

INTEGRATING IMPLICIT MOTIVES, EXPLICIT MOTIVES, AND PERCEIVED ABILITIES: THE COMPENSATORY MODEL OF WORK MOTIVATION AND VOLITION

HUGO M. KEHR

University of California at Berkeley

The compensatory model of work motivation and volition synthesizes some previously unrelated lines of research. The structural components of the model are implicit motives, explicit motives, and perceived abilities; the functional processes are volitional regulation (compensating for inadequate motivation) and problem solving (compensating for inadequate perceived abilities). Propositions that integrate, challenge, and extend existing conceptions are derived. Moreover, the framework of the compensatory model suggests an agenda for future research.

Why do some individuals reach their goals easily, whereas others, equally skilled, struggle and fail? Why do individuals sometimes not like the goals they voluntarily set? Which mechanisms allow a person to strive for aversive goals, and how can these mechanisms be improved? These questions are of theoretical and practical relevance, pertaining to work-related issues such as job design, recruitment, compensation, leadership, organizational behavior modification, and organizational development. However, current approaches to work motivation do not address these questions.

To overcome this limitation, we need new theories of work motivation based on the distinction between implicit and explicit motive systems that has stimulated recent research in basic motivational psychology (Brunstein, Schultheiss, & Grässmann, 1998; Emmons & McAdams, 1991; McClelland, Koestner, & Weinberger, 1989; Spangler, 1992). In particular, the possibility that implicit and explicit motive systems might conflict with each other—a central proposition of the dual system approach to motivation (McClelland et al., 1989; Sheldon & Kasser, 1995)—has not yet been incorporated in work motivation theories. Furthermore, mecha-

nisms that resolve such conflict have not received much attention from work motivation investigators. I term these mechanisms *volitional regulation* (Kuhl, 1985; Sokolowski, 1993). There is abundant research on self-regulatory processes, but what Kanfer and Ackerman (1989), Binswanger (1991), and Latham and Locke (1991) have conceptualized as self-regulation is too loosely defined to relate to specific mechanisms that resolve conflicts between implicit and explicit motives.

In several approaches to work motivation, researchers have reserved a prominent role for perceived abilities and related constructs (Kanfer & Ackerman, 1989; Klein, 1989; Vroom, 1964). However, in approaches to perceived abilities, scholars have generally not analyzed situations where this important behavioral ingredient is lacking and which, I argue here, require problem solving. Moreover, the relationship of ability to implicit and explicit motives has not been examined in work motivation theories.

In sum, contemporary conceptions of work motivation largely ignore implicit motives, the distinction of implicit and explicit motives and the possibility of resulting intrapersonal conflict, volitional mechanisms to resolve such conflict, and the relation of these processes to perceived abilities and problem solving. To overcome these limitations, I have developed the compensatory model of work motivation and volition.

In this article I describe the structural components of the model (implicit motives, explicit motives, and perceived abilities) and explain

The author wrote this paper while a Lynen fellow at the University of California at Berkeley. The author gratefully acknowledges the support of the Alexander von Humboldt Foundation.

I am grateful to Cathleen Kehr, Ariel Malka, Tom Mongan, Kurt Sokolowski, two anonymous reviewers, and Richard T. Mowday, a special issue editor, for helpful comments.

the interrelations and interactive effects of these determinants of work motivation. I then discuss the functional processes of the model (volition and problem solving). Because these functions compensate for inadequate motivation (volition) and inadequate perceived abilities (problem solving), I call the model "compensatory."

The compensatory model is a synergetic approach to work motivation, intended to clarify, challenge, and extend existing conceptions. I demonstrate the advantages of the compensatory model by relating it to expectancy-value models (Vroom, 1964), goal-setting theory (Locke & Latham, 1990), self-efficacy (Bandura, 1977) and self-regulation (Bandura, 1988), dual system approaches (McClelland et al., 1989), intrinsic and extrinsic motivation (Deci & Ryan, 2000), reward models (Lawler, 1971), and the work of Kanfer and collaborators (Kanfer & Ackerman, 1989; Kanfer & Heggestad, 1997). Finally, I suggest future research based on the compensatory model.

STRUCTURAL COMPONENTS OF THE MODEL

Implicit Motives

Dual system approaches to motivation have a long tradition in psychology (Allport, 1937; Freud, 1967; Lewin, 1926; Wundt, 1907). The general idea is that a person is a complex system composed of several subsystems (Brunstein et al., 1998; Cantor & Blanton, 1996; Deci & Ryan, 2000; Sheldon & Kasser, 1995). Particular emphasis has been on implicit and explicit motive systems, which researchers assume drive, direct, and select behavior (Brunstein et al., 1998; McClelland et al., 1989).

Implicit motives—or latent motives—have been conceptualized as associative networks connecting situational cues with basic affective reactions and implicit behavioral tendencies (McClelland, Atkinson, Clark, & Lowell, 1953). Implicit motives are related to unconscious needs (Maslow, 1943) and basic and organismic needs (Deci & Ryan, 2000). In general, implicit motives are not consciously accessible; they are subconsciously aroused and lead to affective preferences and implicit behavioral impulses (McClelland, 1985; McClelland et al., 1989). Implicit motives result in spontaneous, expressive, and often pleasurable behavior (McClelland et al., 1989). They develop early in life and are

relatively independent of social demands in later life (Koestner, Weinberger, & McClelland, 1991; McClelland, 1985).

McClelland (1995) refers to the "big three" implicit motives: power, achievement, and affiliation. The power motive relates to dominance and social control (e.g., a CEO presenting the company's new mission statement at an annual general meeting). The achievement motive is aroused when personal standards of excellence are to be met or exceeded (e.g., a worker trying to increase output). Finally, the affiliation motive is aroused when social relationships are established and intensified (e.g., an employee extending a break to finish a talk with a new colleague). Researchers also differentiate hope (i.e., approach) and fear (i.e., avoidance) motives (Atkinson, 1964; Higgins, 1998; Kanfer & Heggestad, 1997).

Because implicit motives are not consciously accessible, they are assessed by operant, fantasy-arousing, picture-story tests, such as the Thematic Apperception Test (TAT; Murray, 1943; cf. McClelland, 1985). Murray designed the TAT to assess affectively charged associative networks—not values (Vroom, 1964) or conscious self-concepts (Markus & Wurf, 1987). The idea underlying the TAT is that pictorial stimuli differentially arouse implicit motives, and implicit motive strength is reflected in the motive-thematic story content, without much distortion by cognitive interference, which would have to be expected if people were explicitly asked about their motives.

Spangler (1992) summarized the early concerns about the TAT, particularly regarding its reliability (Entwisle, 1972). McClelland (1985) argued that the low reliability of the TAT is caused by the instruction to invent creative stories. Without this instruction, reliability coefficients are substantially improved. Spangler's meta-analysis rehabilitated the TAT by showing that the TAT predicts behavioral outcomes—particularly those related to intrinsic, or task-related, incentives—better than questionnaires.

According to McClelland et al. (1989), systematic self-observation is an additional method for enhancing self-awareness of one's implicit motives. Although implicit motives are not consciously accessible directly, they give rise to affective preferences and implicit behavioral impulses, which may be observed systematically (cf. Schwarz & Bohner, 1996).

Explicit Motives

Explicit motives are the reasons people self-attribute for their actions (McClelland, 1995; McClelland et al., 1989). For example, a hard-working person may self-identify as an "achievement-oriented person." Explicit motives are identical with *values* in Atkinson's (1964) and McClelland's (1985) terminology, but McClelland et al. (1989) decided to replace *values* with *self-attributed* or, synonymously, *explicit motives* to avoid confusion with approaches defining values as normative beliefs about desirable modes of conduct (e.g., Rokeach, 1979).

Explicit motives are consciously accessible and can be assessed with questionnaires based on self-ascriptions, such as the Personality Research Form (PRF; Jackson, 1984). Similar to implicit motives, explicit motives can be categorized according to motive themes (Brunstein et al., 1998; Emmons & McAdams, 1991)—for example, in achievement, dominance, and affiliation-related categories (Jackson, 1984). In contrast to implicit motives, explicit motives are strongly influenced by social demands and normative pressures (Koestner et al., 1991; McClelland, 1985). Activated explicit motives generate cognitive preferences (e.g., in a test situation, a person with high self-ascribed achievement motives will develop strong cognitive preferences for achieving high test results).

Explicit motives are particularly influential in determining cognitive choices—for example, task choice (McClelland, 1985; Spangler, 1992). Combined with other factors—notably, perceived abilities (Feather, 1982)—explicit motives are closely related to the development of goals (Brunstein et al., 1998; McClelland, 1985). Other prominent constructs related to the explicit motive system, besides goals (Brunstein et al., 1998) and values (Atkinson, 1964; McClelland, 1985), are intentions (Gollwitzer, 1999) and self-concepts (Markus & Wurf, 1987).

Perceived Abilities

Several approaches to human motivation, both basic (Ajzen, 1991; Atkinson, 1964; Bandura, 1977; McClelland, 1985; White, 1959) and applied (Conger & Kanungo, 1988; Kanfer & Ackerman, 1989; Klein, 1990; Thomas & Velthouse, 1990; Vroom, 1964; Wright, Kacmar, McMahan, & Deleuw, 1995), highlight the importance of abil-

ities. In an early approach, White introduced the concept of competence: "an organism's capacity to interact efficiently with its environment" (1959: 297). Recent approaches focus on perceived instead of actual abilities (cf. Ajzen, 1991; Bandura, 1977; Vroom, 1964; for exceptions, cf. Klein, 1990; Wright et al., 1995).

Ajzen (1991) outlines the reasons for his decision to concentrate on perceived instead of actual abilities; if the primary interest is in determining output of motivated endeavors, the focus should be on *actual* abilities that "must to some extent dictate the likelihood of behavioral achievement" (1991: 183). If, however, the focus is on motivationally relevant antecedents of behavior and the dynamics in which these factors combine, *perceived* abilities are "of greater psychological interest" (1991: 183; for similar arguments, cf. Bandura, 1977; Tubbs & Ekeberg, 1991). In line with Ajzen (1991), Bandura (1977), and Vroom (1964), the compensatory model presented here focuses on perceived instead of actual abilities. Similar to Tubbs and Ekeberg (1991), I conceive of perceived abilities as an individual's perception of the amount of actual control she or he can exert over the environment. This definition of perceived abilities excludes metalevel constructs such as heuristic competence (Doerner & Wearing, 1995), but it closely relates to Ajzen's (1991) perceived control, Bandura's (1977) self-efficacy, and Vroom's (1964) expectancies. Although a fine-tuned analysis may identify nuances in which these constructs differ (Ajzen, 1991; Bandura, 1991), discussing such differences lies beyond the scope of this paper.

Social support, modeling, and attribution affect perceived abilities, but the major determinant is past performance (Bandura, 1977; Carver & Scheier, 1982; Kanfer & Ackerman, 1989). Successful performance generally leads to the conviction that similar behaviors can be successfully executed (Bandura, 1977), accompanied by the perception of the relative ease of performing similar behaviors (Ajzen, 1991).

In conceptual (Ajzen, 1991; Bandura, 1977; Tubbs & Ekeberg, 1991) and empirical research (for reviews, cf. Ambrose & Kulik, 1999; Kanfer, 1990), scholars have identified perceived abilities as an important determinant of work motivation. Directly (Bandura, 1977) or indirectly, in combination with other factors—notably, values (Atkinson, 1964; Feather, 1982; Vroom, 1964)—

perceived ability influences goal choice (McClelland, 1985).

RELATIONSHIPS AMONG THE STRUCTURAL COMPONENTS OF THE MODEL

In this section I discuss the conceptual and empirical relationships among structural components of the compensatory model. I first describe the relationship of implicit and explicit motives and then integrate perceived abilities into the analysis.

Implicit Motives and Explicit Motives

A central proposition of dual motive system approaches is that implicit and explicit motives relate to different aspects of the person (McClelland et al., 1989; Spangler, 1992).¹ Activation of implicit and explicit motives is largely independent (Brunstein et al., 1998; McClelland et al., 1989; cf. Epstein, 1998; Metcalfe & Mischel, 1999). Implicit motives are aroused by factors intrinsic to the activity, whereas explicit motives are aroused by factors extrinsic to the activity (Koestner et al., 1991; cf. Deci & Ryan, 2000). For example, a manager high in implicit affiliation motive might enjoy the companionship of a friendly, although unproductive, subordinate (intrinsic), but still defer to the social demands of his or her supervisor to increase productivity by dismissing the subordinate (extrinsic). Using Berlew's (1986) push-pull metaphor, implicit motives "push," whereas explicit motives "pull" the individual.

In contrast to explicit motives, implicit motives are built on associations with innately triggered affective experiences, called "natural incentives" (McClelland et al., 1989: 697). For example, the natural incentive for the power

motive is to have an impact on human affairs. McClelland et al. (1989) reviewed studies suggesting natural incentives differentially arouse implicit motives, not explicit motives, and trigger characteristic hormonal reactions.

Implicit and explicit motives have distinct effects on behavior. On a proximal level (for the distinction of proximal and distal motivation processes, cf. Kanfer & Heggestad, 1997), aroused implicit motives lead to affective preferences ("I like this person") and implicit behavioral impulses ("I would like to spend more time with her"). Here, implicit means these behavioral impulses do not necessarily reflect the person's self-ascriptions or explicit values (perhaps the individual in the above example "knows" that the liked person is a *persona non grata*). In contrast, activated explicit motives result in cognitive preferences ("I want this prestigious job") and explicit action tendencies ("I try to influence my boss to promote me"). Here, explicit means action tendencies are consciously reflected and consistent with the person's self-ascribed motives.

On a distal level, implicit motives become particularly influential in determining long-term behavioral trends (McClelland, 1985). Spangler's (1992) meta-analysis, Heckhausen's (1991) extensive review, and others' applied research (e.g., Chusmir & Azevedo, 1992; Langens, 2001; McClelland & Franz, 1992; Sokolowski & Kehr, 1999) lend empirical support for this notion. In contrast, explicit motives (or values) influence cognitive choices and goal setting (e.g., Ajzen, 1991; Atkinson, 1964; Locke & Latham, 1990; McClelland, 1985; Spangler, 1992; Tubbs & Ekeberg, 1991; Von Rosenstiel, Kehr, & Maier, 2000; Vroom, 1964). For example, people with an explicit power motive (who highly esteem power and influence) may aim for influential positions with power and prestige. In contrast, people with an implicit power motive seek intrinsic experiences having impact, but not necessarily influential positions.

Winter's (1982) study of presidential candidates illustrates this difference. Candidates high in implicit achievement motive dropped out if they had no realistic chances to win, whereas candidates high in implicit power motive continued their election campaigns, even if winning seemed impossible. Those with an implicit power motive obviously enjoyed media presence, walkabouts, and other high-impact

¹ Using varying terminology, scholars from different research traditions have addressed the basic distinction between implicit versus explicit motive systems. Examples include Epstein's (1998) distinction between an experiential system (the locus of McClelland's implicit motives) and a rational system (the locus of McClelland's explicit motives); Metcalfe and Mischel's (1999) differentiation of a hot, emotional system and a cold, cognitive system; and Bazerman, Tenbrunsel, and Wade-Benzoni's (1998) distinction between want-selves and should-selves. Further parallels exist with desired versus actual values (Loewenstein, 1996) and delayed versus immediate choices (Read & Van Leeuwen, 1998).

situations that come about in an election campaign.

This discussion shows that implicit and explicit motives are conceptually independent determinants of behavior. Regarding the empirical relationship of these constructs, Spangler's (1992) meta-analysis indicates that implicit and explicit motives are empirically uncorrelated. However, others have reported small but significant correlations between implicit and explicit motives (Cantor & Blanton, 1996; Emmons & McAdams, 1991; King, 1995; Sokolowski, Schmalz, Langens, & Pucca, 2000). These inconsistent findings suggest the empirical relationship between implicit and explicit motives may depend on the sample considered: some people may integrate implicit and explicit motives, whereas others may not (McClelland et al., 1989; Mischel, 1999; Sheldon & Kasser, 1995). Some people closely observe their affective preferences and implicit behavioral impulses, enabling them to gain access to their implicit motives, adjust their goals, and enhance concordance of implicit and explicit motives (Deci & Ryan, 2000; Schultheiss & Brunstein, 1999; Sheldon & Elliot, 1999).

Implicit and explicit motives, although conceptually independent, may nonetheless interact. For example, McClelland et al. (1989) assert that explicit motives may "channel" the way in which implicit motives are expressed (cf. McClelland, 1985, 1995; cf. Emmons, 1989). Implicit achievement motives, for instance, reflect affective preferences to do something well. Here, *something* denotes a class of potential behaviors. Which behavior is enacted depends on the explicit motives of the person. For example, a person high in implicit affiliation motive who wants to remain in solitude (the explicit motive) might write letters to contact people indirectly (C. A. Constantian, cited in McClelland, 1985).

Behavioral tendencies resulting from implicit and explicit motives can be concordant or discrepant (Brunstein et al., 1998; McClelland et al., 1989). According to McClelland et al. (1989), the larger the discrepancy between implicit and explicit motives, the more incompatible the resulting behavioral tendencies will be. So, one can assume that individuals with low self-awareness for affective preferences and implicit behavioral impulses tend to develop goals incongruent with their implicit motives.

Research shows that discrepancies between implicit and explicit motive systems cause in-

trapersonal conflict in terms of conflicting behavioral tendencies and may result in preference reversals, performance deficits, impaired well-being, and health problems (Bazerman et al., 1998; Brunstein et al., 1998; McClelland et al., 1989; Ryan & Deci, 2000; Sheldon & Kasser, 1995). Brunstein et al. (1989) provide a counterintuitive example. Most people think goal attainment should lead to satisfaction and well-being (cf. Locke & Latham, 1990: Chapter 10). However, Brunstein et al. (1998) show that goal attainment only leads to well-being if goals are congruent with a person's implicit motives; commitment to need-incongruent goals can decrease well-being. From the discussion above, I derive the following propositions.

Proposition 1: Implicit motives and explicit motives are conceptually independent and have distinctive effects on working behavior. Aroused implicit motives are associated with affective preferences, implicit behavioral impulses, and spontaneous behavior; activated explicit motives are associated with cognitive preferences, explicit action tendencies, and cognitive choices.

Proposition 2: Discrepancies between implicit and explicit motives cause intrapersonal conflict because of conflicting behavioral tendencies, and they result in impaired well-being and failure.

Discrepancies between implicit and explicit motives, conceptualized at an abstract level of representation (McClelland et al., 1989), at first constitute latent behavioral conflict. Behavioral conflicts become manifest if implicit behavioral impulses (originating in aroused implicit motives) and explicit action tendencies (stemming from activated explicit motives) are incompatible at a given moment.

Incorporating Perceived Abilities

Perceived abilities are conceptually independent of implicit and explicit motives. We may perceive ourselves capable of living a healthy life, or of doing all the housework for our family, and still not intend to do so. Conversely, many cognitive and affective preferences exist despite

insufficient perceived abilities. For example, a manager may adopt the goal to cut the costs of his or her work unit despite limited perceived ability to determine how these cuts should be enacted.

McClelland (1985) shows that differentiation of implicit motives, explicit motives, and perceived abilities was a principle concern for early motivation theorists like Hull (1952) and Atkinson (1964). During the "cognitive revolution," however, the implicit motive to achieve success (originally conceptualized as a nonconscious, affectively toned variable; cf. McClelland et al., 1953) was reinterpreted in cognitive terms. It was first collapsed with the probability of success (Atkinson & Feather, 1966), and later abandoned in favor of a purely cognitive approach (Feather, 1982).²

Kehr, Von Rosenstiel, and Bles (1997) found that items measuring affective preferences, cognitive preferences, and perceived abilities repeatedly loaded on three separate factors, without any sizable cross-loadings. McClelland (1985) summarizes a study showing that perceived abilities are unrelated to implicit motives but correlated with explicit motives. He argues that both variables "are influenced by the subjects' cognitive understanding of what kind of people they are" (1985: 818). Further evidence shows correlations between perceived abilities and explicit goals (Ajzen, 1991; Bandura, 1977; Vroom, 1964).

Research on the implicit motive-perceived abilities relationship is scarce. Given that perceived abilities are a by-product of past behavior (Ajzen, 1991; Bandura, 1977) and that behavior can be seen as an instantiation of implicit motives (Steers & Spencer, 1971), the implicit motive-behavior-perceived abilities effect chain may account for some (but generally small) empirical relationship between implicit motives and perceived abilities.

As an isolated factor, perceived abilities have no motivational significance. Bandura, for example, recognizes that self-efficacy must combine with "appropriate skills and adequate incentives" (1977: 194) to determine motivation. Consequently, Tubbs and Ekeberg note, "Claims of direct causal relationships between perceived control over actions (e.g., self-efficacy) and performance should be viewed with caution" (1991: 196). Similarly, Ajzen (1991) holds that perceived control is not the only determinant of behavior but that "intentions are influenced by additional factors, and it is because of these factors that two individuals with different perceptions of behavioral control can have equally strong intentions" (1991: 184).

For behavioral relevance, perceived abilities must combine with motives. Tidying one's desk and doing the dishes are common skills, but not necessarily in accord with one's implicit and explicit motives. Conversely, the advice "You can do it!" is no real help to a person who is afraid of (or dislikes) bungee jumping. Behavioral significance is achieved through liaisons between perceived abilities and explicit motives ("I want to jump"). This leads to the formation of intentions (Gollwitzer, 1993; Tubbs & Ekeberg, 1991) and goals (Feather, 1982; Vroom, 1964), which are known to have motivational significance (Hollenbeck & Klein 1987; Latham & Locke, 1991).³

The conception present here refutes Bandura's notion that "people will avoid transactions . . . they perceive as exceeding their ability" (1977: 203). People may engage in transactions, even those they perceive as exceeding their ability, if sufficiently motivated (the motivation may stem from aroused implicit motives or activated explicit motives). This is evident when people strive for extremely improbable results (e.g., physicists aiming to find the link between cosmology and quantum mechanics).

Proposition 3: Perceived abilities are conceptually independent of implicit and explicit motives.

² Maslow's (1943) work is an additional example of how implicit motives fell prey to the cognitive revolution. Maslow originally proposed "a more central place for unconscious than for conscious motivations" (1943: 370). However, in subsequent research on need satisfaction (Porter, 1961) and the need hierarchy theory (Wahba & Bridwell, 1976), researchers used questionnaires to operationalize the need construct. Hence, this research relates to explicit rather than implicit motive systems.

³ In this perspective, it is important to distinguish between explicit motives and explicit goals, even if both constructs have an important characteristic in common, in that they both relate to cognitive (instead of affective) preferences. Explicit motives may combine with perceived abilities to instigate explicit goals and, thus, should be considered a determinant, not a synonym, of explicit goals.

Proposition 4: Perceived abilities alone are not sufficient to determine behavior but may combine with explicit motives to determine task choice and goal setting. Conversely, insufficient perceived abilities do not preclude motivated behavior.

RESOLVING INCONGRUENCE AMONG STRUCTURAL COMPONENTS: VOLITION AND PROBLEM SOLVING

Volition

Cognitive investigators propose that higher-order cognitive preferences (e.g., goals or intentions) may temporarily override lower-order, automatic behavioral impulses (Ach, 1910; Bargh, 1984; Posner & Snyder, 1975). In this section I describe how volitional mechanisms, supporting cognitive preferences, may be employed to accomplish such impulse suppression.

In recent approaches to volitional regulation, scholars have considered intrapersonal conflicts from conflicting behavioral tendencies and the strategies people use to overcome these (Ainslie & Haslam, 1992; Bazerman et al., 1998; Kanfer & Heggestad, 1997; Kehr, 2000; Kuhl, 1985; Kuhl & Fuhrmann, 1998; Kuhl & Goschke, 1994; Loewenstein, 1996; Metcalfe & Mischel, 1999; Mischel, Cantor, & Feldman, 1996; Muraven & Baumeister, 2000; Sokolowski, 1993). Work-related intrapersonal conflicts include resisting temptations (stock brokers dealing with the assets of others), overcoming fear (salespeople "cold calling" new customers), and persisting in a strenuous task (project managers attempting to meet rigid project deadlines). Such conflicts are resolved by volitional strategies, including attention control—for example, ignoring the amount of money one is managing (cf. Egeth & Yantis, 1997; Norman & Shallice, 1986); emotion control—for example, adjusting one's emotional states to the demands of a sales process (cf. Erber & Erber, 2000; Forgas, Johnson, & Ciarrochi, 1998; Morris & Reilly, 1987); and motivation control—for example, anticipating gratifications expected after finishing a project (cf. Mischel, 1996; Oettingen, Pak, & Schnetter, 2001).

Volition can be defined as an array of self-regulatory strategies to support explicit action tendencies against competing behavioral impulses. This concept of volition is related to will-

power (Metcalfe & Mischel, 1999; Mischel, 1996, 1999), self-control (Ainslie & Haslam, 1992; Muraven & Baumeister, 2000), and self-regulation (Kuhl & Fuhrmann, 1998). However, *volition* is narrower than Latham and Locke's (1991) and Bandura's (1991) concept of self-regulation or Binswanger's (1991) use of the term. These constructs include every goal-related effort—not just those efforts where intrapersonal conflicts must be resolved or unwanted impulses overcome.

Volitional regulation is needed to support cognitive preferences insufficiently motivated by or discrepant from actual implicit behavioral tendencies (Brunstein et al., 1998; Emmons, 1999; Epstein, 1998; Kuhl & Goschke, 1994; Ryan, Sheldon, Kasser, & Deci, 1996). Discrepancies between implicit and explicit motives lead to conflicting behavioral tendencies, requiring volitional regulation (Brunstein, Schultheiss, & Maier, 1999; Emmons, 1999; Epstein, 1998; Ryan et al., 1996). Conversely, volitional regulation is not needed for cognitive preferences congruent with affective preferences (Karoly, 1993; Sokolowski, 1993)—that is, if aroused implicit and activated explicit motives are thematically congruent. Sokolowski (1993) highlights this distinction, contrasting "motivational regulation states" (behavior energized by implicit motives) and "volitional regulation states" (behavior insufficiently energized by implicit motives and requiring volitional support). Hence, I offer the following proposition.

Proposition 5: Volitional regulation is required to compensate for insufficient motivation due to discrepancies between implicit and explicit motives. When implicit and explicit motives are congruent, no volitional regulation is required.

A closer look reveals that volitional regulation has a twofold function: to enhance explicit action tendencies—for example, networking, despite being low in implicit power and affiliation motive—and to suppress unwanted implicit behavioral impulses—for example, avoiding thoughts of a tempting sailing trip when one intends to work during the weekend (Forgas et al., 1998; Mischel, 1996; Norman & Shallice, 1986). Atkinson and Birch (1970), for example, contrast "inhibitory" forces suppressing behavioral impulses and "instigating" forces enforcing acti-

vated goal representations. Kanfer and Heggestad (1997) contrast suppression of implicit anxiety reactions and support of explicit achievement-related goals as two main functions of motivational skills (volition).

Proposition 6: Volitional regulation has a twofold function. Volition is needed to support explicit action tendencies (activated explicit motives) discrepant with affective preferences (aroused implicit motives) and to suppress implicit behavioral impulses (aroused implicit motives) discrepant with cognitive preferences (activated explicit motives).

Like other psychological processes, volitional regulation may have deficiencies (Baumeister & Heatherton, 1996). There are at least five interrelated problems. First, volition can be ineffective, as shown with respect to emotion control (Morris & Reilly, 1987) and attention control (Wegner, 1994). Ineffective volition accounts for difficulties in suppressing tempting impulses and in supporting intentions such as quitting smoking and keeping to a diet (Polivy, 1998). Second, volition may block cognitive capacities, which then are unavailable for other task-related activities (Kanfer & Ackerman, 1989). Third, volitional regulation can be associated with rigid self-control ("overcontrol"; Asendorpf & Van Aken, 1999; cf. Kuhl & Fuhrmann, 1998). In a work-related context, Kehr, Bles, and Von Rosenstiel (1999) found that rigid self-control impeded managers' goal attainment and affective responses. Fourth, volition may have negative side-effects, such as strain, emotional distress, maladaptive behavior, and behavioral excesses after relapse (Cantor & Blanton, 1996; Polivy, 1998). People who constantly overemphasize cognitive preferences, ignore affective preferences, and use dysfunctional volitional strategies (e.g., negative fantasies, extreme internal pressure) may suffer from impaired well-being and alienation (Deci & Ryan, 2000; Kuhl & Fuhrmann, 1998; Polivy, 1998). Fifth, and perhaps most important, volition consumes limited resources. After volitional acts (e.g., eating radishes rather than tempting chocolates), subsequent acts of volition (e.g., suppressing emotional reactions) are more likely to fail (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven & Baumeister, 2000). These findings led

Muraven and Baumeister (2000) to propose a resource-based concept of self-control strength, where volitional acts may consume and ultimately "deplete" resources.

A recent study examined volitional depletion among managers and found that implicit/explicit motive discrepancies predicted decreased volitional strength and well-being and that the discrepancy/well-being relationship was fully mediated by reduced volitional strength (Kehr, 2004). Here, volitional strength, defined as the person's proficiency in using volitional strategies, is essentially identical to self-control strength (Muraven & Baumeister, 2000), volitional competence (Kuhl & Fuhrmann, 1998), and motivational skills (Kanfer & Heggestad, 1997).

Proposition 7. Volitional regulation can have deficiencies, in that it may be ineffective, block cognitive capacities, be associated with rigid self-control, have negative side-effects, and require volitional resources possibly resulting in depleted volitional strength. The larger the discrepancies between implicit and explicit motives, the more deficiencies are to be expected.

Problem Solving

Repeated behavioral experiences lead to development of automatic control processes, relieving capacity-limited, conscious cognitive processing of the burden of controlling the behavior (Posner & Snyder, 1975; Schneider & Shiffrin, 1977). These automatic control processes eventually amalgamate to automatic control programs that guide routine behaviors. Such behavioral programs are called "scripts" (Lord & Kernan, 1987; Schank & Abelson, 1977). Script theory suggests that nonroutine situations, environmental obstacles, or personal mistakes lead to script interruptions and require additional problem solving (March & Simon, 1958) and planning (Schank & Abelson, 1977). Shifts from automatic processing to conscious problem solving enhance one's capacity to successfully cope with situational demands (Atkinson & Birch, 1970; Carver & Scheier, 1982), but they absorb attentional capacity and are experienced as effortful (Schneider & Shiffrin, 1977).

Researchers have proposed several constructs for unlearned processes used in novel, unexpected, or difficult situations that require capacity-limited attention—for instance, conscious control (Klein, 1989; Posner & Snyder, 1975), conceptual and controlled processing (Leventhal & Scherer, 1987; Schneider & Shiffrin, 1977), problem solving (March & Simon, 1958), and planning (Klein, 1989; Schank & Abelson, 1977). There are subtle differences among these constructs. For example, *conscious control* and *controlled processing*, essentially identical, are generic terms for conscious cognitive activity, and they embrace problem solving and planning. Planning involves anticipating future developments (Doerner & Wearing, 1995) and developing goal hierarchies (Cropanzano, Citera, & Howes, 1995) and, thus, is not restricted to script interruptions. Here, *problem solving*, being more specific, is the more adequate term, because problem solving involves a “problem” (i.e., an unscripted situation) that requires conscious attention to attain a solution. Hence, the compensatory model focuses on problem solving (Doerner & Wearing, 1995; March & Simon, 1958; Nair, 2000; Smith, 1997), defined as conscious processes used to overcome environmental difficulties (e.g., novel situations or exceptional task demands) when no behavioral routines exist.

How does problem solving relate to perceived abilities? Perceived abilities are conceptualized at a distal level (because they help determine the allocation of attention [Kanfer & Ackerman, 1989]), and problem solving happens at a proximal level (because it requires reallocation of attention [Kanfer & Ackerman, 1989]), so this question is not trivial. The answer lies in the fact that both variables are determined by essentially the same processes. Past performance, in particular, is a chief determinant of perceived abilities (Bandura, 1977; Carver & Scheier, 1982) and the scripted behavioral repertoire of a person (Lord & Kernan, 1987; Schank & Abelson, 1977). Hence, perceived abilities largely reflect an individual’s scripted response patterns. Consequently, low perceived abilities are associated with inadequate, less developed, or nonexisting behavioral routines. If behavioral routines are unavailable, problem solving (Doerner & Wearing, 1995; Klein, 1989; March & Simon, 1958) is required. Thus, inadequate perceived abilities are positively associated with problem-solving requirements.

The fact that a person’s scripted repertoire reflects actual and not perceived abilities is not in conflict with this proposition. Script theorists hold that script interruptions depend on whether the person *perceives* obstacles in the environment or a novel situation (Lord & Kernan, 1987; Schank & Abelson, 1977). A person with low perceived ability will have lower perceptual thresholds, leading to more frequent script interruptions, than a person with high perceived ability (for similar arguments, see Kanfer & Ackerman, 1989).

Proposition 8. Perceived abilities are negatively associated with the requirement of problem solving.

Contrasting Volition and Problem Solving

The compensatory model draws a sharp line between problem solving and volition.⁴ As explained above, problem solving compensates for insufficient abilities and overcomes environmental (extrapersonal) difficulties, whereas volition compensates for insufficient motivational support and resolves intrapersonal conflicts from competing behavioral impulses originating in implicit/explicit motive discrepancies (Sokolowski, 1993; cf. Muraven & Baumeister, 2000). For example, consider a typical environmental difficulty when a driver finds the road is blocked by a fallen tree. The person is highly motivated to overcome this obstacle. Problem solving (thinking about alternate routes) is necessary. Volitional strategies (visualizing possible positive outcomes) are useless. Conversely, intrapersonal conflicts from tempting impulses (to disregard organizational regulations) or insufficient motivation (to work overtime) demands volitional regulation (to support cognitive preferences and suppress temptations). Here, problem solving has little or no benefit.

There is support for this notion in cognitive psychology. Behavioral cues, serving as stimuli

⁴ I draw this sharp line for conceptual clarity of the model. In reality, there may be overlap in the functions of volition and problem solving. For example, quitting smoking (an intrapersonal conflict) may be facilitated by hiding one’s cigarettes (a problem-solving strategy). Kuhl (1985) calls problem solving directed at altering the external determinants of behavior to resolve intrapersonal conflicts “environmental control,” but suggests classifying this hybrid as a volitional strategy.

for affective, cognitive, and conative reactions, may be differentiated into external cues—from perceptions of the environment—and internal cues—from internal sensations of the person's mind and body (James, 1981; LeDoux, 1995; Leventhal & Scherer, 1987). LeDoux (1995) calls these "exteroceptive" and "interoceptive" inputs. Since cues are generally subject to affective and cognitive evaluation (not necessarily consciously reflected [LeDoux, 1995; Leventhal & Scherer, 1987]), both internal and external cues may be categorized as being either supportive or obstructive. From this perspective, intrapersonal barriers reflect internal obstructive cues, and extrapersonal difficulties reflect external obstructive cues.

Like perceptions (the input), behaviors (the output) may also be categorized as internally directed or externally directed (Norman & Shallice, 1986). In the compensatory model I call internally directed behaviors aimed at overcoming intrapersonal barriers "volition," and externally directed behaviors aimed at overcoming extrapersonal barriers "problem solving" (Kehr, 2000; Sokolowski, 1993). As early as 1890, James proposed a similar distinction, writing, "Volition is primarily a relation, not between our Self and extra-mental matter (as many philosophers still maintain), but between our Self and our own states of mind" (1981: 1172). More recent approaches differentiating internally aimed volition and externally aimed problem solving include Lazarus, Kanner, and Folkman (1980) and Taylor and Schneider (1989). Research on volition depletion supports this distinction, showing that suppressing temptations or unwanted emotions and compensating for inadequate motivation impairs subsequent volitional regulation (Muraven & Baumeister, 2000). In contrast, behavior requiring problem solving but not volition (e.g., solving math problems) does not impair subsequent volitional regulation (Muraven, Tice, & Baumeister, 1998: Experiment 3; cf. DeShon, Brown, & Greenis, 1996).

Proposition 9: Volitional regulation and problem solving fulfill distinct functions. The requirement for volition is independent of perceived abilities, and the requirement for problem solving is independent of the relationship between implicit and explicit motives.

As detailed above, problem solving and volitional regulation both require attentional capacity (Kanfer & Ackerman, 1989; Schneider & Shiffrin, 1977). Attentional capacity is restricted, so actions requiring both volitional regulation and problem solving are likely to be abandoned (owing to inefficient volition), or fail (owing to inefficient problem solving). A person preoccupied with volitional regulation may fail to notice signals indicating unexpected environmental developments, resulting in delayed script interruptions and inefficient problem solving (cf. Doerner & Wearing, 1995). Conversely, extreme extrapersonal difficulties associated with excessive problem solving demands may lead to reassessment of cognitive preferences (Carver & Scheier, 1982; Klinger, 1975).

Proposition 10: Actions requiring both problem solving and volitional regulation are likely to be abandoned or lead to failure.

CONGRUENCE OF IMPLICIT MOTIVES, EXPLICIT MOTIVES, AND ABILITIES

Since simultaneous examinations of implicit motives, explicit motives, and perceived abilities are scarce, I first address consequences of congruent implicit and explicit motive systems and then widen the perspective to include perceived abilities.

Ample research suggests that congruence of implicit and explicit motive systems is associated with low intrapersonal conflict, intrinsic motivation, and successful performance—the preconditions for happiness, well-being, and health (Brunstein et al., 1998; Deci & Ryan, 2000; Mischel, 1999; Ryan & Deci, 2000; Ryan et al., 1996; Sheldon & Elliot, 1999). Sokolowski (1993) suggests that congruent implicit and explicit motives are associated with motivational regulation states requiring no volitional regulation. Thus, motivational regulation states should save volitional resources. In support of this notion, I found that managers' implicit/explicit motive congruence was negatively associated with subsequent impairments in terms of depleted volitional strength (Kehr, 2004).

The compensatory model indicates that a prerequisite for intrinsic motivation is that the behavior at hand is thematically congruent with actual affective preferences stemming from

aroused implicit motives (cf. McClelland, 1985; McClelland et al., 1953). As in "autotelic" conceptions (e.g., Csikszentmihalyi, 1975; Deci & Ryan, 2000), I propose that intrinsic motivation does not depend on support from cognitive preferences. Many climbers, for example, do not climb a mountain just to reach the summit but, rather, try to reach the summit for the intrinsic joy of climbing. Nevertheless, it seems likely that intrinsic motivation from aroused implicit motives (Puca & Schmalz, 1999; Sokolowski & Kehr, 1999) is accompanied by more profound experiences of meaning (Hackman & Oldham, 1980) and purposefulness (Thomas & Velthouse, 1990) only if aroused implicit and activated explicit motives are thematically congruent.

Arousal of implicit motives does not always lead to intrinsic motivation, because an additional requirement is the absence of competing cognitive preferences. A crossword puzzle may potentially arouse implicit achievement motives and lead to intrinsic motivation, but knowing one is late for work would suppress such motivation. I described such situations earlier as volitional suppression of unwanted implicit impulses. This conception allows for partial congruence of implicit and explicit motives, suggesting that activated explicit motives only counteract intrinsic motivation or relate to extrinsic motivation if they compete with affective preferences. This discussion leads to the following proposition.

Proposition 11: Behavioral congruence with affective preferences (aroused implicit motives) is a necessary, but not sufficient, condition for intrinsic motivation. Behavioral congruence with affective and cognitive preferences (activated explicit motives) is a sufficient condition for intrinsic motivation.

High perceived abilities are associated with a well-organized, scripted behavioral repertoire and low requirements of problem solving. Hence, if perceived abilities combine with congruent implicit and explicit motives, neither extrapersonal nor intrapersonal difficulties are expected, and no support of problem solving or volitional regulation is needed (Karoly, 1995; Sokolowski, 1993). Such situations are characterized by task enjoyment and low experienced effort (even if the objective difficulty of the task

at hand might be high), and they will generally be associated with behavioral success.

At first, this phenomenology seems to resemble Deci and Ryan's (2000) intrinsic motivation and Csikszentmihalyi's (1975) flow, the latter being a specific case of intrinsic motivation characterized by undivided attention to the task; impaired sense of time; and absence of intrapersonal conflict, self-referential, or other distracting thoughts (Csikszentmihalyi, 1988; Heckhausen, 1991). However, the compensatory model differs from alternative approaches to intrinsic motivation (for reviews, cf. Kanfer, 1990), particularly those in which abilities are perceived as critical—for example, Csikszentmihalyi's (1975) flow concept.

As stated, the sufficient condition of intrinsic motivation does not include perceived abilities: low perceived abilities per se do not preclude intrinsic motivation. However, low perceived abilities preclude flow experience, because low perceived abilities are associated with frequent script interruptions that counteract the experience of flow. Hence, congruent implicit and explicit motives (the sufficient condition for intrinsic motivation) must combine with perceived abilities to allow flow experience.

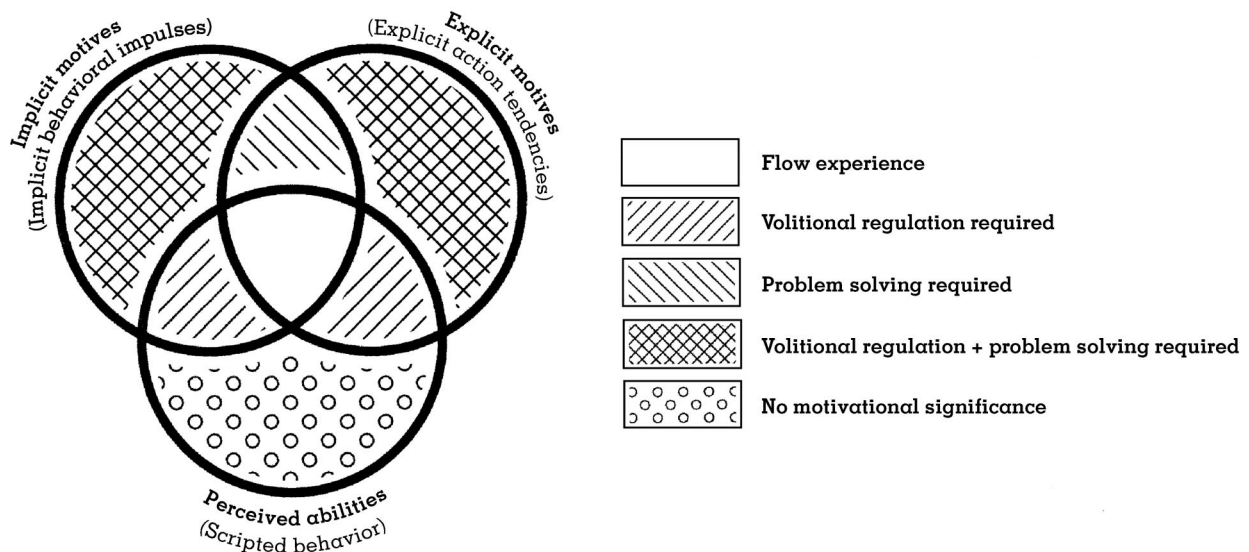
In contrast to Csikszentmihalyi (1975, 1988), the compensatory model leads to the assertion that perceived abilities surpassing task demands do not necessarily lead to boredom, or otherwise counteract flow. Consider, for example, flow experiences in reading, which are largely independent of reading proficiency and do not decrease for the experienced reader. Low, compared to high, task demands only counteract flow if they prevent arousal of flow-concordant implicit motives or activate conflicting explicit motives (e.g., the reader may not like or want to read a simple book).

Proposition 12: Congruence of implicit motives, explicit motives, and perceived abilities is associated with flow experiences.

SUMMARY OF THE COMPENSATORY MODEL

Figure 1 is a schematic overview of the compensatory model. The three structural components of the model—implicit motives, explicit motives, and perceived abilities—are represented by the three circles of Figure 1, symbol-

FIGURE 1
Schematic Overview of the Compensatory Model of Work Motivation and Volition



izing their conceptual distinctiveness. The circles partially overlap, indicating the empirical relationship of the structural components. Figure 1 can be used for distal analysis of latent conflict (where the circles represent the overall structure of implicit motives, explicit motives, and perceived abilities), and for proximal analysis of manifest conflict and regulation requirements (where the circles represent implicit behavioral impulses, explicit action tendencies, and scripted behavioral patterns at a particular time).

Aroused implicit motives are associated with affective preferences leading to implicit behavioral impulses, and activated explicit motives are associated with cognitive preferences leading to explicit action tendencies. Discrepancies between implicit and explicit motives (at a distal level) may instigate competing affective and cognitive preferences (at a proximal level), causing intrapersonal conflict. Volitional regulation is needed to resolve these conflicts in favor of cognitive preferences and to compensate for insufficient motivational support. Figure 1 also illustrates the twofold function of volition—namely, to support need-discrepant explicit action tendencies (represented in Figure 1 as the section of the explicit motive circle not covered by the implicit motive circle) and to suppress

unwanted implicit impulses (the section of the implicit motive circle not covered by the explicit motive circle). Problem solving, in contrast, compensates for low perceived abilities and insufficient scripted behavioral routines.

Congruence between implicit and explicit motives (represented by the overlap of the implicit and the explicit motive circles in Figure 1) instigates compatible implicit behavioral impulses and explicit action tendencies, associated with intrinsic motivation and requiring no volitional support. The center of Figure 1 represents congruence of implicit motives, explicit motives, and perceived abilities, associated with flow experience as a special case of intrinsic motivation.

The “unique” (nonoverlapping) sections of Figure 1 represent situations where two of the three structural components of motivation are lacking. Explicit action tendencies in the unique section of the explicit motive circle are not supported by affective preferences or perceived abilities. Hence, both problem solving and volitional regulation are required. This decreases the chances of successful accomplishment because of the limitations of attentional capacity. Implicit behavioral impulses in the unique section of the implicit motive circle could be associated with intrinsic motivation, but are volition-

ally suppressed because they are inconsistent with cognitive preferences. Chances of fulfilling implicit motives that fall into this section are further decreased, because they also require problem solving. Perceived abilities in the unique section of the perceived abilities circle of Figure 1 are not congruent with implicit or explicit motives and, hence, will not instigate behavior.

RELATIONSHIPS TO EXISTING APPROACHES TO WORK MOTIVATION

In this section I assess the compensatory model in relation to existing knowledge of work motivation and volition, although space limitations preclude detailed reviews of existing approaches. The emphasis is on explaining the relation of the model to selected person-centered conceptions of work motivation.

Expectancy-Value Approaches

In expectancy-value approaches (Feather, 1982; Vroom, 1964; cf. Van Eerde & Thierry, 1996), scholars seek to predict behavioral choices as a function of expectancy of behavioral success (perceived abilities) and subjective value of this success (explicit motive). The compensatory model extends this approach by considering implicit motives and conflict resulting from implicit/explicit motive discrepancies. Moreover, the compensatory model provides a proximal analysis of mechanisms that compensate for inadequate support from structural components. This is not included in expectancy-value approaches that are largely confined to distal-level behavioral prognoses.

Goal-Setting Theory

Goal-setting theorists generally do not differentiate between explicit goals (their primary object of interest) and implicit motives. Locke (2000) recently acknowledged this limitation. The compensatory model stresses this distinction and the necessity of distinguishing between explicit goals and explicit motives, because the latter may combine with perceived abilities to instigate the former. Furthermore, goal-setting theorists disregard volitional resolution of intrapersonal conflict. When Locke and Kristof (1996) speak of "volition," they refer to Rand's (1964)

broad concept of volition, according to which attention must be voluntarily focused to permit goal setting and goal striving. This may include the narrower concept of volitional conflict resolution here, but Locke and Kristof (1996) do not explore this issue.

Bandura's Self-Efficacy and Self-Regulation

Bandura acknowledges that motivation is only "partly rooted in cognitive activities" (1977: 193), but he does not address noncognitive determinants of motivation, such as implicit motives. As a consequence, Bandura's approach overemphasizes cognitive motivators, particularly self-efficacy (Bandura, 1977) and goals (Bandura, 1988). In contrast, the compensatory model indicates that perceived abilities must combine with implicit and explicit motives to gain motivational significance and that low perceived abilities are not necessarily an obstacle to motivation.

Bandura's (Bandura, Caprara, Barbaranelli, Pastorelli, & Regalia, 2001) concept of metacognitive self-regulation embraces evaluating task demands and searching for alternatives (elements of problem solving in the compensatory model), as well as creating self-incentives and suppressing intrusive thoughts (elements of volitional regulation in the compensatory model). A basic principle of the compensatory model is that problem solving and volitional regulation must be clearly distinguished, since they fulfill distinct functions and employ different mechanisms. These differences are obscured in the construct of metacognitive self-regulation. By contrasting implicit and explicit motives (and perceived abilities), the compensatory model allows analyses that isolate causal antecedents leading to problem solving or volitional requirements.

McClelland's Dual System Approach to Motivation

McClelland and collaborators (Koestner et al., 1991; McClelland et al., 1989; Weinberger & McClelland, 1990) examined differences between implicit and explicit motives and proposed that discrepancies lead to intrapersonal conflict. However, McClelland did not cross the Rubicon to incorporate volitional conflict resolution processes into his analysis. The compensatory

model builds heavily on McClelland's work but adds the functional analysis of volitional regulation and problem solving. Some dual system approaches to motivation include speculations about the relationship between motive discrepancies and volitional regulation (Brunstein et al., 1999; Emmons, 1999; Epstein, 1998; Ryan et al., 1996), but these links have not been explored systematically.

Deci and Ryan's Intrinsic and Extrinsic Motivation

The compensatory model extends Deci and Ryan's (2000) approach by including perceived abilities and problem solving, and it also differs from Deci and Ryan's understanding of intrinsic motivation and regulation requirements. The compensatory model suggests that fulfillment of any implicit motive is associated with task enjoyment and intrinsic motivation—not just fulfillment of certain "fundamental" implicit motives or needs (cf. McClelland et al., 1953). Moreover, arousal of implicit motives does not lead to intrinsic motivation per se, but only if no incompatible cognitive preferences exist at the same time. Flipping the coin over, the present approach differs from Deci and Ryan's in suggesting that even externally imposed goals can be intrinsically motivating, provided they are congruent with the person's actually aroused motives. For example, speeding up an assembly line, probably experienced as externally regulated and alienating by most workers, may be stimulating for those high in implicit achievement motive. This challenges Deci and Ryan's conclusion that "some goals are not integratable" (2000: 248). Finally, and perhaps most important, the compensatory model expands Deci and Ryan's approach by taking a closer look at functional processes that support external regulation (i.e., volition).

Rewards and Corruption of Intrinsic Motivation

Lawler's (1971; Lawler & Jenkins, 1992) approach to rewards is based on cognitive models of motivation (i.e., goal-setting, expectancy-value, and equity approaches). Lawler and Jenkins's (1992) notion that organizational rewards may attract and retain individuals is consistent with the compensatory model, since social in-

centives and rewards activate extrinsic motives (e.g., an explicit money-making motive [cf. Srivastava, Locke, & Bartol, 2001]) known to be influential in determining choice behavior (e.g., job choice). However, working behavior itself, particularly intrinsic work motivation, seems less influenced by rewards, particularly those unrelated to the task—like increased pay or time off work (French, 1955). This suggests that rewards do not necessarily arouse implicit motives, in line with McClelland's (1985) view. Rewards may produce inconsistencies between explicit and implicit motives that require volitional regulation. Employees may not have the necessary volitional resources, or not choose to use them, and absenteeism and withdrawal cognitions may result.

The compensatory model suggests a *differential* view of task-intrinsic incentives. An individual's implicit motives determine the tasks he or she experiences as intrinsically motivating (cf. Winter, 1982). Nevertheless, the influence of implicit motives on behavior may disappear in the presence of powerful social constraints (McClelland et al., 1953). Hence, social incentives in general and rewards in particular can reduce the variation of employee behavior. In sum, the compensatory model advocates including implicit motives and volitional regulation in theorizing on rewards.

The compensatory model also offers alternative explanations for inconsistencies in research findings on the corruption effect of extrinsic rewards (Deci, Koestner, & Ryan, 1999). Summarizing the contradictory evidence, Kanfer writes, "Extrinsic rewards may enhance, impair, or fail to affect task interest, enjoyment, and persistence" (1990: 92). The compensatory model leads to the prediction that extrinsic rewards only corrupt intrinsic motivation if they activate new goal representations ("I want a higher salary for my job . . ."), and deactivate the originally aroused implicit motives (" . . . and I can no longer enjoy my work without more pay"). If, however, extrinsic rewards do not deactivate motives, intrinsic motivation may be *enhanced* instead of corrupted. As suggested by Figure 1, the reward must thematically fall into the intersection of the two circles to avoid the corruption effect. For example, existing intrinsic work motivation will be enhanced—not impaired—if the extrinsic reward is to improve working conditions.

Kanfer and Collaborators' Resource Allocation and Motivational Traits/Skills Analysis

Initially, Kanfer and Ackerman (1989) conceptualized self-regulation as problem solving—not volition. Recently, however, Kanfer and colleagues (Kanfer, 1996; Kanfer & Ackerman, 1996; Kanfer & Heggestad, 1997) adopted Kuhl's (1985) notion of volitional regulation into a motivational traits/skills analysis that has some parallels with the compensatory model. However, Kanfer and colleagues restricted their analysis of motivational traits to explicit motives; implicit motives and the important distinction between implicit and explicit motives were not included. In consequence, their approach is vague about situations that require volitional support and those that do not. For example, Kanfer and Heggestad suggest that fear motives require volitional support (particularly emotion control). In the compensatory model, activated fear motives only require volitional support if they lead to implicit behavioral impulses ("I am afraid of this job interview") in conflict with explicit action tendencies ("I want this job"). No volition, in contrast, is needed if implicit fear associates with explicit action tendencies that are avoidance related ("I don't like this company, and I do not want this job"). Thus, the compensatory model allows a deeper analysis of causal antecedents and functional properties of volitional regulation than Kanfer and Heggestad's approach. Moreover, the inclusion of perceived abilities and problem solving in the compensatory model allows comprehensive analyses of work motivation processes.

AGENDA FOR FUTURE RESEARCH

Research should be directed at developing valid, reliable, and economic instruments to explore the main constructs of the compensatory model—notably, implicit motives and volitional regulation. One of the main obstacles to widespread use of the TAT in motivation research is that it requires qualitative analysis of picture-stories. This raises reliability concerns (Entwisle, 1972) and absorbs considerable research resources. New instruments, such as the Multi-Motive-Grid (Sokolowski et al., 2000) may help to overcome this limitation. There is also a mismatch between recent advancements in research on volitional regulation on the one hand

and methodological stagnation on the other. The Volitional Components Inventory (VCI; Kuhl & Fuhrmann, 1998) is a first attempt to fill this gap (cf. Ryan, 1998). Nevertheless, the factorial structure of the VCI seems somewhat inconsistent (Kehr et al., 1999), and additional research is needed to improve the VCI and develop alternative instruments for volitional regulation. It is also worth examining whether affective preferences ("I really like this task") and cognitive preferences ("I consider this task important and I really want to do it") can serve as easily assessable proxy variables for implicit and explicit motives, respectively.

With respect to structural components of the compensatory model, additional research is necessary to determine how implicit motives, explicit motives, and perceived abilities relate in praxi and how they interact to determine performance. It is to be expected that these predictors have different relative weights and different interactive effects for different classes of behavior. Leisure-related behavior, for example, may be more strongly impaired by inadequate support from implicit motives than work-related behavior.

Differential research may test the proposition that some employees achieve higher congruence of implicit and explicit motives than others, perhaps because they have enhanced self-awareness of implicit motives owing to improved skills in self-observation (McClelland et al., 1989), or because they use metamotivational strategies to align affective and cognitive preferences (Schultheiss & Brunstein, 1999). Further differential effects can be expected in terms of the degree to which employees take account of perceived abilities when setting goals. On the one hand, employees giving much weight to perceived abilities may reject socially supported goals if ability perceptions are low. On the other hand, employees with low ability perception who ignore these may adopt unrealistic goals, resulting in failure.

With respect to functional processes of the model, additional research is needed to determine when problem solving and volitional regulation interact. Even if problem solving and volition are conceptually distinct, there might be transition periods where extrapersonal difficulties surpass a certain threshold and problem solving becomes ineffective. This may erode mo-

tivational support and result in intrapersonal conflict requiring volitional regulation.

The most important task is to further explore the interrelations of motives and volitional processes. Replications of the finding that implicit/explicit motive discrepancies deplete volitional resources (cf. Kehr, 2004) are needed. Specifically, the Baumeister et al. (1998) paradigm could be adopted to determine whether employees with high discrepancies between implicit and explicit motives also have particular difficulties with single volitional acts (e.g., to strive for externally imposed goals or to withstand temptations).

Additional work is needed to develop more sophisticated conflict taxonomies. The compensatory model focuses on conflict between implicit and explicit motives, which proponents of dual system approaches view as the principle case of intrapersonal conflict (McClelland et al., 1989; cf. Brunstein et al., 1998). However, there may be additional conflicts among activated explicit motives (cf. Emmons, King, & Sheldon, 1993), as well as among aroused implicit motives. This differentiation may relate to Lewin's (1938) distinction of approach/approach, approach/avoidance, and avoidance/avoidance conflict, resulting in a multidimensional typology of intrapersonal conflict. Different classes of intrapersonal conflict may require different volitional regulation strategies.⁵ This suggests several interesting research questions, but conceptual work is necessary first. Researchers could also examine whether different action phases (i.e., task choice or task fulfillment) and different classes of regulatory requirements (i.e., suppression or support) may require different volitional strategies (cf. Kehr, 2000).

Several propositions derived from the compensatory model await empirical support, particularly those that challenge existing approaches. To give an example, the compensatory model indicates that expectancy-value approaches (e.g., Feather, 1982; Vroom, 1964) do not predict behavior well if potential conflicts resulting from implicit/explicit motive discrepancies are disregarded. Likewise, the advice from Locke and Latham's (1990) goal-setting theory to set specific and challenging goals may be contraindicated if the goal is not supported by im-

PLICIT motives and the volitional resources of the individual are low.

The compensatory model differs from Bandura's (1977) view in predicting that perceived abilities must combine with motives to instigate action. Moreover, low perceived abilities are not necessarily an obstacle to action, as Ajzen's (1991) approach might indicate, and high perceived abilities are no obstacle for flow experience, in opposition to Csikszentmihalyi's (1975) suggestion. Another proposition requiring empirical substantiation is that extrinsic rewards corrupt intrinsic motivation only if they lead to a reconfiguration of the initial motivation structure. This may offer an explanation for inconsistencies in research findings regarding the corruption effect (Deci et al., 1999).

Finally, an intriguing task relates to the development of intervention methods. Baumeister et al. (1998) use the metaphor of a muscle for volitional regulation, indicating that volitional strength may be depleted but can also be built up by exercise. However, volitional strength does not necessarily develop automatically, and systematic exercise and training may be supportive (Kehr & Von Rosenstiel, in press; Muraven, Baumeister, & Tice, 1999). Clearly, organizations need motivational intervention programs, based on sound theoretical and empirical work, that are thoroughly assessed.

CONCLUSION

The compensatory model of work motivation and volition coalesces three previously unrelated approaches to human motivation: dual system theories, theories on volition, and theories on perceived abilities. The basic notion of the compensatory model is that volitional regulation compensates for insufficient motivation due to implicit/explicit motive discrepancies. Volition is sharply contrasted with problem solving, which compensates for insufficient perceived abilities.

Earlier theories on work motivation do not compete with the compensatory model; rather, they complement it. However, the compensatory model extends these earlier approaches by (1) simultaneously examining implicit and explicit motives and perceived abilities, (2) accounting for individual differences, and (3) highlighting intrapersonal conflict and volitional conflict resolution. Not surprisingly, most propositions de-

⁵ I owe this insight to an anonymous reviewer.

rived from the compensatory model still await empirical support. Hence, there is reason to believe that the compensatory model will provide fresh impulses for research on work motivation and its applications.

REFERENCES

- Ach, N. 1910. *Über den Willensakt und das Temperament* [About the volitional act and character]. Leipzig: Quelle & Meyer.
- Ainslie, G., & Haslam, N. 1992. Self-control. In G. Loewenstein & J. Elster (Eds.), *Choice over time*: 177–209. New York: Russell Sage Foundation.
- Ajzen, I. 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50: 179–211.
- Allport, G. W. 1937. *Personality: A psychological interpretation*. New York: Holt.
- Ambrose, M. L., & Kulik, C. T. 1999. Old friends, new faces: Motivation research in the 1990s. *Journal of Management*, 25: 231–292.
- Asendorpf, J. B., & Van Aken, M. A. G. 1999. Resilient, overcontrolled, and undercontrolled personality prototypes in childhood: Replicability, predictive power, and the trait-type issue. *Journal of Personality and Social Psychology*, 77: 815–832.
- Atkinson, J. W. 1964. *An introduction to motivation*. Princeton, NJ: Van Nostrand.
- Atkinson, J. W., & Birch, D. A. 1970. *A dynamic theory of action*. New York: Wiley.
- Atkinson, J. W., & Feather, N. T. 1966. *A theory of achievement motivation*. New York: Wiley.
- Bandura, A. 1977. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84: 191–215.
- Bandura, A. 1988. Self-regulation of motivation and action through goal systems. In V. Hamilton, G. H. Bower, & N. H. Frijda (Eds.), *Cognitive perspectives on emotion and motivation*: 37–61. Dordrecht, Netherlands: Kluwer.
- Bandura, A. 1991. Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50: 248–287.
- Bandura, A., Caprara, G. V., Barbaranelli, C., Pastorelli, C., & Regalia, C. 2001. Sociocognitive self-regulatory mechanisms governing transgressive behavior. *Journal of Personality and Social Psychology*, 80: 125–135.
- Bargh, J. A. 1984. Automatic and conscious processing of social information. In R. S. Wyer & T. K. Srull (Eds.), *Handbook of social cognition*, vol. 3: 1–43. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Baumeister, R. F., Bratslavsky, E., Muraven, M., & Tice, D. M. 1998. Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology*, 74: 1252–1265.
- Baumeister, R. F., & Heatherton, T. F. 1996. Self-regulation failure: An overview. *Psychological Inquiry*, 7: 1–15.
- Bazerman, M. H., Tenbrunsel, A. E., & Wade-Benzoni, K. 1998. Negotiating with yourself and losing: Making decisions with competing internal preferences. *Academy of Management Review*, 23: 225–241.
- Berlew, D. E. 1986. Managing human energy: Pushing versus pulling. In S. Srivastva (Ed.), *Executive power*: 30–50. San Francisco: Jossey-Bass.
- Binswanger, H. 1991. Volition as cognitive self-regulation. *Organizational Behavior and Human Decision Processes*, 50: 154–178.
- Brunstein, J. C., Schultheiss, O. C., & Grässmann, R. 1998. Personal goals and emotional well-being: The moderating role of motive dispositions. *Journal of Personality and Social Psychology*, 75: 494–508.
- Brunstein, J. C., Schultheiss, O. C., & Maier, G. W. 1999. The pursuit of personal goals. In J. Brandtstädter & R. M. Lerner (Eds.), *Action & self-development*: 169–196. London: Sage.
- Cantor, N., & Blanton, H. 1996. Effortful pursuit of personal goals in daily life. In J. A. Bargh & P. M. Gollwitzer (Eds.), *The psychology of action: Linking cognition and motivation to behavior*: 338–359. New York: Guilford Press.
- Carver, C. S., & Scheier, M. F. 1982. Control theory: A useful conceptual framework for personality-social, clinical, and health psychology. *Psychological Bulletin*, 92: 111–135.
- Chusmir, L. H., & Azevedo, A. 1992. Motivation needs of sampled Fortune-500 CEOs: Relations to organization outcomes. *Perceptual & Motor Skills*, 75: 595–612.
- Conger, J. A., & Kanungo, R. N. 1988. The empowerment process: Integrating theory and practice. *Academy of Management Review*, 13: 471–482.
- Cropanzano, R., Citera, M., & Howes, J. 1995. Goal hierarchies and plan revision. *Motivation and Emotion*, 19: 77–98.
- Csikszentmihalyi, M. 1975. *Beyond boredom and anxiety*. San Francisco: Jossey-Bass.
- Csikszentmihalyi, M. 1988. The flow experience and its significance for human psychology. In M. Csikszentmihalyi & I. S. Csikszentmihalyi (Eds.), *Optimal experience: Psychological studies of flow in consciousness*: 15–35. New York: Cambridge University Press.
- Deci, E. L., Koestner, R., & Ryan, R. M. 1999. A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin*, 125: 627–668.
- 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.
- DeShon, R. P., Brown, K. G., & Greenis, J. L. 1996. Does self-regulation require cognitive resources? Evaluation of resource allocation models of goal setting. *Journal of Applied Psychology*, 81: 595–608.
- Doerner, D., & Wearing, A. J. 1995. Complex problem solving: Toward a (computersimulated) theory. In P. A. Frensch & J. Funke (Eds.), *Complex problem solving: The European perspective*: 65–99. Hillsdale, NJ: Lawrence Erlbaum Associates.

- Egeth, H. E., & Yantis, S. 1997. Visual attention: Control, representation, and time course. *Annual Review of Psychology*, 48: 269–297.
- Emmons, R. A. 1989. The personal striving approach to personality. In L. A. Pervin (Ed.), *Goal concepts in personality and social psychology*: 87–126. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Emmons, R. A. 1999. *The psychology of ultimate concerns: Motivation and spirituality in personality*. New York: Guilford Press.
- Emmons, R. A., King, L. A., & Sheldon, K. 1993. Goal conflict and the self-regulation of action. In D. M. Wegner & J. W. Pennebaker (Eds.), *Handbook of mental control*: 528–551. Englewood Cliffs, NJ: Prentice-Hall.
- Emmons, R. A., & McAdams, D. P. 1991. Personal strivings and motive dispositions: Exploring the links. *Personality and Social Psychology Bulletin*, 17: 648–654.
- Entwisle, D. R. 1972. To dispel fantasies about fantasy-based measures of achievement motivation. *Psychological Bulletin*, 77: 377–391.
- Epstein, S. 1998. Personal control from the perspective of cognitive-experiential self-theory. In M. Kofta, G. Weary, & G. Sedek (Eds.), *Personal control in action: Cognitive and motivational mechanisms*: 5–26. New York: Plenum Press.
- Erber, R., & Erber, M. W. 2000. The self-regulation of moods: Second thoughts on the importance of happiness in everyday life. *Psychological Inquiry*, 11: 142–148.
- Feather, N. T. 1982. Human values and the prediction of action: An expectancy-valence analysis. In N. T. Feather (Ed.), *Expectations and actions: Expectancy-value models in psychology*: 263–289. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Forgas, J. P., Johnson, R., & Ciarrochi, J. 1998. Mood management: The role of processing strategies in affect control and affect infusion. In M. Kofta, G. Weary, & G. Sedek (Eds.), *Personal control in action: Cognitive and motivational mechanisms*: 155–195. New York: Plenum Press.
- French, E. G. 1955. Some characteristics of achievement motivation. *Journal of Experimental Psychology*, 50: 232–236.
- Freud, S. 1967. (First published in 1915.) Die Verdrängung [The repression]. In A. Freud (Ed.), *Gesammelte Werke aus den Jahren 1913–1917*: 247–261. Frankfurt am Main: Fischer.
- Gollwitzer, P. M. 1993. Goal achievement: The role of intentions. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology*, vol. 4: 141–185. Chichester, UK: Wiley.
- Gollwitzer, P. M. 1999. Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54: 493–503.
- Hackman, J. R., & Oldham, G. R. 1980. *Work redesign*. Reading, MA: Addison-Wesley.
- Heckhausen, H. 1991. *Motivation and action*. Berlin: Springer.
- Higgins, E. T. 1998. Promotion and prevention: Regulatory focus as a motivational principle. *Advances in Experimental Social Psychology*, 30: 1–46.
- 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.
- Hull, C. L. 1952. *A behavior system: An introduction to behavior theory concerning the individual organism*. New Haven, CT: Yale University Press.
- Jackson, D. N. 1984. *Personality Research Form manual*. Port Huron, MI: Research Psychologists Press.
- James, W. 1981. (First published in 1890.) *The principles of psychology*, vol. 2. Cambridge, MA: Harvard University Press.
- Kanfer, R. 1990. Motivation theory and industrial and organizational psychology. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology*, vol. 1 (2nd ed.): 75–170. Palo Alto, CA: Consulting Psychologists Press.
- Kanfer, R. 1996. Self-regulatory and other non-ability determinants of skill acquisition. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior*: 404–423. New York: Guilford Press.
- Kanfer, R., & Ackerman, P. L. 1989. Motivation and cognitive abilities: An integrative/aptitude-treatment interaction approach to skill acquisition. *Journal of Applied Psychology*, 74: 657–690.
- Kanfer, R., & Ackerman, P. L. 1996. A self-regulatory skills perspective to reducing cognitive interference. In I. G. Sarason, G. R. Pierce, & B. R. Sarason (Eds.), *Cognitive interference: Theories, methods, and findings*: 153–171. Mahwah, NJ: Lawrence Erlbaum Associates.
- Kanfer, R., & Heggstad, E. D. 1997. Motivational traits and skills: A person-centered approach to work motivation. *Research in Organizational Behavior*, 19: 1–56.
- Karoly, P. 1993. Goal systems: An organizing framework for clinical assessment and treatment planning. *Psychological Assessment*, 5: 273–280.
- Karoly, P. 1995. Self-control theory. In W. O'Donoghue & L. Krasner (Eds.), *Theories of behavior therapy: Exploring behavior change*: 259–285. Washington, DC: American Psychological Association.
- Kehr, H. M. 2000. *Motivation und Volition: Theoretische Ansätze, empirische Studien und Konzepte zur Intervention* [Motivation and volition: Theoretical approaches, empirical studies, and concepts for intervention]. Unpublished habilitation thesis, University of Munich, Germany.
- Kehr, H. M. 2004. Implicit/explicit motive discrepancies and volitional depletion among managers. *Personality and Social Psychology Bulletin*, 30: 315–327.
- Kehr, H. M., Bles, P., & Von Rosenstiel, L. 1999. Self-regulation, self-control, and management training transfer. *International Journal of Educational Research*, 31: 487–498.
- Kehr, H. M., & Von Rosenstiel, L. In press. Self-management training (SMT): Theoretical and empirical foundations

- for the development of a metamotivational and meta-volitional intervention program. In D. Frey, H. Mandl, & L. Von Rosenstiel (Eds.), *Knowledge and action*. Seattle: Hogrefe & Huber.
- Kehr, H. M., Von Rosenstiel, L., & Bles, P. 1997. *Zielbindung, subjektive Fähigkeiten und intrinsische Motivation* [Goal commitment, subjective abilities, and intrinsic motivation]. Paper presented at the 16th Colloquium of Motivational Psychology, Potsdam, Germany.
- King, L. A. 1995. Wishes, motives, goals, and personal memories: Relations of measures of human motivation. *Journal of Personality*, 63: 985–1007.
- Klein, H. J. 1989. An integrated control theory model of work motivation. *Academy of Management Review*, 14: 150–172.
- Klein, J. I. 1990. Feasibility theory: A resource-munificence model of work motivation and behavior. *Academy of Management Review*, 15: 646–665.
- Klinger, E. 1975. Consequences of commitment to and disengagement from incentives. *Psychological Review*, 82: 1–25.
- Koestner, R., Weinberger, J., & McClelland, D. C. 1991. Task-intrinsic and social-extrinsic sources of arousal for motives assessed in fantasy and self-report. *Journal of Personality*, 59: 57–82.
- Kuhl, J. 1985. Volitional mediators of cognition-behavior consistency: Self-regulatory processes and action versus state orientation. In J. Kuhl & J. Beckmann (Eds.), *Action control: From cognition to behavior*: 101–128. Berlin: Springer.
- Kuhl, J., & Fuhrmann, A. 1998. Decomposing self-regulation and self-control: The volitional components inventory. In J. Heckhausen & C. Dweck (Eds.), *Motivation and self-regulation across the life span*: 15–49. Cambridge: Cambridge University Press.
- Kuhl, J., & Goschke, T. 1994. A theory of action control: Mental subsystems, modes of control, and volitional conflict-resolution strategies. In J. Kuhl & J. Beckmann (Eds.), *Volition and personality: Action versus state orientation*: 93–124. Seattle: Hogrefe & Huber.
- Langens, T. A. 2001. Predicting behavior change in Indian businessmen from a combination of need for achievement and self-discrepancy. *Journal of Research in Personality*, 35: 339–352.
- Latham, G. P., & Locke, E. A. 1991. Self-regulation through goal setting. *Organizational Behavior and Human Decision Processes*, 50: 212–247.
- Lawler, E. E. 1971. *Pay and organizational effectiveness: A psychological view*. New York: McGraw-Hill.
- Lawler, E. E., & Jenkins, G. D. 1992. Strategic reward systems. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology*, vol. 3 (2nd ed.): 1009–1055. Palo Alto, CA: Consulting Psychologists Press.
- Lazarus, R. S., Kanner, A. D., & Folkman, S. 1980. Emotions: A cognitive-phenomenological analysis. In R. Plutchik & H. Kellerman (Eds.), *Theory, research, and experience. Volume 1: Theories of emotion*: 189–217. New York: Academic Press.
- LeDoux, J. E. 1995. Emotion: Clues from the brain. *Annual Review of Psychology*, 40: 209–235.
- Leventhal, H., & Scherer, K. 1987. The relationship of emotion to cognition: A functional approach to a semantic controversy. *Cognition and Emotion*, 1: 3–28.
- Lewin, K. 1926. Untersuchungen zur Handlungs- und Affekt-Psychologie. I: Vorbemerkungen über die psychischen Kräfte und Energien und über die Struktur der Seele [Examinations on the psychology of action and affect. I: Preliminary remarks on psychological powers and energies and on the structure of the psyche]. *Psychologische Forschung*, 7: 294–329.
- Lewin, K. 1938. *The conceptual representation and the measurement of psychological forces*. Durham, NC: Duke University Press.
- Locke, E. A. 2000. Self-set goals and self-efficacy as mediators of incentives and personality. In M. Erez, U. Kleinbeck, & H. Thierry (Eds.), *Work motivation in the context of a globalizing economy*: 13–26. Mahwah, NJ: Lawrence Erlbaum Associates.
- Locke, E. A., & Kristof, A. L. 1996. Volitional choices in the goal achievement process. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior*: 365–384. New York: Guilford Press.
- Locke, E. A., & Latham, G. P. 1990. *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice-Hall.
- Loewenstein, G. 1996. Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, 65: 272–292.
- Lord, R. G., & Kernan, M. C. 1987. Scripts as determinants of purposeful behavior in organizations. *Academy of Management Review*, 12: 265–277.
- March, J. G., & Simon, H. A. 1958. *Organizations*. New York: Wiley.
- Markus, H., & Wurf, E. 1987. The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology*, 38: 299–337.
- Maslow, A. H. 1943. A theory of human motivation. *Psychological Review*, 50: 370–396.
- McClelland, D. C. 1985. How motives, skills, and values determine what people do. *American Psychologist*, 40: 812–825.
- McClelland, D. C. 1995. *Scientific psychology as a social enterprise*. Working paper, Boston University.
- McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. 1953. *The achievement motive*. New York: Appleton-Century-Crofts.
- McClelland, D. C., & Franz, C. E. 1992. Motivational and other sources of work accomplishment in mid-life: A longitudinal study. *Journal of Personality*, 60: 679–707.
- McClelland, D. C., Koestner, R., & Weinberger, J. 1989. How do self-attributed and implicit motives differ? *Psychological Review*, 96: 690–702.

- Metcalf, J., & Mischel, W. 1999. A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, 106: 3-19.
- Mischel, W. 1996. From good intentions to willpower. In J. A. Bargh & P. M. Gollwitzer (Eds.), *The psychology of action: Linking cognition and motivation to behavior*: 197-218. New York: Guilford Press.
- Mischel, W. 1999. Personality coherence and dispositions in a cognitive-affective personality (CAPS) approach. In D. Cervone & Y. Shoda (Eds.), *The coherence of personality: Social-cognitive bases of consistency, variability, and organization*: 37-60. New York: Guilford Press.
- Mischel, W., Cantor, N., & Feldman, S. 1996. Principles of self-regulation: The nature of willpower and self-control. In E. T. Higgins & A. Kruglanski (Eds.), *Social psychology: Handbook of basic principles*: 329-360. New York: Guilford Press.
- Morris, W. N., & Reilly, N. P. 1987. Toward the self-regulation of mood: Theory and research. *Motivation and Emotion*, 11: 215-249.
- Muraven, M., & Baumeister, R. F. 2000. Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, 126: 247-259.
- Muraven, M., Baumeister, R. F., & Tice, D. M. 1999. Longitudinal improvement of self-regulation through practice: Building self-control strength through repeated exercise. *Journal of Social Psychology*, 139: 446-457.
- Muraven, M., Tice, D. M., & Baumeister, R. F. 1998. Self-control as limited resource: Regulatory depletion patterns. *Journal of Personality and Social Psychology*, 74: 774-789.
- Murray, H. A. 1943. *Thematic Apperceptive Test manual*. Cambridge, MA: Harvard University Press.
- Nair, K. U. 2000. Cognitive maps of managers and complex problem solving. In T. K. Lant & Z. Shapira (Eds.), *Organizational cognition: Computation and interpretation*: 211-239. Mahwah, NJ: Lawrence Erlbaum Associates.
- Norman, D. A., & Shallice, T. 1986. Attention to action: Willed and automatic control of behavior. In R. J. Davidson, G. E. Schwartz, & D. Shapiro (Eds.), *Consciousness and self-regulation: Advances in research*, vol. 4: 1-18. New York: Plenum Press.
- Oettingen, G., Pak, H., & Schnetter, K. 2001. Self-regulation of goal-setting: Turning free fantasies about the future into binding goals. *Journal of Personality and Social Psychology*, 80: 736-753.
- Polivy, J. 1998. The effects of behavioral inhibition: Integrating internal cues, cognition, behavior, and affect. *Psychological Inquiry*, 9: 181-204.
- Porter, L. W. 1961. A study of perceived need satisfaction in bottom and middle management jobs. *Journal of Applied Psychology*, 45: 1-10.
- Posner, M. I., & Snyder, C. R. R. 1975. Attention and cognitive control. In R. L. Solos (Ed.), *Information processing and cognition: The Loyola Symposium*: 55-85. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Puca, R. M., & Schmalz, H.-D. 1999. Task enjoyment: A mediator between achievement motives and performance. *Motivation and Emotion*, 23: 15-29.
- Rand, A. 1964. *The virtue of selfishness*. New York: New American Library.
- Read, D., & Van Leeuwen, B. 1998. Predicting hunger: The effects of appetite and delay on choice. *Organizational Behavior and Human Decision Processes*, 76: 189-205.
- Rokeach, M. 1979. *Understanding human values: Individual and societal*. New York: Free Press.
- Ryan, R. M. 1998. Commentary: Human psychological needs and the issue of volition, control, and outcome focus. In J. Heckhausen & C. Dweck (Eds.), *Motivation and self-regulation across the life span*: 114-133. Cambridge, UK: Cambridge University Press.
- 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., Sheldon, K. M., Kasser, T., & Deci, E. L. 1996. All goals are not created equal: An organismic perspective on the nature of goals and their regulation. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior*: 7-26. New York: Guilford Press.
- Schank, R., & Abelson, R. 1977. *Scripts, plans, goals, and understanding*. New York: Halsted.
- Schneider, W., & Shiffrin, R. M. 1977. Controlled and automatic human information processing: Detection, search, and attention. *Psychological Review*, 84: 1-66.
- Schultheiss, O. C., & Brunstein, J. C. 1999. Goal imagery: Bridging the gap between implicit motives and explicit goals. *Journal of Personality*, 67: 1-38.
- Schwarz, N., & Bohner, G. 1996. Feelings and their motivational implications: Moods and the action sequence. In P. M. Gollwitzer & J. A. Bargh (Eds.), *The psychology of action: Linking cognition and motivation to behavior*: 119-145. New York: Guilford Press.
- 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., & Kasser, T. 1995. Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology*, 68: 531-543.
- Smith, G. F. 1997. Managerial problem solving: A problem-centered approach. In C. E. Zsombok & G. Klein (Eds.), *Naturalistic decision making*: 371-380. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Sokolowski, K. 1993. *Emotion und Volition* [Emotion and volition]. Göttingen, Germany: Hogrefe.
- Sokolowski, K., & Kehr, H. M. 1999. Zum differentiellen Einfluß von Motiven auf die Wirkungen von Führungstrainings (Mbo) [Differential impact of motive dispositions on the effects of management training (MbO)]. *Zeitschrift für Differentielle und Diagnostische Psychologie*, 20: 192-202.
- Sokolowski, K., Schmalz, H.-D., Langens, T. A., & Puca, R. M. 2000. Assessing achievement, affiliation, and power mo-

- tives all at once: The multi-motive grid (MMG). *Journal of Personality Assessment*, 74: 126–145.
- Spangler, W. D. 1992. Validity of questionnaire and TAT measures of need for achievement: Two meta-analyses. *Psychological Bulletin*, 112: 140–154.
- 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 and Social Psychology*, 80: 959–971.
- Steers, R. M., & Spencer, D. G. 1971. The role of achievement motivation in job design. *Journal of Applied Psychology*, 62: 472–479.
- Taylor, S. E., & Schneider, S. K. 1989. Coping and the simulation of events. *Social Cognition*, 7: 174–197.
- Thomas, K. W., & Velthouse, B. A. 1990. Cognitive elements of empowerment: An "interpretive" model of intrinsic task motivation. *Academy of Management Review*, 15: 666–681.
- Tubbs, M. E., & Ekeberg, S. E. 1991. The role of intentions in work motivation: Implications for goal-setting theory and research. *Academy of Management Review*, 16: 180–199.
- Van Eerde, W., & Thierry, H. 1996. Vroom's expectancy models and work-related criteria: A meta analysis. *Journal of Applied Psychology*, 81: 575–586.
- Von Rosenstiel, L., Kehr, H. M., & Maier, G. W. 2000. Motivation and volition in pursuing personal work goals in the course of organizational socialization. In J. Heckhausen (Ed.), *Motivational psychology of human development*: 287–305. Amsterdam: Elsevier.
- Vroom, V. H. 1964. *Work and motivation*. New York: Wiley.
- Wahba, M. A., & Bridwell, L. G. 1976. Maslow reconsidered: A review of research on the need hierarchy theory. *Organizational Behavior and Human Performance*, 15: 212–240.
- Wegner, D. M. 1994. Ironic processes of mental control. *Psychological Review*, 101: 34–52.
- Weinberger, J., & McClelland, D. C. 1990. Cognitive versus traditional motivational models: Irreconcilable or complementary? In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of social behavior*, vol. 2: 562–597. New York: Guilford Press.
- White, R. W. 1959. Motivation reconsidered: The concept of competence. *Psychological Review*, 66: 297–333.
- Winter, D. G. 1982. Motives and behavior in the 1976 presidential candidates. In A. J. Stuard (Ed.), *Motivation and society*: 244–273. San Francisco: Jossey-Bass.
- Wright, P. M., Kacmar, K. M., McMahan, G. C., & Deleeuw, K. 1995. $P = f(M \times A)$: Cognitive ability as a moderator of the relationship between personality and job performance. *Journal of Management*, 21: 1129–1139.
- Wundt, W. 1907. (First published in 1896.) *Grundriss der Psychologie* [Sketch of psychology] (8th ed.). Leipzig: Engelmann.

Hugo M. Kehr is professor of organizational behavior at the Macquarie Graduate School of Management, Macquarie University, Sydney, and a Heisenberg fellow of the German Research Foundation. He received his habilitation and his Ph.D. in psychology from the University of Munich. His research interests include work motivation, volition, self-management, and leadership.

Copyright of Academy of Management Review is the property of Academy of Management and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.