

APPLYING SELF-DETERMINATION THEORY TO ORGANIZATIONAL RESEARCH

Kennon M. Sheldon, Daniel B. Turban, Kenneth
G. Brown, Murray R. Barrick and Timothy A. Judge

ABSTRACT

In this chapter we argue that self-determination theory (SDT; Deci & Ryan, 2000) provides a useful conceptual tool for organizational researchers, one that complements traditional work motivation theories. First, we review SDT, showing that it has gone far beyond the "intrinsic versus extrinsic motivation" dichotomy with which it began. Then we show how the theory might be applied to better understand a variety of organizational phenomena, including the positive effects of transformational leadership, the nature of "true" goal-commitment, the determinants of employees' training motivation, and the positive impact of certain human resource practices. We note that SDT may yield significant new understanding of work motivation, and suggest opportunities to refine the theory for research on work-related phenomena.

INTRODUCTION

Questions regarding what dispositional and situational factors lead employees to learn, perform, and be satisfied at work are enduring themes in organizational

to maximize pleasure and reward and to minimize pain and cost. In contrast, SDT focuses on peoples' motivation to grow, both in terms of developing their potential, and in terms of enhancing their connection with others and their community. We believe that both types of theory, while on the surface appearing somewhat contradictory, are useful in understanding the full range of work behavior. However, given the relative inattention to SDT in the organizational literature, we believe it is worthy of attention in this chapter.

Self-determination theory is a macro-theory consisting of several *mini-theories*: Cognitive Evaluation Theory, Organismic Integration Theory, Causality Orientations Theory, and Basic Needs Theory. Below we will cover each of the four mini-theories within SDT, thereby both providing a historical perspective and bringing readers up-to-date on the theory as it now stands. Subsequently, we will offer an overarching conceptual framework that incorporates all four mini-theories into a single process model of goal-directed behavior. Afterwards, we will consider the applicability of this process model for several important areas of organizational research, namely transformational leadership, goal commitment, motivation to learn, and strategic human resource management. The variety of topics addressed is intended to suggest that SDT has applicability both for refining study on particular constructs (e.g. goal commitment and motivation to learn), and for expanding the focus of research on broader organizational processes (e.g. leadership and human resource practices). The selection of topics is not intended to be exhaustive but instead is representative of some important areas in organizational research where SDT may be fruitfully applied. Finally, we will discuss some potential limitations and boundary conditions for the theory.

SELF-DETERMINATION THEORY

SDT began in the late 1960s with the pioneering work of Edward Deci, who explored the conditions that can undermine "intrinsic" motivation (i.e. the desire to engage in an activity because one enjoys, or is interested in, the activity). Using a *free choice* methodology, in which intrinsic motivation is operationalized as the number of seconds spent doing an appealing target activity after being left alone, Deci found many factors that can undermine intrinsic motivation. These include certain types of performance-contingent rewards, time pressures, threats of punishment, and certain types of competition. These experimental results (and other supporting survey and field data) were summarized in a theory that became known as Cognitive Evaluation Theory.

Cognitive Evaluation Theory

In his 1975 book, *Intrinsic Motivation*, Deci argued that the common thread underlying these findings is the psychology of autonomy versus control. Specifically, intrinsic motivation is undermined when people feel controlled (i.e. a lack of autonomy/freedom in performing the activity). According to Cognitive Evaluation Theory, rewards, competitions, and pressures do not necessarily undermine intrinsic motivation because, after all, these forums can help supply important competence information to the individual. Rather, problems can arise when rewards, competitions and pressures are used by authority figures as means of coercing or over-controlling people's behavior and performance, thus thwarting their natural need for autonomy (discussed below). When people feel controlled (or compelled) by others to perform an activity, what was formerly an enjoyable activity can become routine, or even aversive, to perform. The key to understanding intrinsic motivation, from this perspective, is the person's *cognitive evaluation* of the rewards, pressures, and constraints within the environment. Of course, such evaluations will be in part a function of the environment and in part a function of the person.

Emphasizing the latter factor, Ryan (1982) showed that people can feel controlled by internal compulsions, impulses, and drives, just as much as they can feel controlled by external forces and constraints. In other words, felt autonomy is to some extent a dispositional variable, representing the individual's characteristic way of relating to his/her own choices and outcomes. Although this was an important extension, Deci and Ryan urged that theorists not lose sight of the undermining characteristics of social and interpersonal environments, in a rush to blame the lack of felt autonomy on the person. Deci and Ryan's (1985a) book, *Intrinsic Motivation and Self-Determination in Human Behavior*, consolidates what was known at that time.

Again, Deci and Ryan (1985a) argued that extrinsic rewards undermine intrinsic motivation, if such rewards are experienced by recipients as an attempt to control their behavior. And indeed, a large literature exists to support this conclusion. Notably, however, there is still some controversy concerning the effect of different types of extrinsic rewards on intrinsic motivation, with different meta-analyses coming to different conclusions (for example, see Cameron & Pierce, 1994; Deci, Koestner & Ryan, 1999a, b; Eisenberger & Cameron, 1996; Eisenberger, Pierce & Cameron, 1999a; Tang & Hall, 1995). These different conclusions resulted, in large part, from different decisions made by the researchers regarding what studies to include in the meta-analysis, how to code different categories of experimental conditions, and what to use as the appropriate control groups.

Lepper, Henderlong and Gingras (1999) reviewed the various meta-analyses, and concluded that, in general, results seem to support the conclusion that extrinsic rewards can undermine intrinsic motivation. In particular, rewards that are material and tangible and which are contingent upon either engaging in the task, completing the task, or performing the task at a certain level of proficiency tend to undermine intrinsic motivation. Notably, the meta-analyses also indicate that verbal rewards (i.e. praise) can *enhance*, rather than detract from, intrinsic motivation. Finally, non-contingent rewards (i.e. rewards given unexpectedly after the task was complete) appear to have little negative effect on intrinsic motivation.

Assuming that these conclusions are correct and definitive, their applicability for organizational researchers and settings remains somewhat unclear. As noted by Lepper and Henderlong (2000) many of the studies included in the meta-analyses were designed to test issues of theoretical significance and do not "mirror any real-world situation" (p. 269). Furthermore, the Deci et al. (1999a, b) meta-analysis, which included one hundred and twenty-eight studies and is arguably the most comprehensive meta-analysis, included only experimental studies with target tasks that were at least moderately interesting. In fact, Deci et al. (1999a, b) specifically excluded studies with boring tasks from the meta-analysis, since cognitive evaluation theory only predicts that rewards undermine intrinsic motivation for tasks in which individuals are interested (motivated), and presumably there is no intrinsic motivation to undermine for boring tasks. Clearly, however, boring tasks are characteristic of many jobs and work situations. Does this mean that SDT has only limited applicability for organizational researchers? Perhaps not – as we will see below, contemporary SDT asserts that the support of self-determination is still important in the case of boring tasks, as autonomy-supportive contexts foster peoples' internalization of such tasks, with many positive results.

To summarize, cognitive evaluation theory proposes that rewards (environmental information) can undermine intrinsic motivation when they are experienced as controlling (reducing autonomy), but rewards also can positively impact intrinsic motivation when they are experienced as providing information and thus satisfying the need for competence (Deci & Ryan, 2000; Ryan & Deci, 2000). Thus, the effects of the reward depending upon how it is experienced by the individual and whether the reward leads to satisfaction of innate needs. For example, even tangible extrinsic rewards, which tend to be controlling, may not undermine intrinsic motivation if they are administered in an autonomy-supportive manner (Ryan & Deci, 2000). Similarly, performance-contingent rewards, delivered in an autonomy-supportive manner, may provide competence information that can enhance intrinsic motivation. Such evidence suggests the importance of *autonomy support* for positively influencing behaviors in work settings, an issue to which we return after our review of self-determination theory.

Organismic Integration Theory

Although much of the early research in SDT focused on intrinsic motivation, as noted above, not all desirable behaviors (such as many important but boring or aversive work-tasks) are intrinsically motivating. This leads to the question: can people be positively motivated even while doing extrinsic tasks, that is, while doing activities they do not enjoy doing? In other words, are there any "good" forms of extrinsic motivation?

SDT began to investigate this important question in the late 1980s. The answer to the question is a qualified "yes." The picture is somewhat complex, however, in part because Deci and Ryan sought to incorporate other major theoretical perspectives upon motivation, including cognitive, behavioral, psychodynamic, and humanistic perspectives, within their model. Figure 1 illustrates SDT's current specification of the various forms of motivation, ranging from amotivation to external motivation to introjected motivation to identified motivation to intrinsic motivation.

As can be seen in the figure, SDT begins with the distinction between amotivation (the form on the left) and motivation (the four forms on the right). Does the person feel helpless, or are his/her actions guided by stable intentions? Many social-cognitive motivation theories focus here, attempting to predict the strength of peoples' intentions or the quantity of their motivation. This is understandable, given that the "motivation versus no motivation" distinction is perhaps the most important of all. Thus, for example, self-efficacy theory maintains that the "quantity" of a person's motivation to do a behavior can be predicted by strength of their belief

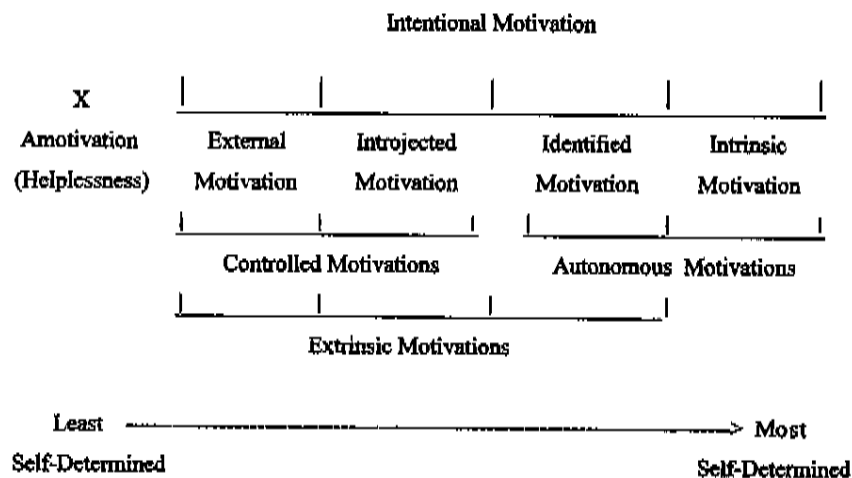


Fig. 1. Schematic Relation of the Five Types of Motivation.

they can successfully perform the behavior. However, SDT proposes that it is also important to address the “quality” of a person’s motivation, an issue that is typically not considered within expectancy and utility theories. As argued at the beginning of this chapter, we believe such perspectives may provide a useful complement to traditional work-motivation theories.

Originally, the consideration of “quality” went no further than the distinction between intrinsic and extrinsic motivation. However, SDT now specifies three types of extrinsic motivation (the three middle forms in Fig. 1), that vary in their degree of self-determination: *external motivation* (acting only to get a reward, or because the external situation seems to compel or require action), *introjected motivation* (acting to avoid feeling anxious or guilty over not doing what one “should” do), and *identified motivation* (acting to express one’s values and uphold one’s self-investments). These are all classified as extrinsic motivations because they do not involve engaging in the activity for its own sake (i.e. they are not intrinsically motivated). However, whereas external and introjected motivations are classified as non-autonomous or controlled motivations, identified motivation is classified as autonomous because people feel fully self-endorsing of the behavior, even if they do not enjoy it.

Thus, contemporary SDT asserts that some forms of extrinsic motivation can indeed be autonomous and “organismically integrated,” if the person identifies with them. For example, an employee may engage in a work behavior (such as assembling a computer) primarily to earn money or to not be punished by a supervisor (external motivation), primarily to avoid feeling guilty or to avoid being a bad worker (introjected motivation), or primarily because of a genuine identification with her role in the company, and a real concern for the customer’s need for a quality computer (identified motivation, which has been integrated into the person’s sense of self). In none of these examples would assembling a computer be intrinsically enjoyable, but in the third case, it is at least tolerable and even meaningful! Doubtless, the reader can think of many similar examples, both in his/her own work-life, and in the problems faced by managers in motivating their employees. Thus, an important question arises – what factors lead employees to feel a sense of identification with their work behaviors, especially when those behaviors are tedious or even aversive to perform?

Relevant to this question, an additional development within SDT in the late 1980s was the concept of internalization. Although the concept of internalization is not new within psychological theory (see, for example, Erikson, 1963, or Kelman, 1961), SDT has provided perhaps the most elaborated account of the process. Specifically, Deci and Ryan (1985a, 2000) posited that non-autonomous motivations can be transmuted into autonomous ones over time (i.e. internalization can occur). Furthermore, Deci and Ryan argued that this process tends

to take place automatically, as a result of the organismic integration process. That is, people are naturally motivated to move towards greater ownership of behavior.

To illustrate, an employee might be assigned the aversive job of maintaining a database, a task that requires much tedious attention to detail. Initially, the employee might feel quite controlled and resistant to the task. However, after a few weeks the employee might do the task because he would feel guilty for not doing it. Over time, hopefully, the employee will come to a better understanding of the value of the task for the organization, and even identify with its purpose and importance. Although the task may never reach intrinsic status, contemporary SDT views this as non-problematic, as long as it has been internalized enough to be undertaken autonomously. Of course, some employees might identify with a boring task immediately, whereas others may never come to own that task, or indeed, may be unable to take responsibility for performing any non-enjoyable behaviors. From the organismic integration perspective, the most "mature" person is one who has most fully internalized the doing of important, if unpleasant, duties (Erikson, 1963; Sheldon & Kasser, 2001).

While we are on the topic of the motivation continuum, it is noteworthy that some intrinsic motivation researchers have argued that even external motivation can have positive effects (Amabile, 1996; Lepper & Henderlong, 2000; Sansone & Smith, 2000). For example, external motivation might help a person to cope with more mundane or aversive aspects of the job (i.e. an artist with strong external motivation may better accomplish the important task of marketing his/her work). As another example, external motivation may get a person to do an activity long enough to begin to find intrinsic incentives it (i.e. a child who is forced to practice the piano may eventually develop enough skill to begin taking pleasure in playing). Sheldon and Deci (2000) agreed with these suggestions, but further suggested that external motivations are least likely to be problematic (i.e. are least likely to undermine the artist's creativity, or the child's potential interest) when they are internalized. In this case, although they would still be extrinsic motivations, they would no longer be considered external motivations, but instead, would have reached the status of identified motivations (see Fig. 1).

To summarize, SDT views motivation as ranging along a continuum from amotivation to intrinsic motivation, with higher "quality" motivation being that which is more self-determined. Furthermore, SDT proposes that individuals naturally tend toward internalization of external requirements. As will be discussed in more detail below, however, internalization depends upon both intrapersonal factors, such as the person's causality orientation, and contextual factors, such as supervisor autonomy support. Below we first consider causality orientations.

Causality Orientations Theory

Although SDT has historically focused on contextual factors that influence internalization of goals and subsequent outcomes, Deci and Ryan (1985b) have shown that individual differences in self-regulation also impact the internalization process. In their model, a person's "causality orientation" is the dispositional propensity to ascribe causality for his or her own behavior to internal factors, external factors, or neither (Deci & Ryan, 1985b). An autonomy-oriented person tends to locate causality inside the self, and seeks out situations in which he/she can freely choose what to do, on the basis of internal information and needs. Autonomy orientation is correlated with variables such as well-being, empathy, vitality, and ego development, and is also correlated with intrinsic and identified motivation (Sheldon & Kasser, 1995). In contrast, a control-oriented person tends to locate causality outside the self, and seeks out situations that clearly dictate what he or she should do. Control orientation is associated with variables such as Type A behavior, competitiveness and power seeking, and self-monitoring, and is also correlated with external and introjected motivation. Finally, an impersonally oriented person is one who feels little capability of making anything happen, regardless of the locus of causality. Impersonal orientation is associated with amotivation, depression, and pathology (Deci & Ryan, 1985b).

Causality orientation is different than locus of control, although as noted by Koestner and Zuckerman (1994), many people confuse locus of control with locus of causality. Locus of control is derived from a reinforcement theory framework, and refers to a person's beliefs about the extent to which his/her *outcomes* result from forces within the person (internal locus of control) or forces outside of the person (external locus of control; Rotter, 1966, Spector, 1982). In contrast, causality orientation is derived from a phenomenological analysis of the dynamics of felt agency (Deci & Ryan, 1991), and refers to a person's beliefs about the extent to which his/her *actions* are determined by external forces (control orientation) or by the self (autonomy orientation). In other words, locus of control refers to the determinants of outcomes, whereas locus of causality refers to the determinants of behavior. Although the concepts are different, there is also some overlap; thus, individuals with an external locus of control are more likely to have an impersonal or a controlled orientation than an autonomous orientation (Deci & Ryan, 1985b).

There has been somewhat less research on causality orientations theory than on the other mini-theories of SDT, and thus we provide minimal discussion of it here. We should note, however, that the causality orientations concept is consistent with other conceptions of intrinsically-versus extrinsically-oriented personality styles (Amabile, Hill, Hennessey & Tighe, 1994; Kasser & Ryan, 1996; Kernis, Paradise, Whitaker, Wheatman & Goldman, 2000).

Basic Needs Theory

What accounts for the well-being and performance differences found between those with relatively high degrees of autonomy orientation, control orientation, or impersonal orientation? This brings us to perhaps the most important element of contemporary SDT – the concept of psychological needs. Psychological needs have been widely discussed in the literature, and there are many different conceptualizations of needs (see Deci & Ryan, 2000 for a discussion of some of these). In SDT, needs specify “*innate psychological nutriments that are essential for ongoing psychological growth, integrity and well-being*” (Deci & Ryan, 2000, p. 229, italics in original). As articulated by Deci and Ryan (1991, 2000), the concept of innate psychological needs is fundamental to SDT, and is necessary to understand and make predictions about individuals’ motivation and behavior. More specifically, SDT argues that there are three universal and evolved human needs, which, when satisfied, lead a person to thrive in the same way that a plant thrives when it is given sun, soil, and water. The needs are: *autonomy* (to be self-regulating, to be the maker or at least the owner of one’s choices); *competence* (to be effective in what one does, mastering new skills in the process); and *relatedness* (to feel connected and in sympathy with at least some others).

In contemporary social/motivational psychology, competence and relatedness are relatively uncontroversial needs, given what is now known about the positive effects of self-efficacy, optimism, attachment security, and social inclusion (Bandura, 1997, Baumeister & Leary, 1995). As Deci and Ryan (2000) noted, however, empirical psychology has focused less on autonomy, in part because of confusion concerning its definition. In SDT autonomy is conceptualized as the experience of feeling that one’s behavior is self-chosen and endorsed. Autonomy is *not* total freedom to do whatever one wants, nor is it a complete lack of structure, nor is it social isolation, reactive independence, or western individualism – rather, it is felt volition. Stated differently, autonomy is conceptualized as the freedom to behave in accordance with one’s sense of self (Deci & Ryan, 2000).

Recent work attempting to confirm the importance of all three of these needs has found unique and additive effects for each, in terms of predicting positive performances and outcomes. Specifically, feelings of autonomy, competence, and relatedness are all part of “what makes for a good day” (Reis, Sheldon, Gable, Roscoe & Ryan, 2000; Sheldon, Ryan & Reis, 1996), “what’s satisfying about satisfying events” (Sheldon, Elliot, Kim & Kasser, 2001), “what makes a secure attachment secure” (LaGuardia, Ryan, Couchman & Deci, 2000), and “what makes personal goals truly personal” (Sheldon & Elliot, 1999).

Readers might ask: “How does SDT’s need-theory differ from Maslow’s theory of needs?” which of course received much attention in management

research twenty to twenty-five years ago (Ambrose & Kulik, 1999). There are several differences, the most important one being that SDT does not assume any hierarchical relation among the three needs. Instead, everybody “needs” all three kinds of experiences, to an approximately equal extent, all the time. Thus, SDT does not assume strong individual, cultural, or developmental differences in the needs, although their means of being satisfied and expressed may certainly differ between individuals, cultures, or ages. Work thus far supports these assumptions. For example, in the domain of cross-cultural psychology, Sheldon, Ryan, Elliot, Kim, Chirkov, Demir and Wu (2002) recently found that having autonomous motivation for one’s personal goal-pursuits (i.e. to be “self-concordant”; Sheldon, 2002) predicts positive well-being in Turkey, Russia, Taiwan, China, and South Korea, as well as in the U.S. In the domain of developmental psychology, Sheldon and Kasser (2001) recently showed that goal-autonomy predicts well-being in people of all ages. Interestingly, Sheldon and Kasser (2001) also showed that older people were more autonomous in their goals. That is, consistent with organismic integration theory, people tend to better internalize their own strivings over time.

Given the importance of need satisfaction for SDT, an important question is: “what characteristics of social, academic and work environments best support psychological need-satisfaction?” In accordance with basic needs theory, three factors are theorized to result in need satisfaction: relationship support, competence support, and autonomy support. In other words, a boss, coach, parent, or teacher who is trying to motivate an individual should try to help that person to feel *competent* in the behavior by expressing confidence in the person’s abilities, providing encouragement, and providing appropriate material and task support; should help the person feel *related* to the motivator, by evidencing genuine concern for his/her thoughts and feelings and by empathizing; and should help the person feel *autonomous* in the behavior, by helping him or her to endorse and “own” the task, even if he/she does not enjoy it. Because it is most controversial, most prior SDT research has focused on the characteristics and effects of autonomy-support. Thus we consider autonomy-support in greater detail below, and also later in the chapter.

As demonstrated by Deci, Eghrari, Patrick and Leone (1994), autonomy support has at least three components: taking the person’s perspective upon the situation, giving as much choice as possible, and providing a meaningful rationale when choice-provision is not possible. Specifically, Deci et al. (1994) showed that when all three factors were present, people were most likely to spontaneously continue doing the boring task of pressing a spacebar whenever a light appeared, after the task’s formal completion. To take a work-related example: a supervisor might need an employee to check spreadsheets for accuracy of data entered. Although the employee does not have a choice about whether or not to do it, the supervisor can

give the employee some choice about *how* to do it, *when* to do it, and perhaps with *whom* to do it. In addition, the supervisor can be sympathetic to the subordinate's perspective ("I know this may not always seem like fun, because I can remember having to do this myself"), and explain why it is so important ("If the data aren't accurate then the analyses will be wrong, which will damage the company"). In this case the employee is most likely to "own" the task, so that he/she might even work on it over the weekend without being asked, if the company needs it.

Considerable evidence, much of it from educational contexts, indicates that such autonomy-support helps maintain and enhance intrinsic motivation, and also helps to promote quicker and deeper internalization of formerly extrinsically-motivated behaviors (Ryan & Stiller, 1991). Focusing on work settings, Hackman and Oldham (1976) argued that workers would experience more internal work motivation when the job provided greater autonomy. Indeed, a meta-analysis of studies investigating Hackman and Oldham's job characteristics model found a corrected correlation of 0.42 between jobs providing autonomy and internal work motivation (Fried & Ferris, 1987). In addition, some studies applying self-determination theory in work contexts have also found that autonomy support is important in such contexts (Deci, Connell & Ryan, 1989; Deci, Ryan, Gagne, Leone, Usunov & Kornazheva, 2001; Hackman & Oldham, 1976). We will consider such work in more detail in the final section.

Bringing the Four Mini-Theories Together: An Integrated Process Model

We have now discussed the four mini-theories that comprise the current state of SDT and have touched upon some of the research that has investigated SDT (see Deci & Ryan, 2000; Ryan & Deci, 2000). Figure 2 provides a summary causal model of how the various pieces of SDT currently fit together. As shown in the model, both contextual factors and personality factors are theorized to influence the extent to which individuals internalize goals and tasks. More specifically,

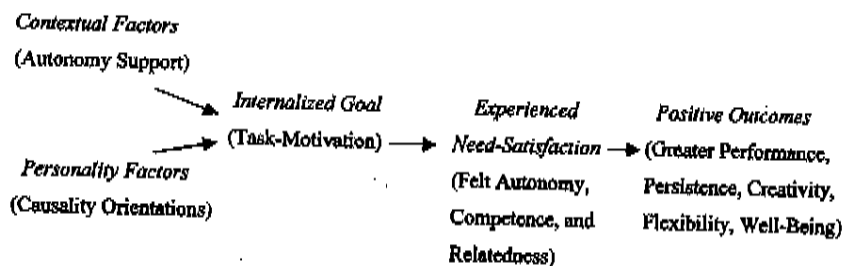


Fig. 2. SDT's General Casual-Process Model.

individuals who receive greater autonomy support from the environmental context are theorized to be more likely to internalize goals and tasks. Similarly, individuals with an autonomous personality style are more likely to have internalized motivation when performing a goal or task. As a result of the internalized motivation, individuals are likely to derive positive momentary feelings of autonomy, competence, and relatedness from doing the task. Such feelings satisfy the organism and give access to full cognitive and motivational resources, thus leading to a variety of positive outcomes, including performance, creativity, and psychological well-being. Much recent work supports this general ordering of factors and processes, in the domains of medicine, sports, parenting, education, politics, religion, and intimate relationships, although there are sometimes direct effects in addition to the mediated effects depicted in Fig. 2.

It is also worth mentioning that empirical evidence does *not* support the proposition that control-oriented participants, who report a stronger preference for structure and direction, benefit from being in treated in controlling ways. In terms of Fig. 2, causality orientations do not interact with autonomy-supportive versus controlling environmental characteristics to predict outcomes. Rather, the evidence indicates that although control-oriented employees may in some ways feel more comfortable being treated as a "pawn" (DeCharms, 1968), even they benefit if they are instead treated as self-creating, self-responsible agents. Stated more broadly, the evidence indicates that all individuals benefit when they are allowed to fulfill their universal need for autonomy, as proposed by SDT (Deci & Ryan, 2000; Sheldon, Joiner & Williams, 2003).

This concludes our brief overview of contemporary SDT (for further information, readers also may consult the SDT website, <http://www.psych.rochester.edu/SDT>, where they may also gain access to measures often used in SDT research). A question that readers may have at this point is, "how does SDT explicitly differ from the motivation theories that are often used to study behavior in organizations?" Although a full answer to this question is beyond the scope of this chapter (see Deci & Ryan, 2000, for one view), it is worth noting that we see important differences among expectancy, goal, self-efficacy theories (as the dominant motivational theories in organizational research), and SDT. Perhaps most important are differences in focus and scope that allow SDT to complement the prevailing theories in organizational research.

Expectancy, self-efficacy, and goal theories generally focus on understanding and predicting rational, deliberate behaviors (Mitchell & Daniels, 2002). For example, research suggests that expectancy theory is essentially a hedonic decision-making theory that best predicts choice examined from a within-subject perspective (e.g. predicting which choice from a set of options a person will select; Van Erde & Thierry, 1996). Thus, expectancy theory, and perhaps by extension

the other theories, may be most useful for understanding and predicting specific choices that follow deliberate reflection. In contrast, SDT may be best suited for predicting and understanding what Mitchell and Daniels (2002) refer to as “not rational” behavior; that is, behaviors that derive from “who people are (including traits and dispositions) and what they feel and need, rather than on what they think and believe” (p. 236). The study of such behavior is essential not only because of its prevalence, but also because the research offers a window to understanding more than just specific choices. SDT provides a framework to examine broad-based psychological outcomes in organizations, such as commitment, satisfaction, and well-being.

With this said, we also believe that SDT is difficult to categorize using the Mitchell and Daniels (2002) framework because, in its current state of theoretical development (i.e. Fig. 2), it describes connections among dispositions, beliefs, needs, feelings, and actions. Thus, its scope is broad enough to cross the boundary of “rational” and “not rational” theory. The model offered by SDT integrates disposition and situational influences on need satisfaction, and links need satisfaction to affect (e.g., satisfaction) and behavior (e.g. learning and performance).

APPLICATIONS IN ORGANIZATIONAL RESEARCH

The remainder of the chapter will demonstrate the breadth of SDT by applying it to various issues and domains within organizational research. Specifically, we apply SDT to the following, notably quite different, organizational phenomena: transformational leadership, goal commitment, training motivation, and high-performance human resource practices. Our intent in discussing such a wide range of organizational phenomena is to demonstrate the potentially far-reaching applicability of SDT and thereby, hopefully, to stimulate additional theorizing and research in other domains. As we discuss the organizational phenomena, we will attempt to apply three key SDT concepts: (1) the *internalization continuum*, as we consider causes and outcomes of peoples' ability to “own” their work-tasks; (2) *autonomy supportive contexts*, as we consider what managerial styles and behaviors best help people to become more self-directing in their lives; and (3) *need satisfaction*, as we consider what kinds of work environments and reward structures lead to maximal satisfaction, performance, and thriving.

Transformational Leadership

In the past two decades, more research has been conducted on transformational or charismatic leadership than on all of the other major theories of leadership

combined (e.g., LPC, path-goal, situational leadership, and normative decision theories).³ This research has produced impressive evidence regarding the positive effects of transformational leadership upon measured outcomes such as follower perceptions of leader effectiveness, follower job attitudes, and objective leader performance (Lowe, Kroeck & Sivasubramaniam, 1996). Despite this extensive body of research and clear empirical pattern, there is a poor understanding of the *processes* by which transformational leaders are effective (Bass, 1999). In short, how do transformational leaders achieve their often-remarkable results?

We suggest that SDT may provide an important part of the explanation, helping to inform both the leadership and job attitudes literatures. Using Fig. 2, we suggest that transformational leadership is a *contextual* factor that helps followers to develop more *internalized work-motivation*, which in turn leads to *greater need-satisfaction and job performance*.

There are several ways that transformational leaders may help their followers to internalize work tasks. First, because transformational leaders *appeal to values* and describe work in value-based terms, they increase the likelihood that followers will come to identify with the values the leader espouses. Indeed, transformational leaders are particularly adept at framing goals in terms of values and needs that are attractive to both leaders and followers (Burns, 1978), facilitating followers' internalization of those goals. Thus they resolve the paradox inherent in the leader-follower relationship (Deci & Ryan, 1985a), enabling people to feel free even as they are directed by a leader or authority.

A second way that transformational leaders likely promote internalization is by *providing vision*. "Vision," a concept common to all major theories of transformational and charismatic leadership (House & Shamir, 1993), provides both a goal and a justification for the goal. In short, an effective vision is an abstract, distal goal (an "end state"; Gardner & Avolio, 1998, p. 39), accompanied by a justification in value-based terms (Kirkpatrick & Locke, 1996). Transformational leaders' goals and goal-justifications tend to be universalistic in orientation (Kirkpatrick, Locke & Latham, 1996), tend to appeal to followers' collective identities (Shamir, House & Arthur, 1993), and tend to be "ideological rather than pragmatic" and "laden with moral overtones" (House & Shamir, 1993, p. 97). According to SDT, these characteristics give the vision special appeal, because of peoples' inherent desire to achieve integration and forge new connections in their lives. Here, we see that SDT's organismic theory emphasis on the growth impulse can provide conceptual tools not offered by conventional utility and expectancy theories.

A third way that transformational leadership promotes internalization is by encouraging individuals to pursue *higher-order potentials*, incentives that transcend purely economic self-interest (Bass, 1985). In other words, whereas transactional leaders emphasize the rational exchange of extrinsic rewards,

transformational leaders instead emphasize the search for meaning, excellence, and self-expression. In the language of SDT, followers of transformational leaders are thus less likely to fall prey to external or "controlled" motivations, and less likely to have their intrinsic motivation eroded or undermined over time. Instead, followers of transformational leaders tend to become ever more "self-directing and self-reinforcing. They take on greater responsibilities" (Bass, 1985, p. 16).

What are the specific benefits of the internalized motivation promoted by transformational leaders? Moving downstream in Fig. 2, the most immediate benefit of internalized work-motivation is that it leads to psychological need-satisfaction. As Conger and Kanungo (1998, p. 157) note, charismatic leaders formulate "a set of idealized, future goals that represent the embodiment of a perspective shared by followers and that appear to satisfy their needs." For example, participants in Bass' (1985, p. 210) studies reported that their leader "increases my optimism for the future," "excites us," "makes me proud," "makes me feel good," and "makes everyone around him/her enthusiastic." Similarly, Conger and Kanungo (1998) found that leader charisma was positively related to follower task efficacy ($r = 0.35, p < 0.001$) and feelings of empowerment ($r = 0.31, p < 0.001$).

Given that past research has shown that transformational leadership is associated with follower satisfaction and performance, and having linked transformational leadership to self-determination here, we can complete this proposed mediated relationship by linking self-determination to satisfaction and performance. Fortunately, research suggests that perceptions of self-determination are indeed positively associated with satisfaction with work (Spreitzer, Kizilos & Nason, 1997) and task performance (Eisenberger, Rhoades & Cameron, 1999b). More recently, Bono and Judge (in press) found mixed support for a model linking transformational leadership to follower goal self-concordance and goal self-concordance to follower performance.

Again, Fig. 2 suggests that transformational leaders satisfy follower needs primarily via promoting autonomous or internalized motivation in their followers. However, we propose here that exceptional leaders may affect need-satisfaction in other ways besides that depicted in Fig. 2, ways not yet recognized by SDT. For example, peoples' sense of camaraderie and shared purpose, derived from the vision of the transformational leader, may create a positive climate that promotes relatedness need-satisfaction independently of workers' positive motivation for their own specific work tasks. Indeed, it appears that vision and teambuilding are positively linked (Anderson & West, 1996). As another example, Pillai, Schriesheim and Williams (1999) found support for the mediating role of justice perceptions between transformational leadership and worker job-satisfaction. Fleshing out such paths represents one potentially important way that organizational research can help expand and improve upon SDT.

To formalize and summarize, we offer the following proposition, which we hope will generate new research:

Proposition 1. Transformational leaders promote follower satisfaction and performance by helping followers to internalize work-related goals and motivations.

Goal Commitment

Goals are a central concept in work motivation research (Austin & Vancouver, 1996; Locke & Latham, 1999). For example, Locke and Latham's goal setting theory proposes that specific and difficult goals lead to greater effort and performance, especially when individuals are committed to the goal. A recent meta-analysis supported both this main effect and this interaction effect – difficult goals led to greater performance than less difficult goals, and goal commitment moderated that relationship such that the highest performance resulted when individuals were highly committed to difficult goals (Klein, Wesson, Hollenbeck & Alge, 1999; although see also Donovan & Radosevich, 1998). Obviously, then, goal commitment is a very important construct for goal-setting theory (Klein et al., 1999; Locke & Latham, 1999). But what is the best way to conceptualize and predict it?

Current models of goal commitment use an expectancy framework, such that the expectancy of goal attainment and the attractiveness of goal attainment are theorized to be the primary determinants of goal commitment (Hollenbeck & Klein, 1987; Klein et al., 1999). Results from a recent meta-analysis (Klein et al., 1999) supported this, showing that the expectancy and the attractiveness of goals strongly predicted goal commitment, with corrected correlations of 0.36 and 0.29, respectively. However, scholars have noted that considerably more research is needed to investigate the nature of goal commitment, as people sometimes become committed to goals despite low expectancy and/or low apparent attractiveness, and sometimes fail to commit to goals which *do* meet these criteria (Klein et al., 1999; Klein, Wesson, Hollenbeck, Wright and DeShon, 2001).

We believe that SDT can provide new insight into the antecedents to goal commitment, while also illuminating the nature of deeper, enduring commitment (as opposed to superficial, temporary commitment). Recall that SDT proposes a continuum of reasons for engaging in behavior, ranging from non-internalized (i.e. controlled) reasons to internalized (i.e. autonomous) reasons (see Fig. 1). Considerable evidence now indicates that individuals exert more enduring effort toward, and better attain, personal goals that are more internalized (Sheldon &

Elliot, 1998, 1999; Sheldon & Kasser, 1995, 1998, 2001), similar to evidence from goal setting theory that goal commitment is positively related to performance (Klein et al., 1999).

There is an important difference in these literatures, however. Although organizational goal-setting researchers have tended to assume that individuals are automatically committed to self-set goals (Klein et al., 1999), Sheldon and colleagues have found variability in the extent to which individuals internalize self-set personal goals (Sheldon & Elliot, 1998, 1999; Sheldon & Houser-Marko, 2001; Sheldon & Kasser, 1998). For example, Sheldon and his colleagues asked subjects to list goals they were pursuing and found that some individuals reported pursuing self-set personal goals for non-autonomous reasons (i.e. because they felt others wanted them to), indicating that not all self-set goals are felt as autonomous. In other words, just because self-set goals are *nominally* self-determined does not mean that they feel *phenomenologically* self-determined. As noted earlier in the section on the organismic integration sub-theory of SDT, people do not necessarily feel full ownership of their motivated behavior.

This reasoning suggests that commitment to self-set goals is affected not only by attractiveness and value, but also by the extent the person feels internally motivated to pursue the goal. Simply put, individuals who felt that they freely chose a goal would be more committed to the goal than individuals who felt that they chose a goal because of external pressures. Interestingly, results from a recent meta-analysis of the organizational literature indicated that one of the strongest antecedents of goal commitment was felt volition (Klein et al., 1999); the corrected correlation was 0.40, which is somewhat stronger than the corrected correlations found for expectancy and attractiveness.

The above reasoning suggests that one way to improve the prediction of positive outcomes would be to measure peoples' degree of internalization of goals, in addition to their degree of commitment to such goals. Demonstrating the added value of conducting such an assessment, Sheldon and Elliot (1998, 1999) and Sheldon and Kasser (1998) showed that measured internalization predicted positive downstream effects above and beyond the effects of alternative motivational constructs, including expectancy, commitment, and implementation intentions. In other words, people who strive for autonomous reasons gain motivational resources that cannot be accounted for by conventional utility, expectancy, and plan theories.

To formalize and summarize the above, we offer the following proposition:

Proposition 2. Not all self-set goals feel autonomously chosen. The degree of goal-internalization will predict goal-commitment above and beyond the predictive effects of expectancy and attractiveness.

Training Motivation

Motivation in the training and development literature is often captured with the construct *motivation to learn*, which has been found to predict employees' learning from training and development opportunities (for a meta-analytic review, see Colquitt, LePine & Noe, 2000). As defined by Hicks and Klimoski (1987) and (Noe, 1986; Noe & Schmitt, 1986), motivation to learn is an employee's desire to learn the content of a particular program. Conceptually, the motivation to learn construct has been rooted in expectancy theory. That is, employees' motivation to learn has been theorized to be largely determined by their assessments of the usefulness of mastering training content for obtaining valued outcomes at work (Mathieu, Tannenbaum & Salas, 1992; Noe, 1986; Tharenou, 2001). Although this perspective has been useful for empirically validating the role of motivation in learning, it has also limited the motivational research questions posed by training researchers. More specifically, the emphasis on a single, aggregate assessment of motivation does not fully capture the nature of learners' *personal goals* (i.e. variety of goals they hope to accomplish and, perhaps more importantly with regard to internalization, why), nor does it lend itself to detailed study of instructor and manager behaviors that may influence these goals. Each issue is addressed by SDT, although to date SDT has been neglected in training and development research. In fact, reviews of the training motivation literature suggest a total absence of research on the internalization of learners' goals and on the influence that instructors and managers have on learners' needs satisfaction (Colquitt et al., 2000; Mathieu & Martineau, 1997; Noe, Wilk, Mullen & Wanek, 1997). Each of these issues is explored below along with propositions derived from SDT.

Learner's Internalized Goals

Research on motivation to learn typically focuses on the content of training as the determinant of motivation. Thus, measures of motivation to learn contain statements like "I have a strong desire to learn the content of this program" (e.g. Noe & Schmitt, 1986). Such an approach does not acknowledge that employees come to a learning experience with goals that may only overlap partially with program content (such as having a goal to learn a small portion of the training content) and may not deal with training content at all (such as having a goal to impress colleagues and/or the instructor). Although there are emerging streams of organizational research on goals and learning that begin to address such phenomena (e.g. Brett & VandeWalle, 1999; Ford, Smith, Weissbein, Gully & Salas, 1998; Kozlowski, Gully, Brown, Salas, Smith & Nason, 2001), we found no organizational research that has investigated the degree to which learners have *internalized* different types goals related to training. Educational research, however, clearly

suggests that higher quality learning occurs when learners experience internalized motivation (Rigby, Deci, Patrick & Ryan, 1992). More recent educational research directly demonstrates the learning benefit of having internalized reasons for being in a course (Black & Deci, 2000). Thus, SDT theory and research suggest the following:

Proposition 3. Employees with internalized goals for learning training content will exert greater effort toward learning and learn more from training than trainees without such internalized goals.

Instructor Effects on Learners

Research examining motivation in training seldom examines what learners actually do and experience in the training environment (Brown, 2001), and thus it may overlook important motivational phenomena that occur after training begins. Motivation measures are typically administered once, either before (e.g. Quiñones, 1995) or after (e.g. Hicks & Klimoski, 1987) training. Such an approach does not allow for an examination of how the training experience may alter learners' goals and motivational states. For example, a trainee who starts out with high motivation to learn may quickly lose it. Alternatively, a trainee with low initial motivation may become inspired to learn by a talented or creative teacher. We will focus on the latter effect below because the field knows the least about how trainers inspire others to learn (Towler & Dipboye, 2001).

First, let us consider several possible explanations for this "inspiration" effect from other motivation theories. Expectancy theory suggests that motivation-enhancing teachers succeed by illuminating the connections between training content and valued job outcomes. In other words, they show trainees how learning the training material will help them perform more effectively on the job. Instructional design models that focus on gaining and keeping learner attention often suggest this approach (e.g. Gagné, Briggs & Wager, 1992). Self-efficacy theory suggests that motivation-enhancing teachers succeed by raising learner self-efficacy, perhaps by convincing trainees verbally of their own competence, or perhaps more concretely by providing opportunities to succeed early in training (Gist & Mitchell, 1992; Kozlowski, Toney, Mullins, Weissbein, Brown & Bell, 2001).

In contrast, SDT begins by focusing on learners' felt autonomy in doing a task, that is, the extent they feel an internal perceived locus of causality for their own behavior. According to Fig. 2, trainers who support learners' autonomy enhance trainees' intrinsic and/or identified motivation to learn (i.e. their autonomous work-motivation), thereby helping fulfill trainees psychological needs. As a result, trainees better learn and retain the material. Indeed, the importance of teacher autonomy-support has been confirmed by research on teacher behavior

in educational settings (see Ryan & Stiller, 1991; Sheldon & Biddle, 1998, for reviews). Research suggests that autonomy supportive teachers listen carefully to learners, allow them to learn in their own way, and continually work to engage learners' interest (Reeve, Bolt & Cai, 1999).

The extent to which such behaviors describe trainers in corporate settings is an open one, in large part because the focus of organizational research has been on learner characteristics and work environment characteristics, rather than on trainer characteristics and behaviors. As suggested by Towler and Dipboye (2001), however, training effectiveness could be much improved by giving greater attention to characteristics and behaviors of trainers. SDT provides a promising framework for conducting such research. Notably, although the research reviewed above focuses on autonomy need-satisfaction, similar positive effects should be expected for satisfying competence and affiliation needs. Needs satisfaction may help to explain the positive results found for certain training programs, such as self-management (Frayne & Geringer, 2000, which may affect competence need-satisfaction) and team training (Salas & Cannon-Bowers, 1997, which may affect relatedness need-satisfaction). Thus, we suggest that the SDT model not only offers new research directions, it also can help to organize what is already known.

Manager Effects on Learners

In addition to shedding light on the nature of effective trainers, SDT can also help illuminate the construct of *managerial support* for training and development. Organizational research often suggests that managerial support for learning predicts employees' motivation for and participation in learning experiences (Baldwin & Magjuka, 1997; Fecteau, Dobbins, Russell, Ladd & Kudisch, 1995). And indeed, management support for learning, as rated by subordinates, has been found to be an important predictor of participation in developmental experiences (Birdi, Allan & Warr, 1997; Noe & Wilk, 1993; Tharenou, 2001). Unfortunately, the specific process by which managers promote (or fail to promote) learning by their employees have been little studied. Again, SDT suggests that such managers succeed by supporting their employees' autonomy needs, thus helping employees to develop and pursue internalized goals related to learning and personal growth.

In sum, SDT offers a perspective seldom employed by training and development research, which has been dominated by the motivation to learn construct and expectancy and self-efficacy theories. In particular, the theory suggests ways of understanding what characteristics of learners, trainers, and managers promote motivation to learn. To formalize the latter issue, the following proposition is offered:

Proposition 4. Employees with managers and trainers who support their autonomy needs will be more motivated to participate in and learn from training experiences.

The Strategic Management of People

Emerging evidence reveals that firm performance is strongly influenced by the nature of its human resource (HR) practices and policies. For example, three recent studies (Delery & Doty, 1996; Huselid, 1995; Huselid, Jackson & Schuler, 1997) found that a one standard deviation increase in a broad array of positive HR practices was associated with higher profits (return on assets) of 23, 23, and 16%, respectively. Such research demonstrates that firms can gain competitive advantage through their human capital and that the firm's HR practices have a direct influence on human capital. As noted by Delery and Shaw (2001), however, little research has examined the *processes* through which HR practices influence firm performance.

Although SDT has been applied predominantly to intra- and interpersonal contexts, we believe it may provide an important theoretical explanation for this important *organization-level* phenomenon, namely, the relationship between certain "high-performance" HR practices and firm performance. More specifically, we propose that some high-performance HR practices provide employees with enough autonomy and self-control that they can internalize the firm's values and objectives while completing their tasks. Thus, their work-motivation becomes characterized by strivings to fulfill personal convictions (identified motivation) and/or by strivings to pursue interesting and enjoyable lines of work (intrinsic motivation). In terms of Fig. 2, HR practices may constitute a super-ordinate contextual factor that influences the extent to which employees internalize the tasks they are assigned, thus influencing employee need-satisfaction and firm performance.

Of course, the positive motivational effect of HR practices upon internalized work motivation is not sufficient to explain *all* of the relationship between the firm's HR practices and its performance - obviously, employees' knowledge, skills, and abilities (KSAs) are an important determinant of the value the work force adds to the firm (MacDuffie, 1995). However, we suggest that having a high KSA work force will not necessarily lead to competitive advantage if that work force feels "controlled," or if it is not granted sufficient autonomy to choose how and in what manner to accomplish the work. In other words, motivating employees to really *use* their abilities, and empowering them to help design their own jobs, may be critical to the accomplishment of organizational goals. Consistent with this reasoning, Delery and Shaw (2001) argued that positive HR practices influence

firm performance in part by influencing felt empowerment and motivation in the company work force.

In addition to their indirect effect via internalized work-motivation (see Fig. 2), we suggest that high-performance HR practices can also influence employee need-satisfaction directly. To illustrate, we consider Pfeffer's (1998) list of high-performance work practices that can give firms a competitive advantage: selective hiring, self-managed teams and decentralization of decision-making, extensive training, compensation contingent upon organizational performance, reduced status distinctions, and extensive sharing of financial and performance information. From the SDT perspective, firms that utilize more selective hiring and extensive training should have employees who better fit with the firm and have more organizationally relevant knowledge; such employees are thus more likely to have their competence needs satisfied. De-emphasized status differentials and the use of teams should encourage employees to feel relatedness with other employees in the firm. The use of self-managed teams, decentralized decision-making, and extensive sharing of financial and performance information should help support employees' feelings of autonomy. Taken together, then, this set of HR practices should provide a context that allows employees to satisfy all of their psychological needs, which in turn leads to greater effort and persistence at work, enabling the firm to obtain higher individual and organizational performance.

To consider the issues more concretely, we focus below on one HR practice, compensation. Compensation policies have been shown to have a significant effect on firm performance (Gerhart & Milkovich, 1990). However, there is a bit of a paradox here: classic SDT points out the potential motivation-undermining effects of extrinsic rewards. Furthermore, some contemporary SDT research into terminal values indicates that placing greater relative importance upon money negatively predicts subjective well-being (Kasser & Ryan, 1993, 1996). Does this mean that compensation issues are bound to undermine and subvert individual, team, and corporate morale?

Not necessarily. It appears that *why* money is valued and pursued makes a difference. For example, Srivastava, Locke and Bartol (2001) showed that the effect of financial motivation depends on the person's motives for making money. Financial motives involving insecurity, status-seeking, and failure-avoidance were associated with negative well-being, whereas financial motives involving *meaning* (supporting a family, gaining a sense of justice, or contributing to a group effort) were positively related to subjective well-being. From an HR perspective, this suggests that company policies that promote meaning, morality, and/or team-cohesion (i.e. compensation based on organization performance) will help defuse the potentially divisive effects of compensation differences between employees.

Although the above example focuses on the role of HR practices for promoting acceptance of a firm's compensation policies, there are many other issues besides compensation that could be more thoroughly examined, such as self-managed teams and decentralization of decision making and reduced status differentials, to name a few. In general, we postulate that firm performance will be maximized when *every* HR practice contributes to internalized work-motivation and employee need-satisfaction, or when HR practices are "internally consistent" with each other (Delery & Shaw, 2001). Such consistency in practices should lead employees to see themselves and their colleagues as owners of their tasks and duties, thus taking full responsibility for the results. To formalize and summarize, we offer the following proposition:

Proposition 5. High performance HR practices result in greater firm performance because such practices promote greater employee internalization of work tasks, thereby promoting employee need-satisfaction.

DISCUSSION

The purpose of this chapter has been to explicate contemporary self-determination theory (SDT), and show how it might be applied to substantive research domains within organizational behavior and human resource management. Research on SDT has increased rapidly over the last decade, and the theory is now quite sophisticated and well supported. As we have argued here, SDT provides an alternative, yet complementary, approach to the dominant motivation theories in the management literature, because of its somewhat different assumptions about human nature. In this concluding section we will briefly reiterate the key propositions of SDT, describe the few existing studies that have specifically applied SDT in work domains, and then briefly consider the limitations, boundary conditions, and opportunities of the theory.

Again, SDT is an organismic theory of human motivation, which assumes people have an inherent need to grow and develop, although both contextual and interpersonal factors can inhibit that inherent need. A key aspect of SDT is the internalization process, by which people come to identify with and "own" less-than-enjoyable tasks. As shown in Fig. 2, both contextual and personal factors are theorized to influence the internalization of such tasks, which subsequently results in greater satisfaction of the three innate psychological needs of autonomy, competence, and relatedness, which positively impacts outcomes such as persistence, well-being, creativity, and performance. Although this general model has been well supported in the domains of health, educational, and social

psychology, there is as yet limited empirical support for it in work domains. In the following section, we summarize the empirical organizational research that does support the various components of the model described in Fig. 2. Including in this brief review are suggestions for future research that may serve to refine the application of SDT to the study of work-related phenomena.

Existing Organizational Research and Theory Refinement

Again, contextual autonomy-support is an important “front end” factor within Fig. 2, that helps to determine whether individuals take ownership of externally requested tasks and goals. Deci et al. (1989) investigated the extent to which managers’ self-reported autonomy-support of employees (measured as “encouraging employee choice, providing non-controlling feedback, and acknowledging employees’ perspective”) was related to employees’ job attitudes. Although the sample size was quite small ($N = 23$ managers, where the unit of analysis was the 23 teams), managers’ support for self-determination was indeed positively related to subordinates’ felt autonomy and satisfaction. Future research in this area could go even “further back” in the Fig. 2 model, to investigate which higher-order contextual factors influence whether managers are autonomy-supportive of employees (i.e. whether the company administration is autonomy-supportive of managers themselves, or whether the organizational culture supports managerial initiative). Future research might also investigate the efficacy of interventions designed to *increase* managers’ willingness and ability to support employee autonomy.

Also at the front end of Fig. 2, personality may influence peoples’ internalization of goals and tasks. As discussed in the first part of this chapter, Deci and Ryan (1985b) have focused primarily on the personality factor of “causality orientations.” However, it seems likely that other stable individual difference variables besides causality orientation influence the extent to which individuals internalize extrinsic tasks in the work place. For example, one might suspect that individuals who are more *proactive* (Bateman & Crant, 1993; Crant, 2000) better internalize work tasks, perhaps through the process of “job-crafting” (Wizesniewski & Dutton, 2001; discussed further below). This remains for future research to test.

The Five Factor Model of personality provides yet another way of considering the role of individual differences in optimal worker performance. Indeed, organizational research has shown that the several of the Big Five traits influence work-performance (Barrick, Mount & Judge, 2001) and overall job-satisfaction (Judge & Ilies, 2002). But how does this occur? In terms of Fig. 2, we suggest that certain traits can provide paths to need-satisfaction that bypass internalized work

motivation altogether. For example, extraversion (sociable, assertive, dominant) and agreeableness (cooperative, trusting, kind) may influence relatedness need satisfaction by promoting positive relations with others. Conscientiousness (dependable, responsible, persistent) and emotional stability (confident, relaxed, secure) may influence competence need satisfaction by promoting disciplined effort. Openness to experience (imaginative, cultured, creative) may influence autonomy need-satisfaction by promoting search for new choices and opportunities. Notably, the linkage between personality trait variables and dynamic motivational variables has received little empirical attention to date within *any* literature (but see Sheldon, Ryan, Rawsthorne & Ilardi, 1997). We suggest that organizational research could help with the important theoretical goal of linking trait and motive constructs (McAdams, 1996), thus expanding the range of personality variables considered within SDT research while at the same time adducing new understanding of work motivation and performance.

Another important proposition of SDT, as shown in at the “back end” of Fig. 2, is that satisfaction of the three innate needs results in greater job satisfaction and performance (Deci et al., 2001; Ilardi, Leone, Kasser & Ryan, 1993). Some organizational research supports this, for example, Ilardi et al. (1993) studied workers in a shoe factory and showed that employees’ feelings of autonomy, competence, and relatedness were related to employee satisfaction and psychological health. Similarly, Deci et al. (2001) studied workers in Bulgaria and the U.S. and found that greater need satisfaction was associated with greater task engagement, self-esteem, and reduced anxiety (although the strength of the relationships varied somewhat across the two countries; notably, this study also found support for the front end of the Fig. 2 model, as the most satisfied workers in both Bulgaria and America were ones who felt that their managers supported their autonomy). Future research should seek to establish which performance outcomes are most affected by which types of need-satisfaction, and also try to uncover situations and jobs in which autonomy, competence, and/or relatedness need-satisfaction may be especially important. Again, such research would provide contributions to both SDT and research on job performance.

Turning away from Fig. 2, we suggest SDT may also provide some insight into some more complex constructs and processes currently being studied by organizational researchers. For example, Wrzesniewski and Dutton (2001, p. 179) presented a model of job crafting, defined as “the physical and cognitive changes individuals make in the task or relational boundaries of their work” that included antecedents, outcomes, and moderators of the job crafting process. Of particular relevance for our chapter, Wrzesniewski and Dutton (2001) argued that people craft their jobs in order to assert some control over their jobs, to create a positive self-image for themselves at work, and to connect with others. Perhaps not

research. Many motivation theories have been brought to bear on these questions, including expectancy theory (Van Erde & Thierry, 1996; Vroom, 1964), goal setting theory (Locke & Latham, 1999), and self-efficacy theory (Bandura, 1997; Stajkovic & Luthans, 1998). Reviews of motivational research on organizationally relevant dependent variables such as job performance and training outcomes suggest the continued dominance of these theories (Locke, 2000; Mathieu & Martineau, 1997), despite the much broader array of motivation theories available within the psychological literature (Higgins & Kruglanski, 2000).

One such theory, which has had a substantial influence on research in domains such as health, education, and social psychology, is Self-Determination Theory (SDT). Recent commentators state that SDT is "an impressive accomplishment" (Pyszczynski, Greenberg & Solomon, 2000, p. 301), provides "new impetus to research on human motivation" (Coleman, 2000, p. 291), and may be "the most ambitious contribution to what some have termed the rebirth of motivational research" (Hennessey, 2000, p. 293). However, organizational scholars have been relatively slow to apply the theory, perhaps because of a lack of understanding of SDT's current formulation.¹ Thus, the purpose of this chapter is to describe new developments within SDT, and to show how the theory might be applied to some enduring research themes with organizational research.

SDT is grounded in the organismic perspective of human nature and motivation (Angyal, 1941; Goldstein, 1939; Rogers, 1961; Werner, 1957). The organismic perspective is a long-standing one within psychology, philosophy, and theoretical biology. It can walk a line between general systems and cognitive-developmental approaches, on the one hand, and humanistic and existential approaches, on the other. Organismic perspectives assume that humans are inherently motivated to develop their interests and skills, to connect and contribute to other people, and to move towards their fullest potential; in other words, the energy and impulse to grow and develop are innate. However, this perspective also asserts that the growth impulse is easily derailed or distorted, if environments or people's own inner processes do not support it. Thus, much of the empirical and experimental work in SDT has focused on delineating what characteristics of intrapersonal, social and task environments enhance or detract from the desire to grow and develop, and thus enhance or detract from positive outcomes such as persistence, creativity, flexibility, well-being, and happiness.²

Ryan and Deci (2001) noted that organismic motivation theories make somewhat different assumptions about human nature than do traditional hedonic motivation theories (such as expectancy theories and utility theories). Although a full discussion of such differences is beyond the scope of this chapter (see Ryan & Deci, 2001), hedonic theories generally assume that individuals are motivated

surprisingly, these objectives seem quite similar to the three posited SDT needs of autonomy, competence, and relatedness, although Wrzesniewski and Dutton (2001) do not discuss SDT in their article. Clearly, further research is needed to test whether job crafting results in greater internalization of work tasks and thence greater satisfaction of autonomy, competence, and relatedness needs.

Limitations, Boundary Conditions, and Opportunities

A major limitation of much SDT research for organizational scholars has been SDT's focus on well-being as the primary outcome of interest. Although employee well-being is an important variable, in part because of its relationship with job satisfaction (Judge, Thoresen, Bono & Patton, 2001), organizational scholars are also interested in productivity and performance measures, which are not as often measured by SDT researchers. Notably, however, another major outcome focused on by SDT is behavioral persistence, which is likely to be of interest to managers. Other methodological limitations of prior SDT research include cross-sectional designs, limited samples (mostly college students), and self-report measures. Of course, one might also view these limitations as opportunities – opportunities for organizational researchers to contribute to the further testing and shaping of an important theory of human motivation.

It is also important to consider some possible boundary conditions that may limit the *conceptual* applicability of SDT to organizational contexts. One such boundary condition may be individual differences in employees' needs for growth or self-actualization. Does everyone want to grow and develop? A related boundary condition may be individual differences in employees' needs for autonomy, competence, and relatedness. Does everyone want to feel effective, connected, and free? In other words, would it do any good to support the growth needs of someone who prefers stability and stasis, or to support the autonomy needs of someone who prefers controls and constraints, or to support the relatedness needs of someone who prefers to be a loner?

Although Deci and Ryan (2000) noted that such differences may exist, they do not think that examining individual differences in need strength "is the most fruitful place to focus empirical attention" (Deci & Ryan, 2000, p. 328). In part, this is due to the fact that past SDT research has not found personality/situation interactions (i.e. as discussed earlier, there is no empirical support for a matching hypothesis, according to which control-oriented participants do better when treated controllingly). Other motivation scholars, however, have argued that examining individual differences in psychological needs may help us better understand many motivational processes (Vallerand, 2000). For example, the job characteristics

model proposes that individuals vary in their growth need strength and that this variability moderates the effects of job characteristics on work outcomes (Hackman & Oldham, 1976). Indeed, meta-analyses support this proposition for the outcomes of job satisfaction (Loher, Noe, Moeller & Fitzgerald, 1985) and job performance (Fried & Ferris, 1987). Such results suggest that Deci and Ryan's assumption of invariant psychological needs and growth processes may need further scrutiny.

Another conceptual boundary condition that may limit the applicability of SDT to organizations is the inevitably tedious or aversive nature of some jobs, such as peeling shrimp, making cold telemarketing calls, or working on assembly lines. Can humanistic management practices really make a difference in such cases?

Again, SDT assumes that the answer is YES, because autonomy support helps people to internalize the doing of boring or tedious tasks (Deci et al., 1994). To show how this can happen, consider a woman with the job of assembling simple rheostats, a job which requires her to produce hundreds of the items every day. This person is not growth-oriented on the job, and she usually prefers the security of being told exactly what she is supposed to do. Also, she has firm expectations that work will always be boring and aversive, an activity that she only does for the money. Still, according to SDT, if this person's immediate supervisor began to talk to her and take her perspective, offer her choices about when and how to do her work, and offer explanatory rationales when making non-ordinary requests (i.e. if the supervisor supported the woman's autonomy, rather than commanding, coercing, or controlling her), then the woman might eventually feel better respected and appreciated, and might also learn to take more interest and pride in aspects of the job (i.e. striving for a reduced error rate or increased productivity). Indeed, given autonomy supportive management, the woman might eventually realize that she has potentials that go beyond her current job, and thus move on to more challenging work. In other words, the support of a caring manager might help this woman to re-connect with the growth impulse that SDT assumes is present all people, even though they may be temporarily "stalled" in a limited way of being. Obviously, more research is required to document these rather optimistic ideas.

Another potential limitation of self-determination theory may be its assumption of a motivational continuum, and its emphasis on creating an aggregate self-determination measure that locates participants upon this continuum. Specifically, SDT researchers often create a single measure of self-determined motivation by adding identified and intrinsic motivation, and subtracting external and introjected motivation. As noted earlier, however, some evidence suggests that it is important to differentiate among the different types of motivation (Sansone & Smith, 2000). By keeping the different forms separate one can examine the independent effects of extrinsic and intrinsic motivation, potentially demonstrating that the two types

of motivation sometimes have additive or complementary effects (Amabile, 1996; Hennessey, 2000; Osterloh & Frey, 2000).

Finally, as implied above, SDT has primarily focused on how autonomy-supportive contexts enhance workers' internalized or intrinsic motivation. We believe, however, that other processes can also lead to more internal motivation. For example, some evidence suggests that individuals who have a strong interpersonal orientation will find boring tasks more interesting when they work with another person, perhaps because their relatedness needs are being met (Sansone & Smith, 2000). In addition, it seems likely that individuals' interest in a task may be influenced by co-workers and supervisor perceptions of the task, as indicated by the social information processing approach (Salancik & Pfeffer, 1978). From this perspective, it may be important to help workers see the value of *every* work task, not just their own. It is also possible that internal self-regulatory processes can serve to enhance internal motivation. For example, Sansone and Smith (2000) argued that individuals may change a task through real or psychological transformation of the task, and that these transformations can result in increased interest in and identification with the task. In summary, although SDT provides some promising places to start, we believe organizational researchers can extend the theory by examining other factors that influence the extent to which workers develop internalized motivation.

CONCLUSION

In this chapter we have derived both a general model describing the process through which self-determination influences positive outcomes of interest in organizations, and a specific set of propositions describing how self-determination theory (SDT) can advance contemporary work motivation research. We have tried to show how SDT can be fruitfully applied to understanding constructs used in organizational research, such as goal commitment and motivation to learn, and broader phenomena such as transformational leadership and the strategic management of human resources. Although some concepts within SDT are doubtless similar to concepts found in contemporary work motivation theories, we suggest that SDT provides a way of integrating these various strands of thought under a comprehensive meta-theory. Indeed, precisely because of such inclusive properties, SDT is playing a prominent role in the new "positive psychology" movement, led by Seligman and Csikszentmihalyi (2000). Thus, we hope that the thoughts expressed here will inspire organizational researchers to give greater consideration to employees' holistic strivings for growth, integration, and connection (Sheldon & Schmuck, 2001).

NOTES

1. As evidence of this misunderstanding, Ambrose and Kulik (1999) used the term Cognitive Evaluation Theory in their literature review on work motivation. This theory represents only one part of the SDT theoretical framework. Despite their narrow focus, Ambrose and Kulik (1999, p. 257) encouraged further organizational research in this area.

2. Notably, happiness and well-being may be somewhat unfamiliar outcomes for organizational researchers. In contemporary social psychology, well-being is typically defined in terms of high positive mood, high life-satisfaction, and low negative mood (Diener, 1984, 1994; Sheldon & Elliot, 1999; but see Ryff, 1995, for a different view of well-being). We believe that enhancing employee well-being is a worthy goal for managers, given the many positive cognitive, performance, and coping benefits that accrue from positive well-being (for a review, see Lyubomirsky, King & Diener, 2003).

3. Consistent with other researchers (e.g. House & Shamir, 1993), we use the terms transformational and charismatic leadership interchangeably.

REFERENCES

- Amabile, T. (1996). *Creativity in context*. Boulder, CO: Westview Press.
- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The work preference inventory: Assessing intrinsic and extrinsic motivational orientations. *Journal of Personality and Social Psychology, 66*, 950-967.
- Ambrose, M. L., & Kulik, C. T. (1999). Old friends, new faces: Motivation research in the 1990s. *Journal of Management, 25*, 231-292.
- Anderson, N., & West, M. A. (1996). The Team Climate Inventory: Development of the TCI and its applications in teambuilding for innovativeness. *European Journal of Work & Organizational Psychology, 5*, 53-66.
- Angyal, A. (1941). *Foundations for a science of personality*. New York: Commonwealth Fund.
- Austin, J. T., & Vancouver, J. B. (1996). Goal constructs in psychology: Processes and content. *Psychological Bulletin, 120*, 338-375.
- Baldwin, T. T., & Magjuka, R. J. (1997). Training as an organizational episode: Pretraining influences on trainee motivation. In: J. K. Ford & Associates (Eds), *Improving training Effectiveness in Work Organizations* (pp. 99-128). Mahwah, NJ: Erlbaum.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next. *International Journal of Selection and Assessment, 9*, 9-30.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York: Free Press.
- Bass, B. M. (1999). Two decades of research and development in transformational leadership. *European Journal of Work and Organizational Psychology, 8*, 9-32.
- Bateman, T. C., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior, 14*, 103-118.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497-529.

- Birdi, K., Allan, C., & Warr, P. (1997). Correlates and perceived outcomes of four types of employee development activity. *Journal of Applied Psychology, 82*, 845-857.
- Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A Self-Determination Theory perspective. *Science & Education, 84*, 740-756.
- Bono, J. E., & Judge, T. A. (in press). Self-concordance at work: Toward understanding the motivational effect of transformational leaders. *Academy of Management Journal*.
- Brett, J. F., & VandeWalle, D. (1999). Goal orientation and goal content as predictions of performance in a training program. *Journal of Applied Psychology, 84*, 863-873.
- Brown, K. G. (2001). Using computers to deliver training: Which employees learn and why? *Personnel Psychology, 54*, 271-296.
- Burns, J. M. (1978). *Leadership*. New York: Harper & Row.
- Cameron, J., & Pierce, W. D. (1994). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research, 64*, 363-423.
- Coleman, P. G. (2000). Aging and the satisfaction of psychological needs. *Psychological Inquiry, 11*, 291-293.
- Colquitt, J. A., LePine, J. A., & Noe, R. A. (2000). Toward an integrative theory of training motivation: A meta-analytic path analysis of 20 years of research. *Journal of Applied Psychology, 85*, 678-707.
- Conger, J. A., & Kanungo, R. N. (1998). *Charismatic leadership in organizations*. Thousand Oaks, CA: Sage Publications.
- Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management, 26*, 435-462.
- DeCharms, R. (1968). *Personal Causation: The internal affective determinants of behavior*. New York: Academic Press.
- Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum Press.
- Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in work organization. *Journal of Applied Psychology, 74*, 580-590.
- Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality, 62*, 119-142.
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999a). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*, 627-668.
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999b). The undermining effect is a reality after all—Extrinsic rewards, task interests, & self-determination: A reply to Eisenberger, R., Rhoades, L., & Cameron, J. (1999) & Lepper, M. R., Henderlong, J., & Gingras, I. (1999). *Psychological Bulletin, 125*, 692-700.
- Deci, E. L., & Ryan, R. M. (1985a). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (1985b). The general causality orientation scale: Self-determination in personality. *Journal of Research in Personality, 19*, 109-134.
- Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. In: R. Dienstbier (Ed.), *Nebraska Symposium on Motivation: Perspectives on Motivation* (Vol. 38, pp. 237-288). Lincoln, NE: University of Nebraska Press.
- Deci, E. L., & Ryan, R. M. (2000). The what and why of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227-268.
- Deci, E. L., Ryan, R. M., Gagne, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern bloc country: A cross-cultural study of self-determination. *Personality and Social Psychology Bulletin, 27*, 930-942.

- Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, *39*, 802–835.
- Delery, J. E., & Shaw, J. D. (2001). The strategic management of people in work organizations: Review, synthesis, and extension. *Research in Personnel & Human Resources Management*, *20*, 165–197.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, *95*, 542–575.
- Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, *31*, 103–157.
- Donovan, J. J., & Radosevich, D. J. (1998). The moderating role of goal commitment on the goal difficulty – performance relationship: A meta-analytic review and critical reanalysis. *Journal of Applied Psychology*, *83*, 308–315.
- Eisenberger, R., & Cameron, J. (1996). Detrimental effects of reward: Reality or myth? *American Psychologist*, *51*, 1153–1166.
- Eisenberger, R., Pierce, W. D., & Cameron, J. (1999). Effects of reward on intrinsic motivation – Negative, neutral, and positive: Comment on Deci, Koestner and Ryan (1999). *Psychological Bulletin*, *125*, 677–691.
- Eisenberger, R., Rhoades, L., & Cameron, J. (1999). Does pay for performance increase or decrease perceived self-determination and intrinsic motivation? *Journal of Personality & Social Psychology*, *77*, 1026–1040.
- Erikson, E. (1963). *Childhood and society*. New York: Norton.
- Facteau, J. D., Dobbins, G. H., Russell, J. E. A., Ladd, R. T., & Kudisch, J. (1995). The influence of general perceptions of the training environment on pretraining motivation and perceived training transfer. *Journal of Management*, *21*, 1–25.
- Ford, J. K., Smith, E. M., Weissbein, D. A., Gully, S. M., & Salas, E. (1998). Relationships of goal orientation, metacognitive activity, and practice strategies with learning outcomes and transfer. *Journal of Applied Psychology*, *83*, 218–233.
- Frayne, C., & Geringer, M. (2000). Self-management training for improving job performance: A field experiment involving salespeople. *Journal of Applied Psychology*, *85*, 361–375.
- Fried, Y., & Ferris, G. R. (1987). The validity of the job characteristics model: A review and meta-analysis. *Personnel Psychology*, *40*, 287–322.
- Gagné, R. M., Briggs, L. J., & Wager, W. W. (1992). *The principles of instructional design* (4th ed.). Fort Worth, TX: Harcourt Brace Jovanovich.
- Gardner, W. L., & Avolio, B. J. (1998). The charismatic relationship: A dramaturgical perspective. *Academy of Management Review*, *23*, 32–58.
- Gerhart, B., & Milkovich, G. T. (1990). Organizational differences in managerial compensation and financial performance. *Academy of Management Journal*, *33*, 663–691.
- Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, *17*, 183–211.
- Goldstein, K. (1939). *The organism*. New York: American Book Co.
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, *16*, 250–279.
- Hennessey, B. A. (2000). Self-determination theory and the social psychology of creativity. *Psychological Inquiry*, *11*, 293–298.
- Hicks, W. D., & Klimoski, R. J. (1987). Entry into training programs and its effects on training outcomes: A field experiment. *Academy of Management Journal*, *30*, 542–552.
- Higgins, E. T., & Kruglanski, A. W. (Eds) (2000). *Motivational science: Social and personality perspectives*. Philadelphia, PA: Taylor & Francis.

- Hollenbeck, J. R., & Klein, H. J. (1987). Goal commitment and the goal-setting process: Problems, prospects and proposals for future research. *Journal of Applied Psychology, 72*, 212-220.
- House, R. J., & Shamir, B. (1993). Toward the integration of transformational, charismatic, and visionary theories. In: M. M. Chemers & R. Ayman (Eds), *Leadership Theory and Research: Perspectives and Directions* (pp. 81-107). New York: Academic Press.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal, 38*, 635-672.
- Huselid, M. A., Jackson, S. E., & Schuler, R. S. (1997). Technical and strategic human resource management effectiveness as determinants of firm performance. *Academy of Management Journal, 40*, 171-188.
- Iardi, B. C., Leone, D., Kasser, T., & Ryan, R. M. (1993). Employee and supervisor ratings of motivation: Main effects and discrepancies associated with job satisfaction and adjustment in a factory setting. *Journal of Applied Social Psychology, 23*, 1789-1805.
- Judge, T. A., & Ilies, R. (2002). Relationship of personality to performance motivation: A meta-analysis. *Journal of Applied Psychology, 87*, 797-807.
- Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*, 376-407.
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology, 65*, 410-422.
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Well being correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22*, 281-288.
- Kelman, H. C. (1961). Processes of opinion change. *Public Opinion Quarterly, 25*, 57-78.
- Kernis, M. H., Paradise, A. W., Whitaker, D. J., Wheatman, S. R., & Goldman, B. N. (2000). Master of one's psychological domain? Not likely if one's self-esteem is unstable. *Personality and Social Psychology Bulletin, 26*, 1297-1305.
- Kirkpatrick, S. A., & Locke, E. A. (1996). Direct and indirect effects of three core charismatic leadership components on performance and attitudes. *Journal of Applied Psychology, 81*, 36-51.
- Kirkpatrick, S. A., Locke, E. A., & Latham, G. P. (1996). Implementing the vision: How is it done? *Polish Psychological Bulletin, 27*, 93-106.
- Klein, H. J., Wesson, M. J., Hollenbeck, J. R., & Alge, B. J. (1999). Goal commitment and the goal-setting process: Conceptual clarification and empirical synthesis. *Journal of Applied Psychology, 84*, 885-896.
- Klein, H. J., Wesson, M. J., Hollenbeck, J. R., Wright, P. M., & DeShon, R. P. (2001). The assessment of goal commitment: A measurement model meta-analysis. *Organizational Behavior and Human Decision Processes, 85*, 32-55.
- Koestner, R., & Zuckerman, M. (1994). Causality orientations, failure, and achievement. *Journal of Personality, 62*, 321-346.
- Kozlowski, S. W. J., Gully, S. M., Brown, K. G., Salas, E., Smith, E. M., & Nason, E. R. (2001). Effects of training goals and goal orientation traits on multi-dimensional training outcomes and performance adaptability. *Organizational Behavior and Human Decision Processes, 85*, 1-31.
- Kozlowski, S. W. J., Toney, R. J., Mullins, M. E., Weissbein, D. A., Brown, K. G., & Bell, B. S. (2001). Developing adaptability: A theory for the design of integrated-embedded training systems. In: E. Salas (Ed.), *Advances in Human Performance and Cognitive Engineering Research* (Vol. 1, pp. 59-124). New York: Elsevier Science.
- LaGuardia, J., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology, 79*, 367-384.

- Lepper, M. R., & Henderlong, J. (2000). Turning play into work and work into play: 25 years of research on intrinsic versus extrinsic motivation. In: C. Sansone & J. Harackiewicz (Eds), *Intrinsic and Extrinsic Motivation: The Search for Optimal Motivation and Performance* (pp. 257-307). San Diego, CA: Academic Press.
- Lepper, M. R., Henderlong, J., & Gingras, I. (1999). Understanding the effects of extrinsic rewards on intrinsic motivation - Uses and abuses of meta-analysis: Comment on Deci, Koestner and Ryan (1999). *Psychological Bulletin*, *125*, 669-676.
- Locke, E. A. (Ed.) (2000). *Handbook of principles of organizational behavior*. Malden, MA: Blackwell.
- Locke, E. A., & Latham, G. P. (1999). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.
- Loher, B. T., Noe, R. A., Moeller, N. L., & Fitzgerald, M. P. (1985). A meta-analysis of the relation of job characteristics to job satisfaction. *Journal of Applied Psychology*, *70*, 280-289.
- Lowe, K. B., Kroeck, K. G., & Sivasubramaniam, N. (1996). Effectiveness correlates of transformation and transactional leadership: A meta-analytic review of the MLQ literature. *Leadership Quarterly*, *7*, 385-425.
- Lyubomirsky, S., King, L. A., & Diener, E. (2003). Is happiness a good thing? A theory of the benefits of positive affect. Manuscript in preparation, Department of Psychology, University of California, Riverside.
- MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial & Labor Relations Review*, *48*, 197-221.
- Mathieu, J. E., & Martineau, J. W. (1997). Individual and situational influences on training motivation. In: J. K. Ford & Associates (Eds), *Improving Training Effectiveness in Work Organizations* (pp. 193-222). Mahwah, NJ: Erlbaum.
- Mathieu, J. E., Tannenbaum, S. I., & Salas, E. (1992). Influences of individual and situational characteristics on measures of training effectiveness. *Academy of Management Journal*, *35*, 828-847.
- McAdams, D. (1996). Personality, modernity, and the storied self: A contemporary framework for studying persons. *Psychological Inquiry*, *7*, 295-321.
- Mitchell, T. R., & Daniels, D. (2002). Motivation. In: W. C. Borman, D. R. Ilgen & R. J. Klimoski (Eds), *Handbook of Psychology: Industrial and Organizational Psychology* (Vol. 12, pp. 225-254). Hoboken, NJ: John Wiley.
- Noe, R. A. (1986). Trainees attributes and attitudes: Neglected influences on training effectiveness. *Academy of Management Review*, *11*, 736-749.
- Noe, R. A., & Schmitt, N. (1986). The influence of trainee attitudes on training effectiveness: Test of a model. *Personnel Psychology*, *39*, 497-523.
- Noe, R. A., & Wilk, S. L. (1993). Investigation of the factors that influence employees' participation in development activities. *Journal of Applied Psychology*, *78*, 291-302.
- Noe, R. A., Wilk, S. L., Mullen, E. J., & Wanek, J. E. (1997). Employee development: Issues in construct definition and investigation of antecedents. In: J. K. Ford & Associates (Eds), *Improving Training Effectiveness in Work Organizations* (pp. 153-189). Mahwah, NJ: Erlbaum.
- Osterloh, M., & Frey, B. S. (2000). Motivation, knowledge transfer, and organizational forms. *Organization Science*, *11*, 538-550.
- Pfeffer, J. (1998). *The human equation*. Boston, MA: Harvard Business School Press.
- Pillai, R., Schriesheim, C. A., & Williams, E. S. (1999). Fairness perceptions and trust as mediators for transformational and transactional leadership: A two-sample study. *Journal of Management*, *25*, 897-933.

- Psyszczynski, R., Greenberg, J., & Solomon, S. (2000). Toward a dialectical analysis of growth and defensive motives. *Psychological Inquiry, 11*, 301-305.
- Quiñones, M. A. (1995). Pretraining context effects: Training assignment as feedback. *Journal of Applied Psychology, 80*, 226-238.
- Reeve, J., Bolt, E., & Cai, Y. (1999). Autonomy-supportive teachers: How they teach and motivate students. *Journal of Educational Psychology, 91*, 537-548.
- Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, R., & Ryan, R. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin, 26*, 419-435.
- Rigby, C. S., Deci, E. L., Patrick, B. C., & Ryan, R. M. (1992). Beyond the intrinsic-extrinsic dichotomy: Self-determination in motivation and learning. *Motivation & Emotion, 16*, 165-185.
- Rogers, C. (1961). *On becoming a person*. Boston: Houghton Mifflin.
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs: General and Applied, 80*, 1-28.
- Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality & Social Psychology, 43*, 450-461.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141-166.
- Ryan, R. M., & Stiller, J. (1991). The social contexts of internalization: Parent and teacher influences on autonomy, motivation, and learning. *Advances in Motivation and Achievement, 7*, 115-149.
- Ryff, C. D. (1995). Psychological well-being in adult life. *Current Directions in Psychological Science, 4*(4), 99-104.
- Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly, 23*, 224-253.
- Salas, E., & Cannon-Bowers, J. A. (1997). Methods, tools, and strategies for team training. In: M. A. Quiñones & A. Ehrenstein (Eds), *Training for a Rapidly Changing Workplace: Applications of Psychological Research* (pp. 249-279). Washington, DC: American Psychological Association.
- Sansone, C., & Smith, J. L. (2000). Interest and self-regulation: The relation between having to and wanting to. In: C. Sansone & J. Harackiewicz (Eds), *Intrinsic and Extrinsic Motivation: The Search for Optimal Motivation and Performance* (pp. 341-372). San Diego, CA: Academic Press.
- Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*, 5-14.
- Shamir, B., House, R. J., & Arthur, M. B. (1993). The motivational effects of charismatic leadership: A self-concept based theory. *Organization Science, 4*, 577-594.
- Sheldon, K. M. (2002). The self-concordance model of healthy goal-striving: When personal goals correctly represent the person. In: E. L. Deci & R. M. Ryan (Eds), *Handbook of Self-Determination Theory* (pp. 65-86). Rochester, NY: University of Rochester Press.
- Sheldon, K. M., & Biddle, B. J. (1998). Standards, accountability, and school reform: Perils and pitfalls. *Teachers College Record, 100*, 164-180.
- Sheldon, K. M., & Deci, E. L. (2000). Book review: Creativity in context. *The Journal of Creative Behavior, 34*, 285-290.
- Sheldon, K. M., & Elliot, A. J. (1998). Not all personal goals are personal: Comparing autonomous and controlled reasons for goals as predictors of effort and attainment. *Personality and Social Psychology Bulletin, 24*, 546-557.

- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: The self-concordance model. *Journal of Personality and Social Psychology, 76*, 482-497.
- Sheldon, K. M., Elliot, A. J., Kim, Y., & Kasser, T. (2001). What's satisfying about satisfying events? Comparing ten candidate psychological needs. *Journal of Personality and Social Psychology, 80*, 325-339.
- Sheldon, K. M., & Houser-Marko, L. (2001). Self-concordance, goal attainment, and the pursuit of happiness: Can there be an upward spiral? *Journal of Personality and Social Psychology, 80*, 152-165.
- Sheldon, K. M., Williams, G., & Joiner, T. (2003). *Self-determination theory in the clinic: Motivating physical and mental health*. New Haven, CT: Yale University Press.
- Sheldon, K. M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology, 68*, 531-543.
- Sheldon, K. M., & Kasser, T. (1998). Pursuing personal goals: Skills enable progress, but not all progress is beneficial. *Personality and Social Psychology Bulletin, 24*, 1319-1331.
- Sheldon, K. M., & Kasser, T. (2001). Getting older, getting better? Personal strivings and personality development across the life-course. *Developmental Psychology, 37*, 491-501.
- Sheldon, K. M., Ryan, R. M., Elliot, A. J., Kim, Y., Chirkov, V., Demir, M., & Wu, C. (2002). Autonomous goal pursuit and collectivist values: Complementary, not conflictual. Unpublished manuscript.
- Sheldon, K. M., Ryan, R. M., Rawsthorne, L., & Hardi, B. (1997). True self and trait self: Cross-role variation in the Big Five traits and its relations with authenticity and well-being. *Journal of Personality and Social Psychology, 73*, 1380-1393.
- Sheldon, K. M., Ryan, R. M., & Reis, H. R. (1996). What makes for a good day? Competence and autonomy in the day and in the person. *Personality and Social Psychology Bulletin, 22*, 1270-1279.
- Sheldon, K. M., & Schmuck, P. (2001). Conclusion: Suggestions for healthy goal striving. In: P. Schmuck & K. Sheldon (Eds), *Life Goals and Well-Being: Towards a Positive Psychology of Human Striving* (pp. 213-226). Seattle, WA: Hogrefe & Huber Publishers.
- Spector, P. E. (1982). Behavior in organizations as a function of employee's locus of control. *Psychological Bulletin, 91*, 482-497.
- Spreitzer, G. M., Kizilos, M. A., & Nason, S. W. (1997). A dimensional analysis of the relationship between psychological empowerment and effectiveness, satisfaction, and strain. *Journal of Management, 23*, 679-704.
- Srivastava, A., Locke, E. A., & Bartol, K. M. (2001). Money and subjective well-being: It's not the money, it's the motives. *Journal of Personality & Social Psychology, 80*, 959-971.
- Stajkovic, A., & Luthans, F. (1998). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin, 124*, 240-261.
- Tang, S. H., & Hall, V. C. (1995). The overjustification effect: A meta-analysis. *Applied Cognitive Psychology, 9*, 365-404.
- Tharenou, P. (2001). The relationship of training motivation to participation in training and development. *Journal of Occupational and Organizational Psychology, 74*, 599-621.
- Towler, A. J., & Dipboye, R. L. (2001). Effects of trainer expressiveness, organization, and trainee goal orientation on training outcomes. *Journal of Applied Psychology, 86*, 664-673.
- Vallerand, R. (2000). Deci and Ryan's self-determination theory: A view from the hierarchical model of intrinsic and extrinsic motivation. *Psychological Inquiry, 11*, 312-318.
- Van Erde, W., & Thierry, H. (1996). Vroom's expectancy models and work-related criteria: A meta-analysis. *Journal of Applied Psychology, 81*, 575-586.

Applying Self-Determination Theory to Organizational Research

393

- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Werner, H. (1957). The concept of development from a comparative and organismic point of view. In: D. Harris (Ed.), *The Concept of Development* (pp. 125-147). Minneapolis, MN: University of Minnesota Press.
- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, 26, 179-201.