance achievement (Ames, 1992; Maehr & Midgley, 1991; Roeser et al., 1996).

Despite early agreement regarding the effects of performance and learning goals on motivation and performance, recent research has revealed a more complicated picture. Some researchers have questioned whether learning goals affect performance at all, sug-

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gesting that they chiefly influence intrinsic motivation (e.g., Barron & Harackiewicz, 2001; Elliot & Church, 1997; Harackiewicz et al., 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000). Some have argued that performance goals predict higher, not lower, grades, and do not affect intrinsic motivation (e.g., Barron & Harackiewicz, 2001; Elliot & Church, 1997; cf. Rawsthorne & Elliot, 1999).

We propose that looking at the ways in which performance and learning goals have been defined or operationalized can help account for the discrepant findings that have been obtained by different researchers. To test this proposal, items were created to measure the different forms of goals that have been prominently represented in existing research. Five studies explore the relationships among these goals, their ability to predict intrinsic motivation and performance under highly challenging or difficult circumstances, and the mechanisms through which they may bring about those effects. We begin by describing the important dimensions along which the operationalizations of performance and learning goals vary in current achievement goal research, and describing how each of these dimensions is represented in the following studies.

What Is a Performance Goal and What Is Its Effect?

Achievement goal researchers have already made one important distinction among performance goals—namely, the distinction between performance *approach* goals (where the focus is on attaining success) and performance *avoidance* goals (where the focus is on the avoidance of failure; Elliot, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Middleton & Midgely, 1997; Pintrich, 2000a). In general, this program of research has suggested that it is the avoidance form of performance goals that predict lower intrinsic motivation and performance, with approach goals often relating positively to performance.

However, as discussed below, the positive and negative effects of performance approach goals have typically been found when performance goals are operationalized in particular ways, and the positive and negative effects of different types of performance approach goals have not been systematically explored. Thus our purpose in this article is to distinguish among approach forms of performance goals, and we propose that they take at least three distinct forms: (a) goals that are linked to validating an aspect of self (e.g., one's ability), (b) goals that are explicitly normative in nature, and (c) goals that are simply focused on obtaining positive outcomes (i.e., doing well). It is the first form that was linked to impairment in the earlier models, but it has tended to be the second two forms that have been linked to more positive outcomes in recent work. Let us take a closer look at these different forms of approach goals.

For some researchers, the essence of a performance goal is seeking to validate one's ability (operationalized either by suggesting to participants that their performance on a task measures the extent to which they possess a valued ability, or by assessing the extent to which they generally strive to validate their ability). Debilitation occurs when outcomes indicate a lack of ability, but performance maintenance or enhancement can occur when success is expected (Ames, 1992; Elliott & Dweck, 1988; see Dweck & Leggett, 1988). It should be noted that debilitation here requires the presence of challenges, setbacks, or failure—an easy task or course is not expected to produce debilitation, even in the presence of strong performance goals. To represent this view, we developed *ability* goal items (e.g., "It is important to me to validate that I am smart.").

For others, the essence of a performance goal is a normative comparison (i.e., wanting to perform better than others), and a goal that is nonnormative (e.g., using an absolute standard such as a perfect score, or tying absolute performance to self-worth) is not considered to be a performance goal (Elliot, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996; Maehr & Midgely, 1991; Pintrich, 2000b). Here, performance goals are often operationalized by informing participants that their performance on a task will be evaluated normatively, or by measuring their agreement with statements such as "It is important to me to do well compared to others in this class" (Elliot & Church, 1997).

The issue of whether normative performance goals are empirically distinct from performance goals that do not contain a normative standard has not been systematically addressed in the achievement goal literature. Yet it is an important question, because to some theorists, as noted, the presence of normative comparison is the essence of a performance goal (Elliot & Harackiewicz, 1996; see Rawsthorne & Elliot, 1999), and to others, a potentially interesting but nonessential aspect of a performance goal (Elliott & Dweck, 1988). It would be interesting to find that normative and nonnormative performance goals do indeed differ, particularly if these differences could illuminate discrepancies in the reported effects of performance goals on motivation and performance. The following studies contain both normative and nonnormative versions of performance goals. An example of an explicitly normative goal would be the following: "One of my major goals in school is to feel that I am more intelligent than other students." In contrast, the goal item, "It is important to me to validate that I am intelligent, " is not explicitly normative.

Sometimes goal items used to measure performance-goal orientation simply ask the participant about wanting to do well on a task, such as wanting to earn a high grade in a course. For people who are focused on doing well, negative outcomes do not necessarily indicate a lack of ability (i.e., holding this type of goal does imply a particular causal attribution for success or failure). We refer to the goal of wanting to do well on a particular task as an *outcome* goal, and it, too, is represented in our studies (e.g., "It is important to me to get good grades in my classes."). A closely related construct is "competence valuation," or the degree to which a task is perceived to be important (Elliot & McGregor, 2001), which has been found to relate positively to intrinsic motivation and performance (Barron & Harackiewicz, 2001). We find this type of goal particularly interesting, because "wanting to do well" can also be an important part of a learning goal framework. In other words, a person with a learning goal may care very much about doing well on a task, but perhaps for different reasons (i.e., in order to maximize learning, as an indicator of successful learning, or for instrumental reasons). Later, we address the question of whether outcome goals are best understood as performance goals.

What Is a Learning Goal? When Is It Helpful?

There is generally less controversy and more agreement with respect to the nature of learning goals. As noted learning goals, task goals, and mastery goals have often been regarded as concep-

tually equivalent (Ames, 1992; Linnenbrink & Pintrich, 2000). Yet, potentially important differences among operationalizations do exist. For some (Ames, 1992; Elliot & Church, 1997; Elliott & Dweck, 1988; Harackiewicz et al., 1997; Middleton & Midgley, 1997), a learning goal is an active striving toward development and growth of competence, and is operationalized by emphasizing the importance and benefits of learning some new knowledge or skill to the participant, or by asking participants to indicate the extent to which learning and developing new skills are major academic goals. However, the terms "task goals" and "mastery goals" do not put an explicit emphasis on learning; thus, we thought it important to test the extent to which the desire to learn may be similar or different from the desire to master challenges. As a result, we included items measuring two forms of learning goals. An example of a learning goal without an explicit challenge-mastery component is "I strive to constantly learn and improve in my courses." An example of an explicit challenge-mastery item is "It is very important to me to feel that my coursework offers me real challenges."

It should be reiterated that, despite the substantial agreement among researchers with respect to the concept of a learning goal, the data with respect to the influence of learning goals on motivation and performance are not without inconsistencies. Typically, those who adopt learning goals are found to engage in deeper, more self-regulated learning strategies, have higher intrinsic motivation, and perform better, particularly in the face of challenge or setbacks (Ames, 1992; Dweck & Leggett, 1988; Kaplan & Midgley, 1997; Pintrich, 2000a; Pintrich & Garcia, 1991; Utman, 1997; see also Barron & Harackiewicz, 2000). However, recently, several studies have failed to find enhanced performance outcomes resulting from learning goals (although enhanced intrinsic motivation was found; Elliot & Church, 1997; Elliot, McGregor, & Gable, 1999).

Conditions Under Which Goal Effects Are Tested

The effects of learning and performance goals on motivation and achievement have been tested under a wide variety of circumstances—with students working on interesting "NINA" puzzles (Elliot & Harackiewicz, 1996), performing a concept-formation task (Elliott & Dweck, 1988), solving math problems (designed to be highly challenging in one condition; Barron & Harackiewicz, 2001; cf. Middleton & Midgely, 1997), or taking an intermediate-level psychology course (Elliot & Church, 1997). Importantly, these tasks may have varied with respect to the degree of difficulty or challenge encountered by the participant, and the degree to which performance on the task had importance or meaning to the participant. We feel that conditions where the degree of difficulty is substantial for a large number of participants and the outcome is highly important are more likely to reveal goal effects on motivation, coping, and achievement, and have tried to use such conditions in the studies reported here.

In summary, there have been major differences in the ways goals have been operationalized, and it is not surprising that the data are inconsistent with respect to how and when performance and learning goals affect motivation and achievement. In the following studies, we attempted to illuminate these issues. In three studies, we developed and tested a set of items to tap different forms of learning and performance goals. In the fourth study, to gain an initial sense of the patterns associated with each goal type, we presented students with scenarios depicting important academic setbacks and examined how the different goals predicted intrinsic motivation and coping. In the fifth study, the different goals were used to predict intrinsic motivation, study strategies, and performance in an important and challenging course.

Study 1

Given the number of goals we hoped to measure and compare (e.g., ability goals, outcome goals, normative outcome goals, normative ability goals, learning goals, and challenge-mastery goals), we wanted to use the fewest possible items to measure each type of goal while still maintaining high reliability. It was felt that using relatively few items would minimize the frustration and confusion participants might experience when required to answer many similarly worded items. Thus, 10 items for each of type of goal were created and carefully tested with 560 participants, and the most reliable three items were selected for each goal. In three preliminary studies (Studies 1–3) reported below, the items used to measure each type of goal achieved good reliability and validity, as demonstrated by the relatively high alphas for each group of items, the high correlation of each group of items with scales assessing conceptually similar variables, and the high test–retest correlations (the Appendix contains the complete list of items). For each goal item, participants were asked to rate their agreement on a 7-point Likert-type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Method

Participants

A total of 451 participants (218 men and 233 women) recruited from the Columbia University student population were paid $5 for their participation. Fifty-seven percent of participants were Caucasian, 9% African American, 19% Asian, 8% Latino, and 7% were "other" or unidentified.

Procedure

Participants were asked to complete a goal inventory containing the three items for each of the types of goals along with several unrelated measures. The goal items were presented in random order. Participants in this initial study (and all subsequently reported studies) read and signed consent forms that informed them about the procedure, the information that would be asked of them, and their rights as research participants. They were reminded that they were free to leave the study at any time without penalty.

Results

Exploratory Factor Analysis

Principal-components analysis, using varimax rotation and eigenvalues greater than 1, yielded four factors (accounting for 24%, 20%, 16%, and 12% of the total variance, respectively). Factor 1 contains all normative items (both normative ability and normative outcome). Factor 2 contains both the learning and challenge-mastery items. Factor 3 contains all of the nonnormative outcome goal items. Factor 4 contains all nonnormative ability goal items.

This analysis was repeated using oblimin rotation, which yielded nearly identical results (see Table 1).

These analyses revealed that, consistent with our expectations, learning goals (Factor 2), outcome goals (Factor 3), and ability goals (Factor 4) are distinct constructs. As we will see, learning and ability goals are the major classes of predictive goals in subsequent studies. In addition, participants clearly distinguished between normative and nonnormative forms of performance goals, suggesting that this distinction is a meaningful and potentially important one. Normative goals loaded together (Factor 1), suggesting that participants who endorsed them did not distinguish strongly between normative outcome and normative ability goals. Similarly, challenge-mastery goals did not distinguish themselves reliably from learning goals. Thus, four groups or classes of goals emerged in this study, and we focus on these groups throughout the remainder of the article: learning (comprised of both learning and challenge-mastery items), outcome, ability, and normative (comprised of both normative outcome and normative ability items).

Internal Consistency

Although Cronbach's alpha is dependent on the length of the measure (i.e., number of items in a scale), our goal measures nonetheless achieve substantial alphas. The alphas for each of the four subsets of the goal items (ranging from .81 to .92) had an average of .86, consistent with unidimensionality for each set of items.

Confirmatory Factor Analysis (CFA)

CFA was conducted on the achievement goal items using EQS 5.7 (Bentler & Wu, 1995). Solutions were generated on the basis of maximum-likelihood estimation. Seven models were tested. For each model, we calculated multiple indices of fit: chi-square, comparative fit index (CFI), normed fit index (NFI), nonnormed fit index (NNFI), root-mean-square error of approximation (RMSEA), and Akaike Information Criterion (AIC), a comparison statistic for nonhierarchical models. The results from these analyses indicated that two models provided a good fit to the data: Model A, $\chi^2(123, N = 451) = 490.23$, CFI = .93, NFI = .91, NNFI = .92, RMSEA = .08, AIC = 244; Model B, $\chi^2(120, N = 451) = 395.76$, CFI = .95, NFI = .93; NNFI = .94, RMSEA = .07, AIC = 155). Although Model B (a six-factor model) does provide a slightly better fit, Model A—a hierarchical model with four primary factors (i.e., an ability goal factor, an outcome goal factor, a normative factor comprised of normative ability and normative outcome factors, and a learning factor comprised of learning and challenge-mastery factors)—is consistent with the results from the two principal-components analyses, as well as with the pattern of item intercorrelations and scale alphas. Thus, a four-factor goal model, consisting of learning goals, outcome goals, ability performance goals, and normative performance goals, received the most consistent support and provided the best overall fit to the data.

Correlations Among Classes of Goals

All four goal indices were positively correlated. Outcome goals (wanting to do well) appear to accompany the valuing of any achievement goals, whether those goals pertain to learning ($r = .37$, $p < .001$), to validating one's ability ($r = .53$, $p < .001$), or to outperforming others ($r = .34$, $p < .001$). Learning goals were positively related to outcome goals, as noted, as well as ability goals ($r = .41$, $p < .001$) and normative goals ($r = .17$, $p < .001$). Finally, ability goals and normative goals were strongly correlated ($r = .52$, $p < .001$). Although it appears that individuals who value achievement may value many aspects of it, we will see that clearly distinct and unique patterns are associated with each type of goal.

Table 1
Principal-Component Factor Analysis With Item Loadings

		Varimax rotation			
Goal item type	Item no.	1	2	3	4
Learning	1		.72 (.74)		
	2		.70 (.68)		
	3		.66 (.62)	.51 (−.44)	
Challenge-mastery	1		.84 (.87)		
	2		.80 (.82)		
	3		.74 (.75)		
Outcome	1			.81 (−.79)	
	2			.74 (−.71)	
	3			.87 (−.86)	
Ability	1				.50 (−.46)
	2				.79 (−.80)
	3				.81 (−.83)
Normative outcome	1	.81 (.85)			
	2	.81 (.86)			
	3	.83 (.86)			
Normative ability	1	.82 (.78)			
	2	.81 (.77)			
	3	.85 (.82)			

Note. All loadings above .40 are shown. Oblimin rotation values are shown in parentheses.

Analysis by Gender

Tests for mean difference in goal ratings by gender revealed several significant differences, though the pattern of differences varied across studies. Because these differences did not replicate across studies, there is little reason to believe that any were representative of the general population. It is important to note that there were no interactive effects of goal and gender in any of the studies. In other words, performance and learning goals exerted the same effects on both men and women in each study. Therefore, in the interest of brevity, gender differences will not be discussed for each study.

Study 2

Method

Participants

A total of 54 participants (23 men, 31 women) recruited from the Columbia University student population were paid $10 for their participation.

Procedure

Participants completed the goal items as part of a battery of measures, and then completed the items again in another battery of measures exactly 2 weeks later.

Results

Correlations between Time 1 and Time 2 ratings were calculated for each goal. The correlations ranged from .69 to .88, and the average test–retest correlation was .79. Thus, participants' scores were substantially consistent over time.

Study 3

Study 3 was designed to obtain construct validity for the goal items by relating them to other goal measures. Two commonly used measures of achievement goal orientation were chosen (i.e., Button, Mathieu, & Zajac, 1996, and Elliot & Church, 1997). In particular, it was important to show that (a) our measure of learning goals mapped onto other operationalizations of learning goals, (b) that our measure of normative performance goals was an accurate representation of how these goals have been measured in the literature, and (c) that our outcome goals were equally related to learning and performance goals in other measures, as they had been in ours. Neither measure taps ability goals as we have defined them.

Method

Measures

Learning and Performance Orientation Scales (Button et al., 1996). Button et al.'s (1996) inventory is composed of two scales (Learning and Performance), each containing eight items. In general, Button et al.'s learning goal items capture the conceptualization proposed by Dweck and Elliott (1983)—an emphasis on challenge-seeking, use of effort and strategies, and desire to develop and grow. Button et al.'s performance items emphasize wanting to do well and not make mistakes, though there are two items that involve social comparison and the opinions of others.

Elliot and Church's (1997) Achievement Goal Scale. The goal orientation scale used by Elliot and his colleagues in their classroom studies (Elliot & Church, 1997; Elliot et al., 1999) consists of three subscales with six items each, of which we focused on two: Mastery and Performance Approach (the third subscale is Performance Avoidance). The Mastery items emphasize wanting to learn as much as possible and thoroughly master new material. Performance Approach items emphasize wanting to do better than others (i.e., normative items).

Participants

A total of 87 participants (37 men, 50 women) were recruited from the Columbia University student community and paid $5 for their participation. Sixty percent of participants were Caucasian, 22% African American, 13% Asian, and 5% were "other" or unidentified.

Procedure

Participants completed our goal items, along with the Learning and Performance Orientation Scales (Button et al., 1996), and the Achievement Goals Scale used by Elliot and his colleagues (Elliot & Church, 1997). The three measures were presented in three different orders across participants. There were no discernable effects of order.

Results

As expected, the learning goal items were highly positively correlated with Button et al.'s (1996) Learning scale ($r = .72$, $p < .001$) and Elliot and Church's (1997) Mastery scale ($r = .76$, $p < .001$). This suggests that the items are valid indices of a learning orientation.

In Study 1, outcome goal items, with their focus on the value of doing well, were compatible with learning goals, ability goals, and normative goals. They were also positively correlated with both Button et al.'s (1996) Learning ($r = .37$, $p < .01$) and Performance ($r = .45$, $p < .001$) Scales, as well as with Elliot and Church's (1997) Mastery ($r = .41$, $p < .001$) and Performance Approach ($r = .30$, $p < .01$) scales. This is further evidence of the hybrid nature of outcome goals.

Ability goal items were positively correlated with Button et al.'s (1996) Performance Scale ($r = .45$, $p < .001$) and Elliot and Church's (1997) Performance Approach scale ($r = .46$, $p < .001$), but only moderately, because neither of those scales focus on ability validation.

As predicted, normative goal items were highly correlated with Elliot and Church's (1997; normative) Performance Approach scale ($r = .83$). Ability and outcome goal items were significantly less correlated with this scale (outcome $r = .30$ vs. normative $r = .83$, $t[85] = 4.01$, $p < .001$; Ability $r = .46$ vs. Normative $r = .83$, $t[85] = 1.98$, $p < .05$).

In summary, a comparison of these three measures yielded evidence for the construct validity of our goal items. High correlations with conceptually similar subscales in the Button et al. (1996) and Elliot and Church (1997) measures can be taken as evidence that the items are tapping into the right goal constructs.

Study 4

We believe that it is important to look at goal effects when individuals experience major setbacks or failure on highly valued

tasks, because it is under these conditions that we would expect goal effects on motivation, coping, and achievement to be maximal. Studies 4 and 5 were designed to look at how each of the different goals we identified predicts indices of intrinsic motivation, mastery-oriented coping, and performance, after a significant or sustained difficulty or setback, by means of hypothetical failure scenarios (Study 4), reports of habitual coping style (Study 4), and a very challenging premed college course (Study 5).

We also included measurements of some of the affective and cognitive variables that comprise the psychological processes that accompany goal pursuit. Much recent achievement goal work pays little attention to the psychological concomitants of goals: attributions, beliefs, and contingency of self-worth (Molden & Dweck, 2000). By including these measures, we hoped to capture a richer motivational picture of performance and learning goal processes.

In Study 4, two scenarios were generated in which the participant encounters failure in an important achievement setting (adapted from Zhao & Dweck, 1997). The use of hypothetical scenarios was used here as a first step in relating the different goals to the variety of cognitive, affective, and behavioral variables involved in coping with difficulty in achievement situations.

Participants in Study 4 also completed a measure of chronic coping style (COPE; Carver, Scheier, & Weintraub, 1989), so that we might look at the relationship between goal orientation and participants' own personal history of coping with setbacks. Thus, the first part of Study 4 asks participants to indicate how they would respond to a situation if it occurred, and the second part of Study 4 asks them to reflect on past situations that have actually occurred.

Method

Participants

A total of 92 participants (40 men, 52 women) were recruited for pay from the Columbia University community. Sixty-one percent of participants were Caucasian, 21% African American, 12% Asian, and 6% were "other" or unidentified. They received $5 for their participation.

Procedure

Participants completed the goal items, and then, after a 5-min word-completion filler task, they received one of two randomly assigned scenarios, shown in previous work to elicit motivational differences (see Zhao & Dweck, 1997). The scenario asked them to read about a failure experience in a college classroom (either getting a bad grade on an important essay in a key course or doing poorly on the Graduate Record Examination when they strongly wished to go to graduate school), and to imagine it happening to them. These two scenarios were vividly written and were selected to represent situations that they could easily personally relate to (i.e., doing poorly on an essay in a course in your major, and doing poorly on a test in science class). Here is an example:

> Imagine that during your second semester at Columbia, you take an important course in your major, in which students are required to read their essays out loud to the entire class. This happens several times throughout the semester. The time comes for the first readings. By the time it's your turn, most of the students have already presented their essays. All of them did pretty well, and you know that their essays got good grades from the professor. But when you read your essay to the class, the professor and the other students don't seem to like your presentation very much, and later you find out that the grade he gave you was a C−.

Participants were then asked to indicate what they would think, how they would feel, and how they would behave after the failure by rating their degree of agreement with a series of statements. These statements include items assessing *loss of intrinsic motivation* (e.g., "I'd probably feel less interested in the subject"), *help-seeking* (e.g., "I would seek help from my professor or my classmates"), *planning* (e.g., "I'd start planning how to do better on the next presentation"), and *time and energy withdrawal* (e.g., "I would devote less time and energy to the class"), as well as *attributions* for the failure (e.g., "I would feel like I wasn't smart enough"), *loss of self-worth* (e.g., "I would feel like a loser"), and *rumination* (e.g., "I would dwell on my failure"). Responses were made by circling a number on a 7-point scale ranging from 1 (*not at all true of me)* to 7 (*very true of me*).

After a second 5-min word-completion filler task, participants were asked to complete the Ways of Coping Scale (COPE; Carver et al., 1989). This scale measures the ways in which individuals have coped with difficulties when they have arisen. Subscales include Active Coping, Planning, Positive Reinterpretation, Denial, and Behavioral Disengagement.

Results

For each of the analyses conducted, scenario version (1 or 2) was entered as a predictor, and no effect for scenario version was found. Therefore, all analyses reported were conducted collapsing across scenario version. Each of the four goal types (learning, outcome, ability, and normative) was entered as a predictor in a series of simultaneous regressions that included all two-way interactions. There were no significant two-way interactions, so these terms were dropped in subsequent analyses. Thus, the effects of each goal on the variables of interest control for any effects of the other three classes of goals. In this way, we could determine what, if any, were the unique effects of each class of goal on our achievement variables.

Intrinsic Motivation

Table 2 depicts the unique relationship between each type of goal and an index of loss of intrinsic motivation, created by adding together responses from the following three items ($\alpha = .89$): "I'd probably feel less interested in the subject," "I probably wouldn't enjoy the course as much as before," and "I wouldn't really be excited about the course anymore."

As can be seen, learning goals were negatively related to decreases in intrinsic motivation, whereas outcome and ability goals were significantly correlated with decreases in intrinsic motivation. Of interest, normative goals did not predict loss of intrinsic motivation. This finding is worth noting, in that the program of research that has most consistently found that approach forms of performance goals do not negatively influence intrinsic motivation has used a normative definition of performance goal (e.g., Elliot & Church, 1997). Also, Epstein and Harackiewicz (1992) have found that students high in achievement motivation who were assigned competitive goals (which are inherently normative) experienced increased interest in a task when they were given a failure expectancy. This finding suggests that competitive strivings may buffer individuals when they experience difficulty or failure, in ways that ability-focused strivings do not.

Table 2
Goals and Responses to Failure

Goal	Loss of intrinsic motivation	Withdrawal of time and effort	Help-seeking	Planning
Learning	−.39***	−.40***	.17	.57***
Outcome	.29**	.00	.36**	.03
Ability	.40***	.32**	−.02	−.02
Normative	−.11	−.02	−.16	−.16

Note. Values are standardized regression coefficients.
** $p < .01$. *** $p < .001$.

Behavioral Coping

Endorsement of several possible behavioral responses by goal type is also displayed in Table 2. Consistent with the maintenance of intrinsic motivation, learning goals predicted planning (one item: "I'd start planning how to do better on the next presentation"), and negatively predicted withdrawal of time and energy (one item: "I would devote less time and energy to the class"). Ability goals, in contrast, positively predicted withdrawal of time and energy.

Outcome goals were the only goals that were positively related to help-seeking (one item: "I would seek help from my professor or my classmates"). Help-seeking may be perceived as a good way to obtain the good grades that those who endorse outcome goals clearly value.

Attributions

Turning to the psychological processes that accompany goal pursuit, learning goals ($\beta = .56$, $p < .001$) were predictive of effort-based attributions for failure (one item: "I think that if I work harder, I can do better"), whereas ability goals ($\beta = .22$, $p < .05$) and outcome goals ($\beta = .36$, $p < .01$), in contrast, were predictive of ability-based attributions (one item: "I feel like I'm just not good at this subject"). Learning goals were negatively related to making ability attributions for poor performance ($\beta = -.37$, $p < .01$).

These results are consistent with prior research, which found attributions to low ability to be associated with drops in intrinsic motivation and helplessness, whereas attributions to effort were associated with intrinsic motivation maintenance and mastery-oriented coping (e.g., Mueller & Dweck, 1998).

Again, normative goals were not reliable predictors of negative ability attributions. Taken together with the finding that these goals do not reliably predict loss of intrinsic motivation, the data begin to suggest that normative performance goals may be a hardier form of performance goal (i.e., one that does not tend to lead to "helpless" forms of coping and behavior). This is again consistent with Elliot and colleagues' findings (see Elliot & Church, 1997; Elliot et al., 1999) that (normative) performance approach goals do not lead to lower motivation and performance.

Loss of Self-Worth

Loss of self-worth is akin to a negative ability attribution, but it is more global. It, too, can often accompany helpless motivational and behavioral responses to a setback (e.g., Covington, 1992; Crocker & Wolfe, 2001). A composite index of self-worth loss was created by adding together responses from the following three items: "I would feel like a loser," "I would feel like a failure," and "I'd think less of myself as a person" ($\alpha = .84$). Consistent with results thus far, ability ($\beta = .56$, $p < .001$) goals were positively correlated with loss of self-worth.

Rumination

The tendency to ruminate on one's setbacks has been associated with helplessness. A composite index of ruminating and dwelling on the failure was created by adding together responses from the following two items: "I would dwell on how poorly I did" and "I would replay it all over and over again in my mind" ($\alpha = .92$). Rumination was fairly strongly related to ability goals ($\beta = .47$, $p < .001$). Thus, those goals that tend to lead to ability attributions and negative self-evaluation also predict dwelling on the negative outcome and its meaning.

The results from the hypothetical failure scenarios revealed a consistent pattern among the motivational and coping variables. Learning goals predicted active, engaged responding, whereas ability goals predicted self-denigration and withdrawal. Outcome goals were associated with a hybrid response pattern (i.e., low ability attributions and decreased intrinsic motivation as well as help-seeking). Finally, normative goals were not reliable predictors of mastery-oriented or helpless responding.

Chronic Coping Style

We now turn to the question of whether different goals predict different reported histories of coping with setbacks in past achievement situations. Different styles of chronic coping were measured by the Ways of Coping Scale (Carver et al., 1989), which asks participants to indicate the extent to which they have typically engaged in various coping strategies.

Consistent with the responses to the failure scenarios, learning goals predicted *active coping* ($\beta = .38$, $p < .01$) and *planning* ($\beta = .33$, $p < .01$). They were also predictive of *positive reinterpretation* of a setback ($\beta = .30$, $p < .05$) and negatively related to *denial* ($\beta = -.36$, $p < .01$), *behavioral disengagement* ($\beta = -.35$, $p < .01$), and *mental disengagement* ($\beta = -.28$, $p < .05$).

Ability goals negatively predicted positive reinterpretation of a setback ($\beta = -.30$, $p < .05$). Of interest, normative goals were significant predictors of denial after a setback ($\beta = .25$, $p < .05$) and behavioral disengagement ($\beta = .28$, $p < .01$). The finding for denial perhaps suggests that competitive striving might keep indi-

viduals from recognizing a poor performance when they produce one. This may provide some explanation for the consistent finding that normative goals did not predict negative cognitive, affective, and behavioral responding to a hypothetical setback (e.g., loss of intrinsic motivation, low ability attributions, loss of self-worth, rumination) as strongly or consistently as nonnormative ability goals.

In summary, learning goals were associated with active coping, and a wide range of positive, mastery-oriented indicators. Learning goals appear to be a powerful predictor of behaviors that will preserve intrinsic motivation and performance in the face of difficulty. In contrast, ability goals were associated with a loss of motivation and common indices of helplessness. Outcome goals (which are related to both learning goals and ability goals) also predicted a loss of motivation and low ability attributions for failure, but predicted proactive behaviors as well (e.g., help-seeking). Taken together, these results suggest that valuing doing well is not in itself a good predictor of responses to failure—rather, the goals that accompany valuing doing well (learning or validating ability) seem responsible for much of the "action." Normative goals were not among the performance goals that related strongly or consistently to the variables measured, suggesting that under some circumstances, competitive performance goal items may not predict maladaptive cognitions, affect, or coping when other types of performance goals (i.e., ability goals) do.

Study 5

Study 5 differed from Study 4 in several ways. First, the goal items were used to predict motivation and performance in a "real-world" setting, specifically for freshman and sophomore undergraduates taking an important and often career-defining course. Study 5 also differed from many past course-taking studies in the level of sustained challenge or difficulty encountered by participants (and, as explained below, in our special attention to students who encountered successive setbacks over the course of the semester). For this reason, we would expect to see more facilitative effects of learning goals on motivation and performance, as well as the debilitating effects of performance goals.

Aside from being a real-world study, Study 5 differed from Study 4 in another important way. Study 4 presented students with a *fait accompli*—a defined failure—and therefore, perhaps did not allow us to see the potentially beneficial effects of performance goals for people experiencing challenge but not failure. Study 5 allowed us to monitor students throughout the semester, by looking in on students as they began this new, important, and challenging course. Here we might find that for students who are doing well, ability goals will provide a boost over time, whereas for students who are encountering difficulty, ability goals will predict further impairment. In other words, Study 5 allowed us to see goal effects as they played out over time—both their facilitative effects and their detrimental effects.

Most potential premed, engineering, and science majors at Columbia University enroll in General Chemistry in the Fall of their freshman year. The permission and support of the Columbia University Provost, Deans of the College of Arts and Sciences, and General Chemistry instructors were granted to conduct an intensive study of these students throughout the semester. Surveys tracked students' intrinsic motivation and performance at several points throughout the semester, and grades were obtained from the Chemistry Department with permission of the students.

Method

Participants

Participants were 85% freshmen, 50% female and 50% male. The number of participants in each wave of the study varied between 78 and 128, depending on class/recitation attendance. In the largest sample, participants were 59% Caucasian, 7% African American, 26% Asian, and 8% Latino. The average grade on any exam in this course was a C+, suggesting that this was a course in which many participants experienced difficulty or setbacks. For the smaller samples, we tested to ensure that the participants were entirely representative of the larger sample and that no systematic attrition had occurred. Thus, although attendance (and hence participation in the study) varied over the waves of the study, no significant differences among samples at the different time points were found in terms of gender, ethnicity, goal endorsement, or grades.

Procedure

General Chemistry is a lecture course that is structured around three midterms and a final exam. Data were collected from participants at four points during the semester: twice 2–3 weeks before the first midterm, once immediately after the first midterm, and again 2 weeks before the final exam. Data were collected in the last 15–20 min of class or recitation. The measures were presented (along with other measures in a packet of questionnaires) in the following sequence:

Session 1 (2–3 weeks before first midterm): goal items, demographic information

Session 2 (1 week after Session 1): intrinsic motivation, perception of chemistry ability

Session 3 (after first midterm): general study strategies (from Elliot et al., 1999)

Session 4 (before final exam): intrinsic motivation

Consistent with the results of Study 4, we predicted that learning goals would be positively related to intrinsic motivation and grades (despite the lack of the influence of learning goals on performance found in previous studies in what may have been less academically strenuous or personally relevant contexts). We expected ability goals to be associated with lower performance after multiple setbacks, as suggested by Dweck and Leggett (1988), but not necessarily with lower performance overall. In fact, we expected that students who were doing well in the course might experience a "boost" from holding strong ability goals.

Results

Perceived Ability

If different types of goals are systematically related to different levels of perceived ability, then it is possible that the effects of goals obtained in this study are simply due to this confounding factor. To rule out this explanation, perceived level of ability in chemistry was measured at the beginning of the course (one item: "Compared to other students in this course, please rate your ability in chemistry" on a 10-point scale ranging from *top 10%* to *lower 10%*). Perception of ability in chemistry was related to overall course grade ($r = .27$, $p < .01$). It was also related to intrinsic

motivation at the beginning ($r = .26$, $p < .01$) and at the end ($r = .31$, $p < .05$) of the course.

Correlations between perceived ability in chemistry and goal type revealed that normative goals were significantly positively related to perceived ability ($r = .38$, $p < .001$). In other words, people with normative goals tended to believe that their ability was high relative to others. This could help account for the resilience (or, better put, lack of negative consequences) associated with normative goals in Study 4. Outcome goals were also positively related to perceived ability ($r = .21$, $p < .05$), whereas learning and ability goals were unrelated to perceptions of chemistry ability.

Intrinsic Motivation

In a set of linear regressions, we looked at the relationship between goal type and intrinsic motivation, measured by enjoyment of and interest in the course (two items, $\alpha = .88$). These data were collected at the beginning of the course and again before the final exam. The regressions controlled for perceived ability (though an essentially identical pattern emerged when perceived ability was not included in the analysis) and for the effects of each of the other three goal indices. We also included gender in our initial analyses, but gender did not predict intrinsic motivation and was dropped from subsequent analyses predicting intrinsic motivation.

In this highly difficult course, learning goals predicted higher intrinsic motivation at the beginning ($\beta = .23$), $t(128) = 2.34$, $p < .05$, and at the end ($\beta = .22$), $t(78) = 2.02$, $p < .05$, of the course. This is consistent with the findings of Elliot, Harackiewicz, and their colleagues (Elliot & Church, 1997; Elliot & McGregor, 1998; Harackiewicz & Elliot, 1998) that learning goals positively predict intrinsic motivation. There were no other significant predictors of intrinsic motivation.

Grades

We looked at the relationship between each goal type and students' total grades, controlling for Scholastic Aptitude Test (SAT) score, perceived ability in chemistry, number of prior courses in chemistry, and gender, as well as the effects of other goal indices. Gender predicted total grade ($\beta = -.19$), $t(126) = -3.03$, $p < .01$, such that men tended to have higher grades than women. In addition, we looked at the extent to which each goal type predicted improvement from Exam 1 to the final exam, controlling for performance on Exam 1 (the interaction of each goal with performance on Exam 1 was also included as a predictor).

Total Course Grade

Consistent with the pattern of effort attribution and mastery-oriented coping associated with learning goals in Study 4, learning goals positively predicted course grade ($\beta = .20$), $t(120) = 2.42$, $p < .05$. No other goals were significant predictors of course grade. The fact that learning goals emerged as a significant predictor of performance supplements the findings of Elliot, Harackiewicz, and their colleagues (e.g., Elliot & Church, 1997; Harackiewicz et al., 1997), who have suggested that performance goals, and not learning goals, predict course performance. This result could imply that when a course involves sustained challenge, learning goals do positively affect course performance.

Improvement in Grade From Exam 1 to Final Exam

Learning goals also significantly predicted grade improvement ($\beta = .25$), $t(122) = 2.94$, $p < .01$, and were the only goals to do so.

Final Exam Grade

Earlier, we had predicted that ability goals would have a negative effect on performance for those students who had experienced prolonged setbacks. To address this question, we looked at how goals predicted performance on the final exam for those students who had performed poorly throughout the semester. We simultaneously regressed each goal type, the average of students' Exam 1, 2, and 3 grades (our index of past performance), and the interaction of goal type with average exam grades, onto final exam grades. We predicted a significant interaction for ability goals, such that students who had done poorly throughout the semester (i.e., those with low average exam grades) would suffer for holding strong ability goals, whereas those who had done well throughout the semester might receive a boost on the final.

As predicted, there was a significant interaction between ability goals and average grade on Exams 1, 2, and 3 ($\beta = .52$), $t(71) = 2.23$, $p < .05$. Figure 1 illustrates this effect. We have plotted data for participants who were either one standard deviation above or below the mean endorsement of ability goals (see Jaccard, Turrisi, & Wan, 1990). Participants were further separated into high- and low-course performance groups (based on a median split of performance on exams prior to final). As shown, participants with low prefinal grades score lower on the final exam if they are high rather than low in ability goals. In contrast, participants with higher prefinal grades earn better scores on the final

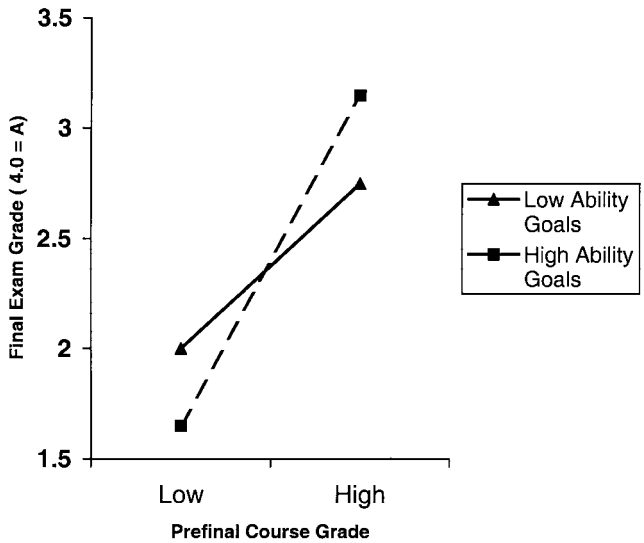

Figure 1. Final exam grade predicted by past performance and ability goals.

exam if they are high rather than low in ability goals. This finding suggests that when setbacks are repeated, ability goals predict poor performance, but may indeed provide a boost when an individual is doing well (see Elliott & Dweck, 1988).

Study Strategies

To further understand the differences we found in performance, we looked at three study strategies (deep processing, surface processing, and disorganized processing) that were adapted from a scale used by Elliot et al. (1999), and were assessed immediately after students took the first exam. The tendency to engage in deep processing was significantly correlated with grade in the course ($r = .29$, $p < .01$). Disorganized processing was negatively related to course grade ($r = -.36$, $p < .001$). Surface processing was unrelated to course grade ($r = .08$, *ns*).

Outcome goals predicted surface processing of course material ($r = .29$, $p < .01$), and learning goals predicted deeper processing of course material ($r = .31$, $p < .01$). In contrast, normative goals were negatively related to deep processing ($r = -.21$, $p < .05$), suggesting that one drawback associated with a competitive goal might be the absence of deep analysis of issues or material.

Mediational Analyses for Learning Goal Effects on Course Grade

The significant correlation between learning goals and deep processing ($r = .31$), as well as the correlation between deep processing and course grade ($r = .29$), suggested processing style as a possible mediator of the effect of learning goals on course grade. Consistent with this hypothesis, the relationship between learning goals and course grade (controlling as we had earlier for SAT score, perceived ability in chemistry, past chemistry course experience, and gender), when controlling for extent of deep processing, is not significant ($\beta = -.06$, *ns*), whereas deep processing remains a significant predictor of course grade ($\beta = .43$, $p < .05$; see Table 3 and Figure 2).

General Discussion

Items measuring different types of performance and learning goals were created and used in five studies to help to shed light on several important, unresolved issues in current achievement goal research. Studies 1–3 yielded evidence for four types of goals: learning goals, outcome goals (wanting to do well), ability-linked performance goals, and normative performance goals. Individuals' responses in these three preliminary studies and two more comprehensive studies suggested answers to a number of the fundamental questions posed in the literature.

First, are there different types of learning goals? What is the relationship of learning goals to intrinsic motivation and performance? We looked at two types of learning goals: striving to learn and develop versus seeking to master challenges. These two goals were highly correlated and loaded together in two principal-components analyses, so the items were combined into a single learning goal measure. Although we did not find evidence in our studies for separating these two types of learning goals, they may still differ importantly from the "task goals" found in past research that are often operationalized in ways that contain neither striving to learn nor challenge-seeking.

Studies 4 and 5 provided evidence for the positive effects of learning goals on both intrinsic motivation and performance, consistent with the early research on achievement goals (see, e.g., Ames, 1992; Ames & Archer, 1988; Butler, 1987; Dweck & Leggett, 1988; Elliott & Dweck, 1988; Meece et al., 1988; Nicholls, 1984). Individuals who endorse learning goals should be more likely to see negative outcomes as information about ways to improve the learning process, rather than as indicators of stable low ability. As expected, in response to a major hypothetical failure (Study 4), learning goals predicted a wide range of positive, mastery-oriented indicators—including sustained intrinsic motivation, planning, and persistence. Participants with strong learning goals also reported a history of having used more mastery-oriented coping methods (e.g., active coping, planning) in response to past setbacks.

In Study 5, in an important and difficult college course, learning goals predicted better processing of course material, higher intrinsic motivation, higher grades, and greater improvement over time. Further analysis suggested that the relationship between learning goals and course grades was mediated by the tendency to engage in deeper processing of course material. The impact of learning goals on performance may be seen chiefly when a high degree of challenge is present, when a task is personally important, or when the processing of complex, difficult material is necessary. A potentially important topic for future research is the role that these factors play in the presence or absence of learning-goal effects on performance.

Turning to other questions posed earlier, is wanting to do well different from wanting to prove your ability? When might perfor-

Table 3
Summary of Learning and Ability Goal Effects From Studies 4 and 5

Goal	Study 4	Study 5
Learning	No decrease in intrinsic motivation	Higher intrinsic motivation at beginning *and* end of course
	Less time and effort withdrawal	
	Effort attributions	Higher grades
	Planning	Greater improvement over time
	Seeking positive reinterpretation and growth	Deeper processing
Ability	Lower intrinsic motivation	Lower grades after repeated poor performance
	Loss of self-worth	Higher grades after repeated good performance
	Low ability attributions	
	Time and effort withdrawal	
	Rumination	

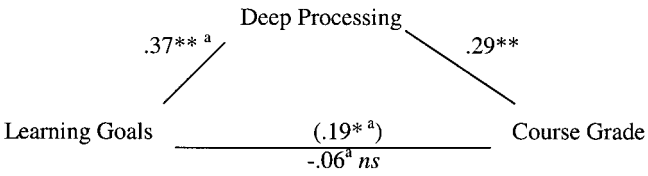

Figure 2. Processing style mediates the effects of learning goals on course grade. Values are standardized regression coefficients. [a]Standardized regression coefficient controlling for Scholastic Aptitude Test, perceived chemistry ability, past chemistry course experience, and gender. $*p < .05$. $**p < .01$.

mance goals predict vulnerability, and when might they prove beneficial to intrinsic motivation and/or performance? Individuals who endorse ability goals (i.e., seek to validate their ability) should be more likely to see negative outcomes as indicative of a lack of ability. Consistent with this prediction, ability goals were associated with common indices of helplessness after a significant hypothetical failure in Study 4. These goals predicted attributions to low ability, loss of self-worth, rumination about the setback, and loss of intrinsic motivation. In Study 5, consistent with the results of Study 4, after multiple setbacks, ability goals predicted lower grades. Thus, ability goals tend to predict a pattern of negative affect and cognition, as well as poorer subsequent performance, after a significant setback or a series of setbacks. These findings are also consistent with the early work on achievement goals (Ames & Archer, 1988; Butler, 1993; Elliott & Dweck, 1988; Jagacinski & Nicholls, 1987; Meece et al., 1988; see also Midgley, Kaplan, & Middleton, 2001). However, ability goals do not appear to have negative effects on performance when one is still "in the running" (i.e., when success is still possible), or when one is doing well, and may in these cases sometimes even boost performance because so much is on the line.

Why do the negative effects of ability goals occur? Dweck and Leggett (1988) suggested several potential cognitive and affective mechanisms of debilitation for individuals who hold ability goals in the face of difficulty. These include the loss of belief in the efficacy of effort (i.e., "My ability is so low, no amount of effort could help me"), defensive withdrawal of effort (either as a form of self-handicapping or as a response to the belief that the need to put in effort confirms that one has low ability), and interference of negative affect with concentration or test performance. Another possibility is that students with ability goals may withdraw effort strategically when they are doing poorly to redirect the resources to courses where they have a better chance at getting a good grade. Although these data do not test specifically for this possibility, the pattern of negative attributions, rumination, and loss of self-worth associated with ability goals suggest that withdrawal is not a solely cool-headed strategic process.

Outcome goals had surprisingly few effects. Although correlated with many key outcomes, these effects were almost always due to the association of outcome goals with either learning goals (e.g., for active coping and effort attributions) or ability goals (e.g., for loss of self worth and rumination). These effects did not survive simultaneous regression analyses that controlled for the influence of learning, ability, and normative goals. Taken together, these results suggest that those researchers interested in studying the unique effects of performance goals would do better not to operationalize them this way, as outcome goals (wanting to do well) can clearly be as much a part of a learning framework as a performance framework. In fact, doing well can be a means of assessing the acquisition and mastery of new skills and knowledge or of demonstrating ability.

Finally, *do* normative and nonnormative performance goals produce different effects? Unlike (nonnormative) ability goals, normative performance goals did not predict any of the affective, cognitive, or behavioral variables measured in Study 4, with the exception of the tendency on the COPE scale (Carver et al., 1989) to report engaging in denial and behavioral disengagement after experiencing an academic setback. In other words, wanting to outperform others might lead you to be reluctant to perceive your performance as a failure. In Study 5, normative goals, unlike ability goals, did not predict vulnerable performance, and in fact, were associated with higher levels of perceived ability. As mentioned earlier, the absence of a relationship between competitive goals and helplessness is worth noting, in that those researchers who have most consistently found that performance goals do not negatively influence intrinsic motivation and performance have used a normative definition of performance goal (e.g., Elliot & Church, 1997). Further research is warranted to explore the roles that perceived ability and denial may play in this protective function. Moreover, it is striking that although deep processing mediates the beneficial effects of learning goals on grades, the negative relationship between normative goals and deep processing did not seem to predict poorer grades. If the lower level of deep processing was not a hindrance in this setting, it is very likely that competitive zeal could have positive effects in the many settings in which deep processing is not required (Kanfer & Ackerman, 2000).

Because ability performance goals and normative performance goals appear to behave so differently, it would seem important for researchers to include both types of performance goals in future studies. In this way, we could continue to gain knowledge about when, why, and for whom each has costs and benefits.

It should be noted that there are several differences between these studies and many past studies of goal effects. First, the present studies used a measure of general goal orientation (i.e., the extent to which students typically felt oriented toward particular goals in their courses), whereas many past studies have used goal inventories that were specific to the task at hand, or to the course the student was currently taking. Although it is not certain how this difference might have affected our results and their interpretation, the field of achievement motivation might benefit from research that addressed differences in general versus specific goal measurement. Next, our participants, attending a highly selective university, may have differed somewhat from the typical student in ways that could increase or decrease the impact of particular goals. Also, somewhat larger sample sizes in some other studies may have yielded significant effects for certain performance goals that were not significant in our studies. Finally, as noted above, the course that our participants were enrolled in (Study 5) appeared to require deep processing in order to do well, and it is possible that this factor heightened the impact of learning goals. Nonetheless, our findings make sense both in view of much previous research and in view of the different meanings that various goals have for the individual.

Indeed, in this article we have taken great care to consider the meaning that particular goals may have for the individual and to

consider goal effects in that light. For example, in addressing the effects of ability-linked goals on behavior or performance, we pointed to the inferences that students with ability-linked goals draw from setbacks. In addressing the effects of outcome goals, we noted that wanting to do well, far from being a pure performance goal, may be equally linked to learning and performance goals. In thinking about learning goals, we stressed the element of active striving rather than a simple focus on the task or the absence of performance goal concerns. Thus, for each goal type, we tried to spell out the impact it might have in the face of achievement outcomes and why. We hope that our findings have shown the importance of conceptualizing the psychological processes that accompany different types of goals, and of matching operationalizations to these conceptions. When thought of in this way, it becomes clearer when and why different goals—even ones that have typically been classified under the same name—will have different effects.

In conclusion, we have found evidence to suggest that a careful examination of different types of performance and learning goals can indeed begin to clarify current controversies in the field. These studies have shown that learning goals do exert a positive influence on both intrinsic motivation and performance when individuals encounter prolonged challenge or setbacks. In addition, although performance goals that are focused on validating ability can have beneficial effects on performance when individuals are meeting with success, these same goals can predict impaired motivation and performance after setbacks.

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Appendix

Achievement Goal Inventory Items

Outcome Goal Items (α = .85)

It is very important to me to do well in my courses.

I really want to get good grades in my classes.

A major goal I have in my courses is to perform really well.

Ability Goal Items (α = .81)

It is important to me to confirm my intelligence through my schoolwork.

In school I am focused on demonstrating my intellectual ability.

One of my important goals is to validate my intelligence through my schoolwork.

Normative Goal Items (α = .92)

Normative Outcome

It is very important to me to do well in my courses compared to others.

I try to do better in my classes than other students.

A major goal I have in my courses is to get higher grades than the other students.

Normative Ability

It is very important to me to confirm that I am more intelligent than other students.

When I take a course in school, it is very important for me to validate that I am smarter than other students.

In school I am focused on demonstrating that I am smarter than other students.

Learning Goal Items (α = .86)

Learning

I strive to constantly learn and improve in my courses.

In school I am always seeking opportunities to develop new skills and acquire new knowledge.

In my classes I focus on developing my abilities and acquiring new ones.

Challenge-Mastery

I seek out courses that I will find challenging.

I really enjoy facing challenges, and I seek out opportunities to do so in my courses.

It is very important to me to feel that my coursework offers me real challenges.

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