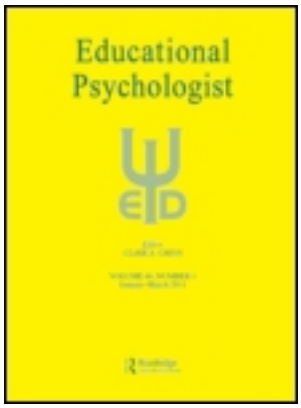

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Achievement Goal Theory at the Crossroads: Old Controversies, Current Challenges, and New Directions

Corwin Senko [a], Chris S. Hulleman [b] & Judith M. Harackiewicz [c]
[a] Department of Psychology, State University of New York, New Paltz
[b] Department of Graduate Psychology, James Madison University
[c] Department of Psychology, University of Wisconsin, Madison
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Corwin Senko
Department of Psychology
State University of New York–New Paltz

Chris S. Hulleman
Department of Graduate Psychology
James Madison University

Judith M. Harackiewicz
Department of Psychology
University of Wisconsin–Madison

Achievement goal theory has been one of the most prominent theories of motivation in educational research for more than 25 years. It has undergone considerable revision during that span, most notably with the distinction between approach and avoidance goals, debate concerning the critical features of performance goals, and the emergence of a multiple goal perspective that emphasizes the positive potential of performance-approach goals alongside mastery goals. This multiple goal perspective has met several criticisms from theorists taking the traditional perspective that emphasizes mastery goals over performance goals. We review these criticisms and the ongoing debate in light of the relevant research. We then spotlight two areas for future research, with the aim of advancing theory development and bridging these perspectives.

In the mid-1980s, several theorists distinguished between mastery goals and performance goals, the former aiming to develop one's competence and the latter to demonstrate one's competence by outperforming peers (Ames & Archer, 1988; Dweck, 1986; Nicholls, 1984). Although they had different theoretical frameworks and used different labels for the goals, these theorists converged on the idea that mastery goals promote greater educational benefits than performance goals, especially for students harboring self-doubts (Dweck, 1986). Later, after some studies had, surprisingly, revealed occasional benefits afforded more by performance goals, Harackiewicz, Barron, and Elliot (1998) offered a revision of achievement goal theory that emphasized the positive potential of each goal instead of mastery goals alone.

Correspondence should be addressed to Corwin Senko, Department of Psychology, SUNY New Paltz, 600 Hawk Drive, New Paltz, NY 12561. E-mail: senkoc@newpaltz.edu

This shift in perspectives has been controversial. Some have welcomed it and others have not, culminating in a point–counterpoint between theorists favoring the original "mastery goal perspective" (Kaplan & Middleton, 2002; Midgley, Kaplan, & Middleton, 2001) and others favoring the newer "multiple goal perspective" (Elliot, 1999; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002; Pintrich, 2000b). The debate simmered for a few years until stoked anew by Brophy (2005), who summarized many of the concerns that had been percolating in the field and concluded with the provocative recommendation that the field "move on" from performance goals—and, thus, away from the multiple goal perspective.

We examine this debate and review recent theoretical developments. We first chronicle the progression of achievement goal theory from a two-goal model into a more complex multiple goal model. We then consider several critiques of the multiple goal perspective, taking care to review the relevant data and outline needed research. Finally, we spotlight

research directions that we hope can steer theory development in a positive direction. Throughout, we focus on students' personal achievement goals rather than the goals conveyed by the classroom climate.

HISTORY OF ACHIEVEMENT GOAL THEORY[1]

The Mastery Goal Perspective

Achievement goal theory was developed to understand students' adaptive and maladaptive responses to achievement challenges (Dweck, 1986; Nicholls, 1984). Two primary goals were emphasized: mastery goals, which focus on acquiring and developing competence, and performance goals, which focus instead on demonstrating one's competence and outperforming others. Mastery goals have been theorized to produce similar or stronger effects than performance goals on any desirable educational outcome, and certainly *never weaker* effects (Dweck, 1986; Nicholls, 1984). This hypothesis traces to two distinctions between these goals.

The first is that the two goals derive in part from different views of ability. Students pursuing mastery goals tend to consider ability a malleable attribute, something to be developed by increasing effort (Dweck, 1986). Consequently, they should enjoy challenge and respond resiliently to adversity. Students pursuing performance goals tend instead to consider ability a fixed attribute (Dweck, 1986). Consequently, those who believe they have high ability should enjoy challenges and respond well to adversity, much like mastery-focused students do, but those who lack this self-confidence should avoid challenges and respond helplessly to adversity.

The second key distinction between the two goals is in how they define success versus failure. Successful attainment of a performance goal requires outperforming peers. In contrast, successful attainment of a mastery goal requires meeting either task-based criteria (e.g., answering 80% of test problems correctly) or, more typically, self-defined criteria (e.g., feeling that you have learned or improved). Thus, only a select percentage of students can achieve a performance goal, but every student can in principle achieve a mastery goal (Nicholls, 1979, 1984). Mastery goals should thus be easier to attain and allow for greater feelings of competence than performance goals, and this should translate into positive educational outcomes.

Researchers have compiled an impressive body of work on the effects of mastery and performance goals. Some of this research has been experimental (e.g., Butler, 1987; Elliott & Dweck, 1988; Harackiewicz & Elliot, 1993; Jagacinski & Nicholls, 1987), but the vast majority has been done in the classroom by correlating students' self-reported goals with various educational outcomes, such as achievement (e.g., course or exam grades), interest in the course material, study strategies, self-regulation, help-seeking behaviors, and so forth.

The findings for mastery goals have been consistent and mostly favorable. Students who pursue mastery goals, compared to those who do not, often find their classes interesting, persist when facing difficulty, value cooperativeness, seek help when confused, self-regulate effectively, use deep learning strategies (i.e., elaborating the material, connecting it to other concepts), navigate decisional conflict well, experience positive emotion, and perceive tasks as valuable (e.g., Darnon, Butera, & Harackiewicz, 2007; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000; Karabenick, 2003; Levy, Kaplan, & Patrick, 2004; Pekrun, Elliot, & Maier, 2006; Wolters, 2004). But there is a noteworthy omission from this list of beneficial outcomes: Mastery goals are often unrelated to academic achievement (for a meta-analytic review, see Hulleman, Schrager, Bodmann, & Harackiewicz, 2010).[2] Surprisingly, students who adopt mastery goals seldom perform better in the classroom than students who do not pursue these goals.

Early research revealed a less consistent pattern of findings for performance goals. Some studies showed negative or null relationships with achievement and other desirable outcomes (e.g., Ames & Archer, 1998; Greene et al., 2004), but others showed positive relationships (e.g., Elliot & Church, 1997; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Skaalvik, 1997). It appears that this inconsistency traces to two issues concerning how to define performance goals.

Performance Goal Issue 1: Approach Versus Avoidance Framing

Drawing from early achievement motivation work (e.g., Atkinson, 1964), theorists separated each goal into approach and avoidance forms (Elliot, 1999; Pintrich, 2000a). Performance goals were divided into performance-approach (i.e., striving to outperform others or appear talented) and performance-avoidance goals (i.e., striving to avoid doing worse than others or appearing less talented). Mastery goals were divided into mastery-approach (i.e., striving to learn or improve skills) and mastery-avoidance goals (i.e., striving to avoid learning failures or skill decline). The empirical research clearly supports this distinction. The findings for

[1]Our review of the history of achievement goal theory is necessarily brief. Readers interested in a more thorough review are directed to Elliot (2005); Senko, Durik, and Harackiewicz (2008); and Urdan (1997a).

[2]The few studies showing *direct* relationships between mastery goals and achievement are far outnumbered by studies showing no direct link. Of course it is possible for mastery goals to improve achievement *indirectly* by promoting behaviors that do boost performance. Indeed, a small number of other studies found that mastery goals were associated with persistence (J. K. Ford, Smith, Weissbein, Gully, & Salas, 1998; Simons, Dewitte, & Lens, 2004) or deep studying strategies (Greene, Miller, Crowson, Duke, & Akey, 2004; Lee, Sheldon, & Turban, 2003; Wolters, 1998) and that these behaviors were in turn associated with achievement. However, several others studies found that persistence and deep learning strategies failed to predict achievement (Al-Emadi, 2001; Bandalos, Finney, & Geske, 2003; Elliot, McGregor, & Gable, 1999; Harackiewicz, Barron, Tauer, & Elliot, 2002; Stipek & Gralinki, 1996).

the two avoidance goals have been almost uniformly negative, at least in Western cultures (Hulleman et al., 2010). Performance-avoidance goals are typically associated with high anxiety, disorganized study habits, help-avoidance, self-handicapping, and often low achievement and interest as well (e.g., Elliot & Church, 1997; Elliot et al., 1999; Midgley & Urdan, 2001; Wolters, 2004). In fact, many of the negative effects originally attributed to performance goals are uniquely associated with performance-avoidance goals (for a review, see Elliot & Moller, 2003). Similarly, mastery-avoidance goals are linked to high anxiety, low self-efficacy, disengagement, and poor performance (e.g., Van Yperen, Elliot, & Anseel, 2009; for a review, see Moller & Elliot, 2006).

The introduction of this approach-avoidance dimension to achievement goal theory helped clarify early inconsistencies in the performance goal findings. It is now widely accepted, with most researchers either studying all four goals or honing in on performance-approach and mastery-approach goals in particular. Taking the latter approach, we focus in this article primarily on mastery-approach and performance-approach goals, which, for simplicity, we refer with the shorter mastery goal and performance goal labels, respectively.

Performance Goal Issue 2: Demonstrating Ability Versus Outperforming Others

The second definitional issue concerns the core element of performance goals. Theorists have long disagreed about this issue. Nicholls (1984) and Dweck (1986) each posited that achievement-oriented behavior is motivated by either a desire to enhance competence or a desire to earn favorable judgments of one's competence. They agreed that mastery goals concern competence enhancement and that performance goals concern competence demonstration. They tacitly disagreed, however, about the role of social comparisons in performance goals. Nicholls, noting that onlookers often judge one's ability with normative criteria, included social comparisons in the performance goal construct and his later measures (Duda & Nicholls, 1992). Dweck, by contrast, conceptualized social comparison as "a potentially interesting but nonessential aspect of a performance goal" (Grant & Dweck, 2003, p. 542). Some theorists have echoed her viewpoint (e.g., Brophy, 2005; Kaplan & Maehr, 2007).

Other theorists approach this issue from a different perspective. They consider striving to outperform others the critical feature of the performance goal, and they question whether this goal should include a competence demonstration feature at all (Elliot & Thrash, 2001; Senko & Harackiewicz, 2002). They contend that the essence of achievement motivation is striving to attain competence, defined either with (a) intrapersonal and/or task-based criteria (i.e., mastery) or (b) interpersonal/normative criteria (i.e., performance). In their view, the desire to *demonstrate* competence instead reflects a concern with the social consequence of being competent (e.g., recognition and plaudits) and therefore make it a self-presentational motive, not an achievement motive. Of course, this self-presentational desire may function as one of many possible reasons that a student strives to outperform others, and it may well color the student's experience during performance goal pursuit, but the key point is that it is not itself part of the goal (Elliot, 2005; Elliot & Thrash, 2001). Accordingly, their framework allows the possibility that normative strivings and self-presentational strivings sometimes co-occur but other times do not. This possibility was demonstrated in a qualitative study by Urdan and Mestas (2006), who interviewed students about their reasons for endorsing a normative performance goal survey item. Approximately half of those students gave reasons indicative of self-presentational desires (i.e., pursuing performance goals *in order to* make a positive impression). Other students instead gave reasons that referred to personal states rather than self-presentation, such as to feel proud or to enjoy the experience of competition. Theorists who favor this theoretical definition therefore recommend that performance goal strivings and the reasons undergirding goal pursuit—including self-presentational concerns—be considered separate elements of the motivation complex (Elliot, 2005).[3]

In sum, there is disagreement about the critical element of performance goals. Some believe it is the desire to demonstrate competence (e.g., Grant & Dweck, 2003; Kaplan & Maehr, 2007). Others believe it is the desire to outperform peers (e.g., Elliot, 2005; Senko & Harackiewicz, 2002). This distinction is not trivial. Accumulating evidence reveals that the two types of performance goals can be differentiated and in fact may yield different effects (Donnellan, 2008; Grant & Dweck, 2003). For example, Hulleman et al. (2010) reviewed 98 studies of performance goals and systematically coded the content of items used to measure the goals. The average correlation between performance goals and academic achievement was positive when the majority of performance goal items emphasized normative comparisons ($r = +.14$, $p < .01$) but negative when they emphasized competence demonstration ($r = -.14$, $p < .01$). Thus, normative performance goals (e.g., the Academic Goal Questionnaire; Elliot & Murayama, 2008) are positively associated with achievement, whereas competence-demonstration goals (e.g., the Patterns of Adaptive Learning Scales; Midgley et al., 2000) are not.

This finding highlights the need for caution when evaluating performance goal effects. For example, the two most widely used measures of performance goals in organizational research (Button, Mathieu, & Zajac, 1996; VandeWalle, 1997) yield null or negative correlations with achievement (see Payne, Youngcourt, & Beaubien, 2007), yet each focuses

[3]In this vein, Vansteenkiste, Mouratidis, and Lens (2010) advised exploration of performance goal effects for people pursuing the goal for autonomous reasons versus controlled reasons, and Molden and Dweck (2006) advised exploration of performance goal effects for people with fixed versus malleable views of intelligence.

exclusively on competence demonstration rather than normative comparisons. Similarly, Utman's (1997) meta-analysis of 24 experiments showed that performance goals generally impair task performance. However, a systematic reanalysis of those studies, using the criteria developed by Hulleman et al. (2010), reveals that only two of those 24 experiments used a normative performance goal, and neither found a difference in achievement between this goal and a mastery goal (Covington & Omelich, 1984; Gianini, Weinberg, & Jackson, 1988). The negative effects in Utman's review were instead found among experiments that focused on competence demonstration or other constructs (i.e., process goals vs. outcome goals; intrinsic vs. extrinsic motivation).

An informal review of the literature suggests a similar pattern for several other important educational outcomes. For example, performance goals focused on competence demonstration have been linked to test anxiety and low levels of effort, self-efficacy, and interest (e.g., Ames & Archer, 1988; Barker, McInery, & Dowson, 2002; Elliott & Dweck, 1988; Grant & Dweck, 2003; Greene et al., 2004; Meece, Blumenfeld, & Hoyle, 1998; Linnenbrink, 2005). By contrast, normative performance goals have typically yielded null or positive relationships with the same outcomes across samples ranging from elementary school students to college students (e.g., Duda & Nicholls, 1992; Hulleman, Durik, Schweigert, & Harackiewicz, 2008; Leondari & Gialamis, 2002; Senko & Harackiewicz, 2005b; Shih, 2005; for reviews of normative performance goal effects, see Elliot & Moller, 2003, and Moller & Elliot, 2006). It appears, then, that these two forms of performance goals might produce different educational outcomes. We believe this possibility merits systematic attention, perhaps with studies comparing the two performance goals, and we urge researchers to consider this distinction when selecting goal measures or manipulations (Hulleman & Senko, 2010). We, too, distinguish them when reviewing performance goal effects during the rest of this article. We use the "normative goal" and "appearance goal" labels when the ideas and findings warrant it, yet we retain the broader "performance goal" label when the ideas or findings concern the two goals equally.

In sum, achievement goal researchers currently face a conceptual challenge about how to define performance goals (competence demonstration vs. outperforming others). Both perspectives are rooted in sound theory, each with pros and cons (Elliot, 2005; Kaplan & Maehr, 2007). Although separating the two types of performance goals does complicate goal theory, we believe it also affords greater precision and helps resolve inconsistent findings. We urge researchers to continue examining whether and why these two types of goals have different antecedents and/or educational consequences.[4]

Indeed, this iterative process of defining constructs, conducting research, and further refining the constructs is the sign of a healthy and productive science (Coombs, Raiffa, & Thrall, 1954).

The Multiple Goal Perspective

As just documented, the effects of performance goals may depend on how they are defined. Performance-avoidance goals tend to produce negative effects, as do appearance goals. Normative goals appear instead to produce a more constrained and unique set of effects (see Elliot & Moller, 2003). Some are relatively undesirable, such as mild anxiety and the use of "surface" learning strategies that focus on rote memorization (Elliot et al., 1999). Others are relatively desirable, such as high effort, persistence, and most notably high achievement in the classroom (see Hulleman et al., 2010). This intriguing link with achievement has been especially robust: It has been shown in both America and Western Europe (e.g., Cury, Elliot, DaFonseca, & Moller, 2006), in age groups ranging from middle school students (Skaalvik, 1997; Wolters,Yu, & Pintrich, 1996) to college students (e.g., Harackiewicz et al., 2000), and in classes ranging from introductory courses in which grades are determined by multiple-choice exams (Harackiewicz, Barron, Tauer, et al., 2002) to advanced seminars in which grades are determined primarily by term papers and participation (Barron & Harackiewicz, 2003).[5]

Of course, the founders of goal theory had always contended that performance goals could provide benefits in *some* situations, so long as the student possesses high confidence (Dweck, 1986; Nicholls, 1984). They also, however, posited that mastery goals would match or surpass performance goals in producing benefits to any desirable outcome, classroom achievement included. The possibility that performance goals might promote classroom achievement *more reliably* than mastery goals was never anticipated.

This unexpected finding, coupled with experimental evidence that normative goals also produce greater engagement and interest than mastery goals for some people (e.g., Harackiewicz & Elliot, 1993), prompted Harackiewicz et al. (1998) to propose a revision to achievement goal theory. In particular, they urged the field to consider the potential *unique benefits* of performance-approach goals and mastery goals, and to identify how the two goals can combine to optimize

[4]Our discussion here has been limited to performance-approach goals. Performance-avoidance goals have almost always been defined in nonnormative ways, with an emphasis either on trying to avoid appearing incompetent or on fears about doing poorly (see Hulleman et al., 2010). Only recently have theorists begun to define these goals with an emphasis solely on avoiding doing worse than others (Elliot & Murayama, 2008). It is too early, therefore, to test whether normative-avoidance versus appearance-avoidance goals yield different effects.

[5]The size of the normative goal relationship with achievement generally ranges from .10 to .25, a small to medium effect size by conventional standards for correlations (Rosenthal, Rosnow, & Rubin, 2000). It is also consistent with a meta-analysis showing that, aside from students' prior achievement, motivational factors such as goals and self-efficacy remain the strongest predictors of school achievement, above socioeconomic status, learning strategies, and other variables (Robbins et al., 2004).

motivation. Barron and Harackiewicz (2001) identified three statistical patterns of data that would reveal beneficial combinations. The most intuitively recognizable one is an *interactive* model in which the two goals have a positive interaction effect on an outcome, such that the greatest benefit occurs when students pursue both goals.[6] The second is an *additive* model in which the two goals each have positive main effects on the same outcome, thus revealing benefits to pursuing both goals. The third is the *specialized* model in which the two goals have unique main effects on *different* outcomes. Pintrich, Conley, and Kempler (2003) observed evidence for all three patterns, depending on the educational outcome being investigated, but the strongest support has been for the specialized model: Normative goals are associated with achievement, whereas mastery goals are associated with interest and several other desirable outcomes (Hulleman et al., 2010). In sum, this multiple goal framework rests on three assumptions: Performance goals may provide some benefits more reliably than mastery goals, students can adopt both mastery and performance goals simultaneously, and students can reap the benefits of each goal by pursuing both.

This newer theoretical perspective departed from the traditional mastery goal perspective that pitted mastery goals against performance goals in an either–or framework. It proved to be somewhat controversial. Theorists (Brophy, 2005; Midgley et al., 2001) have offered four primary criticisms of the multiple goal perspective, each challenging the first assumption concerning the positive potential of performance-approach goals. In particular, they contend that students rarely pursue performance goals, that the link between performance goals and achievement is spurious, that pursuing performance goals carries achievement-related costs, and that pursuing performance goals also has interpersonal costs. We review the data for each next.

PRIMARY CRITICISMS OF THE MULTIPLE GOAL PERSPECTIVE

Criticism 1: Do Students Rarely Generate Performance Goals Spontaneously?

Researchers usually rely on questionnaires to identify students' achievement goals. Brophy (2005) argued that this method may provide an inaccurate portrayal of how much students actually pursue performance goals. He reported three published qualitative studies in which elementary school students were asked to describe their own goals (Anderson, Brubaker, Alleman-Brooks, & Duffy, 1985; Lemos, 1996; Rohrkemper & Bershon, 1984). Performance goals were rarely mentioned in any of them, which led Brophy to conclude that these goals are a low-incidence phenomenon and that theorists ought therefore to stop studying them.

We concur with Brophy's (2005) broader recommendation to supplement survey-based methods with qualitative or experimental methods. Yet we believe his conclusion about performance goals is premature, because it is based on only three studies. We therefore explored the literature and located six additional studies in which students described their goals. Hijzen, Boekkarts, and Vedder (2007) found that fewer than 5% of Dutch university students listed a performance goal as one of their motives on a collaborative learning task. The five other studies, however, showed an altogether different pattern. Harackiewicz et al. (1997) found that 42% of college students listed performance goals for their Introductory Psychology course. Levy et al. (2004) found that 34% of elementary school students described a performance goal as their dominant goal. Urdan (2004b) found that 25% of elementary and middle school students were motivated by performance goals during various class activities. Finally, Job, Langens, and Brandstätter (2009), in two studies of Swiss university students, found that 82% in Study 1 and 71% in Study 3 listed performance goals when providing their goals for various achievement domains. Clearly, some students pursue performance goals, at least in some contexts. In fact, the overall rate of performance goal pursuit in these six studies ($M = 43\%$, range = 5–82%) was comparable to the rate for mastery goals ($M = 36\%$, range = 12–86%).

Criticism 2: Is the Normative Performance Goal Relationship With Achievement Spurious?

Brophy (2005) and Van Yperen (2003) argued that students with stronger performance histories are more likely to adopt normative goals. Thus, the relationship between normative goals and performance may be spurious, reflecting a confound with ability and confidence. Two sets of data address this confound hypothesis. One is those survey studies that (a) report significant, positive relationships between normative goals and class achievement and (b) also measure students' *baseline* ability (e.g., prior grade point average or standardized test scores) or competence perceptions. Drawing from two recent reviews (Hulleman et al., 2010; Linnenbrink-Garcia, Tyson, & Patall, 2008), we identified 24 studies from peer-reviewed, English-language publications that satisfy both criteria. The correlations in these studies, provided in Tables 1 and 2, provide several insights.

First, in support of Elliot's (1999) hierarchical model of achievement goals, competence perceptions are much more potent than ability in predicting goal pursuit. Second, and more important, these correlations allow a straightforward assessment of the ability confound hypothesis: If students' underlying ability and/or competence perceptions does explain why normative goals predict achievement more reliably than do mastery goals, then these baseline measures must also correlate with normative goals significantly and more

[6]By contrast, a negative interaction effect, such that mastery goals are less effective when pursued alongside performance goals, would reveal support for the mastery goal perspective. This pattern has been seldom found in the literature (Midgley et al., 2001).

TABLE 1
Summary of Relationships Between Achievement Goals and Baseline Ability in Studies Linking Normative Goal to High Achievement

Study	*Sample/ Setting*	*Baseline Ability Measure*	*PAP Correlation With Ability*	*MAP Correlation With Ability*	*PAP Correlation With Achievement*	*PAP Relationship With Achievement, Controlling For Ability*[a]
Barron & Harackiewicz (2001, Study 1)	College; Lab	Pretest ability (math task)	.15	.14	.23*	.10*
Church et al. (2001, Study 2)	College class	SAT	.07	.08	.11*	.14*
Cury et al. (2006, Study 1)	7th- & 8th-grade classes	Prior semester GPA	.17*	.13*	.28*	.23*
Cury et al. (2006, Study 2)	7th- & 8th-grade classes	Pretest IQ test	.27*	.23*	.24*	.23*
Daniels et al. (2008)	College class	High School GPA	.12*	.02	.18*	—
Durik et al. (2009)	College class	ACT	.13	–.01	.30*	.26*
		High school percentile	.15*	.21*		
Elliot & McGregor (1999, Study 1)	College class	SAT	n/a	n/a	.14[b]	.21*
Elliot & McGregor (1999, Study 2)	College class	SAT	n/a	n/a	.09[b]	.24*
Elliot et al. (1999, Study 1)	College class	Prior cumulative GPA	.14*	.17*	.23*	.15*
Elliot et al. (1999, Study 2)	College class	SAT	–.04	–.10	.08	.17*
Elliot & McGregor (2001, Study3)	College class	SAT	.10	–.09	.14	.18*
Elliot & Murayama (2008)	College class	SAT	n/a	n/a	n/a	.46*
Harackiewicz et al. (2002)	College class	SAT	–.03	–.02	.14*	.16*
		High School percentile	.09	.05		
Harackiewicz et al. (2008)	College class	Background Topic Experience	–.07	.12*	.18*	.25*
Wolters (2004)	7th- & 8th-grade classes	Standardized test	.13*	.12*	.23*	.12*
Total no. significant relationships			6:14 (43%)	6:14 (43%)	10:12 (83%)	14:14 (100%)
Mr			.10	.08	.18	

Note. Daniels et al. (2008) did not test this relationship. PAP = performance-approach goal; MAP = mastery-approach goal; GPA = grade point average.
[a]Data were culled from regression or path analyses that control for the effects of baseline ability on achievement. [b]Significance level not provided.
*$p < .05$. All other correlations were nonsignificant.

strongly than they do with mastery goals. As it turns out, the correlations do not show this. Baseline ability actually correlates only weakly with normative goals ($Mr = .10$) and mastery goals ($Mr = .08$) alike. Competence perceptions do correlate modestly with normative goals ($Mr = .27$), but they correlate even more strongly with mastery goals ($Mr = .39$), which of course belies the logic of the ability confound argument. In addition, 18 of these 24 studies also tested the normative goal link with achievement while statistically controlling for baseline ability or competence perceptions. All but one (94%) found that the relationship remained intact.[7] Thus, the findings from these 24 survey studies clearly fail to support the ability confound hypothesis.[8]

[7]Timing is essential with this statistical approach. Several studies (e.g., Harackiewicz et al., 2000; Harackiewicz, Durik, Barron, Linnenbrink, & Tauer, 2008; Senko & Harackiewicz, 2005b; Wolters et al., 1996) measured goals at the beginning of the semester (Time 1) and achievement (or perceived competence) at multiple separate points later in the semester, for example, a midterm exam (Time 2) and then final grade (Time 3). It is tempting to treat the Time 2 achievement measure as an ability covariate when testing the goal effects on Time 3 achievement. Linnenbrink-Garcia et al. (2008) took this approach and concluded from their review of seven studies that the relationship between performance goals and grades often disappears when controlling for ability. We believe this approach is misguided, however, because the Time 2 achievement measure is not a valid indicator of baseline ability; statistically controlling it removes not only ability but also any effects that achievement goals have on ongoing achievement. The best baseline measures are those taken prior to the assessment of achievement goals.

[8]Because college entrance exams (e.g., the SAT) and high school performance (rank or grade point average) rate among the most robust and reliable predictors of college achievement (Robbins et al., 2004), researchers use them as baseline ability measures. Nonetheless, one's prior performance in a similar class(es) or on a similar task might provide an even better index of baseline ability. Fortunately, a few of the studies listed in Table 1 did use measures of pretask performance or cumulative baseline grade point average, and they showed the same effects as those using college entrance exams or high school achievement. So, too, do the studies using baseline competence perceptions, which are likely to be strongly influenced by one's performance history on similar tasks (see Table 2). The consistency across

TABLE 2
Summary of Relationships Between Achievement Goals, Baseline Competence Perceptions, and Achievement in Studies Linking Normative Goal to High Achievement

Study	*Sample / Setting*	*Baseline Competence Perception Measure*	*PAP Correlation With Expectations*	*MAP Correlation With Expectations*	*PAP Correlation With Achievement*	*PAP Relationship With Achievement, Controlling for Expectations*[a]
Bong (2009)	Elementary school	Math Self-Efficacy	.50*	.67*	.23*	Not tested
	Middle school		.40*	.67*	.24*	
Elliot & Church (1997)	College class	Competency Expectations	.20*	.36*	n/a	.36*
Greene et al. (2004)	High school class	Self-Efficacy	.24*	.48*	.15*	Not tested
Harackiewicz et al. (2000)	College class	Performance Expectations	.15*	.30*	.14*	.15*
Leondari & Gialamas (2004)	5th – 8th-grade classes	Self-Perceived Competence	.25*	.30*	.17*	*ns*[c]
Senko & Harackiewicz (2005b, Study 1)	College class	Performance Expectations	.03	.21*	.25*	.17*
Senko & Harackiewicz (2005b, Study 2)	College; Lab	Math Confidence (math task)	.19*	.06	.16*	.19*
Skaalvik (1997, Study 2)	6th-grade class	Self-Efficacy	.23*	.22*	.14*	Not tested
Wolters et al. (1996)[b]	7th- & 8th-grade classes	Self-Efficacy	Math: .24*	.42*	.13*	Not tested
			English: .32*	.49*	.12*	
			Social studies: .35*	.49*	.14*	
Total no. significant relationships			11:12 (92%)	11:12 (92%)	11:11 (100%)	4:5 (80%)
Mr			.27	.39	.17	

Note. PAP = performance-approach goal; MAP = mastery-approach goal.
[a]Data were culled from regression or path analyses that control for the effects of baseline expectations on achievement. [b]Wolters et al. provided correlations among Time 1 (beginning of school year) and Time 2 (end of school year) variables for all three classes. Data reported here concern the Time 1 goals and expectations and Time 2 achievement, consistent with the temporal logic of goal theory. [c]Significance level not provided.
*$p < .05$. All other correlations were nonsignificant.

The second set of data to consider comes from experiments that manipulate the achievement goals pursued by participants, in particular studies using normative goals. This small pool of experiments has yielded evenly mixed results: A normative goal produced achievement gains relative to a mastery goal or control group in some studies (Elliot, Shell, Henry, & Maier, 2005; Poortvliet, Janssen, Van Yperen, & Van de Vliert, 2007; Senko & Harackiewicz, 2005a) but not in others (Barron & Harackiewicz, 2001; Giannini et al., 1988; Senko & Harackiewicz, 2002). Although the normative goal effects on achievement have been less robust in these experiments than in the classroom studies, the fact that some experiments show normative goal benefits, and none show decrements, reveals that these goals *can* cause achievement gains.

In sum, the survey research and experimental research together cast doubt on the ability confound argument. Although there remains room for continued research on the issue, the extant data suggest that the normative goal link to grades is legitimate, not spurious. This is not to imply that performance goal pursuit is always unrelated to prior achievement. High achievement may reinforce the continued pursuit of these goals (Senko & Harackiewicz, 2005b; Van Yperen & Renkema, 2008), much as high course interest may reinforce the pursuit of mastery goals (Harackiewicz et al., 2008). The point is that goals can sometimes exert direct motivational effects on achievement, independent of students' performance history. This of course was one of the foundational assumptions of achievement goal theory (Dweck, 1986), and in our view remains one of its most appealing features.

Criticism 3: Do Performance Goals Have Achievement-Related Costs?

Thus far, our review reveals that some students do pursue performance goals and that normative goals may sometimes facilitate achievement. Nonetheless, there are genuine concerns about the potential costs of pursuing these goals. We review several in the subsequent sections.

3a. Do Normative Performance Goals Interfere With Task Focus?

Despite being consistently linked with high achievement, normative performance goals are, curiously, sometimes alleged to hinder achievement (Brophy, 2005; Hoffman, 1993;

these different baseline measures is impressive and, we believe, allows reasonable confidence in the use of SAT or high school performance as baseline ability measures. Nonetheless, use of various other baseline ability measures would be welcome in future tests of the ability confound hypothesis.

Steele-Johnson, Beauregard, Hoover, & Schmidt, 2000; Urdan & Mestas, 2006; Vansteenkiste, Matos, Lens, & Soenens, 2007; Van Yperen, 2003). The argument put forward is that thoughts of outperforming others might become intrusive, thus diverting attention away from task demands and undermining students' achievement. Elliot and Moller (2003) likewise suggested that performance goals, owing to their external standards for judging success, may become distracting if students are not provided clear and consistent feedback about their goal progress.

There are various ways to test the task distraction hypothesis. One indirect tactic is to correlate goals and trait-level test anxiety, especially the "worry" subcomponent that captures cognitive interference. Many studies have done this. Their findings vary but on average show no link between normative performance goals and worry (for reviews, see Elliot & Moller, 2003, Pekrun et al., 2009). A more direct test is to examine goal relationships with self-reports of distraction *during or immediately after* task engagement. Three studies using this approach support the task distraction argument, but each used performance goal measures that confound approach and avoidance strivings (Brown, 2001; Fisher & Ford, 1998; Hoffman, 1993). Studies using normative goals have not supported it. For example, classroom-based studies show that neither normative goals nor mastery goals decrease students' task focus when preparing for an upcoming exam (Linnenbrink, Ryan, & Pintrich, 1999; McGregor & Elliot, 2002; Putwain & Daniels, 2010) or during the exam (Elliot & McGregor, 1999) and that both may sometimes even *elevate* task focus (Lee et al., 2003). Similarly, experiments have found that normative and mastery goals each produce greater task absorption than a control group on various games and problem-solving activities (Barron & Harackiewicz, 2001; Elliot & Harackiewicz, 1996; Harackiewicz & Elliot, 1993).

The distraction hypothesis can also be tested with more objective measures of task focus. One useful tactic is to test the goal effects on working memory, which diminishes during cognitive interference. Huijun, Dejun, Hongli, and Peixia (2006) and Linnenbrink et al. (1999) did this. Each found that, in contrast to the task distraction hypothesis, self-reported normative goals directly predicted *high* levels of working memory. Finally, stereotype threat research also tests this hypothesis. Members of a group stereotyped as incompetent tend to underperform when the stereotype is made salient (Steele, 1997). One explanation for this effect is that stereotype awareness reduces working memory while task engaged (Schmader, 2010). Accordingly, Brophy (2005), when proposing the task distraction hypothesis, suggested that stereotype threat effects may be especially pernicious for students with normative goals, because thoughts about outperforming others would be mentally overloading. Four studies have tested this possibility (Brodish & Devine, 2009; Chalabaev, Sarrazin, Stone, & Cury, 2008; Kellow & Jones, 2008; Smith, Sansone, & White, 2007). None found any link whatsoever between stereotype threat and normative performance goals.

To summarize, there is a dearth of evidence for the task distraction hypothesis. Normative goals, like mastery goals, do not appear to distract students to any significant degree and in some cases actually improve task focus. Instead, the evidence reveals that performance-*avoidance* goals interfere with students' task focus. These goals have been linked to self-reported task distraction (Lee et al., 2003) and low working memory (Huijun et al., 2006). Performance-avoidance goals, unlike normative goals, also prompt confusion about how to study (e.g., Elliot et al., 1999; Senko & Miles, 2008), frequently set in motion the feelings of shame and anxiety that trigger task-disrupting thoughts (Pekrun et al., 2006; Pekrun, Goetz, Titz, & Perrry, 2002), and produce stereotype threat effects (Brodish & Devine, 2009; Chalabaev et al., 2008; Smith et al., 2007). These opposing effects of normative and performance-avoidance goals raise a new hypothesis: Perhaps mastery and mastery-avoidance goals also have diverging effects on task focus. This possibility needs testing. Should the research support it, we would know that it is the approach-avoidance distinction, not the type of goal, that determines whether students experience debilitating levels of anxiety and distraction.

3b. Do Performance Goals Transform Into Performance-Avoidance Goals?

Although normative goals do not appear to jeopardize task focus and achievement in direct ways, perhaps they do so in an *indirect* way over the long run by making students vulnerable to performance-avoidance goals. This possibility was first offered by Nicholls (1984), who posited that students pursuing performance goals would respond to failure experiences by switching to performance-avoidance goals, thus incurring all the educational hazards of the latter goals, including low achievement.[9] Other theorists have echoed this hypothesis (Bong, 2005; Brophy, 2005; Kaplan & Maehr, 2007; Midgley et al., 2001; Molden & Dweck, 2000; Roeser, 2004).

The research offers mixed evidence for goal switching. Consider the test–retest correlations of goals during the academic period. If there is widespread, wholesale change in students' goals, especially their performance (normative or appearance based) goals, then these correlations should be relatively low. The extant data show otherwise. The test–retest correlations for mastery goals and performance goals tend to be similar and high, ranging from .40 to .70, with values typically stronger for goal measures taken in the same semester than over successive semesters (e.g., Lieberman & Remedios, 2007; Stipek & Gralinski, 1996; Wolters et al., 1996; see

[9]Though Nicholls (1984) never used the performance-approach and performance-avoidance terminology, his hypothesis clearly captured the basic goal-switching process described here.

Payne et al., 2007, for a review). This suggests that the pursuit of mastery and performance goals alike remains stable during the academic period for most students. Another way to spot goal switching is to examine the mean levels of goal pursuit over time for a single course (or activity) in which the broader motivational climate remains unchanged. If the goal switching hypothesis is correct, we should see a concurrent (a) decrease in performance goals and (b) increase in performance-avoidance goals. We know of 10 studies that provide this test (Elliot & McGregor, 2001, Study 2; Fryer & Elliot, 2007, Studies 1–3; Jagacinski, Kumar, Boe, Lam, & Miller, 2010; Muis & Edwards, 2009, Studies 1–2; Senko & Harackiewicz, 2005b, Studies 1–2; Summers, 2006). Only one (Senko & Harackiewicz, 2005b, Study 1) found a corresponding decrease in performance goals and increase in performance-avoidance goals. The other nine studies provided little hint of goal switching; in fact, most found no change in performance goals over time. However, the test–retest correlations and the mean-level analyses are each limited: They aggregate across the sample and therefore might mask any goal switching that occurs among small segments of the sample (Fryer & Elliot, 2007). A more fine-grained analysis of goal switching would count the number of students who adjust their goals a significant degree over time. Thus far, only Muis and Edwards (2009) have used this student-centered approach. They found that only 4% of students in Study 1 and 0% in Study 2 actually switched from performance to performance-avoidance goals. In sum, the various studies above all run counter to the goal-switching hypothesis.

However, it is also clear that competence perceptions predict performance goal pursuit (see Table 2) and that *fluctuations* in competence perceptions during the semester predict corresponding fluctuations in students' performance goal pursuit (Bong, 2005; Jagacinski et al., 2010). Perhaps, then, some students do revise their performance goals after receiving negative feedback. Testing this hypothesis properly requires measuring students' goals *within the same context* before and after challenging events that might alter their competence perceptions. Only three studies provide such a test.[10] Middleton, Kaplan, and Midgley (2004) found that early performance goal pursuit (sixth grade) predicted subsequent performance goal pursuit (seventh grade). This matches the stability findings previously covered in this article. Curiously, early performance goals also predicted subsequent performance-avoidance goals among students with *high* baseline self-efficacy. This finding seems to contradict the goal-switching hypothesis, which instead posits that it is students with low self-efficacy who switch to performance-avoidance goals. One possible explanation for this surprising result is that the high-efficacy students had the highest standards and were therefore the most at risk of experiencing early disappointment, thus leading them to later pursue performance-avoidance goals. Regardless, those same students reported no corresponding decrease in performance goal pursuit, so it appears that they simply began to pursue *both* goals rather than switch from performance to performance-avoidance goals. Senko and Harackiewicz (2005b) later tested Nicholls's hypothesis more directly in two studies by examining the impact of feedback on students' ongoing goal pursuit. In the first, they found that college students in an introductory-level psychology course decreased their performance goal pursuit and increased their performance-avoidance goal pursuit if they had received low exam scores during the semester. However, in their second study, they found no effect of experimentally induced negative feedback on the pursuit of either performance goals or performance-avoidance goals.

It is essential to consider whether mastery goals pose the same risk. Do students reduce their mastery goal strivings and/or switch to mastery-avoidance goals after experiencing setbacks? The possibility may seem implausible at first blush. Mastery goals are famed for producing resilience and challenge seeking, after all. Yet all goals seem to be governed by the same basic goal revision process: Believing that goal attainment is unlikely eventually leads to reduced goal pursuit (Carver & Scheier, 1990). There is no reason to believe that mastery goals are immune to this process. Indeed, baseline competence perceptions predict mastery goal pursuit at least as strongly as they predict performance goals (see Table 2). Likewise, fluctuations in competence perceptions predict corresponding fluctuations in mastery goal pursuit (Bong, 2005; Jagacinski et al., 2010). Thus, it is likely that when mastery goals seem unattainable, for whatever reason, students will reduce their pursuit of this goal. Only the two studies by Senko and Harackiewicz (2005b) have directly tested this possibility. Although neither assessed mastery-avoidance goals, each did show that students who sustained negative feedback reduced their mastery-approach goal strivings as much (Study 1, a classroom survey study) or more (Study 2, a laboratory experiment) than their normative goal strivings. If this general pattern persists, we should perhaps advocate against avoidance goals in general rather than performance goals in particular.

To summarize, the research thus far offers much stronger evidence for goal stability than for goal revision. This suggests that switching from approach to avoidance goals, and the various costs that may accompany this switch, is not common in classrooms. Likewise, the simple fact that normative performance goals do consistently predict achievement, just as mastery goals consistently predict interest and other benefits, suggests that the pursuit of each goal usually remains fairly stable during the academic period. Nonetheless,

[10] Van Yperen and Renkema (2008) also tested the effects of competence feedback on goal pursuit. They found that normatively based performance goals were more likely to be chosen after receiving positive instead of negative feedback in two studies. The effects on performance-avoidance goals were less consistent: Positive feedback produced *high* performance-avoidance goal pursuit in their Study 1 but low pursuit in their Study 2. However, their studies lacked a baseline goal measure and thus were unable to examine *change* in goal pursuit.

some students do alter their pursuit of mastery and performance goals (Fryer & Elliot, 2007; Muis & Edwards, 2009), and the few studies that have directly tested the goal switching hypothesis suggest that this risk may be present for students who experience intense, sustained negative feedback. It therefore behooves us to continue to study goal revision processes much more closely: in particular, how often this approach-avoidance switching occurs, for both mastery and performance goals, and which cognitive or emotional regulatory strategies can help minimize this risk (see Tyson, Linnenbrink-Garcia, & Hill, 2009).

Criticism 4: Are Performance Goals Costly in Social Contexts?

Some achievement goal researchers are now examining interpersonal outcomes alongside traditional educational outcomes. This growing area has raised a newer concern with performance goals: specifically, that these goals might impair students' peer relationships, undermine collaborative learning, or encourage cheating. Much of the research has used appearance goals instead of normative ones, yet we suspect that this is one area where the two produce similar effects. Given the competitive essence of normative goals, future research may even reveal stronger effects for normative than appearance goals.

4a. Do Performance Goals Undermine Students' Relationships?

Several studies, nearly all with middle school or high school samples, have explored links between students' achievement goals and aspects of their social relationships. They show uniformly positive associations of mastery goals with peer relationship satisfaction, positive bonds with teachers, and a sense of classroom belonging (e.g., Anderman & Anderman, 1999; Kaplan & Maehr, 1999; Levy-Tossman, Kaplan, & Assor, 2007; Liem, Lau, & Nie, 2008; Nelson & DeBacker, 2008; Patrick, Ryan, & Kaplan, 2007; Urdan, 1997b). Performance goals have shown a less consistent pattern. Students pursuing these goals express concern with popularity and have little desire to please their teachers (Anderman & Anderman, 1999; Levy-Tossman et al., 2007; Urdan, 1997b). Yet they do not appear to suffer much for it: Performance goals have yielded null (Anderman & Anderman, 1999; Kaplan & Maehr, 1999) or positive correlations (Liem et al., 2007; Nelson & DeBacker, 2008) with peer relationship satisfaction and classroom belonging.

These initial findings offer two tentative conclusions. One is that mastery goals are more likely than performance goals to facilitate positive relationships with peers and teachers. However, it also appears that performance goals yield null or positive links with key social outcomes, not the negative links needed to show that they are "costly." We encourage more work in this area, with both normative and appearance goals, ideally across all grade samples and with a greater emphasis on pinpointing the causal direction of the link between goals and social relationship quality (Wentzel, 1999).

4b. Do Performance Goals Jeopardize Collaborative Learning?

With collaborative learning becoming more common in school, Pintrich et al. (2003) urged researchers to explore the effects that mastery and performance goals have on students' efforts and experience in such situations. The research to date is sparse, yet the pattern of findings mirrors the one for social relationships. Mastery goals are linked with openness to working with classmates (Levy et al., 2004), candid sharing of one's opinions (Poortvliet et al., 2007), and tolerance for opposing opinions (Darnon, Muller, Schrager, Pannuzzo, & Butera, 2006), all of which may help explain why these goals promote effective collaborative learning and satisfaction with the collaborative process (Hijzen et al., 2007; Kristof-Brown & Stevens, 2001; Sins, van Joolingen, Savelsbergh, & van Hout-Wolters, 2008).

The findings for performance goals (appearance-based in most studies) instead reveal that students pursuing these goals participate during collaborative learning sessions as actively as mastery-focused students (Gabriele & Montecinos, 2001; Harris, Yuill, & Luckin, 2008), but with a cautious approach that contrasts the intended spirit of collaborative learning. For example, Harris et al. (2008) found that students pursuing performance goals were less apt than those pursuing mastery goals to use collective pronouns ("we") or to elaborate their comments for the benefit of their partner. Performance goals also appear to prompt a more critical view of teammates. For example, students pursuing these goals, compared to those pursuing mastery goals, display stronger signs of favoritism in their partner choices (Levy et al., 2004) and lower tolerance for disagreement from a partner whose ideas are clearly wrong (Darnon et al., 2006). Similarly, whereas mastery-focused students openly share and welcome all ideas, whether weak or strong, performance-focused students give guarded opinions (Poortvliet et al., 2007) and summarily dismiss weak ideas (Darnon, Butera, et al., 2007; Poortvliet et al., 2007) but welcome strong ideas (Poortvliet et al., 2007) in ways that ultimately may benefit their own success.

In sum, the handful of studies reviewed here suggests that performance goals prompt a guarded and results-oriented approach that, depending on the circumstances, may be either conducive (Poortvliet et al., 2007) or nonconducive to the goal pursuer's learning (Darnon, Butera, et al., 2007; Darnon, Harackiewicz, Butera, Mugny, & Quiamzade, 2007). Insofar as these goals produce a cautious approach to information exchange (Poortvliet et al., 2007), it appears that they could be costly to teammates' learning and group performance. Studies are needed to test this directly, ideally with real teams (Sins et al., 2008).

4c. Do Performance Goals Increase Cheating?

A final interpersonal cost alleged of performance goals is that they may prime students to tolerate and perhaps engage in cheating (Murdock & Anderman, 2006). Studies are now testing this hypothesis. For example, two recent experiments (Sage & Kavussanu, 2007a; Van Yperen, Hamstra, & van der Klauw, in press) found that performance goals are more likely than mastery goals to cause actual cheating behavior. In addition, several field studies show that youth and adult athletes who pursue performance goals tend to consider rule-breaking (e.g., fouls, deceiving the referee) and poor sportsmanship to be acceptable under some conditions (Kavussanu & Roberts, 2001; Sage & Kavussanu, 2007b; Sage, Kavussanu, & Duda, 2006). In contrast to these results, however, four studies found no relationship between students' performance goals and beliefs about the morality or justifiability of cheating (Murdoch, Hale, & Weber, 2001, Study 1; Murdoch, Miller, & Kohlhardt, 2004, Studies 1 & 2; Niya, Ballantyne, North, & Crocker, 2008).[11] Mastery goals, on the other hand, promote sportsmanship and low tolerance for cheating in all of these studies. Thus, the research, though limited at this juncture, suggests that mastery goals are superior to performance goals on this issue but at the same time provides only mixed support for the criticism that performance goals increase cheating.

NEW DIRECTIONS FOR ACHIEVEMENT GOAL THEORY

The various critiques of the multiple goal perspective reviewed here, and summarized in Table 3, are all intuitively compelling. However, of the seven alleged costs of performance goals, we found evidence for only two (4b, 4c), and in both cases, it was mixed rather than definitive. The remaining critiques lack convincing empirical support entirely, and in some cases are actually contradicted by the available data. Why then do these critiques persist? Perhaps their resilience traces to a philosophical undercurrent driving the debate. Several theorists (Elliot & Moller, 2003; Kaplan & Maehr, 2007; Roeser, 2004; Urdan, 2003) have characterized the ongoing debate as one between realism and idealism: Multiple goal theorists play the part of realists striving to identify goal effects as they currently exist in the classroom; mastery goal theorists instead play the part of idealists striving to reform educational practices. We agree with this basic characterization yet are concerned that it does little to resolve this debate or generate new research directions.

How, then, should we proceed, given the theoretical and empirical progress thus far? Brophy (2005) provided one provocative recommendation: Stop studying performance goals and abandon the multiple goal perspective. We believe a more fruitful and progressive research agenda would instead build on the theoretical refinements and research findings discussed here and, hopefully, move past the old debates. Toward that end, with the remainder of the article, we humbly suggest two broad areas of theory development that we believe can help nudge achievement goal research forward. The first is to explore *why* normative goals are often linked to grades and *why* mastery goals often are not.[12] Understanding these mechanisms would improve theorizing from a multiple goal perspective, which at this point is more successful at identifying the goal-achievement links than at explaining them. The second area of theory development concerns the strategies by which students pursue multiple goals. As noted earlier, the multiple goal perspective assumes that students can pursue both mastery and normative goals in some educational settings, and also reap the benefits of each goal. But is it feasible and easy to pursue both goals successfully? Or does pursuing one goal hinder the successful pursuit of the other goal? This thorny issue has received scant attention in goal theory.

What Explains Achievement Goal Effects On Achievement?

The Goal Difficulty Mechanism

Earlier in this article, we considered whether students' underlying ability could explain the normative goal effects on achievement. Recall that the logic was that because normative goals are often hard for most people to attain (Dweck & Elliott, 1983; Nicholls, 1984), only the most talented students would be inclined to pursue them (i.e., a selection effect). The data reviewed earlier contradict this ability confound hypothesis.

Yet it is still possible that the challenging standards of normative goals are partially responsible for their positive effect on achievement—not by attracting the most talented students, but by activating motivational processes that affect achievement (Senko et al., 2008). In particular, perhaps normative goals, due to their challenging standards, often create more pressure to perform and arouse greater effort, thereby enabling success on many tasks. This hypothesis is consistent with other theories that trace achievement to effort-arousal mechanisms. For example, goal-setting theory (Locke & Latham, 2002), motivational intensity theory (Brehm & Self, 1989), social facilitation theory (Zajonc, 1965), and test

[11] Murdock and colleagues' studies showed that evaluative classroom climates, but not students' personal appearance-based performance goals, predicted tolerance of cheating.

[12] Although we disagree with Brophy's call to "move on" from performance goals, our focus on mechanism as a new direction is partially inspired by his earlier attention to this topic, in particular at a special session he organized during the 2005 meeting of the American Educational Researcher Association. Prominent theorists on the panel were invited to discuss possible reasons for why performance goals, but not mastery goals, are often unrelated to achievement.

TABLE 3
Summary of Evidence Concerning the Criticisms of the Multiple Goal Perspective

Criticisms	*Description*	*Evidence*	*Conclusion*
1: Students do not generate performance goals spontaneously.	Self-report measures inflate the apparent incidence of performance goals in the classroom.	The majority of qualitative evidence shows that students do generate performance goals, with the overall rate similar to mastery goals.	This criticism is not supported. Some students do pursue performance goals, as least in some learning contexts.
2: The link between normative goals and academic achievement is spurious.	Only students with a strong performance history on similar tasks will pursue normative goals. Thus, the goal link with achievement is due to underlying ability or confidence, not the goal itself.	a. The correlations of baseline ability or perceived competence are no stronger for normative goals than mastery goals. b. 18 of 19 studies (94%) found that normative goals still predicted achievement when statistically controlling for prior ability or competence perceptions. c. About half of the experiments that manipulate goals show normative goals produce higher performance than mastery goals or no goal controls, and the other half show equivalent performance.	This criticism is not supported. The cumulative evidence shows that normative goals are often associated with high achievement, irrespective of underlying ability of confidence.
3: Performance goals undermine achievement.			
3a: Performance goals interfere with task focus.	Thoughts of outperforming others undermine performance by increasing worry and diverting attention away from task demands.	a. In laboratory and classroom settings, normative goals are either unrelated or *positively* related to task focus. b. Normative goals do not impair working memory or trigger stereotype threat effects.	This criticism is not supported. Instead, it is performance-*avoidance* (and perhaps mastery-avoidance) goals that interfere with task focus.
3b: Performance goals eventually turn into performance-avoidance goals.	Performance goals harm achievement in an indirect manner over the long-run by making students vulnerable to performance-avoidance goals.	a. Test-retest correlations and mean-level analyses reveal more stability than change in goals over time. b. Competence perceptions do predict goal pursuit, both in classroom and laboratory studies, yet this is true for performance and mastery goals alike.	This criticism is largely not supported, though more work is clearly needed. Also, any goal switching is likely to reflect general process that applies to performance *and* mastery goals.
4: Performance goals have social costs.			
4a: Performance goals undermine social relationships.	The competitive aspect of performance goals harms social relationships and students' sense of belonging.	Performance goals yield null or positive relationships with most relationship outcomes.	This criticism is not supported. Mastery goals do seem more beneficial for social relationships, however.
4b: Performance goals undermine collaborative learning.	The competitive aspect of performance goals interferes with cooperative learning.	Performance goals prompt a guarded and results-oriented approach that could be costly to teammates' learning and the group's performance.	There is mixed support for this criticism. More research is needed that focuses on normative vs. appearance goals. Mastery goals are clearly beneficial for this outcome.
4c: Performance goals increase cheating.	The competitive aspect of performance goals may prime students to tolerate and even engage in cheating.	a. Two experiments found that manipulated performance goals increased actual cheating in relation to mastery goals. b. About half of the field studies show positive correlations between performance goals and openness to cheating, but the other half show null correlations.	There is mixed support for this criticism. More research is needed that focuses on normative vs. appearance goals. Mastery goals are clearly beneficial for this outcome.

anxiety theory (Wine, 1980) all identify variables that elevate arousal and effort, thereby aiding performance on tasks if the individual possesses sufficient skill. Perhaps a similar mechanism can help explain the link between normative goals and achievement. Senko and Harackiewicz (2005a) found preliminary support for this hypothesis in two experiments, each showing that normative goals were perceived as more challenging than mastery goals. This perception aroused more

pressure to perform, which may facilitate performance on some tasks.

Normative goals may typically be harder than mastery goals, but of course there can be exceptions. Each goal has some flexibility to its standards. For example, Blaga and Van Yperen (2008) suggested that a normative goal standard could range from modest for one student (e.g., performing slightly above average) to extreme for another student (e.g., performing in the top percentile). Likewise, Senko (2009) showed that a mastery goal standard could range in difficulty based on the complexity of the task. The flexibility of goal standards raises a new hypothesis for mastery goals: Perhaps they are more likely to enhance achievement when made more challenging (see Dweck, 1986). In support of this hypothesis, one experiment showed that participants who were given a difficult mastery goal performed as well as those given a normative goal, with both groups performing better than participants given a typical mastery goal (Senko & Harackiewicz, 2005a, Study 2). Similarly, Hulleman et al.'s (2010) meta-analysis found that mastery goals were more likely to predict achievement when they emphasized challenge seeking instead of learning or task mastery.

This goal difficulty hypothesis highlights two cautionary messages about difficult goals, whether normative or mastery based. First, in line with effort intensity theories (e.g., Brehm & Self, 1989), the relatively high arousal and performance pressure generated by these goals might sometimes hinder performance on creativity tasks or especially complex tasks. Future research should examine this possible moderating role of task type. Second, the pressure experienced might undermine interest development. Indeed, Senko and Harackiewicz (2005a) showed that increasing the difficulty of mastery goals boosted performance but reduced interest.

The Study Strategy Mechanisms

Other mechanisms may contribute to goal-achievement links as well. One strong possibility is that mastery and normative goals encourage different preparatory behaviors that account for their respective relationships with classroom achievement. In considering this possibility, it is useful to distinguish learning from achievement. In an ideal world, the two would be highly related: The quality of students' learning would be captured by their achievement on exams and other assessments. Ideals aside, however, the reality may be that some students learn much of the course material fairly well even if it is not revealed in their class achievement. Perhaps this lack of convergence between learning and achievement is more common for mastery-focused students than normative-focused students. This would explain why those pursuing mastery goals do not perform as well as would be expected in light of their high course interest and self-reported use of deep learning strategies. This possibility warrants direct testing by examining goal effects on students' learning. Let us for the sake of argument assume that this possibility is correct. Why should learning and achievement converge better for performance-oriented students than mastery-oriented students? We consider two explanations, both concerning the fit between the assessment methods employed by teachers and the studying processes promoted by goals.

The depth of Learning Hypothesis. The literature on approaches to learning distinguishes between two broad approaches to learning and studying: the surface approach that emphasizes memorization, and the deep approach that emphasizes elaboration and knowledge construction (Biggs, 1985; Entwistle, 1988). As noted earlier, mastery goals tend to promote deep learning strategies, whereas performance goals tend to promote surface learning strategies.In light of these patterns, several theorists have hypothesized that the differential use of these learning approaches can account for the relationships that the two goals have with achievement (Brophy, 2005; Butler, 2000; Kaplan & Maehr, 2007; Kaplan & Middleton, 2002; Midgley et al., 2001; Nicholls, 1979; Payne et al., 2007; Pugh & Bergin, 2006; Roeser, 2004; Vansteenkiste et al., 2007). They make two connected propositions. The first is that students pursuing normative performance goals earn high exam marks *because* of their frequent use of surface instead of deep learning strategies. The second is that those students would not earn high marks in more advanced classes, where teachers' assessment procedures require a deep understanding of course material (e.g., evaluating concepts or transferring skills to new problems). Students pursuing mastery goals, due to their frequent use of a deep learning approach, might instead be the ones best positioned to excel in those advanced classes.

This argument, dubbed here the "depth of learning" hypothesis, certainly has intuitive appeal. Indeed, multiple goal theorists offered it when first reporting the link between normative goals and grades (Elliot & Church, 1997; Harackiewicz et al., 1997). It has also been advanced by mastery goal theorists who contend that the apparent benefits of normative goals are confined to educationally ignoble situations in which instructors demand only superficial understanding of the course material (e.g., Brophy, 2005; Covington, 1992; Kaplan & Middleton, 2002; Midgley et al., 2001; Urdan, 2004a). In their view, the normative goal effect reveals a flawed educational system, not a positive quality of the goal. Fortunately, we now have more than a dozen years worth of data with which to consider the merits of this hypothesis.

We begin with the first proposition that students pursuing normative goals achieve high marks *because* they use surface learning strategies. To examine it, we gathered studies from English-language, peer-review publications that were listed in recent literature reviews (Hulleman et al., 2010; Linnenbrink-Garcia et al., 2008; Payne et al., 2007) or identified through a PsycINFO database search that combined multiple permutations of achievement goal terms (e.g., "goal orientation," "performance goal") and surface learning terms (e.g., "surface," "shallow," "superficial"). This search yielded

TABLE 4
Summary of Correlations Between Achievement Goals, Surface Learning Strategies, and Course Achievement

	Performance Goal Link With Achievement	*Performance Goal Link With Surface Learning*	*Mastery Goal Link With Surface Learning*	*Surface Learning Link With Achievement*
Studies using normative performance goals				
Al–Emadi (2001)	–.15*	.61*	.18*	–.07
Coutinho & Neuman (2008)	.12*	.22*	.28*	–.07
Elliot et al. (1999, Study 1)	.23*	.17*	.12	.15
Elliot et al. (1999, Study 2)	.08	.26*	–.11	.05
Elliot & McGregor (2001, Study 2)	No achievement measure	.15	.11	NA
Fenollar et al. (2007)	.06	.15*	–.19	–.03
Harackiewicz et al. (2000)	.14*	.22*	.13	.06
Howell & Watson (2007)	.27*	.13	.14	.03
Liem et al. (2008)	–.03	.23*	.54*	–.28*
Senko & Miles (2008)	.21*	.02	.40*	.10
Vermetten et al. (2001)	No achievement measure	.15*	.03	NA
Vrugt & Oort (2008)	Not tested	–.10*	Not tested	–.15*
Zusho et al. (2003)[a]	.07	Time 2: .10	.70*	.27*
		Time 3: .48*	.21*	.10
Subset total showing positive links	6:10 (60%)	10:14 (72%)	6:13 (46%)	1:12 (8%)
Mr	.10	.20	.20	.04
Studies using nonnormative performance goals[b]				
Dupeyrat et al. (1999)	No achievement measure	.11	.15	NA
Dupeyrat & Marine (2005)	.13	.33*	.23*	–.05
Fisher & Ford (1998)	Knowledge test: –.18*	.23*	.10	Knowledge test: .01
	Application test: –.08			Application test: –.12
Greene & Miller (1996)	–.03	.41*	.18	–.06
Miller et al. (1996, Study 1)	.22*	.23*	.25*	–.26*
Miller et al. (1996, Study 2)	.02	.07	.30*	.16
Nolen (1988)	Not provided	.58*	.58*	–.27*
Phan (2008)	–.03	.16*	.36*	–.12*
Somuncuoglu & Yildrim (2001)	No achievement measure	.40*	–.24*	No achievement measure
Wolters (1998)	–.21	.04	.18*	.03
Subset total showing positive links	1:8 (13%)	7:10 (70%)	7:10 (70%)	0:9 (0%)
Mr	–.02	.26	.21	–.08
Total across both subsets showing positive links			13:23 (56%)	1:21 (5%)
Mr			.20	–.01

Note. For theory-based reasons, we excluded studies (e.g., Meece et al., 1998; Simmons et al., 2004; Stipek & Gralinksi, 1996) that used surface learning measures which capture work-avoidance (e.g., guessing to finish quicker, cheating) or confusion (e.g., skipping confusing material). As with the included studies, however, none of those excluded studies found positive links between their surface learning measure and achievement.

[a]Zusho et al. (2003) measured goals at Week 10 of the semester (Time 2) and surface learning measures at Weeks 10 and 15 (Time 3). Time 1 measures were of control variables only. [b]This subset comprises studies that either used appearance goals or combined normative and performance-avoidance goals into a single performance goal measure. We include them because they report mastery goal correlations with surface learning and surface learning correlations with achievement.

*$p < .05$. All other correlations were nonsignificant.

85 studies, 24 of which provided correlations between normative (or appearance) goals, surface learning strategies, and classroom achievement. Table 4 provides these correlations. Two findings stand out. First, as hypothesized, normative goals were linked to surface learning strategies in most studies (72%), as were appearance goals (70%). However, so too were mastery goals in more than half of them (56%), and the average correlation with surface strategies was identical for normative and mastery goals (rs = .20). Thus, performance goals do not seem much more likely than mastery goals to promote surface learning. Second, and more important, no study supported the assumption that surface learning can *explain* the normative goal link with achievement. Surface learning strategies and achievement were unrelated overall ($Mr = –.01$); the one study that did find a positive correlation between them did not observe a link between normative goals and surface learning strategies (Zusho, Pintrich, & Coppola, 2003). This pattern matches the literature on learning approaches, which routinely shows that surface learning is a negative or, at best, null predictor of achievement

(e.g., Biggs, 1985; Diseth & Martinsen, 2003; Nolen, 1988; Scouller, 1998; Trigwell & Prosser, 1991). Clearly, this large body of data belies the first proposition of the depth of learning hypothesis. It appears that normative goals aid course achievement not by promoting surface learning, but *despite* it.

The second proposition of the depth of learning hypothesis is that mastery goals will facilitate achievement in classes that require deep learning; the normative goal link to grades might even disappear in those classes. This proposition has not yet been tested as thoroughly as the first proposition, and the initial results are mixed. Harackiewicz and colleagues have shown that normative goals pursued in an Introductory Psychology course predict success not only in that course but in successive Psychology courses as well (Harackiewicz et al., 2000; Harackiewicz, Barron, Tauer, et al., 2002; Harackiewicz et al., 2008). Barron and Harackiewicz (2003) also investigated the effects of achievement goals in advanced seminar classes where achievement requires deeper understanding of the material than might be demanded in most introductory classes. Normative goals again predicted grades but not interest in these seminars, whereas mastery goals again predicted course interest but not grades. Similarly, Darnon and colleagues (Darnon, Butera, Mugny, Quiamzade, & Hulleman, 2009) explored the normative goal link with Swiss university students' achievement on difficult examinations that required application, analysis, and synthesis of course concepts. Normative goals, once again, predicted high achievement. By contrast, two other studies found that mastery goals, but not normative goals, predicted achievement in large introductory-level classes that required deep understanding of the course material (Grant & Dweck, 2003; Linnenbrink, 2005).

Researchers have also tested the second proposition with laboratory experiments that compare goal effects on achievement on tasks that require either surface or deep learning. We know of five articles comprising eight such experiments in total, many with multiple tests of deep learning. Collectively, they allow a direct assessment of whether mastery goals are beneficial on deep learning tasks (Barker et al., 2002; Bereby-Meyer & Kaplan, 2005, Studies 1 & 2; Escribe & Huet, 2005; Graham & Golan, 1991, Studies 1 & 2; Steele-Johnson et al., 2000, Studies 1 & 2). Their findings turn out to be as inconclusive as the classroom-based research findings. Two experiments compared a mastery goal versus a no-goal control group on a total of 12 deep learning performance measures (eight from Barker et al., 2002; four from Graham & Golan, 1991, Study 1), and not one of them showed a difference in achievement between these conditions. Thus, there is not yet evidence of a mastery goal benefit per se on these deep learning tasks. The comparisons between mastery goals and appearance goals tell a nearly similar story. Every experiment in these five articles compared the achievement of these two goals. Four of those five articles found differences favoring mastery goals. This would seem to partially support the depth of learning hypothesis. However, a careful look at all 22 performance measures collected across these different experiments reveals that mastery goals led to higher achievement than appearance goals on only six measures (three from Graham & Golan, 1991; two from Bereby-Meyer & Kaplan, 2005; one from Escribe & Huet, 2005); the remaining 16 measures showed no difference between the two goals (eight from Barker et al., 2002; one from Escribe & Huet, 2005; three from Graham & Golan, 1991; four from Steele-Johnson et al., 2000).[13] In sum, only a few field studies and experiments have tested the second proposition of the depth of learning explanation, and their results provide weak support at best. This proposition clearly demands more research.

The Learning Agenda Hypothesis. The depth of learning hypothesis focuses entirely on *how* students study (i.e., surface vs. deep levels). Yet we know that academic achievement also depends on *what* students choose to study. Regardless of how deeply they study, students perform better when they focus their efforts on topics which the teacher deems important and tests (Broekkamp & van Hout-Wolters, 2007; Jetton & Alexander, 1997). Senko and Miles (2008) proposed that this axiom may help explain why normative performance goals generally predict classroom achievement more reliably than do mastery goals: Perhaps normative goals, unlike mastery goals, encourage students to identify and pursue their teacher's "learning agenda" (i.e., the topic knowledge and learning outcomes the teacher considers most important). This possibility makes sense in light of the different standards implicit in the two goals. Because normative goal attainment in the classroom requires outperforming peers on teacher-set criteria, performance-focused students might be especially vigilant for cues (e.g., the teacher's demands, hints, study guides, etc.) that indicate the topic knowledge and skills that the teacher values and is likely to assess on the exams and assignments. So long as the teacher expresses this agenda clearly, this tactic should position them to perform well in class.

Contrast this with mastery-focused students. Because mastery goal attainment is more negotiable and subjectively defined (Dweck & Elliott, 1983), these students are not as compelled as performance-focused students to attend closely to the teacher's learning agenda. They are freer to instead pursue their own learning agenda, guided by their curiosity and personal interests. Their studying efforts may reflect

[13] Three of these studies (Barker et al., 2001; Bereby-Meyer & Kaplan, 2005; Graham & Golan, 1991, Study 1) also provided 14 total comparisons between appearance goals and a no-goal control group on the deep learning tasks. Each study observed one case of a disadvantage of appearance goals, yet the remaining 11 deep learning tests showed no difference between these two conditions. However, we recommend some caution in generalizing these findings to the broader debate about normative goal benefits, as each experiment used appearance-based performance goal manipulations that focused on social presentation concerns (i.e., wanting to look smart) rather than normative-based performance goal manipulations.

this. They may devote more energy to studying the personally interesting material than the duller material. This approach may be a mixed blessing. It may lead students to learn their preferred material quite deeply, which may help further develop their individual interest in those topics (Hidi & Renninger, 2006). Yet it could also lead them to neglect the less interesting material that the teacher nevertheless tests on exams and assignments, thus jeopardizing their overall performance.

Senko and Miles (2008) found preliminary evidence for this learning agenda hypothesis. Students pursuing mastery goals reported prioritizing material to study based on how interesting they found it, to the point that they even neglected some of the personally duller topics. This interest-based studying approach in turn predicted lower grades in the class. By contrast, those pursuing normative goals were disinclined to use this interest-based studying approach and were therefore immune to the achievement risks of that approach. Other studies provide indirect support as well. Vermetten, Lodewijks, and Vermunt (2001) found that performance-focused students are especially attentive to instructor demands and reliant on their cues for how to approach studying, and Shell and Husman (2008) found that performance-focused students tend to *actively* seek information about which material will be tested on exams. Similarly, Poortvliet et al. (2007) found that experimentally induced normative goals, compared to mastery goals, promote more discerning and accurate judgment about the quality of task-relevant tips provided by others. Other research show that competitiveness, a predictor of normative goal adoption (Harackiewicz et al., 1997), promotes a "strategic studying" approach characterized by cue-seeking, careful planning, and using any learning strategy that would produce high marks (Entwistle, 1988). This approach has been shown to facilitate students' achievement (Biggs, 1985; Diseth & Martinsen, 2003; Entwistle & McCune, 2004). Finally, Senko, Belmonte, and Yakhkind (2010) found that these two learning agendas also shape how students evaluate teaching effectiveness: Mastery-focused students judged interest-arousing qualities the most essential in an instructor, whereas normative-focused students judged clarity about performance expectations the most essential.

Taken together, these sets of studies provide initial evidence that normative goals, more so than mastery goals, might promote vigilance toward, and pursuit of, the teacher's learning agenda, and that this in turn can aid their achievement in some classes. This emerging pattern may help explain why normative goals sometimes do not predict surface learning strategies (Elliot & McGregor, 2001; Elliot et al., 1999; Harackiewicz et al., 2000; Wolters, 1998) and occasionally even predict deep learning strategies (Al-Amadi, 2001; Dupeyrat & Mariné, 2005; Howell & Watson, 2007; Liem, Lau, & Nie, 2008): perhaps the learning tactics of performance-focused students depend on their beliefs about their teacher's agenda. Thus, it may be that those students, sometimes typecast as rigid thinkers who use only superficial study strategies (e.g., Kozlowski, Gully, Brown, Salas, Smith, & Nason, 2001; Midgley et al., 2001), are actually more versatile in their learning approach than commonly believed (see Pintrich, 2004). This warrants direct testing.

Summary of Mechanisms

The effects of mastery goals and normative performance goals on classroom achievement were unexpected and remain at odds with original goal theorizing. It behooves researchers, therefore, to identify the mechanisms responsible for these effects. We examined three plausible mechanisms here. The first, an arousal-effort intensity mechanism, is that the greater perceived difficulty of normative goals activates processes that may often be conducive to achievement. The other two mechanisms concern the strategic learning behaviors fostered by mastery and normative goals. The depth of learning explanation focuses on the match between *how* students study (i.e., deep vs. surface) and the level of knowledge assessed by teachers; the learning agenda explanation instead focuses on the match between *what* students study and what is assessed by teachers.

These mechanisms are not mutually exclusive. Several may operate together. Nor is this list of mechanisms exhaustive. Others may emerge in future research, and indeed we encourage theorists to explore such possibilities. Certainly, this line of work would bolster the theoretical merits of the multiple goal perspective, which at this point describes the typical goal effects on achievement but is largely silent about why those effects occur. These research efforts could also uncover ways to aid mastery-focused students' achievement. For example, the three mechanisms we reviewed, if supported by additional research, would offer unique avenues for teachers: increasing the perceived difficulty of students' mastery goals, increasing the depth of learning assessed on exams and assignments, or increasing the fit between students' and teacher's learning agendas.

Types of Mastery Goals

Our discussion thus far has focused on mechanisms responsible for the links between goals and achievement. We conclude here with another explanation for these links that focuses on construct measurement rather than mechanisms. It is silent about why normative goals predict achievement, but it may help explain why mastery goals often do not predict achievement. This explanation is rooted to previous findings that mastery goals, but not normative goals, tend to correlate positively with social desirability indices (e.g., Day, Radosevich, & Chasteen, 2003; Grossbard, Cumming, Standage, Smith, & Smoll, 2007; Pekrun et al., 2006; Pekrun, Elliot, & Maier, 2009; see Payne et al., 2007, for a review), social goals to please teachers (Anderman & Anderman, 1999), and students' beliefs that their teachers care about them (Patrick et al., 2007). Noting this pattern, Darnon and

colleagues (Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009) posited that some students pursue mastery goals out of social desirability aims to please teachers (or parents, coaches, etc.), others out of a pure desire for improvement or task mastery, and, furthermore, that the two types of mastery goals may yield different effects. In support of this hypothesis, they found that university students choose mastery goals over performance goals when considering which of the two would please their teacher most (Darnon, Dompnier, et al., 2009), and that mastery goals more strongly predict academic achievement when undiluted by social desirability aims (Dompnier, Darnon, & Butera, 2009). These studies together raise the possibility that mastery goal endorsement for some students says more about their general endorsement of pro-school values than their actual strivings for improvement or learning. This also dovetails with the finding that normative goals predict actual achievement more strongly than do appearance goals (Hulleman et al., 2010), and it further demonstrates the need for clear theorizing about how students' reasons for goal pursuit can shape goal effects (Elliot, 2005; Molden & Dweck, 2006; Vansteenkiste et al., 2010).

How Do Students Pursue Multiple Goals?

The multiple-goal perspective assumes that normative performance goals may provide some benefits more reliably than mastery goals (e.g., to achievement), that students can adopt both goals simultaneously, and that they can also reap the benefits of each goal when pursuing both. We have so far focused on the first assumption. Now we turn to the last two assumptions.

Despite originally being theorized as opposing motives (Dweck, 1986; Nicholls, 1984), mastery goals and performance goals are usually positively correlated to a modest degree, thus suggesting that some students do indeed pursue both goals together. This may be easier said than done, however. Because the goals differ so much in content, with separate criteria for determining success, the strategies needed to attain one goal may sometimes conflict with the strategies needed to attain the other. For example, if the learning agenda hypothesis described earlier is correct, students who pursue a mastery goal will explore their own intellectual curiosities about the course material. That approach, though laudable, might undermine their odds for successfully identifying and studying any "instructionally important" course material that they find dull. Even if students can somehow manage to coordinate the strategies needed to attain both goals, perhaps doing so will tax their cognitive resources to the point that they are unable to achieve either goal. In short, it is plausible that pursuing the two goals together might undermine the attainment of one or both goals for some students. From this perspective, pursuing both goals could actually be detrimental, not beneficial (Bong, 2009; Brophy, 2005; Midgley et al., 2001; Vansteenkiste et al., 2007).

On the other hand, it is equally plausible that students can pursue both goals successfully. This possibility is supported by evidence that mastery and normative goals each positively predict various important educational outcomes even when the two are correlated with each other (Hulleman et al., 2010). Furthermore, studies that test the effects of pursuing both goals typically find that pursuing both is no worse than pursuing a mastery goal alone, and sometimes may even be better (see Pintrich et al., 2003). These findings suggest that some students do pursue both goals with success. If that is the case, what is their secret? How do they juggle both goals? One intriguing possibility raised by Barron and Harackiewicz (2001) and Pintrich (2000b) is that they strategically shift their focus between the two goals, pursuing each when it seems most academically relevant. For example, some students might pursue a mastery goal during much of the semester, cultivating their interest and desire to learn the material deeply, and then become more focused on outperforming others when studying for exams and preparing assignments.

In short, though the multiple goal perspective suggests that it would be optimal for students to pursue both mastery goals and normative goals, coordinating the two goals might be challenging. Some coordination strategies may be more effective than others. Research is now needed to examine how students juggle their pursuit of multiple goals and to evaluate the success of their efforts (Hulleman & Senko, 2010; Pintrich, 2003). For example, if students shift between the two goals during the academic period, which regulatory strategies do they use to shield their focus from the deselected goal? Are some regulatory strategies more effective than others (see Bodmann, Hulleman, & Harackiewicz, 2008; Shah, Friedman, & Kruglanski, 2002)? Which characteristics of the students (e.g., age, emotional regulation skill) or of the course (e.g., material, motivational climate) influence the effectiveness of these regulatory strategies? Finally, it may be useful to also examine ways that teachers can enable successful coordination of both goals.

Goal coordination is not just an issue for theorists favoring the multiple-goal perspective. Students can and do also pursue a variety of other goals alongside their mastery and performance goals—for example, social goals or achievement goals in other domains such as sports or work (M. E. Ford, 1992). Thus, even purely mastery-focused students must coordinate their goal pursuit with other goals that could conflict with their efforts to attain topic mastery (Roussel, Elliot, & Feltman, in press; Wentzel, 1999).

CONCLUSION

Achievement goal theory has grown substantially in the past 30 years. This growth has not always been easy, particularly in the last 15 years, during which there has been an influx of studies documenting that normative performance goals are more robustly correlated with achievement than are mastery goals (see Hulleman et al., 2010). That finding, along with the benefits of performance goals to interest and engagement for

some students (e.g., Harackiewicz & Elliot, 1993), lead some theorists to develop a multiple goal perspective that emphasizes the positive potential of both goals (Harackiewicz et al., 1998; Pintrich, 2000b). This new perspective has met its fair share of resistance. The criticism has focused foremost on the validity of the normative goal benefits, especially the relationship between normative goals and achievement, as well as various potential "costs" to pursuing these goals. Their critiques are reasonable and important, to be sure. One purpose of this article, therefore, was to systematically examine the research relevant to each critique.

Of the seven critiques reviewed in this article, there has been consistent empirical support for only two: that performance goals may interfere with collaborative learning and encourage openness to cheating (see Table 3, Criticisms 4b and 4c). The remaining five critiques, despite their intuitive appeal, lack substantive support. In particular, there is clear evidence that some students do spontaneously adopt performance goals (Criticism 1). Ample research also clearly contradicts the ability confound hypothesis (Criticism 2). Finally, although the interpersonal relationship hypothesis (Criticism 4a), the task distraction hypothesis (Criticism 3a), and the goal switching hypothesis (Criticism 3b) have seldom been tested, the available data offer no support for the first two and evenly mixed support for the last one. For each issue, we have suggested new research directions.

The second and more vital aim of this article, adopted in the spirit of Pintrich's (2000b) effort to unite the two theoretical perspectives, was to spotlight areas for theory development. The first is to examine precisely *why* normative-based performance goals often facilitate classroom achievement and *why* mastery goals often do not. The second concerns the joint pursuit of multiple achievement goals. Each of these directions can improve our understanding of achievement goal dynamics and, we believe, help achievement goal research move forward.

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