THE GEORGE WASHINGTON UNIVERSITY
GRADUATE SCHOOL OF EDUCATION
AND HUMAN DEVELOPMENT

MOTIVATION, BEHAVIOR, AND PERFORMANCE IN THE WORKPLACE

Insights for Student Success in Higher Education

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September 2013

I. INTRODUCTION

Motivation is a subject that has long interested researchers and practitioners seeking to understand human behavior and performance. Over the course of the 20th century and into the new millennium, scholars have developed sweeping theories and have amassed large bodies of applied research investigating motivation across a variety of settings. Motivation has been studied in schools, the workplace, government, and athletic competitions, to name but a few contexts. It has been studied at the level of the individual, the group, and the organization. Some motivation researchers have employed cognitive models, which emphasize the role of thought processes in determining motivation and behavior, while other researchers have adopted non-cognitive paradigms, which focus on factors such as personality traits, affective states, and environmental determinants.

This paper focuses specifically on research about motivation and behavior in the workplace. It discusses motivation theory, which has broad applicability across contexts, as well as the empirical research conducted in workplace contexts. In reviewing this literature, particular emphasis is placed on research about motivation and behavior as they relate to individual *performance*. A central aim of motivation research is to explicate the complex relationships that exist among motivation, behavior, and performance—such knowledge is critical for managers tasked with getting the most out of their employees, as well as for educators charged with engendering student success. Indeed, an important objective of this paper is to identify insights in the research about workplace motivation that may be transferrable to non-workplace contexts such as postsecondary education. Although a vast literature exists about motivation and behavior in educational contexts, this research often focuses on younger children rather than older students and adults. Considerable potential exists for research about motivation in the workplace to inform efforts to improve student success in higher education.

The first two sections of this paper discuss the dominant cognitive theories of motivation—goal-setting theory and social cognitive theory—and the empirical research conducted in work-related environments that relates to these two approaches to studying motivation. A thematic shift then occurs for the third and fourth sections, which review two important areas of research about non-cognitive factors and motivation: personality traits and affect. Non-cognitive factors such as these have only received belated attention from motivation researchers, but they are among the fastest growing areas of motivation research today. Finally, the paper concludes with a discussion of the practical applications of the reviewed research and the ways in which it can be used not only to improve performance in the workplace but also to promote student success in higher education.

II. GOAL SETTING THEORY

Goal setting theory was developed during the second half of the 20th century, a prolific era for theoretical research about motivation. Its origins trace back to experiments conducted in the 1970s, but Locke and Latham (1990), the two most prominent goal setting scholars, provided its formal articulation. Goal setting theory has guided the development of an immense body of empirical research about workplace motivation, and it is by far the dominant paradigm in the literature today. More than 1,000 studies about goal setting were published during the final three decades of the 20th century, easily making it the most heavily researched topic in the field of motivation (Mitchell & Daniels, 2003).

Goal setting theory is a framework for understanding the relationships among motivation, behavior, and performance. The basic idea behind goal setting theory is that humans translate motivational forces into observable behavior through the process of setting and pursuing goals. Goals are thus the mechanism that operationalizes motivation by using it to shape and drive behavior—without such a mechanism, motivation would simply be a collection of unrealized, internal forces of little consequence. Moreover, goals are *effective* motivational devices because they tend to promote behavioral patterns that are conducive to high performance and success. Specifically, goals lead people to focus attention, exert effort, persist in the face of challenge, and engage in strategy development (Latham, 2007). The conceptual distinction between motivation and behavior must be emphasized, as it is key to understanding these constructs in relation to performance—motivation is a psychological state, and behavior is its outcome. It is only through actual behavior that motivation ultimately connects to performance. For example, simply wanting a promotion will not yield the promotion (if only things were that easy). Rather, it is the activity inspired by the desire for a promotion that may get one promoted. Goal setting theory thus describes a causal sequence in which motivation leads to behavior, which in turn leads to performance. Goals play an indispensable role in this motivational process by facilitating the connection between motivation and behavior.

In addition to providing a conceptual framework, goal setting theory also makes three specific claims. First, goal setting theory maintains that specific, high goals lead to better performance than do low goals or vague goals such as "do your best." Second, it states that given goal commitment, a positive, linear association exists between goal difficulty and performance—in short, the higher the goal, the better. Third, it states that a number of additional factors that are known to influence behavior and performance, such as feedback and monetary incentives, only do so to the extent that they promote the setting of specific, high goals. In other words, it states that goal setting mediates the influence of these additional factors on performance (Latham, 2007).[1] These three findings are the result of 50 years' worth of empirical research examining goal setting in relation to more than 100 different tasks performed by over 40,000 participants in eight different countries (Locke & Latham, 2005).

Although the existing empirical research strongly supports these three central tenets of goal setting theory, researchers have identified a number of factors that can moderate the effectiveness of goal setting as a means to improve performance at work. Specifically, studies have shown that goal commitment, feedback, and task complexity are all moderators of the effectiveness of goal setting. The notion that goal commitment tempers the goal-performance relationship has clear intuitive appeal—goal setting can't be expected to work if goals will be readily abandoned at the first sign of difficulty. But more importantly, a large amount of empirical research has demonstrated the significance of goal commitment. Klein, Wesson, Hollenbeck, and Agle (1999) conducted a meta-analysis of 83 studies and concluded that goal commitment is an important moderator of the relationship between goal setting and performance.

Furthermore, the authors found that goal commitment moderated the goal-performance link to a greater degree when goal difficulty was high than it did when goal difficulty was low. This finding suggests that for specific, high goals to fulfill their promise of superior performance, strong commitment to those goals is especially important.

[1] In statistics, the terms "moderator" and "mediator" are used to refer to variables that influence the relationship between an independent variable and a dependent variable. Moderators are variables that affect the strength of such a relationship, while mediators are variables that explain the existence of it (Baron & Kenny, 1986). For example, imagine that a negative correlation exists between income and the number of lottery tickets purchased, meaning that people with higher incomes tend to purchase fewer lottery tickets. State of residence would be a moderator of this relationship if it turns out that the correlation is stronger in some states than in others (perhaps because some states aggressively market their lotteries to the poor, while other states do not). Educational attainment, on the other hand, would be a mediator of the relationship if it turns out that people with higher incomes purchase fewer lottery tickets not because they already have plenty of money, but rather, because they tend to be more educated (which, presumably, would mean they've been taught to not buy lottery tickets).

Many studies have sought to uncover the antecedents of goal commitment, most likely in an effort to understand how it might be enhanced. This research has generated important findings about the factors that predict goal commitment. For example, studies have shown that self-efficacy, which captures the beliefs an individual holds about his or her capability to succeed, correlates with both higher goals and stronger commitment to them (Latham, 2007). Other studies have found that the expectancy of achieving the goal, the attractiveness of the goal, and the specificity of the goal are all associated with higher levels of commitment (Klein et al., 1999; Wright & Kacmar, 1994). Not all of the research findings about goal commitment, however, are so clear-cut. For example, studies about the influence of extrinsic factors (e.g., monetary rewards) on goal commitment have yielded decidedly mixed results. Some studies have reported that extrinsic factors affect goal commitment for both high goals and low goals, while other studies have found that extrinsic factors only affect commitment to low goals, and still other studies have found no relationship at all between extrinsic factors and goal commitment (Mitchell & Daniels, 2003). Thus, although research about the antecedents of goal commitment has generated important insights, continued research is needed to resolve some outstanding issues.

In addition to goal commitment, another important moderator of the effectiveness of goal setting is feedback. It makes sense that without the presence of some kind of feedback in relation to goal pursuit, goal setting loses its power because one cannot assess progress toward his or her goals. But in addition to its logical appeal, the idea that feedback moderates the effectiveness of goal setting is also supported by many empirical studies (Erez, 1977, Locke & Latham, 1990). Certain types of feedback, of course, can be more useful than others, and the influence of feedback can also vary depending on characteristics of the individual. One study found that positive feedback boosted motivation when provided in relation to personally valued goals, while negative feedback increased motivation when provided in relation to obligatory goals (Van-Dijk & Kluger, 2004). Individual-level factors also appear to influence feedback use—for example, in a study of salespeople working for industrial products firms, Brown, Ganesan, and Challagalla (2001) found that people with high self-efficacy used feedback productively (e.g., for role clarification), but those with low self-efficacy did not. Some research also suggests that the original reason for which feedback is sought can determine its usefulness. People may seek feedback for any number of reasons—to improve performance, to benefit their egos, or to manage the impressions they make on others—but only feedback solicited with the intention of using it productively improves performance (Ashford & Black, 1996). The general theme that emerges from research about feedback in the workplace is that feedback is an essential component of the goal setting process, but that the precise role of feedback varies depending on characteristics of the feedback as well as contextual and individual-level factors.

Lastly, a third factor that studies have shown to moderate of the effectiveness of goal setting is task complexity.[2] In a seminal study involving air traffic controllers performing a complex task without prior ability, Kanfer and Ackerman (1989) reported that "do your best" goals actually led to higher performance than did specific, high goals—a result that corroborates an earlier meta-analytic finding that task complexity moderates the effect of goal difficulty on performance (Wood, Mento, & Locke, 1987).[3] The explanation for this finding is that under conditions of task complexity, ability acquisition and effective strategy development are vital to achieving high performance.[4] In such a context, specific, high goals can be counter-productive to the extent that they may fixate attention and effort on distant outcome goals rather than on the more proximal processes of learning and strategy development, which are crucial steps along the way to achieving high performance on complex tasks. In studies involving complex tasks, participants in specific, high goal conditions tend to switch haphazardly among task strategies, panicking to find something that will work, while those in vague goal conditions take a comparatively systematic approach to the learning process that ultimately leads to greater success.

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[2] While goal commitment, feedback, and task complexity are the most heavily studied moderators of the relationship between goal setting and performance, they are not the only ones that are identified in the literature about workplace motivation. For example, some research has looked at goal setting in group contexts. The findings from this line of inquiry largely mirror what is known about goal setting at the level of the individual—meta-analysis reveals a broad link between goal setting and performance in a group context (O'Leary-Kelly, Martocchio, & Frink, 1994), while other studies have shown that specific, difficult goals still lead to higher performance than do easy and vague goals in group settings (Durham, Knight, & Locke, 1997). In a study that looked at the interaction between personal goals and group goals, however, Seijts and Latham (2000) found that when an individual's goals conflict with those of the group, this "social dilemma" counteracts the normal benefits of goal setting on group performance.

[3] Kanfer and Ackerman's (1989) finding was also replicated in subsequent studies involving air traffic control simulations (Kanfer, Ackerman, Murtha, Dugdale, & Nelson, 1994; Mitchell, Hopper, Daniels, George-Falvy, & James, 1994) and simulations of human resources tasks such as hiring decisions (Mone & Shalley, 1995).

[4] It goes without saying that ability, like goal commitment and feedback, is a factor that can strictly limit the effectiveness of goal setting. Ability determines the boundaries of possibility—people cannot do what they flatly lack the capacity to do, no matter the strength of their motivation.

At first, the finding that vague goals lead to higher performance under conditions of task complexity may appear to seriously undermine goal setting theory's claim about the benefits of specific, high goals. But by looking at characteristics of goals other than specificity and difficulty level, these seemingly contradictory findings can actually be reconciled. In addition to specificity and difficulty level, goals can be categorized based on their content—namely, whether they are outcome goals or learning goals. Outcome goals focus attention on task performance (e.g., landing five new clients by the end of the week), whereas learning goals focus attention on task mastery and ability acquisition (e.g., developing strategies for cold-calling potential clients). Winters and Latham (1996) utilized the distinction between outcome goals and learning goals in a study involving a complex scheduling task. Participants were assigned to one of three goal conditions—a specific, high outcome goal condition; a specific, high learning goal condition; and a vague goal condition. Participants in the outcome goal condition were told to generate as many correct schedules as possible, while those in the learning goal condition were told to identify generalizable strategies for completing the scheduling task, and those in the vague goal condition were told to just do their best. The authors replicated Kanfer and Ackerman's (1989) finding that the vague goal condition led to higher task performance than did the specific, high outcome goal condition. But the authors also found that the specific, high learning goal condition produced the highest task performance of all, even though the learning goal was specifically directed at task process and *not* at task performance. This finding suggests that under conditions of task complexity, it is not goal specificity or goal difficulty that inhibits performance—rather, goal content appears to be the culprit. As mentioned before, preoccupation with distant performance outcomes can distract from the proximate process of learning and developing strategies, which are essential for success on complex tasks. Learning goals, in contrast, explicitly direct goal-seeking behavior toward the learning process. The Winters and Latham (1996) study demonstrates that specific, high goals are still preferred under conditions of task complexity, provided that they are learning goals rather than outcome goals.[5]

The research about goal commitment, feedback, and task complexity highlights the importance of understanding the specific behaviors that result from goal setting and, in particular, how moderating variables influence those behaviors as well. As mentioned earlier, the usefulness of goal setting lies in its tendency to direct attention, promote the exertion of effort, encourage persistence, and facilitate strategy development. But motivation researchers have identified a number of intermediate factors that can significantly influence the process by which goal setting leads to these desirable behaviors. Interventions that seek to use goal setting to improve performance (in the workplace, the college classroom, or some other environment) must account for the important influence of these moderating variables. The final section of this paper provides a more detailed discussion of how research about goal setting can be used to inform efforts to improve individual performance, particularly in postsecondary education.

III. SOCIAL COGNITIVE THEORY

Social cognitive theory, like goal setting theory, is a framework for understanding motivation and human behavior. The architect of social cognitive theory is Albert Bandura, who first presented his theory in the late 1970s (Bandura, 1977) around the same time that goal setting theory was taking shape. Along with goal setting theory, social cognitive theory is one of the few sweeping theories of motivation and behavior to emerge during the 20th century that continues to enjoy widespread influence to this day. The primary construct in social cognitive theory, self-efficacy, is one of the most extensively studied topics in motivation research.

Social cognitive theory sees motivation and behavior as resulting from an ongoing, dynamic interaction among cognitive, social, and environmental variables. Cognitive factors such as goals, values, and efficacy beliefs all influence motivation and the decisions people make about how to act. Likewise, social norms and expectations can affect motivation and dictate behavior, as can the enabling or disabling characteristics of one's physical surroundings. Absolutely central to social cognitive theory, however, is the proposition that amidst this tangle of simultaneous influences, people retain meaningful control over their actions. For this reason, Bandura (2001a) describes social cognitive theory as a fundamentally agentic perspective on human motivation and behavior, meaning that people are agents who act intentionally to shape their life circumstances. People are influenced by the social systems within which they exist, but people are not defined by their surroundings—they are more than just the products of their environments.

[5] Seijts and Latham (2005, 2012) discuss when to select learning goals rather than outcome goals.

Bandura (2001a) identifies four ways in which human agency manifests in behavior. People act with intentionality, foresight, self-regulation, and self-reflectiveness—all of these dimensions of agency can be seen in human behavior. People exhibit intentionality in their actions because they make deliberate plans about what to do, whether those plans are large (e.g., planning to switch careers) or small (e.g., planning to eat lunch at noon). People show foresight because they incorporate anticipations, expectations, and desires about future events into the plans they make. For example, planning to switch careers may involve the expectation that one will be better paid and happier in a new career, and planning to eat lunch may result from the anticipation of being hungry otherwise. But planning is not always straightforward, since the future can only be anticipated, not known. As a result, people self-regulate their plans and modify their behavior as events come to pass and new information becomes available. And during this whole process, people are self-reflective—they develop, maintain, and constantly revise inwardly held beliefs about what they want to achieve and what they are capable of achieving.

Although it may not be immediately apparent, this fourfold description of human agency actually fits very well with the contours of goal setting theory. To say that people make plans (i.e., intentions) about what to do that are informed by considerations of the future (i.e., foresight) is to say that people are goal-setters. The notion that people are constantly self-regulating and adjusting their behavior—say, by revising their goals or setting new goals—is common to both goal setting theory and social cognitive theory. With regard to these first three dimensions of human agency—intentionality, foresight, and self-regulation—the two theories are thus very similar in their descriptions of motivation and behavior. With the introduction of self-reflectiveness as a dimension of agency, however, social cognitive theory enters into new conceptual territory. To capture the self-reflective aspect of human agency, social cognitive theory introduces its core construct, self-efficacy.

Self-efficacy describes the beliefs that one holds about his or her capabilities, and its explanatory power in the motivational process is tremendous (Bandura, 1997). Self-efficacy beliefs are a strong determinant of the goals people set and the opportunities they take on. People rule out innumerable possibilities based on the beliefs they hold about what they can and cannot accomplish. More specifically, people with high self-efficacy tend to set higher goals and embrace challenging opportunities, while those with low self-efficacy, viewing such things as unattainable, tend to do the opposite (Bandura, 2009). In addition to its role in the setting of goals and selection of opportunities, self-efficacy continues to influence the behaviors people display while actively pursuing their goals. Self-efficacy imbues behavior with a resiliency that leads to greater effort and persistence in the face of challenge. To put it simply, self-efficacy beliefs are ubiquitous in the process that connects human motivation, behavior, and performance.

Social cognitive theory maintains that high self-efficacy leads to superior performance. When people are confident in their ability to accomplish tasks, they tend to perform better on those tasks. Multiple meta-analytic studies, which synthesized data from hundreds of individual studies, have documented a positive correlation between self-efficacy and performance (Sadri & Robertson, 1993; Stajkovic & Luthans, 1998). In research about self-efficacy, however, it can be difficult to identify an independent link between self-efficacy and performance, given the abundance of other factors that also influence performance. A major problem is that self-efficacy is a function of past performance, which itself is a strong predictor of future performance (Vancouver, Thompson, & Williams, 2001). Studies must be able to show that any detected relationship between self-efficacy and performance isn't just capturing the influence of past performance on future performance—in other words, they must be able to distinguish between perceived ability and actual ability.[6] Fortunately, researchers have found a promising research method that addresses this identification problem by exploiting the Pygmalion and Galatea effects, two phenomena that can be used to artificially induce self-efficacy through persuasion.

[6] Unfortunately, simply controlling for past performance isn't a viable solution to this identification problem. To do so risks over-correcting the issue because self-efficacy has partially determined past performance in the first place (Bandura, 1997).

The Pygmalion effect is a form of self-fulfilling prophecy in which a leader's expectations for a subordinate's performance actually lead to the subordinate performing in line with the leader's expectations. For example, when a boss has confidence in a worker's ability, that worker tends to perform at a higher level than he or she would have otherwise. Similarly, when a boss sees little potential in a worker, that worker tends to perform more poorly than he or she would have absent the low expectations. The explanation for the Pygmalion effect is that the subordinate perceives the leader's performance expectations and internalizes them to some degree—in short, the leader's expectations affect the subordinate's self-efficacy. The subordinate's self-efficacy, in turn, influences his or her actual performance. Some studies exploit the Pygmalion effect to alter subjects' self-efficacy by actually deceiving a leader into believing that workers in the treatment group have high potential. The leader then unwittingly communicates those expectations to the subordinates. Other studies use the Galatea effect, which is similar but involves the direct manipulation of the subordinates' self-efficacy, an approach that is often more practical than deliberately tricking a leader.[7] In both of these research designs, however, the basic idea is the same—self-efficacy is artificially induced so that the link between self-efficacy and performance, independent of past performance, can be examined.

Empirical research about self-efficacy that uses the Pygmalion and Galatea effects has been conducted most frequently in educational contexts, but there have been a number of studies conducted in organizational environments as well. Meta-analyses of studies conducted in organizational settings have found that effect sizes can be substantial, which lends strong support to the idea that positive self-efficacy can improve job performance (McNatt, 2000; Kierein & Gold, 2000). McNatt (2000) cautions, however, that effect size estimates vary considerably across organizational contexts, and that Pygmalion effect sizes appear to be largest in military contexts, for men, and when leaders initially have low expectations for the participants. One of McNatt's (2000) primary recommendations is that more studies be conducted in non-military organizational contexts to correct for the overrepresentation of military-based studies in the existing research.[8]

More research is also needed to design Pygmalion-based self-efficacy interventions that don't rely on deception. It isn't entirely clear that managers can be effective at raising workers' self-efficacy when the managers are not actually tricked into thinking that those workers really do have great potential. For example, in a study of contracted auditors, McNatt and Judge (2004) were forthright about the study design with the managers who had hired the auditors under study. While the authors found an increase in auditor performance initially, no significant difference remained after three months. Another study analyzed the results of seven Pygmalion leadership workshops that didn't use deception and found scant evidence that the interventions had a meaningful effect, even when the seven of them were examined meta-analytically (Eden, Geller, Gewirtz, Gordon-Terner, Inbar, Liberman, Pass, Salomon-Segev, & Shalit, 2000). Thus, although the existing research on self-efficacy has provided compelling evidence of a positive link between self-efficacy and performance, specific workplace interventions aimed at boosting performance by enhancing workers' self-efficacy are not always successful. A generalized approach to designing self-efficacy interventions, as described by Bandura (2009), is discussed in the final section of this paper.

[7] The Galatea effect refers to the influence that an individual's personal expectations have on his or her subsequent performance. Thus, the difference between the Pygmalion effect and the Galatea effect is really just in the ultimate origin of the expectations. The Pygmalion effect, in which the expectations originate with the leader, essentially produces the Galatea effect because the leader's expectations are internalized by the subordinate. The Pygmalion and Galatea effects are considered distinct, however, to recognize that many real-life scenarios may involve the Galatea effect but not the Pygmalion effect (e.g., scenarios in which there is no leader).

[8] The work of Dov Eden and his colleagues accounts for a large share of the existing research about Pygmalion effects in organizations, and their work focuses heavily on studying members of the Israeli Defense Forces (Eden & Ravid, 1982; Eden & Shani, 1982; Eden, 1993; Oz & Eden, 1994; Dvir, Eden, & Banjo, 1995; Davidson & Eden, 2000). This is not to say, however, that their work accounts for all of the existing research. For example, studies about Pygmalion effects have been conducted in factories (King, 1971), stores (Sutton & Woodman, 1989), and universities (Vrugt, 1990)—all of these are included in McNatt's (2000) meta-analysis, but his recommendation is for more research to be done in these for-profit contexts.

IV. PERSONALITY

Personality traits and dispositions, which are stable individual differences, were largely overlooked in motivation research for most of the 20th century. During this time period, the cognitive and behaviorist motivational paradigms, which sought to explain motivation and behavior in terms of cognitive or environmental variables, respectively, completely dominated the agenda for motivation research. In the prevailing intellectual climate, non-cognitive factors, such as personality traits, weren't considered to be important predictors of motivation and behavior. Furthermore, even among the researchers who were interested in studying personality, little agreement existed regarding the structure and individual components of personality—or in other words, widely accepted theoretical frameworks for studying personality were lacking. This meant that solid conceptual guidance wasn't available to support a robust empirical research agenda. On the whole, the situation was not favorable to research about the relationship between personality factors and motivation in the workplace.

It was not until the late in the 20th century that personality began to receive serious attention from motivation researchers. The interest in studying personality began to gain momentum during the 1980s, in large part because of the emergence of the Five Factor Model (FFM) during that time period (Hogan, 2004). The FFM is a taxonomy of five measurable personality constructs—conscientiousness, emotional stability, extroversion, agreeableness, and openness to experiences—that together are said to capture the relevant dimensions of one's personality. While the FFM is not an exhaustive theory of personality, it catalyzed motivation research about personality factors by providing a reasonably thorough set of workable constructs whose relationship to motivation, behavior, and performance could be investigated in environments such as the workplace. By the turn of the millennium, personality had become the fastest growing area of research in the field of motivation (Mitchell & Daniels, 2003).

To this day, the five personality constructs in the FFM are the focus of the vast majority of existing research about personality in the workplace. In this literature, the relationship between FFM personality constructs and job performance has received the most attention. In fact, that relationship was studied so extensively during the 1980s and 1990s that Barrick, Mount, and Judge (2001) conducted a meta-analysis of no less than 15 previously published meta-analyses and then called for a moratorium on any further meta-analysis of the subject. From their synthesis of two decades' worth of research, the authors drew three main conclusions. First, they found that conscientiousness reliably predicts a number of different performance metrics across a wide range of occupations.[9] Second, they reported that although emotional stability predicts a measure of generalized performance, the relationship between emotional stability and specific performance measures in particular occupations tends to be variable. Third, the authors found that the other three factors (extroversion, agreeableness, and openness) don't predict generalized performance, and that variation across performance measures and occupational contexts is the rule. In sum, the major theme that emerges from the Barrick *et al.* (2001) study is that with the possible exception of conscientiousness, the relationship between the FFM constructs and performance is largely dependent on contextual factors such as the specific performance task and occupation.[10]

[9] Examples of the types of performance measures for which a conscientiousness-performance link has been found include supervisor performance appraisal ratings (Dunn, Mount, Barrick, & Ones, 1995), training performance (Martocchio & Judge, 1997), sales levels (Barrick, Stewart, & Piotrowski, 2002; Vinchur, Shippmann, Switzer, & Roth, 1998), and group task performance (Neuman & Wright, 1999).

[10] This is not meant to suggest that the extensive literature on the FFM has produced little of use. Rather, the idiosyncratic nature of the research findings means that generalizations are hard to come by and anyone who is interested in the relationship between particular FFM components and worker performance should approach the research with specific contextual parameters in mind. Readers seeking that level of detail are advised to begin by looking at the meta-analyses that Barrick et al. (2001) drew upon. In particular, the studies by Barrick and Mount (1991) and Tett, Jackson, and Rothstein (1991) are highly regarded.

Although the FFM was influential in guiding early motivation research about personality, it has been critiqued for a couple of reasons. One shortcoming of the FFM is that the five factors, rather than being completely independent constructs, are all positively correlated with one another.[11] This suggests that some underlying aspects of personality show up in the measurement of multiple FFM constructs. Such overlap limits the conclusions that can properly be drawn from research that treats the FFM traits as independent factors with unique relationships to variables such as job performance. A second criticism of the FFM, alluded to earlier, is that it doesn't provide a comprehensive description of personality. Motivation researchers have identified important dimensions of personality that are not captured (or at least not fully captured) by the five FFM traits. One such personality trait that has received considerable research attention is a construct called goal orientation. Goal orientation, which captures the types of goals that an individual is naturally inclined to set, directly connects research on personality traits to goal setting theory, so it is perhaps unsurprising that goal orientation has been a popular subject among researchers of motivation.

The concept of goal orientation came to the field of industrial-organizational psychology after originating in educational psychology. Dweck (1986) was the first to propose that goal orientation may predict children's motivation and behavior in educational settings. She posited that people are either oriented toward setting learning goals or oriented toward setting performance (i.e., outcome) goals. Those with learning goal orientations seek mastery over tasks and situations, so they strive to improve their competence and gain knowledge. They focus more on developing ability than they do on demonstrating it to others. For people with performance goal orientations, however, the achievement preference is just the opposite. Rather than seeking mastery, they are preoccupied with validating their ability by gaining the favorable judgments of others. As a result, they focus more on performance outcomes and the demonstration of competence than on the learning process itself.[12]

Research conducted in work settings suggests that goal orientation may carry implications for motivation and behavior. Studies have shown that a learning goal orientation, but not a performance goal orientation, is positively associated with self-set goal level (VandeWalle, Brown, Cron, & Slocum, 1999), effort and strategy development (Sujan, Weitz, & Kumar, 1994; Fisher & Ford, 1998; VandeWalle et al., 1999), feedback-seeking (VandeWalle & Cummings, 1997; VandeWalle, Ganesan, Challagalla, & Brown, 2000), and self-efficacy (Phillips & Gully, 1997). Numerous studies have also reported that a learning goal orientation correlates positively with actual task performance, while a performance goal orientation does not (Taberno & Wood, 1999; VandeWalle et al., 1999; VandeWalle, Cron, & Slocum, 2001; Payne, Youngcourt, & Beaubien, 2007). On the whole, these studies suggest that a learning goal orientation compares favorably to a performance goal orientation in many situations. It must be emphasized, however, that these findings only indicate that goal orientation correlates with the aforementioned factors—they cannot be used to attribute causality to goal orientation.

Distinguishing between correlation and causation is central to understanding the relationship between goal orientation and task performance. As it turns out, the influence of goal orientation on performance appears to operate through a collection of intermediate variables. For example, in a complex task simulation based on the telecommunications industry, Seijts, G. Latham, Tasa, and B. Latham (2004) demonstrated that goal type mediates the link between goal orientation and performance. The authors used three assigned goal type conditions—learning goals, performance goals, and vague goals—and found that the assigned goal type masked any impact of goal orientation on performance. The assigned learning goal condition produced the highest task performance, but it did so regardless of goal orientation.[13] The only condition in which goal orientation continued to predict performance was the vague goal condition, presumably because it was the only condition in which goal orientation could find expression. (An assigned vague goal is similar to no goal.) In short, Seijts et al. (2004) demonstrated that the relationship between goal orientation and performance is

[11] In earlier formulations of the FFM, the emotional stability factor was called neuroticism and, when measured that way, correlated negatively with the other four factors. Neuroticism is now referred to as emotional stability and is reverse-scored, which means that all five of the factors correlate positively (Perrewe & Spector, 2002).

[12] Dweck originally proposed a dichotomous (learning v. performance) formulation for goal orientation, but since then, a third category has been incorporated. Several researchers have argued that the performance goal orientation should actually be split into two sub-types—one characterized by a desire to "prove" competence and one characterized by a desire to "avoid" displaying incompetence (Elliott & Harackiewicz, 1996; VandeWalle, 1997). In both cases, individuals are more concerned with performance outcomes than with the learning process, but their motivational and behavioral patterns are distinct.

[13] As mentioned in the section about goal setting theory, earlier research had shown that learning goals are more effective than performance goals and vague goals under conditions of task complexity (Winters & Latham, 1996). The results of Seijts et al. (2004) study reinforce that earlier finding.

explained by specific goal setting behavior, not by having a *predisposition* to that behavior.[14] In other words, the nature of the goals one actually sets (or is assigned) mediates the relationship between goal orientation and performance.

The finding that actual goal setting behavior mediates the relationship between goal orientation and performance is of particular importance because such behavior can be artificially manipulated.[15] Regardless of goal orientation, people can be effectively taught or told when to set learning goals and when to set performance goals (Latham, 2007). This suggests that for situations in which individuals have considerable autonomy, such as self-employment or entrepreneurial activities, goal orientation may be a highly relevant motivational factor. But in more controlled environments, such as offices and classrooms, policies and practices that encourage desired goal setting patterns and behaviors have a direct influence on performance above and beyond dispositional goal orientation.

V. AFFECT

Affect refers to the non-cognitive factors that can be described in terms of *feelings,* and research about affect in the workplace seeks to establish the relationships between employees' feelings and their motivation, behavior, and performance. Like personality, affect received little attention from motivation researchers for long periods of time during the 20th century, but it has attracted considerable research interest over the last two decades. In fact, the newfound interest in studying affect in the workplace has become so strong that scholars speak of an "affective revolution" in the field of motivation research (Barsade, Brief, & Spataro, 2003).

Researchers studying affect in the workplace distinguish between two kinds of affect: trait affect (also called dispositional affect) and state affect. Trait affect captures an individual's natural tendency to experience certain types of feelings across different situations and over time. Like the personality factors of the FFM, its defining feature is that it is a stable individual difference. It is normally analyzed and measured in terms of positive affect (PA) and negative affect (NA), which, rather than representing the two extremes of a bipolar construct, are distinct constructs measured on separate spectra that range from "low" to "high" (Watson, Clark, & Tellegen, 1988). People with high trait PA tend to experience feelings such as happiness, enthusiasm, and excitement (high energy, high pleasantness), while those with low trait PA are inclined towards feelings such as sadness, depression, and lethargy (low energy, low pleasantness). People with high trait NA are predisposed to feelings like stress, nervousness, and tension (high energy, low pleasantness), while those with low trait NA tend to feel calm, relaxed, and contented (low energy, high pleasantness). These nuances aside, the key feature of trait affect is that it is considered to be an enduring dispositional characteristic—it describes a lasting propensity for particular sorts of feelings over others.

State affect, in contrast, refers to the actual feelings that one experiences at a given moment in time—feelings that need not always match one's trait affect. Researchers distinguish between two types of affective states: emotions and moods. Emotions are discrete, targeted responses to specific events and situations, and they may last only for an instant. For example, you experience the emotion of fear when confronted by a mugger at knifepoint. The fear is an acute response to your immediate situation, and it passes when the mugger is gone (or when you're home safely). Moods, on the other hand, are more ongoing, global affective states that generally result from the confluence of many factors. Moods tend to last longer than emotions, and they aren't as closely associated with any single stimulus. Consequently, moods are usually just described with generic adjectives such as "good" versus "bad" or "positive" versus "negative" rather than with the unambiguous terms reserved for emotions: euphoria, surprise, disappointment, remorse. Although the words "emotion" and "mood" are often used interchangeably in everyday language, they are distinct constructs in research about affect. Their shared attribute is that they are both transient affective states, not stable traits.

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[14] Other studies have also found that aspects of goal setting, such as goal type and goal level, mediate the relationship between goal orientation and job performance (Brett & VandeWalle, 1999; VandeWalle *et al*., 1999; VandeWalle et al., 2001). Additional mediators have been identified as well, such as self-efficacy (VandeWalle et al., 2001; Seijts et al., 2004) and effort (VandeWalle et al., 1999; VandeWalle *et al*., 2001). Porath and Bateman (2006) found that a set of four self-regulatory tactics—feedback seeking, proactive behavior, emotional control, and social competence—also act as mediators.

[15] The presence of easily controllable mediating variables had led some researchers to doubt the usefulness of continuing to study goal orientation as a dispositional trait (Bandura, 2001b). Furthermore, the notion that goal orientation is actually a stable individual difference has been questioned—it seems more likely that an individual may exhibit learning goal orientation in certain achievement contexts while exhibiting a performance goal orientation in others (Latham, 2007).In particular, the studies by Barrick and Mount (1991) and Tett, Jackson, and Rothstein (1991) are highly regarded.

Much of the empirical research on affect in the workplace has examined the relationship between measures of trait affect and job performance.[16] This general subject had interested motivation researchers long before the onset of the affective revolution, but the construct that early research sought to link to work-related performance was job satisfaction, not trait positive affect or trait negative affect. On the whole, this early research on job satisfaction and job performance produced equivocal results, casting doubt on the stability of a link between job satisfaction and performance (Cropanzano & Wright, 2001). Recently, however, studies about job performance have focused on the more precise measures of trait positive affect (PA) and trait negative affect (NA). This line of inquiry has yielded more promising findings—several comprehensive meta-analyses and reviews have found a strong link between trait PA and job performance (Lyubomirsky, King, & Diener, 2005; Barsade & Gibson, 2007; Kaplan, Bradley, Luchman, & Haynes, 2009). Moreover, this relationship has been detected for a variety of performance measures, including supervisory evaluations (Cropanzano & Wright, 1999; Wright & Staw, 1999) and sales performance (Sharma & Levy, 2003). High trait NA, on the other hand, has been linked with lower levels of job performance and a greater incidence of counterproductive behavior on the job (Kaplan et al., 2009; Johnson, Tolentino, Rodopman, & Cho, 2010). Results such as these are only correlational, but they do suggest that employee's feelings can play a role in determining important workplace outcomes.

While the aforementioned research findings suggest the relevance of affect in the workplace, they do little to explain the mechanisms that connect trait affect to desirable outcomes such as superior job performance. How exactly does affect operate in the workplace? Answering this question requires focusing on the relationship between affective states and specific behavioral patterns, rather than looking broadly at the association between dispositional affect and final performance outcomes. After all, dispositional affect must operate on workplace outcomes through the actual moods and emotions that it induces and the ways in which those affective states influence behavior.

The most widely used framework for analyzing affective states in the workplace is called affective events theory (AET) and was developed by Weiss and Cropanzano (1996). AET situates affective states in a mediating role between environmental stimuli and subsequent behavioral and attitudinal outcomes. Emotions and moods arise as reactions to external events (e.g., stress may result when a quick deadline is set for a report) and shape the translation of these events into observable behaviors (e.g., stress may cause one to be more careless when writing the report). Crucially, AET distinguishes between behaviors that result from non-cognitive, affective states and behaviors that result from cognitive evaluations of work-related events (Brief & Weiss, 2002). Emotions can occur in a split-second and have behavioral consequences that bypass the cognitive processes that are normally involved in careful, deliberate judgment. By assigning explanatory power to affective states, AET extends our understanding of workplace motivation and behavior beyond conceptual frameworks that only consider the influence of cognitive factors on motivation and behavior (e.g., goal setting theory and social cognitive theory).

A considerable amount of recent research has been devoted to studying the workplace behaviors that result from different affective states. The theme that emerges from this body of applied research is that positive mood states tend to be associated with a set of desirable behaviors, while negative mood states are related to certain undesirable behaviors. Studies have shown that positive mood states, but not negative mood states, lead to more effective decision-making (Isen, 2001), higher levels of creativity (James, Brodersen, & Jacob, 2004; Amabile, Barsade, Mueller, & Staw, 2005), cooperative and prosocial behavior (George, 1991), lower levels of absenteeism and turnover (Pelled & Xin, 1999), and sustained effort (Foo, Uy, & Baron, 2009). While the general pattern is clear, some qualifications do exist regarding the universality of these findings. For example, research suggests that under certain circumstances, negative mood may actually produce better decision-making, perhaps through a "depressive realism effect" (Barsade & Gibson, 2007). Similarly, some studies have found that negative mood may be more conducive to creativity (George & Zhou, 2002). These exceptions are few, however, and they do little to undermine the broad association between positive mood states and a number of desirable workplace behaviors.

[16] Affective states have received less attention in the literature about job performance. The likely reason for this is that their short-lived nature (even moods are short-lived compared to trait affect) makes it prohibitively difficult to link them to performance measures, which generally reflect periods of time ranging from several weeks to several months or a year (Barsade & Gibson, 2007).

VI. THE PRACTICAL APPLICATION OF MOTIVATION RESEARCH TO HIGHER EDUCATION

Effective application of the existing research about motivation and behavior has the potential to improve performance not only in the workplace, but also in other contexts such as postsecondary education. The most extensively studied topic in motivation research is goal setting, and a vast amount of theoretical and empirical research conducted in work-related environments has revealed that specific, difficult goals are more conducive to high performance than are unchallenging and vague goals (Locke & Latham, 1990, 2002, 2005). While this basic finding should be the starting point for efforts to use goal setting to promote student success in college, such efforts should also incorporate the research that has demonstrated that specific, high goals may not always lead to the highest performance. As mentioned in the section of this paper about goal setting, there are a number of factors that moderate the goal-performance relationship, including task complexity, goal commitment, and feedback. Each of these moderating variables has important implications for the use of goal setting to promote student success in higher education.

Task complexity provides an excellent example of the relevance of these moderators to the practical application of goal setting research in a postsecondary context. The goal of college completion is a challenging goal for any student, and it can be articulated as specifically as one may want—e.g., completing a bachelor's (associate's) degree within four (two) years, completing the credential while maintaining some specified GPA, and so forth. But merely setting that goal is unlikely to have a meaningful impact on completion rates because it offers no guidance whatsoever as to how students should go about trying to achieve college completion. Completing college is a complex and novel task that spans multiple years. Research about goal setting has shown convincingly that under these conditions, the most effective goals will be difficult and specific, but they will also focus on learning processes rather than on final performance outcomes. It is likely that setting learning goals to improve one's comprehension of academic articles, to develop the research and writing skills necessary to complete term papers, and to acquire effective study habits for exams will eventually lead to better student outcomes than the worthy but unworkable goal of completing college on time and with impressive grades. The reason is that these goals direct attention and effort toward the development of the skills and abilities that one needs in order to succeed in college.

Some research has identified another promising strategy for using goals to achieve high performance under conditions of task complexity. This alternative approach, which seems particularly well suited to tasks like postsecondary study that occur over a very long time period, is to set a sequence of proximal outcome goals that steer the individual toward a more distant performance objective (Latham & Seijts, 1999). In the context of higher education, this might entail setting sequential goals to complete the first semester, then the second semester, then the third, and so on. This method could even be used at the level of the course, credit, or assignment, though it is essential that a sequence of proximal outcome goals be carefully designed to guide the individual toward a greater, more distal outcome without losing sight of the forest for the trees. The basic idea behind this approach is to achieve some ultimate outcome (e.g., college completion) by creating a path of more actionable and immediate outcome goals.

In addition to task complexity, another moderator of the relationship between goal setting and performance is goal commitment. In general, there are two approaches that can be taken to improve goal commitment, which are to heighten the importance of the goal and to increase the expectancy that the goal will be achieved (Klein et al., 1999). A common method for improving the importance of a goal is to have the person in question make a public commitment to the goal, which incorporates the avoidance of personal and social impressions of hypocrisy into the benefits of goal attainment (Heslin, Carson, & VandeWalle, 2008). In a workplace environment, this might entail announcing the goal to colleagues, while in the context of higher education, it might take the form of an announcement to peers or professors. Another method for improving the importance attached to goals is for a leader to communicate a superordinate vision that others can rally around—to the extent that individual goals are then designed to align with this shared vision, they are imbued with an elevated sense of purpose and importance (Latham, 2004, 2007). In addition to targeting the perceived importance of goals, efforts that seek to boost goal commitment can be directed at increasing the expectancy of goal achievement—or in other words, they can focus on the augmentation of self-efficacy beliefs. The greater one's belief in his or her capability to achieve goals, the greater one's commitment to them (Latham, 2007). Specific methods for enhancing self-efficacy are discussed in greater detail below.

A third moderator of the goal-performance link is the presence of feedback, and the nature and delivery of feedback are important considerations in the application of goal setting research to practice. Feedback has the potential to greatly improve performance, but feedback isn't always helpful—indeed, in an authoritative meta-analysis of the results of feedback interventions, Kluger and DeNisi (1996) reported that one-third of the reviewed studies found that the feedback intervention had a negative effect on job performance. It appears to be especially important, therefore, that any application of goal setting research to practice be careful and deliberate in its treatment of feedback. Drawing on the extensive literature about feedback interventions, DeNisi and Kluger (2000) offered several recommendations for the successful use of feedback in promoting high levels of motivation and performance. First, so as to limit the possibility of damaging the individual's self-concept, feedback should be framed in relation to the task and task performance, not in relation to characteristics of the individual. Second, feedback should include information about how to improve performance. While it can be a valuable learning experience to struggle to improve task process all on one's own, this is often an exercise in futility without some sort of guidance about how to improve performance. For example, if a student has set a goal to complete the semester with a full credit load but fails or withdraws from one course, it might be useful to provide some type of end-of-semester consultation that would analyze in detail the specific moments and decisions throughout the semester that led the student to fall short of the goal. Third, feedback should be integrated into a formal goal setting plan, allowing the individual to gauge progress toward his or her goals. Finally, feedback should maximize information relating to one's own performance improvement and minimize comparisons with the relative performance of others.

The effective application of goal setting research to practice promises higher levels of performance, but performance will benefit the most from interventions that consider additional motivational factors as well. In particular, self-efficacy, the core construct in social cognitive theory, has been shown to play an instrumental role in the motivational and behavioral processes that lead to performance outcomes. Decades' worth of research about self-efficacy demonstrates that high self-efficacy beliefs are associated with greater levels of motivation and performance (Bandura, 1997). This finding, like the finding about the benefits of specific high goals, is one of the most significant findings in the entire literature about human motivation, behavior, and performance. But this finding alone doesn't provide guidance about how to improve self-efficacy in real-life situations—how can this important knowledge be used to inform interventions that aim to improve individual performance?

Writing for managers seeking to enhance employee performance, Bandura (2009) addresses this question directly. According to Bandura (2009), self-efficacy beliefs can be developed enactively, vicariously, persuasively, and somatically. Self-efficacy beliefs are most commonly formed enactively through the interpretation of one's own experiences of success and failure. But self-efficacy can also be influenced vicariously through the observation of other people's experiences—when you see a similar person succeed (or fail) on some task, this affects your own beliefs about your capacity to succeed in the same endeavor. Self-efficacy beliefs can also be formed through social persuasion, as when a professor signals an appreciation for a student's intelligence and ideas and, as a result, that student's self-efficacy rises. Lastly, physical and emotional states can influence one's self-efficacy—bad moods and negative feelings as nervousness or fatigue can be interpreted as indictors of personal deficiency. These four avenues, alone or in combination, are the ways in which self-efficacy beliefs are developed.

Bandura (2009) advocates for an approach to cultivating high self-efficacy called "enablement through guided mastery" that engages the multiple channels through which self-efficacy can be developed. A guided mastery intervention has three phrases—enabling modeling, guided skill perfection, and transfer training by self-directed success. In the first phase, skills and abilities are modeled as a way of communicating basic information about rules, strategies, and execution. In the guided skill perfection phase, learners practice new skills in a simulated environment in which stakes are low, allowing them to focus on developing familiarity, fluency, and proficiency with the new competencies. The final phase then involves the application of the newly acquired skills and abilities in a real-life environment. Crucially, this transfer phase doesn't entail simply dumping people back into their natural environment, as if in a trial by fire. The skill transfer phase should be purposefully structured to allow people to experience small (but not trivial) successes as they gradually solidify self-efficacy beliefs and become comfortable with using their new skills in a self-directed and self-regulated fashion. In essence, the guided mastery approach is a careful, graduated process through which new abilities and corresponding self-efficacy beliefs are generated and internalized.

Enablement through guided mastery is an approach to developing positive and resilient self-efficacy beliefs that has the potential to improve student outcomes in college.[17] Its application might take the form of single seminars or entire courses designed for incoming students that would focus specifically on communicating expectations about college-level coursework and then teaching and practicing studying, writing, and testing skills in an ungraded, low-stakes environment—skills that could then be gradually transferred into higher-stakes classroom environments with assignments deliberately structured to reinforce efficacy beliefs relating to these essential academic skills and abilities. Motivation research conducted in workplace contexts suggests that for people whose performance stands to benefit from higher self-efficacy beliefs, a highly structured immersion process such as enablement through guided mastery could be an effective approach to improving individual performance.

As emphasized throughout this paper, most of the existing research about motivation has been guided by two conceptual paradigms—goal setting theory and social cognitive theory—that heavily emphasize the cognitive processes involved in motivation and behavior. Recently, however, scholars have begun to devote increasing amounts of attention to studying non-cognitive factors such as personality traits. On the whole, this developing body of literature suggests that personality traits can be important determinants of motivation and behavior. However, given that personality traits are dispositional characteristics that cannot be manipulated in the same ways that cognitive factors such as goals, aspirations, and self-efficacy beliefs can be, the question of how research about personality and motivation can be put to practical use is especially difficult. One potential application of this research would be to use it to create tasks or environments designed for specific individuals (e.g., setting learning goals for performance goal oriented individuals), thereby fostering higher levels of performance. But since personality is still a developing area of motivation research, and since the practical application of this research poses such unique challenges, continued work is needed to determine concrete and effective methods for translating this type of research into practice.

In addition to personality, another promising area of research about the role of non-cognitive factors in the motivational process investigates affect as a predictor of motivation and behavior. Like the research on personality traits, this literature is a work in progress. Nevertheless, the existing research about affect in the workplace indicates that affective factors can have an important influence on motivation and behavior. Specifically, the generalized findings indicate that being in a positive mood is conducive to higher levels of motivation and superior performance. The most actionable research findings are those reported in studies linking affective states to specific behaviors, which have found that positive moods are associated with desirable behaviors such as effective decision-making, creativity, cooperative behavior, and effort. While these findings are promising, they are not universally applicable. Before affective factors can be reliably incorporated into interventions seeking to improve performance, further research is needed to clarify the precise role of affect and feelings in determining motivation, behavior, and performance.

[17] Self-efficacy may be an especially important aspect of motivation for college students because many people enroll in higher education at a point in their lives when they are still discovering themselves and developing their self-concept. Although adult students now account for a considerably larger proportion of postsecondary enrollment than they used to—43 percent of students enrolled in 2010 were aged 25 or older, compared to 28 percent in 1970 (NCES, 2012)—the majority of college students today are still under the age of 25.

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