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Chapter *in* Advances in Motivation and Achievement · July 2010

DOI: 10.1108/S0749-7423(2010)000016A006

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Up Around the Bend: Forecasts for Achievement Goal Theory and Research in 2020

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Invited Book Chapter for *Advances in Motivation and Achievement* (Volume 16).

December 14th, 2009

Up Around the Bend: Forecasts for Achievement Goal Theory and Research in 2020

“Come on the rising wind, we’re going up around the bend.”

Creedence Clearwater Revival, *Up Around the Bend*, 1970

The editors of this volume asked us to summarize the current state of achievement goal research and to predict the next 10 years of research. A relatively simple task, one might think. Ten years is not that much time. Yet predicting the future is, as any doomsday cultist can attest, fraught with error. This is due to the simple fact that our immersion in the present hinders us from recognizing how we might think or feel differently in the future. Invariably, the predicted future is a somewhat flawed variation of the present, because, as Gilbert (2007) notes, “we fail to recognize that our future selves won’t see the world the way we see it now” (p. 121). Thus, any prophecies we might offer are likely to be anchored to the particular theoretical, methodological, and ideological positions that we currently hold.

Given this blind spot, we resolved to not make any predictions at all and instead offer a ‘wish list’ for achievement goal research over the next 10 years. This list covers topics that we personally think are compelling and exciting new areas that hopefully will help stimulate new advancements in achievement goal theory. We begin this chapter with a review of achievement goal theory and research from the early 1980’s to the present. We then identify several vital issues that theorists and researchers are currently grappling with, or at least in our view ought to be grappling, in order to advance the field. Finally, we provide a wish list of research directions for the next 10 years of achievement goal research that focuses on three inter-related areas: methods (of research), mechanisms (of goal effects), and multiple goal dynamics.

A (Brief) Review of Achievement Goal Research

Achievement goal theory traces people's behaviors, thoughts, and emotions in achievement situations to the broad goals they pursue in that activity, whether in education, sports, work, or other achievement domains (Dweck, 1986; Maehr & Midgley, 1991; Nicholls, 1984). Two goals have featured prominently: mastery goals (also sometimes called learning goals) and performance goals (also called ego goals or ability validation goals). Both goals concern the pursuit of competence and the assessment of one's own skill level, yet they do so in distinct ways. People pursuing a mastery goal strive to develop their skill or expertise, while those pursuing a performance goal instead strive to demonstrate and validate their existing skill, typically by outperforming peers. As such, those pursuing mastery goals typically use self-referential standards to define success versus failure, while those pursuing performance goals instead use normative standards to define success versus failure.

Over a decade into the theory, several theorists (Elliot & Harackiewicz, 1996; Middleton & Midgley, 1997; Skaalvik, 1997; VandeWalle, 1997) furthered the bifurcation of performance goals into approach (i.e., desire to outperform others) and avoidance forms (i.e., desire to avoid doing worse than others) that was suggested but undeveloped in early achievement goal theorizing (Dweck, 1986; Nicholls, 1984). The approach-avoid distinction, which helped align achievement goal theory with a key element of traditional achievement motivation theories (e.g., Lewin, Festinger, Dembo, & Sears, 1944; McClelland, Atkinson, Clark & Lowell, 1953), was widely welcomed, and for good reason: studies routinely showed much more negative effects of performance-avoidance goals than performance-approach goals, the latter tending for the most part to yield neutral or beneficial effects (Elliot & Moller, 2003; Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002). Theorists later proposed a similar separation of mastery goals into approach (i.e., desire to improve or learn) and avoidance (i.e., desire to avoid a decline in skill or

failing to learn) forms (Elliot & McGregor, 2001; Pintrich, 2000). This split seems to be fruitful as well, with mastery-approach goals producing positive effects and mastery-avoidance goals negative effects (Moller & Elliot, 2006). Nonetheless, for reasons discussed later, this separation of mastery goals has not been widely adopted by all theorists.

Hundreds of studies have compared the various correlates of mastery-approach goals and the two performance goals. They generally take one of two thematic approaches. One is to explore the antecedents to achievement goal pursuit. In educational research, for example, many studies have traced goal adoption to (a) student-centered variables such as personality (e.g., trait anxiety, conscientiousness, need for achievement), epistemological sophistication, and task confidence (e.g., Bråten & Strømsø, 2004; Elliot & Church, 1997; Zweig & Webster, 2004); (b) classroom-centered factors such as the evaluation procedures or the classroom climate (e.g., Maehr & Midgley, 1991; Mueller & Dweck, 1998); or (c) students' interpersonal relationships with peers, teachers, and parents (e.g., Anderman & Anderman, 1999; Elliot & McGregor, 2001).

The second and vastly more common theme of the research is to explore the consequences of goal pursuit. Volumes of research in the education context, for instance, have explored goal correlations with achievement (e.g., exam or course grades), interest in the course material, or the many behavioral (e.g., help-seeking, study strategies, cheating), emotional (e.g., pride, anxiety), and cognitive (e.g., self-regulation, working memory) processes that may link goals to achievement and interest. On the whole, the literature shows uniformly positive effects of mastery-approach goals on a variety of desirable educational outcomes. For example, these goals promote interest and engagement with the topic, self-efficacy, persistence, adaptive help-seeking, and effective self-regulation (e.g., Harackiewicz, Barron, Tauer, Carter, & Elliot, 2000;

Karabenick, 2003; Nolen, 1988; Pintrich, 2000; Wolters, Yu, & Pintrich, 1996). Truly, the only blemish on mastery-approach goals' otherwise spotless record is their weak and inconsistent relationship with actual achievement (see Hulleman, Schrager, Bodmann, & Harackiewicz, in press, for a meta-analytic review). This is no small blemish, though, if you take the view that any theory of achievement motivation must account for achievement.

The extant research shows much different effects for the two performance goals. Performance-avoidance goals clearly yield maladaptive consequences, including high anxiety, disorganized study habits, help-avoidance, self-handicapping, and often low achievement and interest as well (e.g., Elliot & McGregor, 2001; Midgley & Urdan, 2001; see Elliot & Moller, 2003, for a review). Performance-approach goals instead yield a much narrower set of outcomes (see Elliot & Moller, 2003; Payne et al., 2007). They tend to be unrelated to many of the negative outcomes often shown for performance-avoidance goals – for example, high levels of anxiety and worry, threat appraisals, and disorganized study strategies (Elliot & McGregor, 2001; Senko & Miles, 2008). They also tend to be unrelated to many of the positive outcomes shown for mastery-approach goals – for example, course interest, deep learning strategies, adaptive help-seeking, and open sharing during problem-solving (Darnon et al., 2006; Harackiewicz et al., 2000; Karabenick, 2003). This is not to say performance-approach goals lack predictive value. They do consistently predict a few “negative” correlates such as acceptance of cheating or the use of “surface” learning strategies that focus on rote memorization, but also some “positive” correlates such as effort, persistence, and, curiously, achievement in the classroom (Elliot & Moller, 2003; Hulleman et al., in press; Kavussanu & Roberts, 2001).

Mastery Goals vs. Multiple Goals

Our research review shows that performance-avoidance goals are associated with many negative outcomes, mastery-approach goals associated with many positive outcomes with the notable exception of achievement, and performance-approach goals associated with fewer negative or positive outcomes but do, importantly, appear to facilitate high achievement. In recognition of these disparate findings, and prior research showing that some students do pursue both goals (Meece & Holt, 1993; Pintrich & Garcia, 1991), theorists proposed a multiple goals perspective that highlights the positive potential of both mastery-approach and performance-approach goals (Harackiewicz, Barron, & Elliot, 1998; Harackiewicz et al., 2002; Pintrich, Conley, & Kempler, 2003). Their perspective, departing as it does from the traditional mastery goal perspective that favors mastery-approach goals only, stirred a lively ongoing debate about the relative merits of performance-approach goals (Brophy, 2005; Harackiewicz et al., 2002; Midgley, Kaplan, & Middleton, 2001; Kaplan & Middleton, 2002).

Before noting the points of tension between these two perspectives, we first highlight two often overlooked areas of agreement. First, proponents of each perspective agree that mastery-approach goals promote an extensive array of adaptive and beneficial effects (Harackiewicz et al., 2002), and also that researchers and practitioners should find ways to promote mastery-approach goals in real world contexts. Second, neither group suggests that teachers and coaches should actively *encourage* performance-approach goals in the classroom or sports field. This point is particularly important, as multiple goal theorists are often misunderstood as advocating that teachers and coaches promote performance-approach goals for students and athletes.

In our view, the main dividing point between the two perspectives concerns whether performance-approach goals ought to be *discouraged*. Mastery goal theorists have argued that performance-approach goals should be discouraged for several reasons, foremost among them a

concern with educational egalitarianism. Achievement goal theory has long held that only mastery goals can promote *equality* in learning and motivation (e.g., Ames, 1992; Dweck, 1986; Nicholls, 1979). Performance goals, due to their reliance on normative rankings, are believed to obstruct some students from succeeding and, consequently, undermine the motivational processes necessary for students to develop to their potential (Brophy, 2005; Kaplan & Middleton, 2002; Midgley et al., 2001; Nicholls, 1979). Thus, mastery goal theorists have long held that performance goals disenfranchise some students. Mastery goal theorists have also marshaled two other reasons for discouraging performance goals. One is their hypothesis that the benefits of performance-approach goals are limited to college-aged American students taking rudimentary classes that require only a superficial understanding of the course content. Thus, in their view, the positive benefit of performance-approach goals on achievement is to be decried instead of heralded. The second is their hypothesis that performance-approach goals, despite their apparent benefits, carry several hidden costs to students' overall educational experience and quality of learning, such as increased cheating, superficial learning, or vulnerability to performance-avoidance goals and the many costs associated with them. We address each of these hypotheses in our Wish List section of the chapter.

Multiple goal theorists take a different perspective. They note that performance-approach goals provide some students important benefits that they do not receive from mastery goals, and argue that it may be risky and unwise to actively discourage those students from pursuing goals that seem to work well for them (Harackiewicz et al., 1998). The primary position of multiple goal theorists is to further explore the inner-workings of performance-approach goal effects, rather than dismiss the goal as unworthy or ignoble (Harackiewicz et al., 2002).

To some degree, this debate traces to the mastery goal perspective being rooted in philosophical concerns about how education ought to work, and the multiple goals perspective instead being rooted in efforts to accommodate the unexpected goal effects into goal theory. In other words, it is, at a crude level, a distinction between idealism and realism (Roeser, 2004; Urdan, 2001). Elliot (2005) summarizes this tension and hints to its resolution:

These desires are not incompatible or antagonistic and, on the contrary, it may be argued that these dual foundations are part of what makes the achievement goal approach so generative and achievement goal research so invigorating and satisfying to conduct. However, disagreements in the achievement goal literature seem to arise when one desire takes precedent over the other – when theoretical work begins to lose its tether to real-world considerations, or when real-world considerations alone begin to drive data interpretations and summary. (p. 67)

We agree and also believe that the theoretical focus of the multiple goal perspective can ultimately inform the idealistic perspective in ways that might appeal to all theorists. In particular, by conducting research on performance goals we can better understand how to imbue mastery-approach goals with the same qualities that enable performance goals to lead to achievement. Potentially, this could lead to mastery-approach goal striving that promotes both learning and achievement. This belief, which has undergirded some of our own research (Senko & Harackiewicz, 2005a; Senko & Miles, 2008), requires a keen focus on the possible mechanisms linking goals to learning and achievement (see Wish #2 later in the chapter).

Conceptual and Methodological Issues Concerning Achievement Goal Constructs

The debate between the mastery and multiple goal perspectives illuminates three conceptual disagreements within the field. Each issue focuses on the achievement goal construct: the conceptual breadth of what defines an achievement ‘goal’, the structure of the achievement goal model (i.e., the value-added of mastery-avoidance goals), and the core components that define mastery and performance goals.

Conceptual Breadth of an Achievement 'Goal'

Since its inception, goal theory has maintained that achievement goals organize and provide meaning to achievement-related experiences (Maehr, 1984), by reflecting beliefs about the relationship between effort and ability (Dweck, 1986; Molden & Dweck, 2000; Nicholls, 1984), for example. Though all theorists agree that goals organize and provide meaning, they disagree on how to best model this in the theory and in the operational definitions of achievement goals. Some theorists favor a “goal orientation” approach that encompasses the different elements of one’s experience (affect, attributions, interest) into the broad goal schema (see Kaplan & Maehr, 2007). In their view, these elements are all integral to the goal orientation, and should thus be represented together in the operational definitions of the goals. For example, they contend that a mastery goal orientation *by definition* comprises focusing on the task, experiencing positive affect and high interest, and possessing an incremental view of intelligence (Maehr, 2001). These elements have therefore been included in their goal measures. For example, some measures are imbedded with interest (“I like to *learn something interesting*”; Skaalvik, 1997) or affect (“I *feel really successful* when I am the smartest”; Duda & Nicholls, 1992).

Other theorists favor a narrower approach to goal constructs and definitions. Guided by the traditional theorizing about goals more generally (see Austin & Vancouver, 1996; Elliot & Fryer, 2007), they contend that goals should be competence-oriented, with an end-state that individuals are committed to either approach or avoid (i.e., “goal complex”; see Elliot, 2005). In their view, any non-goal elements within the goal orientation model should be distinguished, conceptually and operationally, as either antecedents (e.g., needs, prior beliefs) or achievement-related processes and outcomes (e.g., affect, attributions) triggered by goal engagement. Thus,

their goals focus strictly on how competence is defined. For example, mastery-approach goal items include, “One of my goals in class is to learn as much as I can” (Midgley et al., 2000) and “My goal in this class is to perform better than the other students” (Elliot & Murayama, 2008), both of which include goal language and clear competence-related outcomes.

Structure of the Achievement Goal Model

The debate over the definition of achievement ‘goal’ is related to another debate about the overall structure of the achievement goal model. The original extension of the two-goal model to include performance-avoidance goals was a welcome change for two reasons. First, it vastly improved the predictive value of goal theory, which to that point had suffered due to the muddy and inconsistent findings for performance goals. Separating the performance-approach and performance-avoidance goals, which had to that point typically been confounded in the same measure (e.g., Button, Mathieu, & Zajac, 1993), had given the field much-needed clarity (Rawsthorne & Elliot, 1999). Second, and no less important, the new three-goal model was loosely consistent with the original conceptualizations of achievement goals, especially Dweck’s (1986) hypothesis that performance goals can be beneficial when perceived competence is high (cf. performance-approach goals) but maladaptive when it is low (cf. performance-avoidance goals).

Naturally, theorists soon proposed also partitioning mastery goals into approach and avoidance forms, thereby extending the theory to a four-goal model (Elliot & McGregor, 2001; Pintrich, 2000). This addition has been empirically useful: mastery-avoidance goals appear to produce unique negative effects not produced by mastery-approach goals (see Moller & Elliot, 2006, for a review). However, despite the added predictive value they provide, mastery-avoidance goals have not yet become a common staple in goal research. There are likely several

reasons for this. One is that mastery-avoidance goals may be less common and relevant to younger school-aged populations than to older adults concerned about declining cognitive or physical skills (Elliot & McGregor, 2001). Indeed, elderly adults are much more likely than young adults to pursue these goals (Ebner, Freund, & Baltes, 2007). Division over mastery-avoidance goals also traces to the broader debate about the appropriate breadth of the goal construct. Theorists who have studied these goals tend to endorse the goal complex view that goals should be narrowly defined in terms of competence-based standards. Mastery-avoidance goals, defined narrowly as a goal to avoid failure to learn or to avoid a decline in skill, fit snugly into this rubric. These goals make less sense from the goal orientation view that includes meaning, value, and affect in the goal construct. In fact, as Bong (2009) recently noted, mastery-avoidance goals are somewhat of an oxymoron from this viewpoint, because they are associated with qualities (e.g., entity beliefs, negative affect) that contradict the mastery goal orientation.

Components of Goals

It has long been known that theorists disagree somewhat about the specific components of each type of achievement goal (e.g., Ames, 1992; Elliot, 2005; Urdan, 1997), but these differences in opinion were widely considered to be trivial. Recently, researchers have begun to inspect these differences more closely (e.g., Donnellan, 2008; Grant & Dweck, 2003; Hulleman et al., in press). This is nicely illustrated by Smith, Duda, Allen, and Hall (2002), who, after comparing three of the most commonly used measures of achievement goals, concluded that the lack of consistently strong theoretical relationships between achievement goals and outcomes “may be due to slight differences in the operational definition proffered by the author of each measure, and the subsequent item content of the subscales” (p. 185). Even theorists who favor a

narrow definition of achievement goals disagree about the primary components of each goal.

What, then, is the true essence of a performance goal and a mastery goal?

With regard to performance goals, two main theoretical components have been identified in the literature (e.g., Hulleman et al., in press; Sideridis & Mouratidis, 2008; Urdan & Mestas, 2006): an appearance component (desire to demonstrate and affirm one's ability) and a normative component (explicit desire to compare favorably to others). In their mixed-methods study of high school students, Urdan and Mestas (2006) found that students reported both competitive (i.e., normative) and appearance reasons for pursuing performance-approach or performance-avoidance goals. Similarly, Grant and Dweck (2003) found that items tapping ability validation (i.e., appearance) and normative ability formed distinct goals in factor analyses. Not surprisingly, the existing performance goal measures vary in how much they emphasize one component or the other. Hulleman et al. (in press) coded the individual items used to measure achievement goals in 243 studies. They found that the most common performance-approach item types were normative (44%) and appearance (23%). The differences in these measures are not coincidental. They reflect a disagreement as to whether normative comparisons are the fundamental aspect of performance goals (Elliot, 2005), merely a "potentially interesting but non-essential aspect of a performance goal" (Grant & Dweck, 2003, p. 542), or should be dropped from the lexicon (Brophy, 2005).

There are two other constructs that have sometimes infiltrated the measures of performance goals. One is an outcome goal, such as wanting to attain a specific outcome (an 'A' on an exam). Though sometimes embedded in early measures of performance goals (Pintrich, Smith, Garcia, & McKeachie, 1991), they ought to be considered separately because they could signify either performance or mastery goal accomplishment. Empirically, outcome goals provide

little predictive value: they are equally correlated with both mastery-approach and performance-approach goals, and are not uniquely associated with educational outcomes (Grant & Dweck, 2003). Thus, although they have recently been offered as a replacement for normative performance goals (Brophy, 2005), they are more accurately placed in their own category. Second, performance-avoidance goal measures have historically included items that tap anxiety and fear (Elliot & Church, 1997). These items have been removed from the most current instruments (Elliot & Murayama, 2008).

In contrast to performance goals, the mastery goal construct has largely managed to escape controversy, as most theorists agree that mastery goals focus on learning and development (Ames & Archer, 1988; Elliot, 2005; Urda, 1997). The lone debate has concerned the inclusion of a challenge-seeking component within mastery goals (Dupeyrat, Marine, & Escribe, 1999; Grant & Dweck, 2003). Grant and Dweck (2003) found that items tapping learning and challenge-mastery sub-scales formed a single goal in a factor analysis, but recent analyses of their scale in two additional samples instead provide support for separate mastery and challenge-seeking factors (Donnellan, 2008). Similarly, Dupeyrat et al. (1999) found items tapping mastery/understanding formed a separate factor from items tapping challenge-seeking (see also Roedel & Schraw, 1993, as cited in Dupeyrat et al., 1999). The main categories of mastery-approach goal items identified in the Hulleman et al. (in press) meta-analysis were understanding the task (12%), improvement (10%), potential to learn as much as possible (19%), and challenge-seeking (14%). In contrast, scales measuring mastery-avoidance goal scales were more likely to measure fear (85%) than the goals themselves (11%).

In summary, there has been substantial disagreement about the core elements of performance goals and mastery goals alike. A careful observer might suggest that achievement

goals are multi-faceted, so it is not a problem if different goal components are being tapped by different measures. Further, one could argue that multi-component measurement is a strength, rather than a weakness, particularly if the goal measures produce similar patterns of relationships with outcomes. This position is plausible in principle, but it is not well-supported by the data. For example, Grant and Dweck (2003) found that the ability validation and normative ability measures of performance-approach goals produced distinct patterns of relationships with outcomes. Likewise, the meta-analysis by Hulleman et al. (in press) found that the various types of performance-approach goal measures and mastery goal measures had distinct patterns of relationships with achievement. As reproduced in Table 1, normatively-framed performance-approach goal scales were positively correlated with achievement, whereas appearance-oriented scales were negatively correlated with achievement. For mastery-approach goals, scales using challenge-seeking or interest-based measures were positively correlated with achievement, whereas scales using task, skill development, or attaining one's potential were uncorrelated with achievement. This conceptual confusion about the essence of each achievement goals has also been reflected in experimental manipulations of achievement goals, which often lump together distinct constructs. For example, Utman's (1997) meta-analysis, which is sometimes cited as evidence of the deleterious effects of performance goals on task performance (Kaplan & Maehr, 2007), comprises 24 studies of which only two could be classified as using normative performance-approach goals (Covington & Omelich, 1984; Gianini, Weinberg, & Jackson, 1988). The others instead would be classified as appearance-oriented performance-approach goals or a non-goal construct (e.g., extrinsic motivation).

Summary of Conceptual and Methodological Issues

The conceptual and methodological issues we have outlined above – definition of achievement ‘goal’, structure of the achievement goal model, components of goals – have important implications for theory growth and research methods. As presented in Table 2, these broad conceptual issues overlap loosely with the mastery/multiple goals debate. For example, multiple goal theorists tend to favor the narrow goal definitions over goal orientations, believe that mastery-avoidance goals are a valid and useful contribution to goal theory, and uniformly use normative-based measures of performance goals. By contrast, theorists who favor a goal orientation perspective, or consider mastery-avoidance goals invalid, or use appearance-oriented measures of performance goals, all tend to support the mastery goal perspective. Our summary is meant to be more illustrative, than definitive, of the types of connections between the conceptual issues within the field. We encourage readers to consider the thoughtful reviews of Kaplan and Maehr (2007) and Elliot (2005) for additional discussion. However, regardless of theoretical perspective, it is clear that the field needs to consider goal definitions much more closely, and investigate the validity of the different types of performance and mastery goal constructs and measures. For example, if separate goal components continue to be differentially related to outcomes (Hulleman et al., in press), it may become necessary for the field to either unite on a singular definition of each goal or bifurcate each goal into separate components.

Our ‘Wish List’ for the Next Ten Years of Achievement Goal Research:

Methods, Mechanisms, and Multiple Goals

In presenting our wish list for the next decade of research, we acknowledge that our perspective is rooted in our social psychological background, which focuses more on micro-processes than, say, the ecological validity emphasis of the applied psychology domains. As such, our wish list addresses micro-level issues surrounding three themes: the methods in

achievement goal research; the mechanisms linking goals to key outcomes, achievement and interest in particular; and the dynamics of multiple goal pursuit over time.

Wish #1: Utilize Appropriate Research Methods

In order for progress to be made in any field, research methods (e.g., measurement tools, experimental design, analytic techniques, sample selection) need to be appropriate for the research question. When misalignment occurs, it is not possible to draw the conclusions that the researcher would like to draw. For example, correlational and qualitative designs are less appropriate for drawing causal inferences than experimental designs or longitudinal modeling, whereas the reverse is true when construct exploration or ecological validity are the goals (Schneider, Carnoy, Kilpatrick, Schmidt, & Shavelson, 2007). In this section we outline three major areas of research methods that we believe achievement goal theorists should ponder: construct measurement, research design (including analytic techniques), and sample selection.

Measurement. In psychology, as in other fields, inferences about theoretical constructs are limited by the precision (validity, reliability) of the instruments used to measure those constructs (Campbell, 1969). Achievement goal research is no exception. As noted earlier, the diversity of content in achievement goal measures opens the possibility that diverging patterns of results could be due to researchers applying the same label to different constructs. Thus, our first wish-list item is for achievement goal researchers to improve measurement in two ways.

First, it will be important for theorists to determine the essential components of achievement goals, both conceptually and phenomenologically, and then establish valid and reliable measures of these components. This means linking the conceptual definitions and components of achievement goals with their operationalized definitions (i.e., measures). In other words, this conceptual-operational alignment must occur at the level of the items used to assess

each type of achievement goal (see Elliot and Murayama, 2008, for an example of this alignment process). Importantly, this means that researchers need to understand the conceptual framework implied by how the items are written, and not simply assume that there is a direct correspondence between another researcher's goal scale label and their theoretical framework.

Second, in accord with the goal complex framework, we believe it is vital that achievement goal measures distinguish goals from processes (e.g., affect, attributions) and antecedents (e.g., reasons, needs, personality preferences). This is important on several accounts. Capturing the processes of goal pursuit via self-report items has been shown to be unreliable because people are better at reporting on mental contents (goals, attitudes) than they are at inferring why they feel a certain way (e.g., "Studying is important to me because...") or why they have adopted an important goal (e.g., "The reason I study hard is to..."; see Nisbett & Wilson, 1977). People are also equally unreliable at forecasting their affective futures (Gilbert, 2007) as some goal items require (e.g., "I feel successful when...").

Further, without distinct measures of goals and processes, it will be impossible to understand the exact nature of their inter-relationships, as well as the nature and strength of the goal relationships with interest, achievement, and other outcomes (Pintrich et al., 2003). As Elliot and Murayama (2008) point out:

"Existing measures of achievement goals often include content that more readily belongs in measures of...other constructs. As the achievement goal literature matures it will undoubtedly move more and more in the direction of linking goals to...other constructs in integrative fashion. A conceptually clean achievement goal measure would seem a prerequisite for this integration process to transpire smoothly." (p. 626)

In fact, one reason behind the development of achievement goal theory was a desire to extend the classic need-based approach to achievement motivation (e.g., McClelland et al., 1953) by investigating context-specific motivations (e.g., Nicholls, 1984). If achievement goal research is

to extend beyond achievement motives, then achievement goal measures will need to distinguish personality preferences, needs, and affect from situation-specific competence strivings (Elliot & Dweck, 2005).

Research design and analytic techniques. Adequate tests of any theory require selecting research designs and analytic techniques appropriate to the hypotheses being tested. The American Psychological Association offers useful guidance:

Although complex designs and state-of-the-art methods are sometimes necessary to address research questions effectively, simpler classical approaches often can provide elegant and sufficient answers to important questions. Do not choose an analytic method to impress your readers or to deflect criticism. If the assumptions and strength of a simpler method are reasonable for your data and research problem, use it. Occam's razor applies to methods as well as to theories...Begin with an idea. Then pick a method. (Wilkinson & The Task Force on Statistical Inference, 1999, p. 598).

Peterson (2009) refers to this type of research design as ‘minimally sufficient research’, where the research questions “direct our methods and analyses, not vice versa” (p. 8). It is not advisable to use the newest statistical technique just because it is available. Nor is it advisable to cling to old methods just because a more appropriate technique is unfamiliar. We would like to see achievement goal research use ‘minimally sufficient’ designs and analytic techniques. For example, although some achievement goal research questions can be best answered using experimental designs and ANOVA-based techniques, other research questions are better suited for more sophisticated analytic methods. Importantly, when sophisticated techniques are used, they must be paired with adequate design and attention to the specific hypothesis. For example, when conducting field research designed to infer causality in a theoretically-derived path model (e.g., via structural equation modeling), the variables need to be separated by time, ideally with goals measured at the beginning of the academic period (Senko & Harackiewicz, 2005b) and

baseline measures of the outcome variable(s) collected as well (see Maxwell & Cole, 2007). Otherwise, the knowledge gained is extremely limited despite complex statistical analyses.

We would also like to see achievement goal researchers integrate field and laboratory research methods. Independently, these methods have their drawbacks, but in concert they produce a robust methodological approach. In particular, many educational researchers use field studies to maximize ecological validity – i.e., the extent to which study results can be generalized across settings. However, such observational designs are not well-suited to infer causality. In contrast, randomized field experiments allow researchers to make causal inferences within real-world contexts (e.g., Schneider et al., 2007). Yet even they cannot allow the full experimental control that is provided in the lab. Similarly, it is challenging to chart the various behavioral processes triggered by goals in field settings, and so researchers often end up relying on students' self-reports of their behavior rather than observing actual behavior. Laboratory studies, by contrast, provide the opportunity to assess causality through experimental manipulation and to directly observe behavior under standardized conditions, both of which can allow meaningful contributions to goal theory when paired alongside the more ecologically valid field studies. Examples abound of interesting and compelling laboratory experiments (e.g., Butler, 1993; Darnon et al., 2007; Elliot & Harackiewicz, 1996; Poortvliet, Janssen, Van Yperen, & Van de Vliert, 2007).

In order for laboratory experiments to provide sufficient tests of achievement goals, however, we believe that they must provide participants opportunities to cultivate and apply the strategies that they employ in the classroom. This generally has not been the case. Most laboratory studies (including our own) introduce participants to a novel task, induce the goal, and then require participants to perform the task immediately. This approach allows only very basic

processes to emerge – for example, varying degrees of anxiety and effort – that in turn may help or hinder performance at the task. There is little room in such a procedure for participants to develop and use more complex processes, such as those that we discuss in Wish #2 (‘Investigating Mechanisms’). We recommend that laboratory studies be designed in ways that allow these processes to emerge in order to better simulate the experiences one might have in the classroom or in other achievement domains. Furthermore, given the aforementioned limitations of reporting on mental processes, affective memories and forecasts, and self-reported study strategies (Gilbert, 2007; Winne & Jamieson-Noel, 2003), we also recommend that laboratory researchers observe participants as they work under mastery or performance goal conditions under extended periods of time, rather than ask participants for retrospective reports.

In summary, integrating measured and manipulated goal studies in a thoughtful fashion would certainly advance our knowledge of achievement goal theory and application (e.g., Bodmann, Hulleman, & Harackiewicz, 2009), and randomized field experiments would complement these approaches (Schneider et al., 2005). In this same regard, the integration of qualitative and quantitative methods (i.e., mixed-methods designs) could also be productive. In an excellent recent example of a mixed-methods study, Urdan and Mestas (2006) followed-up participants’ responses to close-ended performance goal items with face-to-face interviews.

Sample selection. As with all psychological research, once fundamental issues of construct validity and mechanism are established, it will be vital to examine the generalizability of these goal processes and outcomes. The selection of a diversity of samples will enable researchers to generalize achievement goal findings beyond convenience samples, and integrate research from the well-established domains of educational, sport, and organizational psychology.

We briefly preview three areas of generalizability that we wish to receive systematic research attention in the next decade: age, culture, and achievement domain.

First, much of the educational research documenting benefits of performance-approach goals relative to mastery-approach goals has been conducted with college samples. Several theorists have questioned whether those effects are unique to that age and educational context (e.g., Midgley et al., 2001). Systematic reviews have yielded different patterns. One found that this link occurs for all but elementary school children, while the other found that age did not moderate the link (Hulleman et al., in press; Linnenbrink, Tyson, & Patall, 2008). There is clearly more work needed on this issue, ideally entailing direct and systematic *within-study* comparisons (Elliot, Conroy, Barron, & Murayama, in press; Middleton et al., 2004). In light of the potentially discrepant effects of different performance goal measures, we encourage such research to use the same goal measures and general procedure when comparing age groups.

Second, as presaged by early theorists (Maehr & Nicholls, 1980), motivation research has expanded beyond North America, with interesting cultural differences emerging for achievement goals in particular. One finding is that performance-avoidance goals seem to provide fewer detriments, and even some benefits, in East Asia than in Western cultures. For example, in a study of Korean students, Bong (2005) found that performance-avoidance goals predict *high* achievement. Her finding is supported by the Hulleman et al. (in press) meta-analysis which found a positive correlation ($r = .11$) between performance-avoidance goals and achievement across 19 studies using Asian samples. Similarly, other studies have shown positive links between general avoidance-oriented life goals (e.g., to avoid declines in health or income) and high well-being in collectivistic societies (Elliot, Chirkov, Kim, & Sheldon, 2001). In contrast, we are unaware of any such finding with students in Western cultures. Studies are needed now to

directly examine the culturally based mechanisms responsible for the surprising positive effects of performance-avoidance goals in collectivistic cultures (cf. Iyengar & Lepper, 1999).

Third, studies are needed to compare effects across achievement domains. Achievement goal theory's origins trace primarily to social (Dweck & Elliott, 1983) and educational psychology (Ames & Archer, 1988; Maehr, 1984; Nicholls, 1984). Similarly, the bulk of the research reviewed in this chapter was conducted either in social psychology laboratories or in educational settings. Over the years, however, the theory has become prominent in the sport psychology and organizational psychology literatures as well (Harwood, Spray, & Keegan, 2008; Payne et al., 2007). Research in these achievement domains has overlapped for the most part. For example, studies in each area have tested the fundamental premise that goal effects depend on one's perceived competence (Dweck, 1986). Likewise, it is now customary in all domains to examine the separate effects of performance-approach goals and performance-avoidance goals.

Yet it is not clear if the effects of achievement goals are consistent across these different domains. Consider, for example, the effects of performance-approach goals on achievement. Two recent meta-analyses suggest the effect may be different in educational settings than in work domains. Hulleman et al.'s (in press) meta-analysis, mostly of studies in educational settings, found a positive effect of performance-approach goals. In contrast, Payne et al.'s (2007) meta-analysis of studies, most of them in organizational settings, found no overall benefit of performance-approach goals. It remains unknown if these differences are due to the domains or instead are an artifact of methodological differences employed in these two areas. For example, the primary performance goal measures used in the organizational research emphasize appearance performance goals (Button et al., 1993; Vandewalle, 1997), whereas measures used in educational research tend to be more normatively focused. It is plausible that the different goal

effects in these education and organizational literatures may simply trace to the components of each goal being measured. This possibility awaits systematic testing.

Wish #2: Investigate the Mechanisms Linking Goals to Achievement and Interest

For now, let us assume that, after improving construct measures and increasing methodological diversity, the research will continue to reveal the same broad patterns of findings— namely, that mastery-approach goals are consistently related to intrinsic motivation and interest, whereas performance-approach goals are more consistently related to achievement. How can achievement goal researchers best understand and explain these effects? The goal relationships with achievement are particularly intriguing, considering that they were never anticipated by goal theory’s founders. Indeed, they continue to surprise after over a decade of research supporting them. For example, Brophy (2005) argued that performance-approach goals actually have no effect on achievement. He reasoned that only the most talented students would willingly pursue this goal, in which case the “effect” of performance-approach goals on achievement is due to an underlying ability (or confidence) confound instead of the goal itself. Although an intriguing and provocative idea, it is contradicted the data. Studies routinely show that performance-approach goals and mastery-approach goals both correlate with underlying ability and confidence to the same small degree, and yet performance-approach goals remain the more reliable predictor of achievement. Furthermore, their effects on achievement persist even when statistically removing the influence of underlying ability or baseline confidence levels (for a review, see Senko, Hulleman, & Harackiewicz, 2009).

If not underlying ability, what does explain why performance-approach goals promote achievement more reliably than mastery-approach goals? There may be many explanations. There certainly has been no shortage of efforts to test the potential “mediators” of this effect.

Numerous studies have provided a smorgasbord of possibilities: for example, study strategies, studying time and other effort measures, persistence, anxiety and other emotions, help-seeking, self-efficacy and performance expectancies, and self-regulation and meta-cognition, among others. All of this work is useful, of course, but also risks being atheoretical if it merely accumulates assorted known predictors of achievement without also offering compelling reasons for *why* those predictors would explain the surprising goal effects on achievement.

Thus, our second wish is that theorists develop clear models for how goals translate into achievement and interest. Knowing the underlying mechanisms will not only advance goal theory, but also perhaps will improve application efforts, introduce possible moderators that have been overlooked, and identify ways to strengthen the mastery-approach goal link with achievement. Fortunately, several possible explanations are now emerging, each of them worthy of continued attention over the next decade. Mirroring the notion that goals both energize and direct behavior, the proffered mechanisms concern either simple effort-related mechanisms or more complex behavioral strategy mechanisms. Due to space limitation, we summarize them only briefly and direct interested readers to Senko et al. (2009) for a fuller treatment of each.

Effort Mechanisms. Goal setting theory (Locke & Latham, 2002) touts how pursuing challenging goals boosts achievement, in large part due to energizing and mobilizing effort. Perhaps a similar effort-related mechanism can help account for the achievement goal effects on achievement. In principle, anyone can attain a mastery-approach goal, but only some can attain a performance-approach goal (Nicholls, 1984). Thus, the performance goal may seem harder to attain than the mastery goal and, as a result, arouse more pressure and effort that, for some tasks at least, can aid performance. We found preliminary support for this in a pair of studies, one of which showed that increasing the apparent difficulty of a mastery-approach goal also led to

performance improvements (Senko, 2009; Senko & Harackiewicz, 2005a). This hypothesis is also partially supported by Hulleman et al.'s (in press) finding that mastery-approach goals correlated positively with achievement only when measured with challenge-seeking items.

Strategy Mechanisms. The effort-based mechanism may contribute to achievement, but there is likely more to the story. One possibility is that mastery-approach goals and performance-approach goals trigger different behavioral strategies, with different consequences for achievement. We consider two strategy-based mechanisms here, one a long-standing explanation and the other a recent alternative. The first is that performance-approach goals lead students to rely on superficial study strategies (i.e., rote memorization), which put them in good position to succeed in many courses. Mastery-oriented students, by contrast, are thought to rely more on deeper learning strategies (i.e., elaboration of the material, critical analysis) that unfortunately put them at a disadvantage in those same classes. Thus, this explanation traces goal effects on achievement to how achievement is measured; it assumes that performance-approach goals often foster success because many classes, especially the large introductory-level courses often sampled in the research, demand only a surface understanding of the material. In more pedagogically sophisticated classes that value deep comprehension, mastery-approach goals, owing to the deep study strategies they prompt, might foster greater success than performance-approach goals (e.g., Brophy, 2005; Midgley et al., 2001; Nicholls, 1984).

This “depth of learning” explanation, like the ability confound argument reviewed earlier, has immense intuitive appeal but is not yet well supported by data. For example, studies show that mastery-approach goals not only promote deep studying strategies but also often surface studying strategies (see Senko et al., 2009). Accordingly, if the explanation were correct, then mastery-approach goals should often predict achievement in those allegedly rudimentary classes

so often sampled in the research. The explanation is also debunked, rather compellingly in our opinion, by the simple fact that surface learning strategies do not aid achievement. They instead nearly always produce a null or *negative* relationship with students' achievement (see Senko et al., 2009). Thus, it appears that surface learning strategies have little to do with the performance-approach goal link to achievement.

An alternative explanation for goal effects on achievement has recently been offered. Rather than focus solely on *how* students study (deep vs. shallow), this explanation focuses also on *what* students choose to study. Essentially, the two goals, due to their different criteria for determining success, may lead students to pursue different learning agendas that cause distinct effects on their performance in the class. Consider performance-approach goals first. Attaining these goals in the classroom requires outperforming peers, usually on teacher-set criteria (Elliot, 2005; Nicholls, 1984). It therefore behooves students pursuing these goals to adhere closely to the teacher's agenda, which requires they maintain vigilance for cues (e.g., the teacher's demands, hints, study guides) that indicate the topic knowledge and skills which the teacher values and is likely to assess on the exams and assignments. In contrast, mastery-approach goal attainment requires satisfying either task-based standards (e.g., solving 80% of problems) or, more often than not, self-referential standards (i.e., improving or feeling one has learned). Students pursuing these goals are therefore freer than performance-oriented students to chase their own learning agenda instead of their teacher's, and as such are likely to delve more deeply into topics that arouse their curiosity. Recent studies offer preliminary support for this "learning agenda" hypothesis. They show, for example, that performance-oriented students are highly attentive to instructor demands and, furthermore, that they anchor their studying efforts to the material they believe the teacher values, whereas mastery-oriented students tend to direct their

study efforts toward personally interesting topics, sometimes even neglecting the duller material that may be tested (e.g., Senko & Miles, 2008; Vermetten, Lodewijks, & Vermunt, 2001).

Social Desirability Considerations. Another intriguing explanation has been recently offered by Darnon and her colleagues. It is silent about the reasons why performance-approach goals aid achievement, but does offer some explanation for the weak link between mastery-approach goals and achievement. Mastery-approach goals, unlike performance-approach goals, correlate with social desirability indices (e.g., Day, Radosevich, & Chasteen, 2003; see Payne et al., 2007, for a review). Likewise, mastery-oriented students, unlike performance-oriented ones, tend to pursue social goals aimed at pleasing teachers (Anderman & Anderman, 1999) and also tend to believe that their teachers like and care about them (Patrick, Ryan, & Kaplan, 2007). In light of these findings, Darnon posited that students may pursue mastery-approach goals for different reasons, some capturing the pure desire for improvement or task mastery but others instead capturing social desirability aims to please teachers (or others). Indeed, when asked to consider which goals would please their teacher, students selected mastery-approach goals instead of performance goals (Darnon, Dompnier, Delmas, Pulfrey, & Butera, 2009). In a similar vein, Dompnier, Darnon, and Butera (2009) recently found that mastery-approach goals predicted achievement only when undiluted by these social desirability aims. Together, their studies spotlight the need to more closely examine the reasons for mastery-approach goal pursuit. It may be that mastery-approach goal endorsement for some students says more about their connection to general pro-school values than students' strivings for improvement or learning. Similarly, the connection with pro-school values could also partially explain the strong correlations between mastery-approach goals and self-reported interest. This possibility dovetails with our meta-analysis finding that performance-approach goals also yield more positive effects

on achievement when they are purely normative instead of colored by competence demonstration strivings (Hulleman et al., in press).

Wish #3: Examine the Dynamics of Multiple Goal Pursuit Over Time

Recent years have witnessed two debates about multiple achievement goal pursuit over time. One concerns whether students have difficulty pursuing mastery-approach goals and performance-approach goals simultaneously. The other concerns whether students switch from performance-approach to performance-avoidance goal in response to adversity. The two debates have rarely overlapped, yet we review them together here because they share several fundamental features and necessitate similar methodological considerations in future research.

Prior Work on Multiple Goal Pursuit. Theorists often conceptualize mastery-approach goals and performance goals as opposites. Yet the two goals usually are somewhat positively correlated, suggesting that some students pursue both during the semester. This possibility raises questions about the effects of pursuing both goals. For example, is it the case, as proponents of the multiple goals perspective suggest (Barron & Harackiewicz, 2001), that students who pursue both mastery-approach and performance-approach goals together reap the benefits of each? Or, as critics of this perspective suggest (Brophy, 2005; Midgley et al., 2001), do those students instead suffer detriments due to the two goals necessitating different strategies, thus draining mental resources and minimizing the benefits normally afforded by the goals? Similarly, students often pursue other goals in achievement situations – for example, social goals to establish status or please teachers, or work-avoidant goals to conserve energy. What are the joint effects of these goals alongside students' achievement goals?

The typical approach to addressing these questions has been to compare the effects of pursuing mastery and performance-approach goals together versus pursuing just one or the other.

Most studies fail to find any interactive effects between the two goals, and those that do tend to yield inconsistent findings that render broad conclusions impossible (for a review, see Pintrich et al., 2003). The most persistent finding appears to be that mastery-approach goals and performance-approach goals yield independent effects: sometimes the two affect the same outcome (e.g., effort, persistence) in an additive manner suggesting increased benefits to pursuing both goals instead of just one or the other (e.g., Pintrich, 2000; Wolters et al., 1996); other times they affect different desired outcomes (e.g., achievement for performance-approach goals, interest for mastery-approach goals) in a manner suggesting specialized benefits for each goal (e.g., Barron & Harackiewicz, 2001; Harackiewicz et al., 2002). In a similar manner, the few studies that have tested the joint effects of social goals and these achievement goals suggest that they provide independent instead of clear interactive effects (e.g., Wentzel, 1999).

Prior Research on Goal Change. Goal theorists generally consider students' achievement goals to be partly dispositional and partly context-dependent – that is, stable enough to energize and direct their experience over time, but also pliable enough to be shaped by others (e.g., teachers, coaches, employers). The research tends to support this long-standing premise. For example, in support of the dispositional view, several studies demonstrate that students tend to pursue similar goals across different domains and also continue to pursue the same goal(s) for a class throughout the semester or academic year (e.g., Bong, 2005; Fryer & Elliot, 2007; Maehr & Midgley, 1991; Meece & Miller, 2001; Middleton, Kaplan, & Midgley, 2004; Shim, Ryan, & Anderson, 2008). Yet in support of the contextualized nature of goals, many of those studies also show that changes to the broader school or classroom climate can affect students' goal pursuit (see also, Ames, 1992; Maehr & Midgley, 1991). For example, the manner in which feedback is delivered can influence students' desire to master subsequent tasks (Mueller & Dweck, 1998).

Most of the work on context-driven change in goals has focused on the role of instructor practices (e.g., evaluation procedures) and school climate in shaping students goals. An emerging line of inquiry is exploring how students revise their goal pursuit in responses to the context-dependent vacillations in competence perceptions (Bong, 2005). The prevailing hypothesis has been that failure experiences lead students to switch from performance-approach to performance-avoidance goals (Brophy, 2005; Kaplan & Maehr, 2007; Midgley et al., 2001; Urda, 2004; see also Nicholls, 1984, for an earlier version of the argument). The underlying message, then, is that performance-approach goals ought to be discouraged because they place students at risk for the ill effects of performance-avoidance goals. This is an intriguing hypothesis, one given primarily as a counterpoint to multiple goals theorists' emphasis on the positive potential of performance-approach goals.

Consistent with this hypothesis, many studies show that baseline competence perceptions positively predict performance-approach goal pursuit and negatively predict performance-avoidance goal pursuit (see Elliot & Moller, 2003). A direct test of the hypothesis, however, requires measuring goals before and after failure experiences. To our knowledge, only three published studies have done this, with mixed results. One study, in support of the hypothesis, found that negative feedback simultaneously decreased performance-approach goal pursuit and increased performance-avoidance goal pursuit (Senko & Harackiewicz, 2005b, Study 1). However, another found no effect of negative feedback on the pursuit of either of the performance goals (Senko & Harackiewicz, 2005b, Study 2), and still another, in apparent contradiction to the hypothesis, found that students pursuing performance-approach goals were more likely to later pursue performance-avoidance goals if they had *high* instead of low self-efficacy (Middleton et al., 2004). More research is clearly needed on approach-avoidance goal

change. We also second Fryer and Elliot's (2007) call for researchers to broaden the scope of this analysis beyond just performance goals. Baseline competence perceptions predict mastery goal pursuit as strongly as performance-approach goal pursuit (see Senko et al., 2009), and changes in self-efficacy predict corresponding changes in mastery goals (Bong, 2005). Surely, then, competence-related goal revision is also relevant to mastery-approach goals. For example, some students might switch from mastery-approach to mastery-avoidance goals or work-avoidance goals after experiencing failure, and indeed two of the three studies cited above showed that students decreased their mastery-approach goal pursuit after receiving negative feedback (Senko & Harackiewicz, 2005b, Studies 1 and 2).

Future Directions. Our brief reviews of the literatures on multiple goal pursuit and goal change reveal mixed findings for each. The multiple goal studies, on the whole, show no clear detriments to pursuing mastery and performance-approach goals together. Most tend instead to show independent, positive main effects of the two goals. Nor is there yet strong evidence that students pursuing performance-approach goals tend to switch to performance-avoidance goals in response to failure experiences. The inconclusive findings for each area might be due to the methodologies typically employed. For each topic, the custom has been to aggregate across students. This assumes that students experience multiple goal pursuit similarly or respond to failure experiences similarly. As noted elsewhere (Fryer & Elliot, 2007; Pintrich et al., 2003), this one-size fits-all method might obscure widely varying individual differences in how students experience multiple goal pursuit or goal revision.

To illustrate, consider two students who are each pursuing both mastery-approach and performance-approach goals for a class. Maxine considers the two goals highly distinct and develops unique strategies (i.e., goal means, such as study strategies) for attaining each goal: she

reads all the assigned material and some that is not (mastery goal), and she also focuses extra attention on the material that she thinks will be on the test (performance goal). In contrast, Minnie considers the two goals highly connected and utilizes the same set of behaviors to attain each: she focuses on the material that she thinks will be on the test (performance goal) and learns it as well as she can (mastery goal). These two students would likely have vastly different experiences. Maxine would probably try to alternate between the two goals, which incurs costs such as fatigue and decreased performance (Shah, Friedman, & Kruglanski, 2002), and therefore struggle to attain one or both goals. By contrast, Minnie, having linked the two goals together, would be more apt to pursue them simultaneously and, without having her resources overtaxed in the process, might have higher odds attaining one or both goals. These hypotheses are purely speculative, of course, and readers may well generate alternate hypotheses. Our main point is simply that students are likely to vary in how they mentally represent multiple goals, how they select strategies for attaining those goals, and how effectively they therefore can coordinate their pursuit of those goals. These possibilities necessitate person-centered methodologies, such as cluster analysis and similar procedures, that can distinguish (a) students who coordinate multiple goals effectively from those who do not, and (b) students who are resilient in performance-approach goal pursuit from those who are not.

In addition, achievement goal researchers might also look to other goal theory frameworks from the broader psychological literature to inform future research endeavors. For example, it may be fruitful to consult the basic social-cognitive models of goal systems (Shah et al., 2002), self-knowledge structures (e.g., Linville, 1987), or cognitive neuroscience (Ferlazzo, Lucido, Di Nocera, Fagioli, & Sdoia, 2007) as starting points for theory development. As an example of the potential for integration, Bodmann et al. (2009) demonstrate that incorporating

the goal systems distinction between goals (desired end-states) and goal means (behaviors that can help one accomplish a goal) can help explain why performance-approach goals are more consistently associated with achievement than are mastery-approach goals.

Conclusion

We wish to see advancements in three broad areas of achievement goal research during the next ten years. These areas, summarized in Table 3, concern the improvements in the selection of appropriate research methods, the investigation of mechanisms causing goal effects, and exploration of the dynamics of multiple goal pursuit over time. Hopefully, pursuing these wishes will engender three interconnected outcomes: 1) a refined focus and broadened scope of achievement goal research, 2) increased usage of minimally sufficient methods to test hypotheses, and 3) an increase in theoretically-guided research that facilitates practical application. Refining the definitions and components of achievement goals will facilitate conceptual-operational alignment. Improved alignment will enhance our ability to validly test hypotheses. Achievement goal theory may naturally broaden as researchers will be better positioned to utilize other theoretical frameworks and apply the theory to more diverse samples and contexts. Practically, refined theories with clear findings are more understandable and easier to apply. The interplay between research and practice can optimize our understanding of both real-world and theoretical challenges, such as the dynamics of multiple goal pursuit.

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Table 1

Expected correlation values for majority scale code moderator analyses

	Correlation with Achievement
Performance-approach (k = 98)	
Overall	0.06
Normative	0.14
Appearance / Evaluative	-0.14
No Goal	0.01
No Clear Majority	0.03
Mastery-approach (k = 95)	
Overall	0.11
Potential	0.03
Task/Improve	-0.10
General*	0.20
No Goal	0.10
No Clear Majority	0.09

* Includes challenge-seeking, interest, and novelty items. As reported by Hulleman, Schrager, Bodmann, & Harackiewicz (in press).

Table 2

A Conceptual Summary of the Major Points in the Mastery Goal vs. Multiple Goal Debate

Issues	<i>Mastery Goal Perspective</i>	<i>Multiple Goals Perspective</i>
I. Goal Construct Definitions		
a. How should goals be defined?	Goal Orientation Approach: The goal and accompanying aspects (affect, interest, etc.) all fit a broad schema and should be considered a single construct.	Goal Complex Approach: The central focus is on a competence-relevant aim or standard. Other aspects should be treated as separate antecedents (e.g., needs) or consequences (e.g., affect) of goal pursuit.
b. Are MAV goals real and useful contributions to goal theory?	No, because mastery goal orientations are by definition positive, comprising high interest, incremental ability views, and so forth.	Yes, because they meet the definition of a competence-based achievement goal and are commonly pursued by people.
c. What are the essential components of performance goals?	Desire to demonstrate competence to others and validate one's own ability. Measures therefore feature <i>appearance</i> PAp goals. (e.g., PALS, Midgley et al., 2000)	Desire to outperform others on normative standards. Measures therefore feature <i>normative</i> PAp goals (e.g., AGQ, Elliot & Murayama, 2008)
II. Goal Mechanisms		
a. How should the PAp goal link to achievement be viewed?	Skeptically. It may be confined to simple tasks (e.g., classes requiring only superficial understanding) or highly competitive contexts.	Cautiously. Mechanisms causing this link need to be explored, as do the potential boundaries of this effect.
b. Multiple Goal Pursuit	Pursuing MAP and PAp together backfires due to competing goal attainment strategies sapping mental resources, thus undermining learning and achievement.	Many students already pursue MAP and PAp, evidently with success. Research is needed to chart the most effective strategies for multiple goal pursuit.
c. Goal Revision After Failure	Pursuing PAp goals is risky because failure experiences may lead students to switch to PAV goals, thus undermining learning and achievement.	Goal pursuit appears largely stable. When failure does trigger goal revision, this can happen to MAP goals as much as PAp goals.
III. Recommendations for Practitioners		
a. Views of MAP goals	Should be encouraged by practitioners (teachers, etc.)	Should be encouraged by practitioners (teachers, etc.)
b. Views PAp goals?	Should actively discourage PAp goals, due to the potential risks of these goals.	Should neither discourage nor encourage these goals. They may work well for some students, not for others.