

# Revision of Achievement Goal Theory: Necessary and Illuminating

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C. Midgley et al. (2001) raised important questions about the effects of performance-approach goals. The present authors disagree with their characterization of the research findings and implications for theory. They discuss 3 reasons to revise goal theory: (a) the importance of separating approach from avoidance strivings, (b) the positive potential of performance-approach goals, and (c) identification of the ways performance-approach goals can combine with mastery goals to promote optimal motivation. The authors review theory and research to substantiate their claim that goal theory is in need of revision, and they endorse a multiple goal perspective. The revision of goal theory is underway and offers a more complex, but necessary, perspective on important issues of motivation, learning, and achievement.

In a recent article in *Journal of Educational Psychology*, Midgley, Kaplan, and Middleton (2001) focused on the question of whether performance-approach goals are adaptive and if so, whether they are uniformly adaptive or adaptive only under certain conditions. Midgley et al. (2001) made a number of cogent and important points about the nature of goal theory and research on performance-approach goals, and we compliment them for highlighting crucial avenues for future research. However, Midgley et al. (2001) concluded by claiming unequivocally that there is no need to revise goal theory: "Is there evidence of the need to adopt a revised goal theory perspective (Harackiewicz, Barron, & Elliot, 1998; Pintrich, 2000b)? We do not think so" (p. 83).

In contrast, the present authors, representing three different research programs, believe that recent theoretical developments and empirical findings warrant a revision of goal theory that is both necessary, given the data, and illuminating, given the prospect for a richer understanding of motivational dynamics. Accordingly, in this response we suggest that recent theorizing has identified three important reasons to revise goal theory: (a) the importance of separating approach from avoidance strivings (Elliot, 1997; Elliot & Harackiewicz, 1996; Pintrich, 2000c), (b) the unique positive potential of performance-approach goals, relative to mastery goals (Harackiewicz et al., 1998), and (c) identification of the ways in

which performance-approach goals can combine with mastery goals to promote optimal motivation (Barron & Harackiewicz, 2000, 2001; Pintrich, 2000b). These new theoretical perspectives have generated hypotheses that move beyond dichotomous mastery versus performance goal comparisons to a *multiple goal perspective* that has enriched our understanding of motivation and achievement.

## Separating Approach From Avoidance Strivings

A cornerstone of the multiple goal perspective is the distinction between performance-approach and performance-avoidance goals. This stands in contrast to what we will refer to as *normative goal theory*, where the basic distinction is a dichotomy between a mastery goal construct and a performance goal construct. Mastery goals represent a focus on learning and self-improvement, and performance goals represent a more general concern with demonstrating ability and trying to do better or not appear worse than others (Ames, 1992; Dweck & Leggett, 1988). As Midgley et al. (2001) rightly pointed out, it was not until recently that theory and research suggested there are important differences between approach and avoidance forms of performance goals. Performance-approach and performance-avoidance goals are two functionally separate goals leading to different outcomes, with performance-avoidance goals linked with maladaptive outcomes (Elliot, 1997, 1999; Elliot & Church, 1997; Elliot & Harackiewicz, 1996), and performance-approach goals linked with some adaptive outcomes, especially achievement (Elliot, 1999; Harackiewicz et al., 1998).

The key theoretical point is that there are important reasons to distinguish between approach and avoidance forms of performance goals. Although it is important to avoid a proliferation of constructs in motivation research, it is also important to maintain distinctions between constructs when they reflect important and functional differences (Pintrich, 2000a). Midgley et al. (2001) accepted this revision of goal theory and have made use of it in their own empirical work (Midgley et al., 1998). However, there seems to be an internal inconsistency in the Midgley et al. (2001)

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article if they accepted the distinction between approach and avoidance but then concluded that no revision of goal theory is needed. At a logical level, this distinction is a key premise of the multiple goal perspective, and accepting this distinction implies the need to revise goal theory to include both types of performance goals.

More important, at a scientific level, Midgley et al. (2001) rejected the proposition that performance-approach goals can have adaptive outcomes and concluded, in line with normative goal theory, that performance-approach goals primarily have maladaptive outcomes. If *all* performance goals are maladaptive, as suggested by Midgley et al. (2001), there seems little scientific utility in continuing to distinguish between approach and avoidance forms of performance goals in future research (Pintrich, 2000a). However, performance-approach goals can have positive outcomes (Harackiewicz et al., 1998) and can play a different role in achievement dynamics than performance-avoidance goals (Elliot, 1999). Accordingly, it is important for researchers to keep the distinction for logical, scientific, theoretical, and empirical reasons and to continue to explore the differential roles that performance-approach and performance-avoidance goals play in motivation and learning.

### The Positive Potential of Performance-Approach Goals

Because there was no distinction between approach and avoidance goals in early research, it is difficult to review the literature on performance-approach goals. The majority of the extant research was from the perspective of normative goal theory. Measures of performance goals based on this dichotomous framework vary dramatically, with some composed entirely of positively valenced items (hence assessing a performance-approach goal) and others composed of both positively and negatively valenced items (hence assessing a hybrid performance-approach/avoidance goal; Elliot & Church, 1997). Ideally, the items used in these measures would be readily accessible, affording recategorization in terms of approach/avoidance. Unfortunately in many instances, the item content has not been published and, as we know from personal experience, efforts to acquire such information are often unsuccessful.

Midgley et al. (2001) addressed this critical measurement issue in a manner that we find confusing. Rather than limiting their review to studies that used performance-approach goal measures (whether defined explicitly as such or as determined through recategorization), they reviewed, in interspersed fashion, studies with performance-approach goal measures and studies with performance goal measures of unspecified composition (generically labeled *performance goals*). Thus, although the headings of the first and third sections of their literature review focused explicitly on performance-approach goals (Performance-Approach Goals: Good for What?, Performance-Approach Goals: Good at What Cost?), the studies reviewed in each section and, presumably, the conclusions offered, followed from a mixed empirical base. As such, we find it difficult to interpret these sections of their article.

Midgley et al. (2001) offered three primary summary statements based on their review of the literature, and some of their conclusions diverged from those we have drawn in recent reviews of studies using explicit or recategorized performance-approach goal measures (Elliot, 1999; Harackiewicz et al., 1998; Hidi & Harac-

kiewicz, 2000; Pintrich, 2000c). We would like to discuss each of Midgley et al.'s (2001) summary statements, in the context of our understanding of the extant literature.

First, Midgley et al. (2001) concluded that the literature on performance-approach goals is less consistent than that for mastery and performance-avoidance goals. We concur and have offered several reasons for this differential consistency (see Elliot & Thrash, 2001; Thrash & Elliot, 2001). One reason is that performance-approach goals are conceptualized and operationalized in very different ways by different researchers, whereas mastery goals are conceptualized and operationalized more uniformly. For example, some define and assess performance-based goals in terms of self-presentation (e.g., trying to look a certain way to others), whereas others focus exclusively on a norm-referenced definition of competence (e.g., trying to do well relative to others). We think that the latter is preferable to the former, because self-presentation has nothing to do with competence per se, and competence should be at the core of any achievement goal construct (Elliot & McGregor, 2001). We would expect norm-referenced goals and goals that include a self-presentation component to yield somewhat different consequences, with the self-presentation component producing a less positive empirical profile. This analysis provides another potential explanation for the differential consistency between performance-approach goals and mastery goals.

Another reason for the differential consistency is that unlike mastery and performance-avoidance goal regulation, which typically represents pure approach and pure avoidance motivation respectively (Elliot, 1997), performance-approach goal regulation can represent a motivational hybrid, in that performance-approach goals may be undergirded by approach and avoidance motivational concerns (e.g., need for achievement and fear of failure; see Elliot & Church, 1997). The motivation underlying the goal is presumed to influence how the goal is pursued and experienced; thus, performance-approach goals could yield variable consequences as a function of their different motivational bases. This issue may account, in part, for the differential consistency between performance-approach goals and both mastery and performance-avoidance goals.

Second, Midgley et al. (2001) concluded that the literature on performance-approach goals and adaptive outcomes is inconsistent. Although the empirical pattern for performance-approach goals is less consistent than that for mastery and performance-avoidance goals, we contend that outcomes in performance-approach goal research are more consistent than Midgley et al. (2001) suggested (see Elliot, 1999; Harackiewicz et al., 1998; Pintrich, 2000c, for reviews). For example, performance-approach goals are positively related to adaptive variables such as task value (e.g., Bong, 2001; Church, Elliot, & Gable, 2001; Wolters, Yu, & Pintrich, 1996), academic self-concept (e.g., Pajares, Britner, & Valiante, 2000; Skaalvik, 1997; Wolters et al., 1996), effort expenditure (e.g., Elliot, McGregor, & Gable, 1999; Lopez, 1999), and performance attainment (e.g., Barron & Harackiewicz, 2001; Elliot & Church, 1997; Elliot & McGregor, 2001; Elliot et al., 1999; Harackiewicz, Barron, Carter, Lehto, & Elliot, 1997; Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000; Lopez, 1999; Skaalvik, 1997; Tanaka & Yamauchi, 2000; Wentzel, 1993). When different results occurred with these variables, they were null findings (e.g., Tanaka & Yamauchi, 2001). Performance-approach goals have been shown to be unrelated to some adaptive

variables such as deep processing (e.g., Elliot et al., 1999; Harackiewicz et al., 2000) and intrinsic motivation (e.g., Church et al., 2001; Elliot & Church, 1997; Harackiewicz et al., 1997, 2000; Tanaka & Yamauchi, 2001). If different results occurred with these variables, they were positive relationships (e.g., Archer, 1994; Lopez, 1999; Pintrich, 1999, 2000b; Skaalvik, 1997; Wolters et al., 1996).

Third, Midgley et al. (2001) concluded that the literature on performance-approach goals and maladaptive variables is more consistent than that for performance-approach goals and adaptive variables. Midgley et al. (2001) suggested that performance-approach goals are consistently linked to variables such as self-handicapping, help avoidance, challenge avoidance, fear of failure, low persistence, a desire to work alone, less cooperativeness, self-reported cheating, and the adoption of subsequent performance-avoidance goals. This characterization of the literature is puzzling to us, as even some of the studies discussed by the authors seem to belie this conclusion. For example, the results concerning students' performance-approach goals and self-handicapping are quite inconsistent: Performance-approach goals were positively related in one study (Midgley, Arunkumar, & Urdan, 1996), unrelated in another (Midgley & Urdan, 1995), positively and unrelated in another (Midgley & Urdan, 2001), and negatively related when accompanied by mastery goals in another (Pintrich, 2000b). Likewise, the results concerning students' performance-approach goals and help avoidance are quite inconsistent: Performance-approach goals show a significant positive relationship at the zero-order level but either null or mixed results (sometimes positive, sometimes even negative) in regression analyses (Middleton & Midgley, 1997; Ryan, Hicks, & Midgley, 1997; Ryan & Pintrich, 1997). For most of the other variables that Midgley et al. (2001) focused on, there are few tests or the results are inconsistent (for an exception, see work on fear of failure; Elliot & Church, 1997; Elliot & McGregor, 1999). We do think that performance-approach goals have some negative consequences, but the empirical evidence is meager at present, and additional research is clearly needed.

#### Benefits of Pursuing Both Performance-Approach and Mastery Goals

Researchers using survey methods consistently find that mastery and performance-approach goals are either unrelated or positively correlated (see Harackiewicz et al., 1998, for review): Students can and do pursue multiple goals. As Midgley et al. (2001) correctly noted, there may be important interactions between performance-approach and mastery goals, and research should address how goals combine to promote motivation and achievement. However, interactions are only one of the ways in which multiple goal benefits may be revealed.

Testing the multiple goal perspective demands a different methodology than the one used in early goals research: It requires that we consider multiple outcomes and that we test the independent and interactive effects of mastery and performance-approach goals on each outcome. This analytic strategy allows direct comparisons with normative goal theory, which predicts positive main effects for mastery goals and null or negative effects for performance-approach goals. In contrast, the multiple goal perspective asserts that both goals can have positive effects, and Barron and Harac-

kiewicz (2000, 2001) recently identified four patterns that can reveal the advantage of multiple goal pursuit relative to single mastery goal pursuit.

In an *additive goal pattern*, mastery and performance-approach goals have independent, positive effects on an educational outcome, resulting in positive main effects for both mastery and performance-approach goals on a single outcome. In an *interactive goal pattern*, above and beyond main effects, mastery and performance-approach goals interact, resulting in a positive Mastery  $\times$  Performance-Approach Goal interaction effect on a single outcome. Note that in both cases, students who endorse both goals have the most adaptive outcomes but with different implications for multiple goal dynamics (Pintrich, 2000b). If the effects are additive, then positive performance goal effects *do not depend* on a high level of mastery goals. In the case of an interaction effect, however, one could argue, as Midgley et al. (2001) did, that positive performance goal effects depend on a high level of mastery goals. This analysis is consistent with the multiple goal perspective and can be distinguished from what normative goal theory would predict: that students who are high in mastery goals but low in performance-approach goals should show the most adaptive pattern, because being high in performance-approach goals should depress the generally positive effect of mastery goals. In the absence of such a maladaptive effect when both goals are high, there is a need to revise normative goal theory.

In a *specialized goal pattern*, rather than promoting the same educational outcomes, mastery and performance-approach goals affect different outcomes. A positive main effect for mastery goals on one educational outcome and a positive main effect for performance-approach goals on another would be evidence for the specialized pattern. For example, mastery goals might predict interest, whereas performance-approach goals might predict grades.

Finally, in a *selective goal pattern*, individuals focus on the achievement goal that is most relevant at a particular point in time. In other words, different goals may be adaptive in different situations, and students who can selectively shift between goals may be particularly advantaged (see also Zimmerman & Kitsantas, 1999). For example, students might pursue mastery goals when they read texts but pursue performance-approach goals when they prepare for exams. As a result, students who adopt both goals might have the highest overall level of performance (e.g., grades). A series of analyses yielding a main effect of mastery goals on one measure collected at one point in time, a main effect of performance-approach goals on another measure, and either two main effects or a positive interaction on an overall measure of performance would be evidence for the selective pattern. Detection of specialized or selective goal patterns requires multiple measures, but these more complex patterns may yield important insights into multiple goal dynamics.

Armed with a clearer understanding of the patterns of data that would support a multiple goal perspective, we turn now to a review of studies in which it is possible to evaluate multiple goal effects. In particular, we will discuss studies cited by Midgley et al. (2001) as supportive of normative goal theory and explain why they actually provide support for the multiple goal perspective. Although a comprehensive review of all goal studies is clearly beyond the scope of this brief commentary, a more constrained review is possible. One option is to focus on one educational context (college) in which a sufficient number of studies have used

explicit or recategorized performance-approach goal measures. We located 14 studies reported in 12 articles that tested the independent and interactive effects of performance-approach and mastery goals, affording a comparative test of both the multiple goal perspective and normative goal theory. We reviewed the independent and interactive effects of mastery and performance-approach goals on two important outcomes: academic performance and interest. See Table 1 for a summary of studies of academic performance in college contexts. The majority of researchers reported significant positive main effects of performance-approach goals, unqualified by interactions with mastery goals. This contrasts the conclusions of Midgley et al. (2001), who argued that the typical finding is that performance-approach goals can only be adaptive when mastery goals are also high. Their claim that positive effects of performance-approach goals *depend on* a high level of mastery goals implies a significant positive interaction that has not been found in any college study to date.

Midgley et al. (2001) also appeared to claim support for normative goal theory if individuals high in both goals attain higher performance, but this pattern can be caused by two *independent* effects (i.e., the additive pattern), with different implications for goal dynamics. There are, as Midgley et al. (2001) noted, a few studies that did find positive effects of mastery goals on performance, but in each case, performance-approach goals also had

independent positive effects (e.g., Church et al., 2001; Elliot & McGregor, 1999; see Footnote b in Table 1), consistent with the additive goals pattern. In sum, the overall pattern of results on academic performance in college settings offers no support for normative goal theory and some provocative support for the multiple goal perspective.

The fact that performance-approach goals have such consistent positive effects on academic performance may tell us more about how competence is traditionally defined and evaluated on college campuses. Harackiewicz and colleagues have often discussed their findings in terms of the competitive climate (where mere presence in a college class signifies survival of a competitive selection process), the use of norm-referenced grading practices, and the reliance on multiple-choice exams in large introductory courses (Harackiewicz et al., 1997, 1998, 2000). However, positive performance-approach goal effects have now been documented on mathematical problem solving (Barron & Harackiewicz, 2001), short-answer and essay exams (Elliot et al., 1999), pop quiz performance assessing long-term retention (Elliot & McGregor, 1999), grades in mastery-oriented chemistry classes (Church et al., 2001), grades in advanced courses (Harackiewicz, Barron, Tauer, & Elliot, 2002), and grades in upper-level psychology courses where evaluation was based on projects, presentations, and essay exams (Barron, Schwab, & Harackiewicz, 1999). We agree with

Table 1  
Summary of Goal Effects on Performance Outcomes

Study	Data analytic method	Performance outcome	Mastery goal main effect	Perf-a goal main effect	M × P interaction
Barron & Harackiewicz (2001)	Regression <sup>a</sup>	Study 1: No. correct math problems	<i>ns</i>	+ .10	<i>ns</i>
		Study 1: No. errors	<i>ns</i>	<i>ns</i>	<i>ns</i>
Barron, Schwab, & Harackiewicz (1999)	Regression	Final grade in class	<i>ns</i>	+ .17	<i>ns</i>
Church, Elliot, & Gable (2001)	Regression	Study 2: Final grade in class	+ .20	+ .14	<i>ns</i>
Elliot & Church (1997)	Regression	Final grade in class	<i>ns</i>	+ .36	- .20
Elliot & McGregor (1999)	Regression <sup>b</sup>	Study 1: Exam score	<i>ns</i>	+ .21	<i>ns</i>
		Study 2: Exam score	<i>ns</i>	+ .24	<i>ns</i>
		Study 2: Pop quiz score	+ .13	(+ .11)	<i>ns</i>
Elliot & McGregor (2001)	Regression	Study 3: Exam score	<i>ns</i>	+ .18	<i>ns</i>
Elliot, McGregor, & Gable (1999)	Regression	Study 1: Exam score	<i>ns</i>	+ .15	<i>ns</i>
		Study 2: Exam score	<i>ns</i>	+ .17	<i>ns</i>
Harackiewicz, Barron, Carter, Lehto, & Elliot (1997)	Regression	Final grade in class	<i>ns</i>	+ .21	<i>ns</i>
Harackiewicz, Barron, Tauer, Carter, & Elliot (2000)	Regression	Final grade in class	<i>ns</i>	+ .15	<i>ns</i>
		Semester GPA	<i>ns</i>	+ .13	<i>ns</i>
		Subsequent psychology GPA	<i>ns</i>	- .23	<i>ns</i>
		Subsequent overall GPA	<i>ns</i>	+ .13	<i>ns</i>
		Ancillary study: Final grade	<i>ns</i>	+ .12	<i>ns</i>
Harackiewicz, Barron, Tauer, & Elliot (2002)	Regression	Final grade in class	<i>ns</i>	+ .16	<i>ns</i>
		Semester GPA	- .09	+ .15	<i>ns</i>
		Subsequent psychology GPA	<i>ns</i>	<i>ns</i>	<i>ns</i>
		Subsequent overall GPA	<i>ns</i>	+ .10	<i>ns</i>

Note. When method of analysis is regression, standardized regression coefficients are reported for significant effects and *ns* is used to indicate nonsignificant effects. Perf-a = performance approach; M = mastery; P = performance; GPA = grade point average.

<sup>a</sup> Barron and Harackiewicz also manipulated difficulty of the math problems, which further qualified the main effect of performance-approach goals. When students were tested with easier problems, the beta for the performance-approach goal main effect was .22. When problems were more difficult, the beta for the performance-approach goal main effect was .00. <sup>b</sup> Although Elliot and McGregor reported that the main effect for performance-approach goals was not significant on pop quiz performance, the regression analysis had controlled for initial exam score. This is important to note because initial exam score was the best predictor of pop quiz performance ( $\beta = +.42$ ), and performance-approach goals were a significant predictor of initial exam score ( $\beta = +.24$ ). Thus, performance-approach goals do exert a positive effect (albeit indirect) on pop quiz performance, and the indirect effect is reported in parentheses. In a personal communication, A. J. Elliot (April 24, 2001) indicated that when the model was rerun without controlling for initial exam performance, both mastery ( $\beta = +.15$ ) and performance-approach ( $\beta = +.16$ ) goals significantly predicted pop quiz performance.



Midgley et al. (2001) that it is important to consider what traditional measures of performance such as grades reflect and that we need to extend our investigations to include more qualitative measures of performance. Nonetheless, the fact remains that grades are the most widely accepted measure of academic performance. Grades in a variety of college courses are best predicted by performance-approach goals (Church et al., 2001; Elliot & McGregor, 1999; Harackiewicz et al., 2000). In fact, if the only outcome variable we examined were academic performance, we would infer very little support for normative goal theory or for a multiple goal perspective.

However, along with Midgley et al. (2001), we believe that it is critical to consider other aspects of achievement behavior, and another important variable is interest. As instructors, we view the cultivation of interest as an important goal, and for students, interest may be a key to life-long learning (Hidi, 1990; Hidi & Harackiewicz, 2000; Maehr, 1989). See Table 2 for a summary of studies of interest in college contexts. Clearly, the majority of researchers found a positive main effect of mastery goals and no evidence of performance-approach goal effects. For example, students who endorse mastery goals at the outset of introductory courses are more likely to report interest in the class and enroll in additional courses in that discipline (Harackiewicz et al., 2000). If we only considered interest outcomes, we would infer strong support for normative goal theory and reject a multiple goal perspective.

By examining both outcome measures together, however, we find strong support for the multiple goal perspective, in the specialized goal pattern (see Tables 1 and 2). Mastery and performance-approach goals independently promoted different achievement outcomes: Students adopting both goals are optimally motivated in this educational context. Both performance-approach and mastery goals are adaptive in college education. Normative goal theory cannot account for this pattern of results, contrary to Midgley et al.'s (2001) conclusions. We believe that our review provides evidence for the need to revise goal theory. Of course, much work remains to refine and test the theoretical propositions generated by the multiple goal perspective, and Midgley et al. (2001) have identified important issues to address. However, progress is cumulative, and we need a good understanding of prior research to make continued progress.

### Future Directions for Theory and Research

The three issues we have discussed here suggest that a revision of goal theory is necessary and illuminating. However, the fact that we have focused on college students in part of our review may raise questions about the generalizability of positive performance-approach goal effects and about the relevance of a multiple goal perspective for earlier grades. It is important to note that positive performance-approach goal effects are not limited to college populations. Although the results are not as consistent as in the college

Table 2  
Summary of Goal Effects on Interest Outcomes

Study	Data analytic method	Interest outcome	Mastery goal main effect	Perf-a goal main effect	M × P interaction
Archer (1994)	Correlation	Positive attitude	+ .39	+ .18	
	MANOVA <sup>a</sup>	Positive attitude	+	+	<i>ns</i>
Barron & Harackiewicz (2001)	Regression	Study 1: Enjoyment	+ .39	<i>ns</i>	<i>ns</i>
		Study 1: Free choice behavior	+ .22	<i>ns</i>	<i>ns</i>
		Study 1: Behavioral inclination	+ .31	<i>ns</i>	<i>ns</i>
Barron, Schwab, & Harackiewicz (1999)	Regression	Interest in class	+ .17	<i>ns</i>	<i>ns</i>
Church, Elliot, & Gable (2001)	Regression	Study 2: Interest in class	+ .38	<i>ns</i>	<i>ns</i>
Elliot & Church (1997)	Regression	Interest in class	+ .31	<i>ns</i>	-.19
Harackiewicz, Barron, Carter, Lehto, & Elliot (1997)	Regression	Interest in class	+ .19	<i>ns</i>	<i>ns</i>
Harackiewicz, Barron, Tauer, Carter, & Elliot (2000)	Regression	Enjoyment of lectures	+ .22	<i>ns</i>	<i>ns</i>
		Interest in psychology	+ .41	<i>ns</i>	<i>ns</i>
		Behavioral measure of continued interest	+ .16	<i>ns</i>	<i>ns</i>
Harackiewicz, Barron, Tauer, & Elliot (2002)	Regression	Enjoyment of lectures	+ .16	<i>ns</i>	<i>ns</i>
		Interest in psychology	+ .35	<i>ns</i>	<i>ns</i>
		Behavioral measure of continued interest	+ .13	<i>ns</i>	<i>ns</i>
Pintrich & Garcia (1991)	Correlation	Major in psychology	+ .12	<i>ns</i>	<i>ns</i>
	ANOVA <sup>b</sup>	Task value	+ .47	+ .10	
		Task value	+	+	<i>ns</i>

Note. When method of analysis is regression, standardized regression coefficients are reported for significant effects, and *ns* is used to indicate nonsignificant effects. When the method of analysis is ANOVA or MANOVA, a + or - is used to indicate significant effects and their direction, and *ns* is used to indicate nonsignificant effects (see accompanying footnote for more detail about effects). When the method of analysis is correlation, we report zero-order correlations between the interest outcome and that particular goal. Perf-a = performance-approach; M = mastery; P = performance; ANOVA = analysis of variance; MANOVA = multivariate analysis of variance.

<sup>a</sup> Archer conducted a median split of mastery and performance-approach goal measures to test a 2 × 2 MANOVA and reported two significant main effects. Students with high-mastery-high-performance goals demonstrated the highest positive attitudes ( $M = 10.86$ ), followed by high-mastery-low-performance goals ( $M = 10.27$ ), low-mastery-high-performance goals ( $M = 9.00$ ), and low-mastery-low-performance goals ( $M = 8.28$ ). <sup>b</sup> Pintrich and Garcia trichotomized mastery and performance-approach goal measures to test a 3 × 3 ANOVA and reported two significant main effects. The mastery goal effect revealed that students who were high in mastery goals reported the most task value ( $M = 6.24$ ), followed by students who were moderate ( $M = 5.76$ ) and low ( $M = 5.13$ ) in mastery goals. The performance-approach goal effect showed that students who were high in performance goals reported the most task value ( $M = 5.99$ ) compared with students who were low ( $M = 5.65$ ) or moderate in performance goals ( $M = 5.55$ ).

setting, there are several studies that report positive performance-approach goal effects in line with the multiple goal perspective in middle school and high school contexts (Bouffard, Vezeau, & Bordeleau, 1998; Lopez, 1999; Pintrich, 2000b; Skaalvik, 1997; Tanaka & Yamauchi, 2001; Wentzel, 1993; Wolters et al., 1996).

Midgley et al. (2001) were absolutely correct that we need to explore more fully the role of personal and contextual characteristics as moderators of the relations between goals and outcomes, and researchers have already begun to study such moderation. For example, Harackiewicz and Sansone (1991) argued that goals may be most effective when they are consistent with or "match" the general context in which they are pursued, and we suspect that performance-approach goals become more adaptive when pursued in educational contexts that afford a good match (such as some secondary schools and many colleges and universities). Indeed, Harackiewicz and Elliot (1998) reported evidence that the effects of experimentally manipulated performance-approach and mastery goals on interest vary as function of context. The role of contextual factors as moderators will be an important direction for future research.

Another possibility is that college students at select universities may have already developed an array of effective self-regulatory strategies for achieving their performance-approach goals, a pattern that may not be found with younger students or with older students who are more diverse in terms of achievement level, knowledge, and skills. We need more research on younger and more diverse populations to understand the role of multiple goals in facilitating or constraining student motivation, cognition, and learning (see Bouffard et al., 1998, for a cross-sectional developmental study). Moreover, as Midgley et al. (2001) noted, there may be some long-term developmental costs to endorsing a consistent performance goal orientation. We second Midgley et al.'s (2001) call for more longitudinal research so that we can examine the developmental role that performance-approach goals play as children age and move through different educational contexts.

Harackiewicz et al. (1998) have also identified another important moderator variable not considered in Midgley et al.'s (2001) review—individual differences in the need for achievement. This personality variable has proven to predict the goals students adopt in their college courses (Elliot & Church, 1997; Harackiewicz et al., 1997) as well as moderate the effects of goal manipulations. In experimental studies comparing mastery and performance-approach goals (Elliot & Harackiewicz, 1994; Harackiewicz & Elliot, 1993), mastery goals were particularly effective in enhancing intrinsic motivation for individuals low in the need for achievement, but only performance-approach goals enhanced interest for achievement-oriented individuals. These results suggest that no single goal manipulation is sufficient to raise interest for all participants but rather that some goals are better for some individuals.

Consideration of individual differences highlights another way in which the selective goal pattern might play out. In situations emphasizing both goals, individuals could select the one goal optimally suited for them. In other words, individuals low in the need for achievement could focus on mastery goals, whereas achievement-oriented individuals could focus on performance-approach goals. Thus, the selective goal pattern takes on added significance when goals are assigned externally. Benefits of multiple goals would be revealed, not because both goals were being simultaneously pursued, but because different individuals focused

on different goals. Barron and Harackiewicz (2001) documented preliminary support for this selective goal pattern in a recent experiment, and we call for further intervention studies to explore multiple goal dynamics. In sum, not only may different achievement goals be more effective in different situations, but different achievement goals may be more effective for different individuals.

Beyond examining multiple goals and their interactions, we need to revise goal theory to reflect the possibility that individuals can pursue multiple pathways to achieve similar goals or outcomes. The principle of equifinality posits that the same goals can be achieved in multiple ways or by different actions (Ford, 1992; Pintrich, 2000c; Shah & Kruglanski, 2000). Students may use different types of self-regulatory strategies to control their cognition, motivation, and behavior to reach their goals (Pintrich, 2000c). Some may reach their goals by just trying harder or persisting, others may reach their goals through the use of more surface strategies, whereas others opt to use deeper processing strategies or to adaptively seek help. In addition, students may have different affective experiences as they enact different strategies in the service of their goals (Pintrich, 2000b, 2000c). The important point for future theory and research is that we need to understand the development of these different patterns of self-regulation and the outcomes that are generated by different patterns of multiple goals. We will not begin to understand these complex processes if we continue to rely on a simplistic generalization that mastery goals are always good and performance goals are always bad. The multiple goal perspective poses a challenging research agenda, but it also offers the potential for a more sophisticated understanding of the complex phenomena of motivation, learning, and achievement.

At the classroom or school level, the multiple goal perspective allows for the possibility that teachers and schools can achieve similar goals in different ways. As the long history of educational reform efforts tells us, there is no one "magic bullet" or one pathway to achieve the goals of having motivated, engaged, knowledgeable, skilled, and happy students. There are different ways to achieve these valued outcomes, and researchers should help schools understand the options and the potential rewards and risks of adopting different strategies based on scientific theory and evidence. There are plenty of politicians and educators who already "know" the answers to our educational problems, but the role of researchers is to help frame the problems and bring to bear empirical evidence on the problems and suggested solutions. As researchers, it is important for us to foster a critical perspective on educational problems and to rely on empirical evidence in our suggestions for improvement. The multiple goal perspective suggests that there may be multiple pathways to improve schools, not just one "mastery road" that all must travel.

In conclusion, there is much research to be done, and Midgley et al. (2001) have started the conversation off in the right manner by pushing us to consider important questions. At the same time, it is clear that the revision of goal theory is underway and should not be constrained by an insistence that no revisions are needed or warranted. The multiple goal perspective offers theoretically important constructs, new research methodologies, and empirically supported generalizations that represent a clear improvement over normative goal theory. It would be a setback to the field and to the goal of scientific progress if we fail to revise our theories as new ideas and new evidence are brought to bear on the important questions of motivation, learning, and achievement.

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## Call for Nominations

The Publications and Communications (P&C) Board has opened nominations for the editorships of *Contemporary Psychology: APA Review of Books*, *Developmental Psychology*, and *Psychological Review* for the years 2005–2010. Robert J. Sternberg, PhD, James L. Dannemiller, PhD, and Walter Mischel, PhD, respectively, are the incumbent editors.

Candidates should be members of APA and should be available to start receiving manuscripts in early 2004 to prepare for issues published in 2005. Please note that the P&C Board encourages participation by members of underrepresented groups in the publication process and would particularly welcome such nominees. Self-nominations are also encouraged.

Search chairs have been appointed as follows:

- *Contemporary Psychology: APA Review of Books*: Susan H. McDaniel, PhD, and Mike Pressley, PhD
- *Developmental Psychology*: Joseph J. Campos, PhD
- *Psychological Review*: Mark I. Appelbaum, PhD

To nominate candidates, prepare a statement of one page or less in support of each candidate. Address all nominations to the appropriate search committee at the following address:

Karen Sellman, P&C Board Search Liaison  
 Room 2004  
 American Psychological Association  
 750 First Street, NE  
 Washington, DC 20002-4242

The first review of nominations will begin November 15, 2002. The deadline for accepting nominations is November 25, 2002.