Goal Orientation: A Review of the Miles Traveled and the Miles to Go

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Abstract

Goal orientation, a theory that originated primarily in the educational and social psychology fields, has emerged in the past two decades as a prominent theory in organizational psychology and organizational behavior. We review the state of affairs for goal orientation research with the following roadmap. First, we discuss the historical roots of goal orientation. Next, we summarize the nomological network of goal orientation and describe the processing frameworks associated with goal orientation factors. We then discuss the crucial role of moderator variables to explain the notable variance found in goal orientation–outcome variable relationships. We next summarize the research findings on the relationship of goal orientation with the proximal mediator and distal outcome variables. We conclude the review with a miles-to-go discussion of several major issues currently faced in goal orientation research.

Keywords: Goal orientation, achievement motivation, task orientation, and ego orientation

INTRODUCTION

In four decades, goal orientation theory has grown from explaining the behavior and performance of young people in academic (Dweck 1986, Nicholls 1984) and sports (Duda 1988, Roberts 1982) settings to becoming one of the most widely researched theories of motivation. For organizational psychology and organizational behavior, a notable introduction to goal orientation occurred with Kanfer's (1990) influential chapter on motivation. Subsequent landmark publications include Bell & Kozlowski (2008), Button et al. (1996), Colquitt & Simmering (1998), DeShon & Gillespie (2005), Farr et al. (1993), Ford et al. (1998), Gong et al. (2009), Hirst et al. 2009, Kozlowski et al. (2001), Payne et al. (2007), Phillips & Gully (1997), and Vandewalle (1997).

To quantify the growth of goal orientation research, we conducted a Web of Science search with "goal orientation" as the topic. The search produced more than 2,000 publications, more than 55,000 publication citations, and an h-index of 108. Many additional publications can be found by searching for similar constructs such as achievement goals and task and ego orientations.

Research growth can often entail growing pains, and goal orientation is no exception to the growing pains phenomenon. One primary challenge is that goal orientation theory has emerged within an umbrella of conceptualizations of achievement motivation that embodies a wide variety of disciplines and settings (see Kaplan & Maehr 2007 for a cogent review). This conceptualization variety has also produced a wide range of structural models that describe how goal orientation is related to other constructs. For example, some scholars describe perceived ability as an antecedent of goal orientation (e.g., the achievement goal framework of Elliot & Church 1997), while other scholars describe perceived ability as a moderator of the relationship of goal orientation with task performance. (e.g., Linnenbrink-Garcia et al. 2008).

Given the current conceptual and structural status of goal orientation research, the following is a roadmap for our review. First, we describe the emergence and evolution of goal orientation theory. This historical overview provides valuable insights into the origins of the current fragmented, and even contradictory, nature of the goal orientation literature. Although we utilize goal orientation theory as our primary reference point, we also discuss findings from additional theories that have emerged under the achievement motivation umbrella.

The second focus of our review describes and explores goal orientation correlates (see

Figure 1). With this discussion, we raise serious questions about the frequent positioning of many correlates as causal antecedents of goal orientation. We illustrate the causality challenge with the often-ascribed antecedent status of the implicit-theory-of-ability construct.

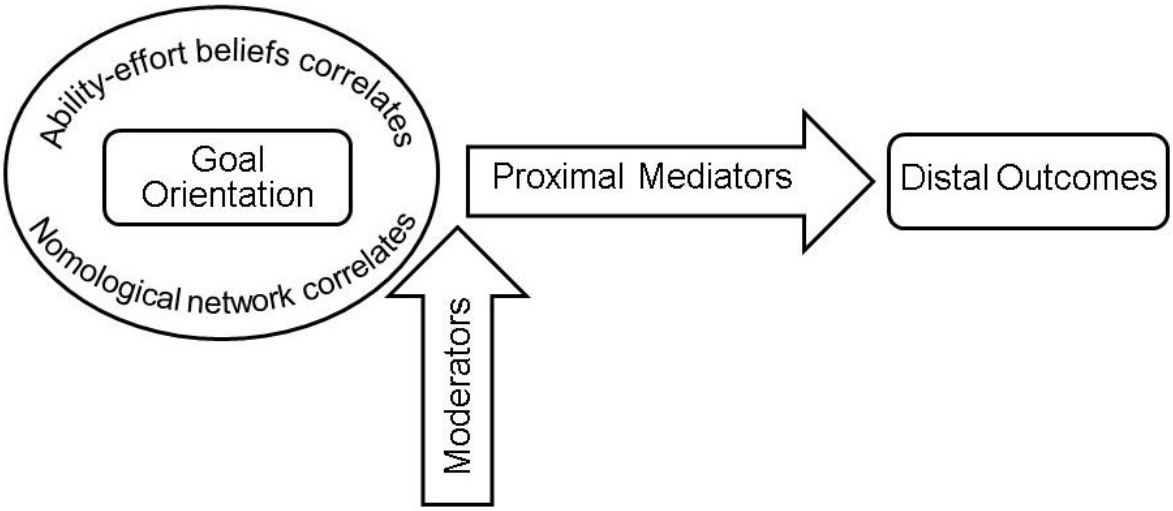

Figure 1 *An overview of the goal orientation cycle of the goal orientation construct as the central independent variable, ability-effort belief correlates, nomological network correlates, proximal mediators, moderators, and distal outcomes.*

The third focus of our review underscores the need to strongly consider the role of moderator variables in enhancing the predictive power of goal orientation. At first glance, the placement of the moderator variable discussion before the review of mediators and distal outcome variables may appear unconventional. However, our literature review revealed that many goal orientation relationships are often qualified by one or more moderator variables.

The fourth focus of our review identifies extant research for variables that we classify as mediators (such as goal setting) and as distal outcomes (such as task performance). Finally, we conclude our literature by raising a set of questions and proposing recommendations for future goal orientation research, especially for organizational contexts.

Given the exponential growth of goal orientation research, we utilize the following boundary conditions to manage the scope of the review. First, we primarily focus on the

ramifications of goal orientation research for adults in organization settings. Second, we focus on dispositional goal orientation. Third, we focus on the individual level of analysis, and we thus do not review topics such as team dynamics, collective goal orientation, goal orientation climate, and cross-cultural analysis. Having outlined these boundary conditions, we draw as needed from research outside of the above boundaries (e.g., induced goal orientation and academic settings) to explain the origin and evolution of goal orientation and to provide initial or collaborative evidence for describing many disposition-based relationships.

THE HISTORICAL FOUNDATIONS OF GOAL ORIENTATION

The emergence of goal orientation theory can be primarily traced to a group of achievement motivation scholars at the University of Illinois in the 1970s, and especially notable among this group was the late John Nicholls (see sidebar titled The Legacy of John Nicholls for a discussion of the seminal contributions of Nicholls to the achievement motivation literature). As described by Roberts (2012), in the fall of 1977 at a seminar at the University of Illinois, Nicholls introduced his colleagues to his initial ideas about a framework for achievement goals. The many attendees at the seminar went on to integrate various achievement goal frameworks as a part of their research agendas. Our development of the historical foundations of goal orientation primarily focuses on the intellectual path of one of the seminar members, Carol Dweck.

THE LEGACY OF JOHN NICHOLLS

A major review of goal orientation research would be incomplete without recognizing the significant legacy of the late John Nicholls, who passed away in 1994 at age 54. As described by Roberts (2012), in the late 1970s, faculty from the Children's Research Center at the University of Illinois started a seminar series to discuss their research about motivation. In addition to Nicholls, the group of now prominent goal orientation scholars included Carol Ames, Carol Dweck, Marty Maehr, and Glyn Roberts. At the seminar series, Nicholls initially presented his novel ideas and the concepts now known as integral to achievement goal theory (Roberts 2012). Nicholls (1984, 1989) went on to develop a two-factor achievement orientation model to describe the standards that individuals use to process competence and success. With a task orientation, individuals seek to develop their competence relative to their abilities (a self-referent standard). With an ego orientation, individuals seek to validate their competence relative to the abilities of others (an other-referent standard). Nicholls' theoretical approach to achievement goals has been especially widely utilized in sports and K–12 education research. For a comprehensive review of the conceptual history of goal orientation, we recommend Kaplan & Maehr (2007).

Dweck's PhD research on learned helplessness was a focal launch pad for her, as illustrated by the Diener & Dweck (1978, 1980) studies on grade school children working to solve a set of matrix puzzles. The children experienced success in solving an initial set of puzzles, but they encountered failure while working on a second set of puzzles that were too difficult for their age group to solve. While working on the puzzles, the children were asked to verbalize aloud their thoughts. In analyzing the verbal data, Diener & Dweck observed that two primary response patterns emerged as the children encountered failure. Some children exhibited a helpless response pattern in that they became upset, lost interest in the puzzles, and commented on their lack of ability. In contrast, other children exhibited a mastery response pattern in that they viewed their failure as temporary, developed new problem-solving strategies, and reported enjoying the challenge of working on the more difficult puzzles.

Why would children encountering a similar setback with the challenging puzzles exhibit such different response patterns? As recalled by Dweck (1999, p. 46), an answer for this question arose from the University of Illinois seminars—specifically, that the children's behavioral patterns could be motivated by different goals. Dweck & Elliott (1983) proposed that the children exhibiting the helpless response pattern may have held performance goals and were preoccupied about the potential appearance of their having low ability. However, the children exhibiting the mastery-oriented response pattern may have held learning goals, and their engagement with the puzzle-solving challenge may have superseded concerns about the appearance of low ability. In subsequent research (e.g., Dweck 1986, Dweck & Leggett 1988) and as recapped by Dweck (1999), Dweck and colleagues fleshed out the following theoretical foundations of goal orientation theory.

In contrast to describing human behavior with internal global states such as personality traits (e.g., McCrae & Costa 1985), Dweck advocated the importance of focusing on motives. Dweck argued that, although trait theories may describe people's behavior, trait theories do not explain "the why of behavior" or "how people work and how they change" (Dweck 1999, p. 134). In contrast, she advocated that motive theories such as the need for achievement (McClelland 1961) could explain "how behavior is initiated, driven, and directed" by people. Dweck also proposed that the predictive power of a motive such as the need for achievement could be enhanced by understanding the underlying goals that explained the purpose of one's motive. For example, to what degree is one's achievement purpose about validating a personal

capability such as intelligence, or is one's achievement purpose about more fully developing one's intelligence?

Connecting achievement motivation with the insights from Dweck & Elliott (1983), Dweck (1986, p. 1040) identified two broad classes of underlying goal orientations:

- Learning goals, "in which individuals seek to increase their competence, to understand or master something new," and
- Performance goals, "in which individuals seek to gain favorable judgments of their competence or avoid negative judgments of their competence."

In essence, individuals can pursue learning goals with an emphasis on ability development or performance goals with a focus on ability demonstration (see the sidebar titled The Goal Orientation Trait-State Debate for additional insights on the properties of goal orientation).

THE GOAL ORIENTATION TRAIT-STATE DEBATE

The question of whether goal orientation is a trait or a state has loomed large, especially after the concept gained traction in organizational psychology and organizational behavior research (DeShon & Gillespie 2005). We offer a two-part response to the question. First, a trait, such as contentiousness, describes a propensity to engage in consistent behaviors across situations. However, a fundamental tenet of goal orientation theory is that engaging in adaptive or maladaptive behavior in an achievement setting is contingent on the characteristics of a situation (Dweck 1986). Thus, we recommend using the terms disposition or individual difference to describe assessment of one's characteristic goal orientation profile. Second, goal orientation also occurs as a state condition that can be influenced by contextual information. For example, experimental instructions are often used to create learning and performance goal conditions. In field settings such as an academic classroom or a workgroup, the climate can also cue state goal orientations (e.g., Ames & Archer 1988, Dragoni 2005). We also suggest that recognizing and utilizing both the dispositional and state forms of goal orientation are important because doing so can potentially enhance both prediction power and task performance (e.g., Seijts et al. 2004).

The Evolution of the Goal Orientation Factor Structure and Operationalization

The factor structure of goal orientation emerged and evolved in the 1980s and 1990s on the basis of research from multiple research fields, including educational psychology, social psychology, and industrial-organizational psychology. The following examples highlight some

especially prominent factor-structure landmarks.

The dichotomous model.

Dweck's early goal orientation research did not stipulate a specific factor structure for the concept. However, Dweck's initial goal orientation assessment protocol suggested that goal orientation was dichotomous, with individuals holding only a learning or a performance goal orientation. For example, Bandura & Dweck (1985) and Leggett & Dweck (1986) used a goal choice measure to assess one's "existing goal preference." With a single-item question, they asked children to select the type of task that they would like to work on during an upcoming problem-solving session. On the basis of that task choice, the children were classified as having either a learning or a performance goal preference. Goal orientation was also clearly positioned as a dichotomous construct in laboratory studies in which experimental treatment instructions were used to induce either a learning or a performance goal orientation.

The two-factor model.

The dichotomous model of goal orientation eventually gave way to explicit two-factor models and to instruments developed to assess scores for each factor. For example, Nicholls et al. (1989) published the Motivational Orientation Scale to assess the academic motivation of adolescents. Their theoretical framework positioned task and ego orientations (close parallels of learning and performance goal orientations) as independent factors, and they found the two factors to be either uncorrelated or slightly correlated.

A substantial development in the assessment of the two-factor model of learning and performance goal orientations was the publication of the Button et al. (1996) goal orientation instrument. Data were collected not from adolescents but from undergraduate students and employed individuals. The authors conducted four studies, collected data sets with sufficient sample sizes to enable multivariate analysis, and conducted a nomological network analysis.

Finally, goal orientation could be assessed as a profile with high or low scores on each factor.

The three-factor model.

PhD dissertations in 1995 (Elliot 1995) and 1996 (Vandewalle 1996) expanded goal orientation from a two-factor to a three-factor model. The emergence of the three-factor structure is an interesting chronicle of two very different research strategies, in two different academic

fields, that converged on similar research conclusions.

One of the dissertations, by Vandewalle (1996) at the Carlson School of Management at the University of Minnesota, examined the relationship between goal orientation and feedback-seeking behavior. With the Button et al. (1996) goal orientation instrument not yet published, Vandewalle was concerned about the validity of using any of the extant goal orientation instruments with adults in organizational settings, and he worked with a research team of PhD classmates to develop a new goal orientation instrument. Adhering strictly to the Dweck (1986) definitions of learning and performance goal orientations, the team developed an initial item pool. However, it soon became apparent that the items developed using the performance goal orientation definition sorted into two subgroups: (a) items about proving ability and (b) items about not showing a lack of ability. As the instrument development process continued with a robust validation process, three distinct goal orientation factors emerged: learning, performance prove, and performance avoid.

Almost concurrently, a dissertation by Elliot (1995) in the Department of Psychology at the University of Wisconsin examined the relationship of achievement goals and intrinsic motivation. Elliot conducted a literature review of the experimental instructions used to create performance goal conditions for intrinsic motivation research. He classified the performance goal instructions into seeking-positive-outcomes and avoiding-negative-outcomes categories. After doing so, he found that the fit of the data to the hypothesized models improved the prediction of intrinsic motivation from less than 50% to more than 90% of the studies. On the basis of this finding, Elliot proposed the following three-factor achievement goal model: a mastery achievement goal, a performance-approach achievement goal, and a performance-avoidance achievement goal.

Both scholars, after their dissertations, published instruments to operationalize their three-factor models. Vandewalle (1997) developed an instrument to assess goal orientation in the work domain and conceptualized goal orientation at the distal motive level. In contrast, Elliot & Church (1997) developed an instrument to assess achievement goals. Conceptualized as mid-level constructs, these latter authors proposed that the need for achievement (McClelland 1961) and fear of failure (Atkinson 1957) were the dispositional antecedents of achievement goals.

Elliot (1999) subsequently developed a two-by-two achievement goal framework that produced a four-factor model with mastery-approach, mastery-avoid, performance-approach, and performance-avoid factors. However, his initial three-factor model without the addition of the new mastery-avoid factor is the primary version found in published research, and it is thus our reference

point when discussing studies using the Elliot model.

A ROADMAP FOR ACHIEVEMENT MOTIVATION TERMINOLOGY

A significant variety of achievement motivation models and assessment instruments have emerged in the literature. We organize our review around four of the most prominent models and use the following terminology when referring to one of these four prominent models. (a) When referring to studies based on two-factor goal orientation models (e.g., Button et al. 1996, Dweck 1986), we use the terms learning goal orientation and performance goal orientation. (b) When referring to the Nicholls (1984) achievement orientation model, we use the terms task orientation and ego orientation. (c) When referring to the Vandewalle (1997) three-factor model, we use the terms learning goal orientation, performance-prove goal orientation, and performance-avoid goal orientation. (d) When referring to the Elliot & Church (1997) three-factor achievement goal model, we use the terms mastery-approach achievement goal, performance-approach achievement goal, and performance-avoidance achievement goal. Scholars may sometimes treat factors from these four models as equivalent. However, given the asymmetry of the definitions and the assessment instruments used for various achievement motivation models, the empirical findings utilizing each achievement motivation model may also vary. Thus, for studies described in our review, we usually refer to the specific terminology of the achievement motivation model used in a given empirical study.

Commentary on Construct Conceptualization

As described above, there are multiple conceptualizations and operationalizations of achievement motivation constructs such as goal orientation. The differences across these constructs are often significant enough to warrant that researchers clarify the specific construct version that they are using in all phases of their research. In the future research section of our review titled Goal Orientation and the Miles to Go, we return to further examine question marks about the goal orientation construct (please also see the sidebar titled A Roadmap For Achievement Motivation Terminology for a description of the terminology used in the manuscript when referring to prominent achievement motivation models).

CORRELATES OF GOAL ORIENTATION

To review the cognitive and affective processing frameworks of goal orientation, we utilize a two-category organizing schema. The first category of correlates consists of those focused on beliefs about effort and ability that emerged primarily from early goal orientation research. The second category of correlates is derived mainly from goal orientation research in the 1990s that sought to develop nomological networks for each goal orientation factor.

Category 1 Correlates: Beliefs About Effort and Ability

The following four beliefs about effort and ability are among the most prominent concepts for the first category of correlates in the goal orientation literature.

Implicit theory beliefs.

The concept of the implicit theory of ability emerged as the initial and most prominent effort-ability belief in goal orientation research. An implicit theory is a lay belief about the controllability that one has over personal attributes such as intelligence, interpersonal skills, and personality. Using the attribute of intelligence as an example, one can hold an incremental belief that intelligence is a malleable attribute that is developable with effort and persistence. At the other end of the continuum, an individual can hold a fixed belief that intelligence is an innate attribute that is less amenable to development and change.

Dweck & Leggett (1988, p. 262) stated the following about the causal nature of implicit theories: "Our research consistently indicates that children who believe intelligence is increasable pursue the learning goal of increasing their competence, whereas those who believe intelligence is a fixed entity are more likely to pursue the performance goal of securing positive judgments of that entity or preventing negative judgments of it."

In the commentary for this section, we discuss concerns about the lack of empirical evidence to support the antecedent status of many goal orientation correlates, and we illustrate this concern by examining the available evidence for the construct of the implicit theory of ability.

Effort and ability performance beliefs.

A second effort-ability belief is about the attributions that individuals make about the relative importance of effort and ability as determinants of successful performance (Duda & Nicholls 1992, Van Yperen & Duda 1999). A learning goal orientation is associated with the belief that effort is the more important determinant of performance, and a performance goal orientation is associated with the belief that ability is the more important determinant of performance. Lochbaum & Roberts (1993) examined the effort and ability beliefs held by high school athletes. They found that the value of daily practice for athletic performance had correlations of $r = 0.55$ with a task orientation and $r = -0.24$ with an ego orientation.

Alas, the picture does not improve with age. In a study of elite collegiate skiers, Duda &

White (1992) found that only a task orientation had a positive relationship with the perceived value of one's effort to enhance performance success. In contrast, an ego orientation had the strongest relationship with their measure of using illegal advantage tactics to augment performance (such as performance-enhancing drugs and blood doping).

Finally, Vandewalle (1997) examined the endorsement of hard work with the Work Scale from the Work and Family Orientation Questionnaire (WOFO) by Helmreich & Spence (1978). The WOFO Work Scale had correlations of $r = 0.50$ with a learning goal orientation, $r = -0.08$ with a performance-prove goal orientation, and $r = -0.32$ with a performance-avoid goal orientation.

Effort use perceptions.

A third effort-ability belief is about how individuals differ in their perceptions about the meaning of exerting significant effort to achieve high performance (Ames 1992). A learning goal orientation is associated with the perception that exerting significant effort is a constructive behavior because it provides the means to activate and develop one's ability for performance. In contrast, a performance goal orientation is associated with the perception that the need to exert significant effort could signal a lack of ability because an individual with high ability would not have to exert so much effort to succeed.

Knowledge acquisition speed beliefs.

By the late 1990s, there was a substantial drop in research investigating the effort-ability correlates of goal orientation. However, in the mid-2000s, a novel effort belief emerged from the research of Bråten & Strømsø (2004). The authors examined lay epistemological beliefs about the speed of knowledge acquisition, which is the degree to which one believes that learning is a gradual process of expending effort over time or that learning occurs either quickly or not at all. In a 2004 study of Norwegian college students enrolled in a 2-year teacher training program, these researchers found that beliefs about knowledge acquisition speed assessed in year 1 of the program had the following correlations with the three goal orientation factors assessed in year 2: $r = -0.32$ for mastery, $r = 0.25$ for performance approach, and $r = 0.44$ for performance avoid Bråten & Strømsø (2006) found a similar pattern of correlations for the above variables in a study of undergraduate students.

To date, we are not aware of researchers assessing the speed of knowledge acquisition

beliefs with goal orientation research conducted in organizational settings. However, given the strength of the above correlations, this more recent effort construct appears to be an especially intriguing candidate for additional investigation.

Category 2: Nomological Network of Goal Orientation

We present category 2 of the goal orientation correlates with the following observations. First, many of the published correlations were calculated with data collected using a common-method, common-source methodology. Second, many of these correlates are often described in the literature as antecedents of goal orientation. For example, the Payne et al. (2007) meta-analysis listed ten variables that are often characterized in the literature as antecedents of goal orientation. Guided by the maxim that correlation does not establish causality, we recommend strong caution about describing these correlates as causal antecedents of goal orientation.

The Payne et al. (2007) meta-analysis provided a systematic assessment of the relationship of goal orientation with the Big Five personality model. Several of the relationship patterns that Payne et al. reported are especially noteworthy. First, a learning goal orientation had positive relationships (reported as estimated true correlations) with all Big Five factors, with openness to experience ($\rho = 0.44$) and conscientiousness ($\rho = 0.32$) having the largest magnitudes. These two correlations align with statements about a strong learning goal orientation being associated with the propensity to embrace novel and challenging learning opportunities and with a belief in the value of effort and persistence. For a performance-prove goal orientation, all reported relationships were null, except $\rho = -0.32$ for emotional stability. For a performance-avoid goal orientation, all five relationships were negative, with the largest magnitude being $\rho = -0.37$ for emotional stability.

Cognitive ability.

Dweck (1986) reported that goal orientation and cognitive ability were unrelated. Consistent with Dweck's early research, Payne et al. (2007) found that cognitive ability had null relationships with all three goal orientation factors (please see the sidebar titled Why Doesn't Goal Orientation Predict Cognitive Ability for observations on these null relationships).

WHY DOESN'T GOAL ORIENTATION PREDICT COGNITIVE ABILITY?

Payne et al. (2007) found that the relationship of a learning goal orientation with cognitive ability was positive but that this relationship fell short of statistical significance. Although that result may appear surprising, it may be less surprising due to the following. First, although the cognitive ability relationship is non-significant, researchers have found that a learning goal orientation has positive relationships with performance in various domains. These positive relationships suggest that a learning goal orientation may be especially conducive to converting one's cognitive ability to high performance. Second, rather than cross-sectional correlations, the important focus may be the assessment of changes in ability. As discussed in this review, a learning goal orientation has positive relationships with developmental processes such as deep-level processing, metacognition, and feedback-seeking behavior. Over time, the repeated use of such processes could produce an additive or even a multiplicative gain for long-term skill development. To capture longitudinal gains, researchers might assess the goal orientation and the baseline skills of an entry-level employee cohort and then repeat the skills assessment at 2–3-year intervals. We hypothesize that, over time, the skill gains for those with a strong learning goal orientation will be greater than for those with a strong performance goal orientation.

Trait anxiety.

Following Spielberger & Sydeman (1994), we describe trait anxiety as an enduring disposition to feel stress, worry, and discomfort, and we describe state anxiety as a temporary nervousness and discomfort induced by a situation perceived as dangerous.

Trait anxiety is often assessed in academic settings with trait test anxiety measures. A study by Elliot & McGregor (1999) exemplifies the relationship pattern of trait test anxiety with their achievement goal framework, with correlations of $r = 0.08$ for a mastery-approach goal, of $r = 0.29$ for a performance-approach goal, and of $r = 0.56$ for a performance-avoidance goal.

Fear.

Researchers have studied several forms of fear. For example, Elliot and colleagues (e.g., Elliot & Church 1997, Elliot & McGregor 1999) found that fear of failure had a null relationship with a mastery-approach achievement goal and positive relationships with both performance-approach and performance-avoidance achievement goals. Vandewalle (1997) found that fear of negative evaluation had a negative relationship with a learning goal orientation and positive relationships with both performance-prove and performance-avoid goal orientations.

Commentary on Goal Orientation Correlates

Many constructs have been proposed in the research literature to operate as antecedents of various forms of achievement motivation such as goal orientation. However, in reviewing the literature, we noted a dearth of empirical evidence that supports either the category 1 effort belief

correlates or the category 2 nomological network correlates, operating as causal antecedents of one's dispositional goal orientation. For an especially notable example, consider the empirical evidence for the implicit-theory-of-ability construct that has been explicitly described for decades in goal orientation research as a causal antecedent of goal orientation. As discussed above, the Payne et al. (2007) meta-analysis reported correlations of implicit theories with the three goal orientation factors that ranged from $\rho = 0.10$ to $\rho = -0.08$, so the explained variance for each factor is rather minimal. For experimental support, the empirical evidence appears to be limited to the analysis of unpublished raw data by Dweck et al. (1982) as described in Dweck & Leggett (1988, p. 263). Children read short stories that portrayed the intelligence of individuals as being either fixed or incremental, and goal orientation was assessed with a single question that asked the children about their goal choice for an upcoming task.

A recent meta-analysis by Sisk et al. (2017) raises another concern about the implicit theory of ability construct. Specifically, the authors found that interventions used with students to promote a growth mindset (their terminology for an incremental implicit theory of ability) had only a weak effect on subsequent academic performance. Introspection about this weak effect leads us to raise several important questions. For example, to what degree was the weak effect on academic performance a function of the intervention design? We raise this question because based on the manipulation checks used in each study, nearly half of the interventions failed to increase the growth mindset level of the participants. Second, to what degree were the growth mindset interventions supported or unsupported by influential actors in the lives of students (e.g., teachers, parents, and administrators)? And third, to what degree were processes such as teaching pedagogy, curriculum focus, and testing methods consistent with a growth mindset approach? Integrating the above three questions, we suggest that whether the goal is to enhance a growth mindset, or to enhance one's learning goal orientation, that such interventions need both careful design, and systematic alignment of influential actors and key processes.

We conclude this commentary with three recommendations. (*a*) For many of the constructs described in the literature as antecedents of goal orientation, significant, empirical research is needed to test the often-suggested causality. (*b*) Given the significant age of the extant antecedent research, goal orientation research could substantially benefit from a renewed effort to identify and test new candidates that operate as goal orientation antecedents. Recent research about one's beliefs about the speed of knowledge acquisition exemplifies a fruitful

exemplar for such research. (*c*) Without robust evidence that specific variables operate as antecedents of dispositional goal orientation, we face a hurdle in developing evidence-based interventions that could enhance one's dispositional goal orientation profile. In turn, this intervention roadblock can limit the utility of goal orientation in organizational settings.

THE CRUCIAL ROLE OF GOAL ORIENTATION MODERATOR VARIABLES

Is a learning goal orientation always superior to a performance goal orientation for outcomes such as task performance? In this section, we discuss why the answer to this question is often contingent upon the status of one or more moderator variables.

To develop the case for the crucial role of moderator variables, we return to the seminal studies of how children responded when they could not solve puzzles that were too advanced for their age group. Dweck & Leggett (1988) reported that two very different response patterns emerged. Children with a learning goal orientation pursued an adaptive response pattern that included effort escalation and persistence to solve the puzzles. In contrast, the children with a performance goal orientation pursued a maladaptive response pattern that included withdraw from working on the puzzles and making excuses for their puzzle-solving difficulties On the basis of these adaptive and maladaptive response patterns occurring, the orthodox proclamation emerging from early goal orientation research was the following: A learning goal orientation is beneficial, and a performance goal orientation is detrimental (e.g., Midgley et al. 2001, Nicholls 1989). Several decades later, on the basis of numerous empirical studies, this binary orthodox proclamation has encountered considerable empirical discord.

A substantial meta-analysis by Linnenbrink-Garcia et al. (2008) exemplifies this discord. On the basis of the three-factor model, the authors examined more than 90 journal articles and assessed the relationship of goal orientation (both dispositional and experimentally induced) with various forms of academic achievement.[1] When the authors specifically examined the association of dispositional goal orientation with academic achievement, they found for a learning goal orientation that approximately 40% of the correlations were positive, that less than 5% were

[1]In presenting the findings from the meta-analysis, the authors stated that they found that a performance-avoid goal orientation was so consistently deleterious, with or without consideration of moderator factors, that they did not include this factor in their data analysis. Similarly, we focus our discussion on learning and performance-prove goal orientations.

negative, and that the remaining were statistically non-significant. Similarly, for a performance-prove goal orientation, 40% of the correlations were positive, 6% were negative, and the remaining were statistically non-significant. The authors concluded that neither goal orientation factor was consistently more beneficial, or more detrimental, for academic performance.

How can we explain this disconnect between the long-held orthodox goal orientation prescription and the above empirical results? We suggest that moderator variables such as the following are crucial for developing an informed understanding of the discord.

Perceived Ability and Self-Efficacy

Perceived ability and self-efficacy were among the first moderator variables identified in early goal orientation research. Following Bandura (1997), we note that individuals can develop perceptions about their ability and self-efficacy on the basis of prior task performance, performance feedback, and vicarious observation.

Dweck & Leggett (1988) summarized perceived ability moderation as follows: When individuals feel confident about their ability, both those identifying with a learning goal orientation and those identifying with a performance goal orientation exhibited an adaptive response pattern when working on a task. However, when these same individuals subsequently encountered a performance setback that created doubt about their ability, those with a learning goal orientation remained adaptively engaged with the task, while those with a performance goal orientation showed a maladaptive response pattern.

A study by Vandewalle et al. (2001) exemplifies the adaptive-maladaptive response divergence when individuals encounter a performance setback that can trigger doubts about ability. Learning and performance-prove goal orientations were assessed at the start of an undergraduate management course, and both orientations had near equal correlations with the exam 1 score ($r = 0.26$ versus $r = 0.27$, respectively). However, the exam 1 class average score was a mere 71%, and the exam scores were not curved to produce higher letter grades. With such a widespread performance stumble on exam 1, an adaptive-maladaptive response pattern appeared for exam 2. Specifically, the learning and performance-prove goal orientations correlations diverged both for pre-exam self-efficacy ($r = 0.29$ versus $r = 0.16$) and for the exam 2 scores ($r = 0.21$ versus $r = 0.03$).

In an organizational context, Sujan et al. (1994) conducted a seminal goal orientation study of salespeople. They found that both learning and performance goal orientations had

positive relationships with sales effort. However, when self-efficacy was added as a moderator variable, a performance goal orientation was beneficial for sales effort only for those with high self-efficacy. In contrast, with low self-efficacy, the positive relationship between a learning goal orientation and sales effort increased.

Task Complexity

Several studies using either dispositional or induced goal orientation have found that the level of task complexity can impact the relative benefit of learning and performance goal orientations.

For example, Steele-Johnson et al. (2000) conducted two experiments to assess the impact of task complexity. In study 1, they found that, for a simple task, individuals in the assigned performance goal orientation condition outperformed individuals in the assigned learning goal orientation condition. In study 2, the researchers manipulated task complexity with low and high rule consistency. For self-efficacy and intrinsic motivation, the researchers found that the scores for both variables were higher for the performance goal orientation condition when the rules were consistent but that the benefit flipped for both outcome variables to those in the learning goal orientation condition when a task became more complex with low rule consistency.

A more recent study by Yeo et al. (2009) found that, at the intraindividual level, a dispositional performance-prove goal orientation initially had a positive relationship with performance on exams with the least complexity. However, the relationship sign switched to a negative coefficient as the exams reached the highest level of complexity.

The above findings are consistent with resource allocation theory (Kanfer & Ackerman 1989) in that when a very complex task requires a high utilization of available cognitive resources, task performance may suffer when preoccupation with a performance goal of appearing competent competes for an individual's available cognitive resources.

Goal Commitment

A major empirical finding in the goal-setting theory literature is that a high level of goal commitment, operating as a moderator variable, is conducive to a positive relationship between goal level and performance (Locke & Latham 2002). However, in goal orientation research, especially when an experimental design is used, goal commitment for performance on a given task is seldom assessed

(for notable exceptions, see Kozlowski et al. 2001 and Seijts et al. 2004). The frequent absence of goal commitment assessment is an important research concern because the participants in a given goal orientation study may or may not consider a task to be worthy of their commitment. For example, some of the studies finding non-significant relationships for learning and performance goal orientations with task performance were laboratory experiments that used a performance criterion such as the number of creative uses developed for objects such as a ruler or coat hanger (e.g., Jagacinski et al. 2001). Goal orientation is more likely to be a significant predictor of a given outcome when the variable evokes commitment because it is a personally relevant performance criterion such as exam performance (Vandewalle et al. 2001) or work performance (Sujan et al. 1994).

Commentary on Goal Orientation Moderator Variables

Similar to the progress path of goal-setting research (Locke & Latham 2002), for the study of goal orientation to advance, we recommend that researchers, during the initial research design, consider which potential moderator variables could be relevant for assessment.

We also suggest that there are multiple benefits for such an approach to research design. First, an examination of moderator variables can enhance the potential predictive power of each goal orientation factor. Second, the findings of moderated relationships can provide a stronger foundation for investigating the causal mechanisms that mediate the relationships of goal orientation factors with distal outcomes. Third, a stronger understanding of the impact of moderator variables may enhance the potential application of goal orientation research findings in organizational settings.

GOAL ORIENTATION MEDIATOR PATHWAYS

For our review, we conceptualize goal orientation as an independent variable and constructs such as task performance as distal outcome variables. We conceptualize mediators as proximal variables that explain how goal orientation and distal outcome variables are related. In presenting a list of prominent mediator variables, we recognize that researchers may sometimes position a variable such as job search behavior as the dependent variable in their study. However, for our goal orientation model (**Figure 1**), we position a mediator variable such as job search effort as a process pathway that leads to a distal outcome such as gaining employment.

Effort and Persistence

Effort and persistence have been among the most widely studied mediator variables for goal orientation research. For relationship examples, Vandewalle et al. (1999) conducted a field study of salespeople engaged in a sales contest. They found that a learning goal orientation had a positive relationship and that a performance goal orientation had a non-significant relationship with the intended effort for the sales contest. In a field study of unemployed job seekers, van Hooft & Noordzij (2009) conducted workshops to promote learning or performance goal orientations. They found that the learning goal orientation condition had a subsequent positive impact on job search effort and subsequent reemployment. In contrast, the performance goal orientation condition was not related to job search effort or to reemployment. The reemployment rates were also starkly different; only 9.1% of the participants in the performance goal condition gained reemployment versus 33.3% of the participants in the learning goal condition. Creed et al. (2009) also conducted a field study of unemployed job seekers and used a three-factor dispositional goal orientation model for their independent variable. They found that only a learning goal orientation had a positive relationship with job-seeking effort over a 4-month period.

Dysvik & Kuvaas (2013) conducted a 12-month field study of employees from three large Norwegian organizations. They found that a mastery-approach achievement goal had a positive relationship with changes in self-reported work effort, and this achievement goal also significantly enhanced the relationship of intrinsic motivation and work effort. In contrast, neither the simple nor interaction regression coefficients were significant with either performance achievement goal for predicting effort or motivation outcomes.

A laboratory study by Sideridis & Kaplan (2011) illustrates the importance of assessing the impact of repeat performance failure episodes. The researchers used a three-factor model to assess dispositional achievement goals, asked the participants to solve a series of unsolvable problems, and then assessed the time spent on each puzzle phase. Compared to the two performance goal groups, those with a high mastery-approach achievement goal persisted for the longest periods with the unsolvable problems.

Goal Setting

We discuss the relationship between goal orientation and goal setting from multiple perspectives. First, goal orientation predicts goal level. For example, in the Vandewalle et al. (1999) study of salespeople, learning and performance goal orientations had correlations of r =

0.30 and $r = 0.11$, respectively, for the goals set before the start of a sales contest.

For goal content, Brett & Vandewalle (1999) conducted a study of full-time MBA students enrolled in a presentation skills course. They found that a learning goal orientation had positive relationships with the content goals of skill development and skill refinement for the course, which in turn positively predicted the end-of-course presentation scores. In contrast, performance-prove and performance-avoid goal orientations had the strongest relationships with the content goals of comparing well to others and avoiding negative evaluations, respectively. Neither of these content goals had a positive impact on the final presentation score.

Finally, a study by Seijts et al. (2004) provides an important insight into goal alignment. The researchers assessed dispositional learning and performance goal orientations; assigned the participants to a learning goal, a performance goal, or a do-your-best goal condition; and then had the participants work on a complex and challenging computer simulation. Dispositional learning goal orientation had the strongest relationship with task performance, and this relationship was even stronger for those participants assigned to the congruent learning goal condition.

Feedback Processes

Goal orientation has emerged as a robust predictor of feedback processes such as feedback-seeking behavior and feedback processing.

Ashford & Cummings (1983) found that feedback-seeking behavior had a positive relationship with the perceived value of seeking feedback (e.g., receiving helpful information on how to improve) and a negative relationship with the perceived cost of seeking feedback (e.g., the risk of receiving unfavorable information about one's ability).

Given that goal orientation is fundamentally about the development or demonstration of ability, Vandewalle & Cummings (1997) extended the above cost-value framework to theorize about goal orientation as a predictor of feedback-seeking behavior. In a scenario study about the willingness to seek feedback from a manager after a career setback, a learning goal orientation had a positive relationship with feedback-seeking behavior. The relationship was mediated by a stronger perceived value and a lower perceived cost of seeking feedback. With a performance-prove goal orientation, the relationship with feedback-seeking behavior became statistically non-significant. Finally, a performance-avoid goal orientation had a negative relationship with feedback-seeking behavior as the perceived value of seeking feedback dropped and as the

perceived cost of seeking feedback ballooned upward.

A subsequent study by Vandewalle et al. (2000) found that the positive relationship of a learning goal orientation with feedback-seeking behavior extended to target characteristics (operationalized by manager scores for leader consideration and leader initiation of structure). Employee learning goal orientation had a positive relationship with feedback-seeking behavior from all managers, regardless of the leadership style. However, on the basis of an examination of a three-way interaction, a learning goal orientation had the strongest relationship with feedback-seeking behavior ($r = 0.64$), with arguably the most challenging manager targets—those with a low consideration/high initiation of structure profile. The authors concluded that a strong learning goal orientation helped individuals, especially those with the most challenging managers, to overcome the potential cost with the potential value of seeking feedback.

Brett & Atwater (2001) examined the perceived value of feedback in a study about reactions to developmental 360-degree feedback. They found that across goal orientation scores, participants rated the negative feedback that they received as not useful. However, in a follow-up survey a month after receiving the negative feedback, the relationship of a learning goal orientation with the perceived usefulness of the negative feedback flipped to positive.

In a recent study on reactions to receiving feedback, the findings of Dahling & Ruppel (2016) suggest that a learning goal orientation may also provide a protective buffer to negative feedback. Undergraduate students completed a cognitive ability test, and they then received either positive or negative bogus feedback about their test performance. The researchers reported that, regardless of whether one received negative or positive feedback, those with a high (but not low) learning goal orientation had equal self-efficacy about improving on a test retake, and their interest in retaking the test was also similar across the feedback sign conditions.

We also note a meta-analysis conducted by Anseel et al. (2015) on the antecedents of feedback-seeking behavior. With ten studies, the authors found a modest correlation between a learning goal orientation and feedback-seeking behavior. However, the sample size of ten studies did not enable moderator analysis of the relationship with variables such as feedback sign.

Learning Processes

With much of the goal orientation research emerging from academic and training settings, there is a significant body of research on learning processes such as cognitive strategies and cognitive effort.

Cognitive strategies.

A primary organizing structure for cognitive strategies is a two-level model with (*a*) surface-level strategies that are more elementary activities, such as note-taking, textbook highlighting, and rehearsing, and (*b*) deep-level strategies that are more active and sophisticated, such as creating diagrams and charts, paraphrasing, and using self-testing exercises (Biggs et al. 2001).

Fisher & Ford (1998) conducted a seminal study to assess the relationships of goal orientation, cognitive strategies, and learning a complex predictive model. The authors found that a learning goal orientation had a positive relationship with deep-level strategy use (e.g., elaboration such as paraphrasing) and that a performance goal orientation had a positive relationship with surface-level strategy use (e.g., rehearsal such as mental repetition) for learning the task.

Simons et al. (2004) conducted a study of nursing students in their training courses. They found that a learning goal orientation had a positive relationship with deep-level strategies and a negative relationship with surface-level strategies. In contrast, the relationships for both a performance-approach goal orientation and a performance-avoid goal orientation were negative for deep-level strategies and positive for surface-level strategies. The researchers also found that the use of deep-level strategies mediated the positive relationship of a learning goal orientation with final exam performance. Additionally, surface-level strategies mediated the negative relationships of both performance goal orientations with final exam performance.

To date, we are unaware of empirical studies in organizational settings that have explicitly assessed the relationship of goal orientation and cognitive strategies when engaged with activities such as professional development programs and preparation for professional certification exams. However, a potential platform for empirical research is a recent multilevel theory developed by Chadwick & Raver (2015). Their model proposes how goal orientation might shape the way that people individually and collectively engage in organizational learning.

Metacognition.

The concept of metacognition is the ability to reflect upon, understand, and regulate one's learning (Flavell 1979). Ford et al. (1998) conducted a seminal laboratory study that assessed the relationship between goal orientation and metacognitive activity for participants working on a complex decision-making task. They found that a learning goal orientation had a positive

relationship, and a performance goal orientation had a non-significant relationship, with the level of metacognitive activity. Coutinho (2008) replicated that relationship pattern with a study of the academic success of undergraduate students, and Klein et al. (2006) also found a positive relationship between a learning goal orientation and metacognitive activity in an undergraduate classroom setting.

In another laboratory study, Schmidt & Ford (2003) assessed the relationship pattern of a three-factor goal orientation model and metacognition. For metacognitive activity, they found that a learning goal orientation had a positive relationship, a performance-prove goal orientation had a non-significant relationship, and a performance-avoid goal orientation had a negative relationship with metacognitive activity.

Surprisingly, the only published research that we could identify on metacognition in a work setting was a recent study by Delahaij & van Dam (2016). The participants were Dutch military recruits in a stressful basic training program. The authors found that metacognitive activity fully mediated the relationship of a learning goal orientation with the use of effective problem-focused coping strategies (rather than less effective emotion-laden strategies) during the training program.

Training transfer.

An extensive meta-analysis by Blume et al. (2010) investigated the impact of predictive factors for training transfer. For goal orientation, they found the following relationship pattern with training transfer: positive for a learning goal orientation, non-significant for a performance-prove goal orientation, and negative for a performance-avoid goal orientation. However, the authors also noted that, for most of the goal orientation studies they reviewed, the assessment of training transfer occurred in a laboratory setting, and the studies provided little or no time between the training process and the subsequent evaluation of training transfer.

For exceptions to the above research designs, we note the findings of two studies. First, Tziner et al. (2007) conducted a study of participants in a 2-month training program to upgrade technical and professional knowledge. They found that the subsequent supervisor evaluations of the employee use of the training content were correlated, with $r = 0.54$ with a learning goal orientation and -0.33 with a performance goal orientation. Second, Dierdorff et al. (2010) studied the training transfer of foreign-language training by members of the military. They found that the relationship pattern of goal orientation and the subsequent passing of a professional certification assessment (used to assess training transfer) paralleled the relationship pattern found by Blume et

al. (2010).

Working memory.

Consistent with resource allocation theory (Kanfer & Ackerman 1989), researchers have tested the premise that a performance goal may divert attention away from a task at hand and toward preoccupation with performance demonstration concerns.

Avery & Smillie (2013) conducted an experiment with undergraduate students to assess the influence of achievement goals on working memory. The researchers used instructions to create mastery-approach and performance-approach achievement goal conditions and then had the participants complete a continuous performance task at low, medium, and high levels of working memory demand. At the low and medium levels of working memory demand, performance accuracy was equivalent across the achievement goal treatment conditions. However, with the highest level of working memory demand, performance accuracy was significantly lower for the participants in the performance-approach achievement goal condition.

Crouzevialle & Butera (2013) partially replicated the Avery & Smillie (2013) study by assigning participants either to a control group or to a group with a performance-approach achievement goal manipulation. Across three studies with the participants working on a highly demanding cognitive task, Crouzevialle & Butera found that the participants in the performance-approach group significantly underperformed the participants in the control group.

Interpersonal Behaviors

Early goal orientation research primarily focused on individual behaviors and individual performance outcomes. However, research in the past decade has expanded to include the study of interpersonal behaviors such as cooperation and competition.

The relationship of goal orientation with interpersonal behavior is grounded in part by the primary referent that one uses for personal ability assessment. With a strong performance goal orientation, there is a focus on assessing one's ability by being superior to referent others such as colleagues. Given this superiority framing, cooperative behaviors such as information sharing can be problematic because the behavior could give away one’s competitive advantage to remain superior to others. In contrast, with a strong learning goal orientation, there is a focus on assessing one’s ability with self-referent standards such as past performance and personal goals. Instead of information sharing with colleagues being viewed as risky, cooperation is more likely

to be considered as a positive opportunity for supporting mutual growth.

Aligned with the above logic, Poortvliet and colleagues (e.g., Poortvliet et al. 2007) conducted a series of experiments to assess interpersonal behavior patterns. The authors created a mastery goal condition by instructing participants to focus on self-improvement, and they created a performance goal condition by instructing participants to focus on performing better than others. On the basis of their data analysis, they developed a social value orientation framework to explain and summarize the two primary interpersonal patterns found in their research: (*a*) Assignment of mastery goals leads to a stronger reciprocity orientation with others, and (*b*) assignment of performance goals led to a stronger exploitation orientation with others.

More recent research supports extending the Poortvliet framework to studies with dispositional goal orientation as the independent variable. First, the findings from several studies suggest that learning and performance goal orientations are related to very different interpersonal styles and levels of interest in cooperation. For example, Poortvliet & Giebels (2012) conducted a study (study 2) with participants engaged in a winter survival exercise. They found that, compared to a mastery-approach achievement goal, a performance-approach achievement goal predicted less concern about the welfare of other participants and a lower interest in cooperation with other participants. In study 3 with Dutch bank employees, Poortvliet & Giebels found that a mastery-approach achievement goal, but not a performance-approach achievement goal, had a positive relationship with positive perceptions of constructive team dynamics such as trust.

In a study of engineers, Matzler & Mueller (2011) reported that a learning goal orientation had a positive relationship, and a performance goal orientation had a negative relationship, for knowledge sharing with colleagues.

Ironically, hiding knowledge to gain an advantage can backfire. For example, Černe et al. (2014) studied the interplay of knowledge hiding, distrust, creativity, and goal orientation climate. They found that when knowledge hiding by employee 1 was detected by employee 2, a negative, downward loop started. Employee 2 would distrust employee 1 and engage in reciprocal knowledge hiding, and the loss of knowledge by employee 1 would lower her creativity. However, the downward loop was attenuated as the self-reported mastery climate of a group increased, and the downward loop became stronger as a group's performance climate became stronger.

In other sections of this review, we describe research that illustrated how a strong

performance goal orientation could undermine one's ability and willingness to learn and grow. With the above discussion about the cooperation and trust issues associated with a performance goal orientation, we identify additional problems that can occur when the need to validate the self can end up sabotaging the performance of colleagues and self-sabotaging one's performance.

Commentary on Goal Orientation Mediators

We conclude our review of mediator variables with the following two observations. First, we can summarize the overall empirical relationship pattern for each goal orientation factor with the mediator variables as follows. A learning goal orientation generally has a positive relationship, and a performance goal orientation generally has a negative relationship, with each mediator. When a performance goal orientation is operationalized with two factors, the mediator relationships for a performance-prove goal orientation are frequently non-significant, and the relationships for a performance-avoid goal orientation are overwhelmingly negative.

Our second observation is derived from the coping literature, in which scholars (e.g., Folkman & Lazarus 1985) have developed cognitive appraisal models that describe how individuals assess potentially stressful situations either with a negative threat lens or with a more positive challenge-and-opportunity lens. Research evidence suggests a connection of cognitive framing with goal orientation correlates and mediators. For a cognitive appraisal example illustrated with goal orientation correlates, we note that, with a strong performance goal orientation, a threat framing appears to operate when a stressful situation such as a performance setback occurs. This threat framing arises because low performance entails the threat of negative evaluations, the value of additional effort is questionable, and even the use of additional effort is threatening when it could further expose a lack of ability. Other performance goal orientation correlates such as anxiety and fear are also indications of approaching potentially stressful situations with a threat framing. In contrast, with a high learning goal orientation, we observe a more positive challenge-and-opportunity framing because these individuals approach situations with less fear and anxiety and have more constructive beliefs about the value and meaning of added effort when a setback occurs.

For mediator variables, we again note a cognitive appraisal underpinning. For example, with feedback seeking behavior, the perceived cost of seeking feedback reflects a threat appraisal, and the perceived value of feedback seeking reflects an opportunity appraisal. With goal setting, content goals to avoid embarrassment reflect a threat appraisal, and content goals to

develop skills reflect an opportunity framing. And, even with interpersonal behavior, we can observe knowledge sharing framed as a threat because doing so can give away part of one's competitive advantage that helps one remain superior to others. Alternatively, knowledge sharing can be framed as a positive opportunity by which individuals seek to engage each other for mutual growth and support.

GOAL ORIENTATION DISTAL OUTCOMES

For goal orientation research conducted in the 1970s and 1980s, the predominant outcome variables were academic performance, sports performance, and problem-solving tasks in laboratory settings. In subsequent decades, researchers have greatly expanded the scope of distal outcome variables to include topics especially relevant to organizational settings such as job performance, contextual performance, adapting to change, leadership, and well-being.

Performance

The Payne et al. (2007) meta-analysis included an assessment of the relationship magnitude of dispositional goal orientation with job performance. They found that learning and performance-prove goal orientations had positive relationships with job performance of $\rho = 0.18$ and $\rho = 0.11$, respectively, but that the confidence intervals for both coefficients contained zero. With a sample set of only seven studies, the authors were unable to assess whether the magnitude of the relationship of each goal orientation factor with job performance might differ on the basis of the relevant moderator variables.

More recently, Van Yperen et al. (2014) conducted a meta-analysis of the relationship of achievement motivation (that included both goal orientation and achievement goal measures) with nonself reports of performance for three moderator categories: work, sports, and education. The overall correlation coefficient for the various learning measures with performance was $r = 0.14$. However, when that relationship was assessed for each moderator category, the correlations were $r = 0.27$ for work, $r = 0.13$ for education, and $r = 0.17$ for sports. For performance-prove-type measures, the overall correlation with performance was $r = 0.10$, with no differences across moderator categories. For performance-avoid-type measures, the overall correlation with performance was $r = -0.13$, and the moderator category correlations were $r = -0.20$ for work, $r = -0.14$ for education, and $r = -0.04$ for sports.

The fact that Van Yperen et al. (2014) found variance across the three moderator categories (e.g., r = 0.13 to 0.27 for the learning-type measures) raises questions about whether this variance might be a function of research design factors such as the typical task parameters for each category and/or the goal orientation measurement instruments commonly used in each category.

Janssen & Van Yperen (2004) conducted a study of Dutch employees that extended the scope of assessing job performance outcome variables. They found that a learning goal orientation had positive relationships with both in-role and innovative job performance. In contrast, a performance goal orientation had a negative relationship with in-role job performance and a non-significant relationship with innovative job performance. Janssen & Van Yperen (2004) also found that the relationship of a learning goal orientation with both in-role and innovative job performance was mediated by the quality of the leader-member exchange (LMX). However, this mediation process did not occur with a performance goal orientation. The LMX mediation leads us to ponder the following question: To what degree does a learning goal orientation facilitate the level of a positive LMX with one's manager, and to what degree does LMX quality facilitate employee performance because of the manager's support?

Gong et al. (2009) conducted a longitudinal field study of insurance agents in Taiwan to examine an event sequence that extended from goal orientation to quarterly sales performance. The authors found that the agents' learning goal orientation collected at time 1 (before the start of the quarter) had a positive relationship with the agents' creative self-efficacy collected at time 2 (in the fourth week of the quarter). The authors further found that the agents' creative self-efficacy at time 2 had a positive relationship with a creativity assessment by the agents' managers at time 3 (at the end of the quarter), which in turn predicted the managers' performance ratings of the agents (also collected at time 3) and with the agents' actual quarterly sales (obtained from post-quarter archival data)

Contextual Performance and Workplace Deviance

A field study by Louw et al. (2016) of employees in Australia provides an interesting twist for assessing contextual behaviors on the basis of goal orientation. The researchers conducted a self-assessment of employee goal orientation, and they had a knowledgeable peer assess the goal orientation of the employee. The researcher found that both the self-assessment and colleague assessment of a learning goal orientation had a positive relationship with self-

reported organizational citizenship behavior. In contrast, neither form of assessment for a performance-prove goal orientation was related to self-reported organizational citizenship behavior. Furthermore, the colleague assessment of a performance goal orientation had a positive relationship with self-reported workplace deviance.

Researchers have also studied the relationship of goal orientation with unethical behavior. For example, Van Yperen et al. (2011) found that, relative to a learning goal orientation, a performance goal orientation was related to a stronger intent to cheat. In a second study, they found that individuals assigned to a learning goal condition (instructed to focus on improvement) cheated less than those in the control condition, and individuals assigned to a performance goal condition (told to outperform others) cheated nearly twice as much as those in the learning goal condition.

Change and Adjustment

A growing footprint for goal orientation research in organizational settings focuses on the degree to which individuals are open to change and adjust to change.

For openness to change, Fuller & Marler (2009) conducted a comprehensive literature review and meta-analysis of proactive personality and used career success as their outcome variable focus. They reported that one of the most striking findings was the strong relationship of $\rho = 0.59$ for a proactive personality with a learning goal orientation. Similar to our above discussion of cognitive appraisal, the authors suggested that, because a learning goal orientation facilitates perceiving changes and challenges as developmental opportunities (rather than as threats to be avoided), the learning goal orientation component of proactive personality could be especially conducive for enhancing career success.

Several studies have examined adjustment to change in cross-cultural settings. For example, Gong & Fan (2006) studied the adjustment of international undergraduate students to a university in a new country. They found that a learning goal orientation had positive relationships with both social and academic adjustment but that a performance goal orientation provided no benefit for either form of adjustment.

In a longitudinal study of new expatriate employees in China, Wang & Takeuchi (2007) found that a learning goal orientation was beneficial for three forms of expatriate adjustment: work responsibilities, interactions with host nationals, and general adjustment. For a performance-avoid goal orientation, all three adjustment relationships were negative. The

adjustment was mixed for a performance-prove goal orientation, as the relationship was positive for work and interactional adjustment but was not related to general adjustment.

A longitudinal study by Ahearne et al. (2010), especially notable for the robust research design, examined the impact of dispositional goal orientation on adjustment to a major work change for salespeople. After an organization introduced a CRM (customer relationship management) software program (a switch that can be both disruptive and unwelcomed), the researchers tracked sales performance over a 12-month period. Regardless of goal orientation scores, sales performance dropped from being approximately 4% above quota when the change was introduced to being approximately 4% below quota within 6 months. However, in the last 6 months of the study, those with a high learning goal orientation returned to performing at their original above-quota sales level, those with an average learning goal orientation recovered to meet the quota requirement, and those with a low goal orientation flatlined and remained far below quota. Interestingly, there was a reverse pattern of sales performance recovery based on the corresponding levels of a performance goal orientation. Those with a low performance goal orientation returned to their above quota sales level, and those with a high performance goal orientation remained far below quota.

Well-Being

The influence of goal orientation on well-being has been addressed and investigated in numerous studies in various contexts (e.g., Adie et al. 2010, Ntoumanis et al. 1999). These studies generally found that a learning goal orientation typically has a positive relationship with well-being outcomes, including positive affect, satisfaction, and engagement (Gillet et al. 2014). A performance-avoid goal orientation has predominantly been associated with problematic outcomes such as high levels of anxiety and low interest (see Hulleman et al. 2010).

The findings concerning a performance-prove goal orientation have been inconsistent (e.g., Adie et al. 2010, Gillet et al. 2014, Mouratidis et al. 2009, Ntoumanis et al. 1999). This inconsistency might be partly explained by a lack of untested moderator variables and the different measurement approaches that researchers have used for goal orientation.

Leadership

Researchers have examined the relationship of goal orientation with multiple aspects of leadership. We highlight studies on leader development and leader behavior.

Leader development.

DeRue & Wellman (2009) conducted an insightful study that included an examination of the benefit of a learning goal orientation for leader skill development. The authors found support for their initial hypothesis that the challenge level of developmental experiences would have an initially positive relationship with the level of leader skill development. Eventually, however, that positive relationship plateaued and then exhibited decreasing, diminishing returns for development. Subsequent data analysis found that, for individuals with a high learning goal orientation, the plateau point was reached at a higher level of developmental challenge.

A study by Dragoni et al. (2009) on the leader development of early career managers illustrates a potential double benefit for a strong learning goal orientation. First, consistent with a learning goal orientation being linked to embracing challenging opportunities, the researchers found that individuals with a strong learning goal orientation landed more often in challenging assignments with high-quality developmental potential. Second, for managers engaged in the high-quality developmental assignments, those with a strong learning goal orientation gained more from their assignment on the basis of a subsequent managerial competency assessment.

Leadership style.

Sosik et al. (2004) found that a mentor's learning goal orientation had a positive relationship with being rated as a transformational leader by protégés. For accountants, Coad & Berry (1998) found that a manager's learning goal orientation had a positive relationship with being rated as a transformational leader by direct reports. In contrast, a manager's performance goal orientation was associated with being rated as a transactional leader by direct reports.

Although our review identifies significant studies on the relationship of goal orientation with leader development and leadership style, we observe a dearth of studies examining the relationship of goal orientation with leader effectiveness. We note that a learning goal orientation has a positive impact on behaviors that are conducive to effective leadership, such as challenge seeking, feedback-seeking behavior, leader development, and adjustment to change. However, it remains an empirical question as to whether a learning goal orientation or a performance goal orientation has a positive relationship with leader effectiveness, and for which organizational settings.

Commentary on Goal Orientation Distal Outcomes

Why does the above research find that a strong learning goal orientation is beneficial, and that a strong performance goal orientation is not so beneficial, for success with distal outcome variables such as those just reviewed? On the basis of our review, we suggest the following insights.

First, outcomes such as performance success require persistence and effort, especially in the face of setbacks. In contrast to the case for individuals with a strong learning goal orientation, the less constructive effort-ability beliefs of those with a strong performance goal orientation appear to undermine those individuals' willingness to exert additional effort when it is needed the most to grow and develop with a challenge.

Second, when those with a strong performance goal orientation process an achievement situation with higher levels of fear, anxiety, and negative emotion, they are also at risk of engaging in a threat rather than an opportunity cognitive appraisal response. In turn, a threat appraisal can limit one's effective assessment of a situation, as well as the recognition of productive response options.

Third, with a strong performance goal orientation, the hyper outcome focus of validating the self may divert some of the limited cognitive resources needed to perform well. Moreover, the validation outcome focus may also undermine the use of effective developmental processes such as metacognition, deep-learning strategies, and feedback-seeking behavior.

Fourth, the focus on validation and superiority for those with a strong performance goal orientation may activate a loss prevention framing and, with this framing, the rationalization of problematic behaviors such as knowledge hiding and cheating to remain superior to others.

To recap, the proving ability focus of those with a strong performance goal orientation can undermine a focus on improving ability, which ironically undermines being able to prove ability.

GOAL ORIENTATION AND THE MILES TO GO

Our review is organized with goal orientation conceptualized as an individual difference, with a trichotomous factor structure. Above, we propose a network of variables that describe processing frameworks associated with goal orientation, suggest proximal mediator variables that link goal orientation with distal outcome variables, and discuss the crucial role of moderator

variables. We now discuss three significant questions for future goal orientation research (see Table 1 Suggestions for Future Research for an overview of recommendations).

TABLE 1 SUGGESTION FOR FUTURE RESEARCH

Suggestion	Contribution
How can we enhance the conceptualization and the operationalization of achievement motivation constructs such as goal orientation?	Pursuing this suggestion can enhance the conceptual coherence, construct validity, predictive power, and parsimony of the goal orientation concept.
For potential antecedents of goal orientation, carefully evaluate the theoretical foundations and conduct rigorous empirical research to access the causality status.	This suggestion can help to clarify whether existing and proposed antecedents actually are antecedents of goal orientation. It can also facilitate a clearer foundation for developing targeted goal orientation interventions.
Which potential moderator variables are essential to develop more nuanced explanations of the relationship of goal orientation with relevant proximal and distal outcome variables?	This suggestion can enhance the predictive power of goal orientation and enhance the potential application of goal orientation research findings in organizational settings.
Carefully clarify the causal sequence of goal orientation antecedent variables, proximal mediator variables, distal outcome variables, and moderator variables.	Pursuing this suggestion can provide stronger conceptual clarity and enhance the predictive power of goal orientation models.

Question 1: How Should Goal Orientation Be Operationalized?

Throughout our review, we discuss why moderator variable assessment is crucial for goal orientation research design. Whether a high learning goal orientation or a high performance goal orientation is more conducive for accomplishing a positive outcome such as high task performance often depends on the status of moderator variables such as task complexity and perceived ability.

However, in addition to the moderator variables explicitly discussed above, we suggest that the most ubiquitous, yet overlooked moderator variable is the operationalization of goal orientation. For example, consider the primary question focus of three major instruments used to assess the learning-mastery component of achievement motivation. The primary focus of the Elliot & Church (1997) instrument is task mastery; Vandewalle (1997) is primarily about the preference for challenging situations; and Button et al. (1996) is primarily about preferences for difficult tasks, hard work, and personal improvement.

This diversity of operationalization is similar for the performance-prove component of achievement motivation. The focus of the Elliot & Church (1997) instrument is primarily about being superior to others, Vandewalle (1997) is primarily about the need to prove the self to others, and the Button et al. (1996) performance goal orientation is primarily about the preference for tasks with a high probability of success.

A meta-analysis of achievement motivation instruments by Hulleman et al. (2010) illustrates why the operationalization focus is such an important issue. For example, they found that when a performance achievement goal was assessed with items primarily focused on demonstrating ability, such an instrument had a negative relationship with performance outcomes. In contrast, when a performance achievement goal instrument contained items primarily focused on competing with others, the relationship with performance outcomes was positive.

In essence, for assessing goal orientation research, instead of being able to conduct an apples-to-apples comparison of a set of research study findings, we are often confronted with comparing the impact of the equivalent of tomato, orange, and garlic goal orientation measures. At a minimum, goal orientation researchers need to explicitly understand and acknowledge the question focus for each goal orientation factor that they assess. And, even better, convergence by scholars on a common core set of definitions and operationalizations of goal orientation could significantly enhance the ability to build upon prior research.

Question 2: How Should We Conceptualize the Causal Sequence of Goal Orientation?

A second major issue is the theoretical positioning of achievement motivation constructs in relation to other constructs. For example, does the goal orientation causal variable chain start at the far left (see Figure 1), with goal orientation being a nuanced version of need for achievement models exemplified by Dweck & Leggett 1988, Vandewalle 1997)? Or does the causal chain start with a singular conceptualization of the need for achievement as an antecedent of more concrete achievement goals (a model exemplified by Elliot & Church 1997)? The empirical evidence for the latter causal chain is ambiguous. For example, Elliot & Church (1997) reported a correlation of only 0.22 (with an explained variance of less than 5%) for the relationship of the need for achievement with holding a mastery achievement goal. Additionally, there is a lack of experimental evidence to support causality.

There are also competing theoretical positions as to the role of one's success expectations

for behavior in achievement settings. The seminal Dweck & Leggett (1988) goal orientation model proposed that success expectations (based on factors such as self-efficacy and prior performance) operate as a moderator of the relationship of goal orientation with proximal variables such as effort and persistence. In contrast, Elliot & Church (1997) proposed that success expectations operate as an antecedent of one's achievement goal for a given situation. Specifically, Elliot & Church stated that holding a low success expectation for a situation decreased an individual's performance-approach achievement goal and increased one's performance-avoidance achievement goal.

Why is our above discussion about the goal orientation causal chain important? Fundamentally, our understanding of the goal orientation causal chain will dictate how we perceive that goal orientation profiles can be enhanced with interventions. For example, with the Elliot & Church (1997) model, one's performance-avoid goal level would theoretically be decreased by boosting a success expectation variable such as self-efficacy. In contrast, with the Dweck & Leggett (1988) model, decreasing one's performance goal orientation would theoretically require an intervention focused on promoting constructive effort-ability beliefs. This discussion about understanding how to create effective interventions becomes especially important for our next discussion about goal orientation in the workplace.

Question 3: How Can Goal Orientation Become a More Potent Construct in the Workplace?

To date, goal orientation theory appears to have had far more traction with academic researchers than with organizational practitioners. Our speculation about the reason for this traction gap is the following: Goal orientation scholars have not developed an integrated and complete model that practitioners can implement in organizational settings. We suggest the following as an initial sketch of the potential components of a more complete implementation model.

First, goal orientation is not an especially familiar construct within many organizations, and the typical employee is probably unaware of his goal orientation profile. Thus, an important starting point of a more complete implementation model is creating awareness of one's goal orientation profile with an assessment process. Utilizing goal orientation assessment as a starting point highlights the importance of addressing our above questions about the conceptualization and operationalization of goal orientation.

Second, organizations can educate employees about the potential benefits of a learning goal orientation and about the potential disadvantages of holding a strong performance goal orientation for outcomes such as effective self-regulation, leader development, learning, and performance.

Third, organizations can develop interventions that enhance employees' goal orientation profiles. In relation to our above questions, such interventions will require additional research on the antecedents of each goal orientation factor. With robust antecedents identified, the antecedents can be used as the basis to develop effective interventions to enhance one's goal orientation profile.

Fourth, we note above that the positive impact of a dispositional learning goal orientation is stronger when there is also a congruent learning goal orientation climate (e.g., Seijts et al. 2004). Thus, organizations will need to promote a learning culture that supports, rather than conflicts with, a dispositional learning goal orientation (see sidebar How Can Leaders Promote a Learning Goal Orientation for discussion on how leaders can influence employee goal orientation).

HOW CAN LEADERS PROMOTE A LEARNING GOAL ORIENTATION?

Prior theory and research (e.g., Ames 1992, Hannah & Lester 2009, O'Keefe et al. 2013) suggest that leaders can help employees develop a stronger learning goal orientation by promoting a mastery-structured work environment. Mastery environmental engineering activities include encouraging employees to pursue new opportunities that are meaningful and challenging, setting goals that signal high, but realistic standards, framing performance setbacks as learning opportunities, providing constructive, self-referenced feedback, and engaging in supportive behaviors that promote psychological safety.

Social cognitive theory (e.g., Bandura 1997) suggests that leaders can also help employees develop a stronger learning goal orientation by acting as positive role models. For example, leaders can take on new opportunities, be transparent and authentic about their own challenges and setbacks, and frame their own setbacks as learning opportunities. Furthermore, leaders can seek and welcome performance feedback, thoughtfully process the feedback they receive, and skillfully adjust their behaviors based on the feedback they receive.

Finally, we suggest that the level of success for enhancing the learning goal orientation of employees will increase as a higher number of the above type of activities occur, and also to the degree to which these activities are in positive alignment.

To summarize, we suggest that the potential utility of goal orientation in the workplace can be stronger and more practical when based on research guided by ideas and suggestions raised with the above three questions.

CONCLUSION

In this review and comparison of goal orientation–driven outcomes, two patterns are especially notable. First, the overwhelming bulk of goal orientation research has occurred in academic settings with students. This participant status even extends to many goal orientation studies described as testing workplace processes such as leadership and decision-making. Our understanding of the dynamics of goal orientation operating in the workplace can be stronger with more studies conducted with employees in field settings.

Second, for studies conducted in the workplace, we found many examples of data collection with research designs that were cross-sectional, common source, common method, and sometimes all of the above. The above-described longitudinal study by Ahearne et al. (2010) provides an excellent example of how our understanding of goal orientation dynamics can be entirely different (and more informative) when scholars use more longitudinal rather than one-stop data collection protocols.

Upon discussing the above three questions about future research while raising many more questions in this review, we conclude that goal orientation research has traveled many miles and that we have many miles of opportunities ahead.

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