

**Designing Motivating Jobs:
An Expanded Framework for Linking Work Characteristics And Motivation**

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Introduction

Work design – the structure, content, and configuration of people’s work tasks and roles - remains a fundamentally important issue in contemporary work places. With dramatic changes occurring in the work place, such as the widespread introduction of flexible working and the prevalence of new and transforming information technologies, theories that help to understand work design and its impact on employees and organizations are highly relevant. New issues need to be attended to if one is to achieve motivating work within this changing context, such as how to design effective virtual work. At the same time, traditional concerns in the field of job design, such as levels of job autonomy, remain important. Call centers, for example, are often characterized by forms of work organization that deskill and disempower the work force. The relevance of work design as a critical issue, for individuals as well as organizations, therefore continues. We focus here on the design of motivating work, thereby connecting macro aspects such as organizational design and change with the micro-processes of motivation.

Our main aim in the current chapter is to integrate existing work design theory with advances in our understanding of work motivation, thereby increasing its usefulness for addressing contemporary issues. In particular, we argue that the concept of motivation within work design theory has thus far been treated in rather vague terms. We draw on Kanfer’s (1990) work motivation framework, as well as other theoretical advances (e.g., self-determination theory, regulatory focus theory), to derive more specific propositions about how work design relates to an expanded array of motivational states (including, for example, different types of extrinsic motivation), as well as specific pathways by which work characteristics affect the kinds of goals employee choose (goal generation) and their persistence in achieving them (goal striving).

To set the scene for this discussion, we first briefly re-cap classic theories of work design and their implications for motivation. We then identify some existing elaborations of these core theories. We keep both of these sections relatively brief in the light of existing in-depth reviews (Morgeson & Campion, 2003; Parker & Wall, 2001). Next, we propose further extensions to work design theory and research, drawing particularly on advances in motivation theory. Finally, we synthesize the ideas raised in the chapter and provide a forward-looking agenda for advancing understanding of the design of motivating work.

Classic theories

The way that work is designed, such as the degree of variety and challenge in the job or the level of work demands, has long been recognized as a critical influence on employees’ work motivation. Work motivation is essentially a driving force for behavior. A classic definition is that by Pinder, who referred to work motivation ‘a set of energetic forces ... to initiate work-related behavior, and to determine its form, direction, intensity, and duration’ (Pinder, 1984, p.8). Another way of understanding work motivation (e.g., Campbell & Pritchard, 1976; Kanfer, 1987) is in terms of where the attentional effort is allocated (direction), the proportion of total attentional effort directed towards the task (intensity), and the extent to which attentional effort towards the task is maintained over time (persistence). Work motivation has sometimes been divided into two types: intrinsic, which involves people doing something because they find it interesting and derive spontaneous satisfaction from it; and extrinsic, which involves obtaining satisfaction from the extrinsic consequences of an activity (Porter & Lawler, 1968).

For the most part, classic job design theories propose that particular work characteristics lead to intrinsic motivational states, which in turn enhance performance. An early theory of work design was Herzberg and colleagues’ motivation-hygiene theory (Herzberg, 1974; Herzberg, Mausner, & Snyderman, 1959), which proposed that intrinsic factors (e.g., the level of recognition, the nature of the work itself) lead to job satisfaction whereas extrinsic factors (e.g., supervision, salary, and working conditions) lead to job dissatisfaction. Although the idea of separate motivators of job satisfaction and dissatisfaction has not been upheld (Hulin & Smith, 1967; Locke, 1973; Wernimont,

1966; however, see also Fisher, 2002), this early theory sparked much interest in factors other than pay contributing to work motivation, and inspired the idea of job enrichment. Job enrichment seeks to improve both performance and job satisfaction by building into people's jobs more challenging and responsible tasks, and more chance for growth (Paul, Robertson, & Herzberg, 1969, p. 61).

The Job Characteristics Model (Hackman & Oldham, 1975, 1976) reinforced the value of job enrichment. This theory predicts that five core work characteristics (skill variety, task identity, task significance, autonomy, and feedback) produce critical psychological states (such as a sense of responsibility and meaningfulness) that generate positive affect and thereby ultimately result in positive work outcomes such as job satisfaction, motivation, and work effectiveness. The positive effects of work characteristics are expected to be greater when individuals have a high need for personal accomplishment (high 'growth need strength'), when they have the requisite knowledge and skill, and when satisfaction with the context is high. Meta-analytic results generally support the effect of work characteristics on outcomes such as intrinsic work motivation, job satisfaction and affective organizational commitment (e.g., Fried & Ferris, 1987; Spector, 1986), and also support the proposed moderating impact of growth need strength (Fried & Ferris, 1987; Loher, Noe, Moeller, & Fitzgerald, 1985; Spector, 1985). The role of the critical psychological states is less well supported. For example, results of a meta-analytic model show a better model fit for an unmediated model (directly from job characteristics to outcomes) than for the job characteristics model with critical psychological states as mediators (Behson, Eddy, & Lorenzet, 2000).

An important theoretical assumption underpinning the Job Characteristics Model is that job characteristics like autonomy are intrinsically motivating and satisfying because individuals have a "need" for growth and development, and that work content affects the extent to which these needs are fulfilled. Additionally, motivation can be enhanced via job enrichment because, for example, it establishes clearer connections between performance and desired extrinsic outcomes. For example, if one has autonomy, the results then depend on one's own efforts, which means the individual feels more personal responsibility for performance, and hence is motivated to perform better (Hackman & Oldham, 1976). These ideas relate to a resource allocation perspective (Kanfer & Ackerman, 1989; Naylor, Pritchard, & Ilgen, 1980), whereby, if an individual is deciding whether to engage in a particular task, they judge the utility of performing this task, and then if positive, make a decision to engage in the task if there are perceived benefits of performance relative to anticipated cost of expending effort. From this perspective, work design affects what Kanfer (1990) refers to as 'distal motivation' – the choice to allocate resources to a particular task or goal - by changing the performance-utility relation (clearer connections between effort and the result of effort) and/or the perceived effort-utility relation (clearer connections between results and valued outcomes).

Another work design theory, this time emerging from research on work-related stress, is Karasek's demand-control model. Karasek (1979) argued that psychological strain results from the joint effects of the demands of a work situation and the level of job control. Jobs characterized by high work demands and low job control are likely to result in high strain because the arousal created cannot be transformed into action (the strain-hypothesis). In contrast, active jobs, characterized by high demands and high job control, are proposed to lead to new behavior patterns, learning, and increased motivation (the active learning-hypothesis; Karasek, 1979; Karasek & Theorell, 1990). The skills developed in active jobs will also help to deal with job strain more effectively. Jobs low in both demands and control are called passive jobs, because a decline in activity is expected.

In relation to motivation and health-related outcomes, such as job satisfaction, the additive effect of demands and control on strain has generally been supported (van der Doef & Maes, 1998). However, the buffering effect of job control, in which job demands do not cause strain so long as job control is high, has received less consistent support (Marshall, Barnett, & Sayer, 1997; Van Yperen & Snijders, 2000; Wall, Jackson, Mullarkey, & Parker, 1996). Despite the mixed evidence, the possibility of a buffering effect has attracted much interest because of its practical implication that

increased demands is not necessarily detrimental to motivation or performance (for further reviews and discussions, see de Lange, Taris, Kompier, Houtman, & Bongers, 2003; Parker, Turner, & Griffin, 2003; Sonnentag & Frese, 2003). A further important implication of the demand-control model (Karasek & Theorell, 1990) that has received more recent attention concerns the potential learning-oriented consequences of active jobs, such as their facilitation of outcomes such as self-efficacy, openness to change, and mastery. We discuss these developments in the next section.

There are, of course, other theories and perspectives on work design. Perhaps the most well known of these that we have not already discussed is that deriving from the socio-technical systems approach (e.g., Trist & Bamforth, 1951). As suggested in the term 'socio-technical', this approach is based on the proposition that there should be simultaneous design and joint optimization of the social and technical subsystems in organizations. With regard to work motivation, this approach assumes that employees have an intrinsic need for task accomplishment (Rice, 1958; cited in Ulich, 2001), and are motivated by efficient work organization and by working on a whole or complete task (cf. Hackman & Oldham's (1975) concept of task identity). A set of socio-technical principles has been advocated to guide the design of jobs. For example, the minimal critical specification principle postulates that work processes should only be minimally specified (Cherns, 1976, 1987) so that just enough direction is given to ensure proper task performance while at the same time allowing for the contribution of the employee (Niepce & Molleman, 1998). Variations from what is planned or expected should be controlled as closely to its source as possible, which means that employees take on responsibility for indirect tasks such as maintenance or quality control (Wall, Corbett, Martin, Clegg, & Jackson, 1990). This principle has been one of the few that has been adequately tested. In a study on the effects of operator control versus specialist control in case of machine break-downs (Wall, et al., 1990), operator control led to higher machine operation time, especially for those machines that were more unreliable.

More generally, application of the principles of socio-technical systems thinking led to the formation of semi-autonomous work groups (or self-managing teams). There is now a vast literature documenting the positive effects of this form of team work design on individual motivation, especially job satisfaction and commitment, although rigorous studies of the effects on performance show more mixed findings (cf. Parker & Wall, 1998).

The above approaches to work design, with their focus on job enrichment, have been collectively referred to by Campion and colleagues (Campion, 1988, 1989; Campion & Berger, 1990; Campion & McClelland, 1991, 1993; Campion, Papper, & Medsker, 1996; Campion & Stevens, 1991; Campion & Thayer, 1985, 1987) as representing a motivational approach to work design. This approach can be contrasted with three other approaches, each with different recommendations for the design of work and different costs and benefits: (1) the mechanistic approach of designing simplified and Taylorised jobs, with benefits such as faster training times and less chance of error, and costs such as lower job satisfaction; (2) the biological approach, from fields such as bio-mechanics and ergonomics, that aims to minimize employee physical stress and strain by improving the ergonomic design of work, with costs including, for example, those associated with modifying equipment; and (3) the perceptual-motor approach, from fields like human factors engineering, which is concerned with ensuring cognitive capabilities are not exceeded by job demands so as to reduce overload, errors and accidents, with a potential cost of decreased job satisfaction due to a lack of mental demands.

These four broad approaches to work design serve to remind us that professionals from different disciplines approach the topic with different underlying values. However, the motivational approach as presented in this model is somewhat simplistic in its presentation of proposed outcomes (Parker & Wall, 1998). For example, the motivational approach is believed to conflict with efficiency outcomes (Campion & McClelland, 1993) as well as health-related outcomes such as strain. Yet, studies show that, as well as promoting satisfaction, the motivational approach is also associated with comfort (Campion & Thayer, 1985) and efficiency (Campion & McClelland, 1991, 1993), as well as a range

of other performance-oriented outcomes such as quicker response times (Wall & Jackson, 1995) and employee proactivity (see later). In addition, researchers have shown that the distinction of four work design approaches is too coarse (Edwards, Scully, & Brtek, 1999, 2000), and suggested instead categories of ten work design dimensions. Likewise, it has been demonstrated that one can minimize trade-offs in terms of positive motivational effects and negative mechanistic effects when redesigning jobs (Morgeson & Campion, 2002).

Existing theoretical extensions

The classic theories of work design have been extended and developed in relation to motivation in several important ways (Parker, Wall & Cordery, 2001). First, it has been recognized that the five job characteristics identified in the JCM are relatively narrow, and that there are other important attributes of work that affect its motivating potential. Second, new mediators of the relationship between work characteristics and behavioral outcomes have been considered. Third, a broader set of performance outcomes have been considered beyond the traditional focus on efficiency and task performance, such as proactivity, creativity, and innovation. Finally, changes in the nature of the work context, and in the nature of the work force, have resulted in studies taking account of these contexts. We describe each of these developments in greater detail.

Expanded work characteristics

The main focus of work design research has been on the five 'core' characteristics in the JCM, especially autonomy, as well as job demands (primarily work load, but also role conflict and role clarity). Additional variables have been suggested by several researchers (e.g. Oldham, 1996; Parker & Wall, 1998, 2001; Roberts & Glick, 1981; Wall & Martin, 1987). In a recent analysis of the literature, Morgeson and Humphrey (in press) identified 21 distinct work characteristics within four broad categories: *task motivation work characteristics* (including all those identified in the JCM, with three types of autonomy: work scheduling autonomy, decision-making autonomy, work methods autonomy); *knowledge motivation characteristics* (including job complexity, information processing, problem solving, skill variety, and specialization); *social work characteristics* (including social support, interdependence- initiated, interdependence-received, interaction outside the organization, and feedback from others) and *contextual characteristics* (including ergonomics, physical demands, work conditions, and equipment use). The task motivation, knowledge motivation, and social work characteristics were shown to have consistently positive relationships with job satisfaction. One could also add job demands such as time pressure, role conflict, role ambiguity, and work load to this list of work characteristics. Nevertheless, even this rather long list of work characteristics is not exhaustive. Some further attributes of work have become more important in recent times.

One such attribute is emotional labor (or emotion work) in service contexts (Dollard, Dormann, Boyd, Winefield, & Winefield, 2003; Heuven & Bakker, 2003; Zapf, Isic, Bechtoldt, & Blau, 2003; Zapf, Seifert, Schmutte, Mertini, & Holz, 2001). Emotion work is the requirement to regulate emotions and to display organizationally desired emotions in work interactions (Zapf, 2002). Emotion work is a salient job characteristic in many service jobs that have frequent client interactions (e.g., nurses, flight attendants). For example, one type of emotion work is the requirement to act in a friendly manner, even in the face of negative interactions (a situation referred to as emotional dissonance). This aspect of emotion work has been shown to be negatively related to well-being (Zapf, 2002), especially when work demands are high (Lewig & Dollard, 2003). The effect of emotional dissonance cannot solely be explained by the emotions provoked by the negative interactions. An event-sampling study showed that emotional dissonance related to lower situational well-being even after controlling for felt negative emotion (Tschan, Rochat, & Zapf, 2005).

Emotion work has been shown to contribute to burnout over more traditional job characteristics (Zapf, et al, 2001). In one study, work redesign in a hospital led to a decrease in job stressors but, at the same time, an increase in burnout (Buessing & Glaser, 1999). This puzzling

finding was explained by the authors as due to an increase in frequency and intensity of interactions with patients, and an accompanying increase in emotion work, which was then related to burnout. There is some evidence, however, that job control can moderate the relationship between emotion work and emotional exhaustion (Grandey, Dickter, & Sin, 2004; Grandey, Fisk, & Steiner, 2005). The effect of emotion work also appears to be influenced by the supervisor (Diefendorff & Richard, 2003; Wilk & Moynihan, 2005). Altogether, emotion work is an increasingly important characteristic in many jobs, especially given the growth in the service sector.

Electronic performance monitoring has also received attention as an important work characteristic in today's context, both in terms of its effects on performance and mental health outcomes. Electronic performance monitoring is the use of systems (electronic equipment, e.g. computers, video cameras, telephone) to collect, store, analyze and report the actions or performance of individuals or groups (Nebeker & Tatum, 1993). Consistent with social facilitation theory, performance monitoring potentially affects task performance in simple/well-learned and complex/new tasks differently (Aiello & Kolb, 1995). Performance on a complex task has been shown to be negatively affected by monitoring, although this effect was offset by giving employees control over the timing of monitoring (Douthitt & Aiello, 2001), at least for employees with high base-line performance. Giving employees control over the timing of monitoring enhances feeling of control, which is in turn related to performance (Stanton & Barnes-Farrell, 1996). Interestingly, making participants aware that their performance was monitored led to lower perceived control in this study. Relevance of the activities monitored (on-task performance or breaks) and participation in the implementation of performance monitoring had effects on procedural justice in a simulated office environment (Alge, 2001). These effects were mediated by perceived invasion of privacy.

Alder and Ambrose (2005) studied the effects of use of information collected electronically on perceived monitoring fairness, job satisfaction and performance. Constructive feedback and feedback given by supervisors (rather than computers) led to higher perceived monitoring fairness, which was in turn related to higher performance and job satisfaction. Control over the timing of performance feedback did not affect fairness perceptions, contrary to what was expected; however other forms of control might have effects (Alder & Ambrose, 2005). The perceived degree to which monitoring was relevant for performance (similar to the relevance studied by Alge, 2001) and the perceived purpose of monitoring (developmental or punitive) was positively related to well-being in customer service agents in call centers (Holman, Chissick, & Totterdell, 2002). The perceived intensity of monitoring was negatively related to well being, especially when job control or supervisor support was low. Information privacy, and the perceived control over and legitimacy of information gathering and handling, was related to psychological empowerment (see below) and extra-role behavior (Alge, Ballinger, Tangirala, & Oakley, 2006). Taken together, these studies have implications for how to design and implement an electronic performance monitoring system so that employees' attitudes and motivation are not affected negatively. Electronic performance monitoring can contribute positively to motivation and performance, if applied correctly. However, further research is needed to identify the specific measures that enhance the feelings of control that appear to be essential for performance.

The importance of social work characteristics such as social contact and social support was highlighted in the analysis by Morgeson and Humphrey (in press) described above, which showed the incremental contribution of these characteristics to job satisfaction over and above traditional work characteristics. In an article that similarly emphasized social and relational aspects of work, Grant and colleagues (Grant, et al, 2006) showed that designing work to enhance contact with beneficiaries enhanced motivation and performance. For example, in one study, fundraising callers who had positive interaction with a past beneficiary of the fundraising (i.e., students who had received the funds) persisted longer at telephone calls and raised more funds than individuals who did not have this contact. Further laboratory studies suggested first that positive respectful interaction

promotes perceived impact, which in turn affects persistence at the task, and second, that positive interaction is most important under conditions of high task significance. Parker and Axtell (2001) similarly focused on relational aspects of work design. They showed that enriched work can enhance the extent to which employees' take the perspective of members of other groups (in this case, their internal suppliers), which in turn makes employees more likely to help those in other groups.

As well as social characteristics having main effects, they might also interact with other work characteristics. The job-demand-control-support model, for example, is an extension of the demand-control model described earlier (Karasek & Theorell, 1990), and it proposes that social support buffers the negative strain effects of high demand and low control jobs. As shown in one study, social support can indeed make up for lack of job control (Van Yperen & Hagedoorn, 2003), although the authors suggested that the kind of support needs to be matched with the kind of demand employees face. In another study, social support acted as a buffer in the relationship between job demands and burnout in three of eight analyses, and the buffering role of job control was demonstrated consistently (Bakker, Demerouti, & Euwema, 2005), although no three-way interaction was tested to determine if social support can substitute job control as a resource. The buffering effect of social support has also received support in some longitudinal studies (Dormann & Zapf, 1999; Frese, 1999; R. Rau, Georgiades, Fredrikson, Lemne, & de Faire, 2001), although these effects are relatively weak (Viswesvaran, Sanchez, & Fisher, 1999). High job demands and high job control were both associated with intrinsic motivation among nurses (Van Yperen & Hagedoorn, 2003), but only when social support was low.

Expanded motivational states

As well as expanding the array of work characteristics, a further development has been to extend the intervening variables between work characteristics and outcomes beyond the critical psychological states proposed in the JCM. In particular, the concept of "psychological empowerment" (Conger & Kanungo, 1988; Spreitzer, 1995; Thomas & Velthouse, 1990) has attracted attention as a critical state of intrinsic task motivation. Psychological empowerment is defined as a motivational state involving an assessment of meaning, impact, competence (or self-efficacy), and choice (or self-determination). Conceptually, these cognitive-motivational assessments overlap considerably with the critical psychological states in the Job Characteristics Model. Thus meaning is similar to meaningfulness; impact is similar to knowledge of results; and self-determination/ choice is similar to experienced responsibility. Evidence for the mediating role of psychological empowerment, however, is stronger than for the critical psychological states, perhaps due to improved measures and methodologies. Thus, there is evidence that the following work characteristics predict feelings of empowerment: team production/service responsibilities and team autonomy (Kirkman & Rosen, 1999), access to information (Spreitzer, 1995), working for a boss who has a wide span of control (Spreitzer, 1996), and the sum of JCM work characteristics (Chen & Klimoski, 2003; Liden, Wayne, & Sparrowe, 2000). In turn, psychological empowerment has been linked to outcomes such as job satisfaction (Liden, Wayne, & Sparrowe, 2000), intrinsic motivation (Gagne, Senecal, & Koestner, 1997), team and organizational commitment (Kirkman & Rosen, 1999; Liden, Wayne, & Sparrowe, 2000), job performance and productivity (Kirkman & Rosen, 1999; Kirkman, Rosen, Tesluk, & Gibson, 2004; Liden, Wayne, & Sparrowe, 2000), and proactivity and innovation (Spreitzer, 1995).

Where psychological empowerment is conceptually distinct from the JCM approach is that it recognizes that the psychological states of empowerment can arise from influences over and above traditional work characteristics, such as peer helping and supportive customer relationships (Corsun & Enz, 1999). In this respect, it has some parallels with the earlier social information processing perspective of work design that highlighted social influences on perceptions of work characteristics (Salancik & Pfeffer, 1978). The empowerment approach also focuses on self-efficacy, which has not been a traditional focus of work design theory (as discussed next). Nevertheless, although useful in

stimulating research, and in highlighting the role of work factors other than job characteristics, empowerment research has tended not to refer or build on previous, and often highly related, work design research. Moreover, as discussed later, the focus is still very much on intrinsic motivation, rather than other types of motivation that might arise from work design.

In recent times, research has linked job characteristics with self-efficacy. Bandura (1982) suggested that four categories of experience are used in the development of self-efficacy, one of which is enactive mastery, or repeated performance success. Parker (1998) argued that autonomy provides a source of enactive mastery experiences because it gives employees the opportunity to acquire new skills and master new responsibilities. In addition, social cognitive theory suggests that the level of controllability of a situation will influence self-efficacy, with more controllable tasks leading to greater self-efficacy (Gist & Mitchell, 1992). Autonomy increases the controllability of a task. Thus, job enrichment potentially promotes self-efficacy through increasing enactive mastery and through increasing the controllability of one's set of tasks. Consistent with this reasoning, several researchers have established a link between job enrichment and self-efficacy (Axtell & Parker, 2003; Burr & Cordery, 2001; Parker, 1998; Speier & Frese, 1997). As we describe shortly, self-efficacy is likely to be a particularly important determinant of proactive behavior.

The focus on self-efficacy as an outcome of work design is consistent with Karasek and Theorell's elaborated demand-control model, which proposes learning-oriented outcomes of active jobs. In terms of an interaction between demands and control in predicting learning outcomes, the picture is not clear, but there is now good evidence for the importance of main effects of job control and autonomy on outcomes such as self-efficacy, mastery, and receptivity to change (Bakker, Demerouti, & Euwema, 2005; Cunningham et al., 2002; Dollard, Winefield, Winefield, & Jonge, 2000; Kauffeld, Jonas, & Frey, 2004; Mikkelsen, Ogaard, & Landsbergis, 2005; Parker & Sprigg, 1999; Taris, Kompier, De Lange, Schaufeli, & Schreurs, 2003). These findings of an effect of job control on learning outcomes are an important contribution. They match a long tradition in work design in German-speaking countries, where widely accepted criteria for well-designed jobs include that: tasks are executable (do-able), do not cause any damage (e.g. accidents), do not impair workers' well-being, and promote employees' self-development (R. Rau, 2004; Semmer & Schallberger, 1996; Ulich, 2001; Zapf, 2002). These criteria are derived from German action theory, which emphasizes the cognitive processes involved in regulating work activities (see Frese and Zapf, 1994). From this perspective, job characteristics like autonomy are important because they allow employees to develop and apply appropriate task strategies and meta-cognitive strategies (Frese & Zapf, 1994; Hacker, 2003; cf. Langfred & Moyle's (2004) informational mechanism of task autonomy), and in so doing, they develop a better understanding of the task and its requirements. This theory characterizes individuals as active rather than passive, to the extent that one's personality is ultimately influenced by work. We return to this idea later.

Expanded outcomes

Considering a broader range of cognitive-motivational mechanisms, such as self-efficacy, has arisen partly in an effort to better understand whether and how work design affects proactive behavior. Proactive behavior refers to self-initiated and future-oriented action that aims to change and improve the situation or oneself that, such as using one's initiative or taking charge to improve work methods (Parker, Williams & Turner, 2006). For example, job autonomy has been identified as an important determinant of personal initiative (e.g., Frese, Kring, Soose & Zempel, 1996; Frese, Garst & Fay, 2005), voice (LePine & Van Dyne, 1998), and suggesting improvements (Axtell et al., 2000). Traditional motivational concepts such as job satisfaction and commitment have been criticized for being rather passive in their emphasis, and appear relatively unimportant in regard to promoting proactive behavior (Parker, et al., 2006).

Proactive behaviors can be relatively 'risky', involving, for example, challenging the status quo and speaking out. As such, it has been suggested that engaging in proactive behaviours involves

a decision-process in which the individual assesses the likely outcomes of these behaviours, both whether the actions are likely to be successful and the likely consequences of the action, such as whether the risks of being proactive outweigh the benefits (Frese & Fay, 2001; Morrison & Phelps, 1999; Parker, et al. 2006). Individuals with higher self-efficacy, therefore, are more likely to be proactive because they believe their actions will be successful (Parker, 1998). Consistent with this reasoning, a study by Parker et al., (2006) showed that the positive effect of job autonomy on proactive behavior occurred via two types of 'proactive motivation': role breadth self-efficacy (individual's confidence to carry out more proactive, interpersonal, and integrative tasks beyond their technical ones; Parker, 1998) and flexible role orientation (individual's ownership of broader, longer-term aspects of their work beyond their immediate narrow job, Parker, Wall, Jackson, 1997). A longitudinal study by Frese, Garst and Molenaar (2000; cited in Frese & Fay, 2001) similarly showed that self-efficacy mediated the link between job autonomy/complexity and personal initiative.

The above research is part of a broader trend in which researchers are investigating how work design might affect types of performance beyond the traditional emphasis on core task performance and productivity, such as how job characteristics might affect helping behaviors (Grant et al., 2006; Parker & Axtell, 2001), creativity (Amabile & Gryskiewicz, 1989; Oldham & Cummings, 1996; Shalley, Zhou, & Oldham, 2004), innovation (Axtell et al., 2000), safety (e.g., Parker, Axtell, & Turner, 2001) and voice (LePine & Van Dyne, 1998). For example, job complexity (often assessed as sum of job characteristics) has been shown to be positively related to creativity (cf. Shalley, Zhou, & Oldham, 2004) and innovative work behavior (De Jong & Kemp, 2003; Dorenbosch, van Engen, & Verhagen, 2005), and autonomy more specifically has been identified as a necessary condition for creative performance (Shalley, 1991; Zhou, 1998) and innovation (Axtell et al., 2000; De Jong & Kemp, 2003; Ohly, Sonnentag, & Pluntke, 2006).

The relationship between work demands and performance behaviors such as creativity and proactivity is more complex. Work demands have sometimes been shown to be positively related to creativity (Shalley, Gilson, & Blum, 2000), and sometimes negatively (Andrews & Smith, 1996). Some research has suggested an inverted U-shape relationship between work demands (time pressure) and creativity/innovation (Baer & Oldham, 2006; Janssen, 2001; Ohly, et al., 2006), but a positive relationship with personal initiative, a form of proactive behavior (Fay & Sonnentag, 2002; Ohly, et al.; Sonnentag, 2003). A recent meta-analysis suggests it is important to differentiate between demands that are hindering (such as production problems) or demands that are challenging (high work-load; LePine, Podsakoff, & LePine, 2005). It is likely this differentiation between types of demands will be useful in understanding exactly how demands affect outcomes like creativity and proactivity.

As we discuss later, expanding the array of performance outcomes will generate interest in motivational states and processes that have hitherto not been considered in work design research. One further spin-off from greater attention to different types of performance is a closer integration with stress research. Traditionally, motivation and performance outcomes have been examined separately to health-related outcomes, reflecting different historical traditions. Yet it makes sense to expect that health and well being can be achieved by the same means as motivation and job satisfaction. Indeed, there is a conceptual overlap between occupational stress and job design literatures (Wright & Cordery, 1999): Job satisfaction and intrinsic motivation can be seen as integral to mental health. Personal accomplishment, for example, can be seen as the opposite pole of the burnout dimensions of exhaustion and depersonalization (Cordes & Dougherty, 1993; Schaufeli, Maslach, & Marek, 1993). In this vein, Parker and colleagues (2003) argued that learning-oriented outcomes (such as aspiration, self-efficacy, and proactivity) represent indicators of positive or 'active' mental health. This latter approach is consistent with Warr's (1987, 1994) identification of five types of active mental health over and above affective well being: positive self-regard (e.g., high self-esteem), competence (e.g., effective coping); aspiration (e.g., goal directedness), autonomy/

independence (e.g., proactivity), and integrated functioning (i.e., states involving balance and harmony). From this perspective, work design not only can alleviate stress symptoms and cause positive affect, but it also affects active mental health. The stress-focused approach to work design, therefore, begins to converge with an active learning-oriented approach.

A changing work context and work force

Parker, Wall, and Cordery (2001) advocated greater attention to the antecedents of work characteristics, including factors internal to the organization (e.g., style of management, technology, nature of the tasks, information systems, human resource practices, strategy, history, and culture) and factors external to the organization (e.g., the uncertainty of the environment, customer demands, the available technology, social and cultural norms, economic circumstances, the nature of the labor market, and political and labor institutions). One consequence of this approach is that it suggests an important role for work design in understanding the motivational, well-being, and performance consequences of broader organizational practices. Thus, as Parker et al., argued, from this perspective, the effects of a particular practice will depend, at least to some degree, on how it impinges on work design. For example, in a study of downsizing, Parker, Chmiel and Wall (1997) failed to find the expected negative effects on employee well-being, despite increased job demands. They explained this finding in terms of the counteracting effect of job enrichment and increased role clarity that occurred as a result of a simultaneous empowerment intervention. Similar intermediate roles of work design have been reported in the context of lean production (Jackson & Mullarkey, 2000; Parker, 2003), just-in-time (Jackson & Martin, 1996), performance monitoring (Carayon, 1994), temporary employment contracts (Parker, Griffin, Sprigg, & Wall, 2002), and team work (Kirkman & Rosen, 1999; Sprigg, Jackson, & Parker, 2000).

Another example comes from telework, that is, using information technology instead of work-related travel to obtain flexibility. Telework (either working in a virtual office or in a home office) has been associated with higher work motivation and performance, a finding that can be explained by the greater autonomy of teleworking individuals (Hill, Ferris, & Martinson, 2003). However, at the same time, telework can reduce social contact and teamwork, which tends to influence job motivation negatively (Kurland & Bailey, 1999). One implication of this type of research is that it suggests that the effects of these types of practices on employees can be made more positive by proactively considering work characteristics. For example, by explicitly increasing opportunities for social contact and teamwork (e.g., through virtual team meetings, regular social events), one can design more motivating telework. In a similar vein, team empowerment has been shown to be associated with better performance for virtual teams, especially for teams that do not meet face-to-face very often (Kirkman, et al., 2004). Proactive attempts to enhance team empowerment are therefore likely to promote better outcomes for teleworking teams.

Greater work force diversity also has implications for work design. For example, it has led to an increase in dual-earner couples, accompanied by difficulties integrating work life and family life. Failure to take work-family issues into account when designing work is argued to reduce organizational effectiveness (Bailyn & Harrington, 2004). Indeed, there are spillover processes between job satisfaction and marital satisfaction (Heller & Watson, 2005), and support from family can contribute to employee creativity (Madjar, Oldham, & Pratt, 2002). Flexible time arrangements and reduced working hours have been discussed as a way to meet work-family needs (Bailyn & Harrington, 2004). Supporting this idea, meta-analytic results show that flexible time arrangements are positively related to performance and job satisfaction (Baltes, Briggs, Huff, Wright, & Neuman, 1999), and negatively related to absenteeism, suggesting a reduced conflict between family demands and work. Flexible work arrangements also led to lower absenteeism, less serious mistakes and fewer customer complaints in a quasi-experimental study of service employees (Kauffeld, Jonas, & Frey, 2004). Offering flexible work arrangements makes an organization more attractive to job seekers high in work-family conflict (B. L. Rau & Hyland, 2002). Furthermore, in a large scale study with

Finnish municipal employees, low control over working times (when to start, when to end) was associated with medically certified sickness absences (Ala-Mursula, Vahtera, Kivimaki, Kevin, & Pentti, 2002). Taken together, flexible work time arrangements have potential positive effects for both the employee and the organization.

With regard to other job characteristics, the design of work (autonomy, coordination requirements, work hours) was relatively unimportant in predicting work-family conflict and turnover intentions in one study (Batt & Valcour, 2003), but autonomy was negatively related to work-family conflict in another study (Parasuraman & Simmers, 2001). Greater daily job demands and less daily job control were associated with work-family conflict in US-American dual-earner couples (Butler, Grzywacz, Bass, & Linney, 2005). Demands were also related to marital satisfaction via emotional exhaustion, but autonomy was not (Grzywacz & Butler, 2005). Thus, the role of job characteristics such as autonomy in relation to work-family conflict needs more investigation.

Summary

In summary, despite claims to the contrary (which tend to be based on rather narrow reviews of the literature), there has been considerable theoretical development in regard to work design and motivation. One summary of these developments is the elaborated job characteristics model proposed by Parker, et al. (2001, see Figure 1). These researchers proposed a theoretical framework of work design with five categories of variables that span individual, group and organizational levels of analysis, including: (1) systematic consideration of antecedents of work characteristics (including, for example, organizational practices such as telework); (2) expansion of the traditional range of work characteristics to include aspects salient to the modern context as well as social, emotional and relational aspects of work; (3) extension of the range of outcome variables beyond the existing narrow focus; (4) analysis of the mechanisms, or processes, that explain why work characteristics lead to particular outcomes; and (5) consideration of individual and contextual contingencies that moderate the effects of work characteristics. Morgeson and Campion's (2003) review similarly advocated a broader perspective for work design research, in terms of: Antecedents (work characteristics), mediating processes (motivation, knowledge), outcomes (satisfaction, performance, training demands), and contextual influences (social influences such as coworkers' attitudes and leadership, and structural influences of the organization or the environment).

Insert Figure 1 about here

Further directions

The above expansions are important and helpful, but more is required to fully understand how work design affects motivation. Thus far, work design theory has treated motivation rather loosely, focusing mostly on how job characteristics affect particular intrinsic motivational states. Our aim in this section is to extend core work design theory to incorporate recent advances in motivation theory, such as by considering how work design might affect extrinsic motivational states as well as how it relates to motivational processes.

We use as a basis for our proposed extensions Kanfer's (1990) postulation of three inter-related motivational constructs: motivational states (beliefs regarding the work environment and one's interest in and capacity to operate effectively in that environment); goal generation processes (the goals people choose or generate, as well as plans and strategies for accomplishing the goals); and goal striving processes (processes involving the regulation of effort during goal pursuit). In regard to motivational states, we propose extending research beyond consideration of particular intrinsic motivational states to incorporate a more differentiated view of extrinsic motivation, as well as including regulatory focus and goal orientation as potential motivational states affected by job characteristics. We also present ideas about how work design affects the processes of goal generation

and goal striving, and how it might moderate the effect of these processes on performance. To date there has been very little explicit attention given to how job characteristics affect either goal generation or goal striving. Third, taking a more dynamic approach to job design than is usually the case, we consider how motivational states and processes might affect job characteristics. Figure 2 summarizes these suggested extensions.

Insert Figure 2 about here

Effect of work design on extrinsic motivation, regulatory focus and goal orientation

Traditionally, work design research has focused on a relatively narrow set of motivational states – notably job satisfaction, organizational commitment, and measures of intrinsic motivation. In recent times, as described above, attention has been given to psychological empowerment, self-efficacy, learning-oriented outcomes, and proactive motivation concepts such as flexible role orientation. Here we propose further extensions to research on motivational states, including how job characteristics might affect extrinsic motivation, regulatory focus, and goal orientation [Path A, Figure 2].

Extrinsic motivation

Recent theoretical developments suggest there are important differentiations within the concept of extrinsic motivation that will help to better understand when, how and why work design affects performance. In particular, self-determination theory (SDT; Ryan & Deci, 2000) distinguishes autonomous and controlled motivation. Intrinsic motivation is an example of autonomous motivation because it involves acting with volition and a sense of choice. At the other end of the continuum, a form of extrinsic motivation referred to as external regulation is the most controlled motivation because it is initiated and maintained by consequences external to the person. The perceived locus of causality is outside the person, and as such, it can have negative consequences including lower task satisfaction, a focus on achieving extrinsic rewards, and expending lower effort. Externally regulated behavior is very much what one would expect to see arise from deskilled jobs. Perceptions of control are low, and individuals often expend minimum effort and have a strong focus on achieving extrinsic rewards.

However, unlike most other motivation theories, self-determination theory proposes additional types of extrinsic motivation that are more autonomous than externally regulated motivation. These types of extrinsic motivation arise through a process of internalization, in which people take in values, attitudes, and regulatory structures such that behavior is internally regulated. Introjected regulation is when regulations are internalized but not accepted as his/ her own. Individuals might engage in a behavior that is socially acceptable in order to avoid feelings of guilt or anxiety or to gain others' respect. For example, a nurse might turn up to work instead of taking sick days, not because of a high level of commitment to the organization, but because s/he does not want to let other team members down. Identified regulation is a form of motivation in which the individual values the action and its intended consequences, seeing them as serving an important purpose. Thus, tasks might not themselves be intrinsically motivating, yet they are experienced as internal and relatively autonomous because the behavior is congruent with one's personal goals and identity. An example would be a nurse carrying out some unpleasant tasks, yet recognizing the importance of these tasks for his/her patient's comfort. Integrated regulation is experienced as even more autonomous, albeit being a form of extrinsic motivation. It occurs when one fully accepts the values guiding the behavior, and integrates them with one's self-concept. Yet again, the tasks and behaviors are not necessarily enjoyable, but the objectives they achieve are valued, and the behaviors are seen as an integral part of who one is and one's personal goals. In the case of the nurse above, the nurse would not only identify with the importance of activities for maintaining their patients' health, but these activities would be central to the nurses' broader self-concept. SDT theory proposes these

types of motivation form a continuum from external regulation, the most controlled, to introjected, identified, integrated and finally intrinsic motivation, the most autonomous and self-determined.

The theory further proposes that the satisfaction of three basic psychological needs – a need for autonomy, competence, and relatedness - are the “nutriments“ required for both intrinsic motivation and the autonomous forms of extrinsic motivation; with satisfaction of the need for autonomy being especially important for internalization. It is quite clear that work design (as well as other factors, such as the interpersonal style of managers) can affect the fulfillment of these needs, especially the need for autonomy, which means that work enrichment will promote not only intrinsic motivation but also the more autonomous forms of extrinsic motivation. We believe there are several advantages to extending work design theory to consider the different types of extrinsic motivation and how they arise through internalization.

First, internalization might represent an important, but rather neglected, motivational process underpinning the positive effects of work design. For example, increasing the extent to which job incumbents complete a whole task gives greater meaning to the task, which might not make the activity inherently more enjoyable, but nevertheless gives individuals “a greater sense of the importance of their work because they can see how the various parts of the jobs fit together in a meaningful unit“ (Gagné & Deci, 2005, p. 355). Consistent with these ideas, Sagie and Koslowsky suggested that practices like job enrichment operate at least partly through enhanced commitment to joint decisions and identification with management. Feedback, such as from patients or customers, can also increase the perceived impact of one’s work (Grant et al., 2006), and hence beliefs about its importance, thereby enhancing extrinsic forms of motivation without necessarily changing the intrinsic enjoyment of the tasks.

Although plausible, such processes of internalization have received little attention in relation to job characteristics. Gagné and Deci (2005) cited Parker and colleagues’ (1997) work as an example of the direction this work might take. These researchers showed how the introduction of semi-autonomous work groups led employees to develop a more flexible role orientation in which they felt ownership for problems and goals beyond their immediate job. Ownership for goals beyond one’s immediate job can be seen as indicative of internalization. Including such concepts in work design research, as well as similar variables like psychological ownership and goal congruence will help us to better understand how and when work design affects internalization.

It should not be assumed, however, that the process of internalization invariably has positive outcomes. A second advantage of considering alternative types of extrinsic motivation is that it can help to deepen our understanding of some potential negative effects of different types of work redesign, as well as how effects change over time. Relevant here is Barker’s (1993) research on concertive control. Barker showed, using an in-depth ethnographic approach, that self-managing teams, accompanied by strong vision statements, resulted in workers taking on values that they then impose on themselves in an increasingly formalized and rigid way. Barker referred to this phenomenon as a “tightening of the iron cage”; and described it as a more powerful and insidious form of control of behavior than traditional forms. Although the outcomes of concertive control were not systematically tracked, Barker (1993) observed that many of the participants were becoming increasingly “strained and burdened” (p. 432); initial enthusiasm and over-involvement giving way to burnout. In this case, although systematic evidence is lacking because outcomes were not assessed, it appears that internalization had, at least in the longer term, a detrimental effect on employee well-being. What the actual effects of self-managing teams were on the different types of motivation, and in turn, how these motivational consequences were linked with well-being and behavioral outcomes is unknown. Was it the case, for example, that the work redesign only resulted in externally regulated motivation, or did it result in more autonomous forms of extrinsic motivation, with the latter having negative consequences? Or perhaps it initially resulted in highly autonomous forms of extrinsic motivation, but over time, internalization declined and only externally regulated

motivation remained? Investigating such questions might help to understand more about the motivational effects of initiatives like lean production, which some have argued have positive employee consequences but others have argued the opposite effect (Taira, 1996). Considering the different motivational states, their interplay and trade-offs, is likely to help resolve this debate.

A third important consequence of considering different types of extrinsic motivation is that this might help researchers to better understand when and how work design affects a broader array of work attitudes and behaviors. Evidence suggests that autonomous motivation predicts different behaviors than controlled motivation. Gagné and Deci (2005) summarized laboratory and field studies (e.g., Amabile, 1982; Grolnick & Ryan, 1987; McGraw & McCullers, 1979) showing that autonomous motivation is associated with better performance on relatively complex tasks involving flexibility, creativity, and heuristic problem solving, whereas there is either no difference or a short-term advantage of controlled motivation when tasks are mundane and involve the routine application of an algorithm¹. In addition, Koestner and Losier showed that intrinsic motivation resulted in better performance when tasks were interesting, but that autonomous extrinsic motivation yielded better performance when the tasks were not so interesting yet were important and required discipline or determination. These ideas are consistent with research showing the value of work enrichment for achieving outcomes such as flexibility, creativity, and proactivity, but they suggest that a sense of autonomous motivation might be a key mechanism by which these outcomes arise. It is worth looking more carefully at how work design and its different configurations affect the various types of autonomous motivation and hence behavior. For example, flexible role orientation (which above we suggested might be an indicator of autonomous extrinsic motivation) has been shown to be an important predictor of proactive behavior (Parker et al., 2006). Meyer and colleagues (Meyer, Becker, & Vandenberghe, 2004, p. 1004) recently made a similar argument, suggesting that the effect of job design on behavior depends on the nature of commitment it produces: “According to our model, empowerment practices generate more autonomous forms of regulated behavior if they elicit identification and value congruence as bases of commitment, hence strengthening affective commitment to relative foci such as management”.

Finally, incorporating ideas from self-determination theory suggests ways to enhance the effectiveness of work redesign. For example, work redesigns such as enrichment might be particularly powerful in conjunction with interventions that provide further sources of meaning and values linked to the bigger picture. Interestingly, Gagné and Deci (2005) suggested that a need for relatedness plays a central role in internalization of values and regulations, and therefore that interdependence and groups are particularly likely to increase the development of autonomous motivation. Team work redesigns, therefore, might be even more likely to promote autonomous forms of extrinsic motivation than individual work designs. A related implication is that, in cases where the nature of the tasks means it is not plausible to make the tasks more enjoyable, one can potentially change the meaning attached to the tasks through relational types of work redesign (e.g., see (Grant, in press) or work redesign in combination with other changes (e.g., leadership interventions to increase the extent to which leaders create an autonomy supportive climate e.g., see (Deci, Connell, & Ryan, 1989). In essence, a better understanding of different ways of motivating individuals might result in work design being better tailored for the context.

Regulatory focus

We propose that work design can affect employees’ regulatory focus and goal orientation; motivational states that are increasingly recognized as important drivers of behavior.

¹ However, even in these situations, autonomous motivation might still be better because it is associated with greater employee job satisfaction and well-being (see Ilardi, Leone, Kasser & Ryan, 1993) which are likely to lead to better retention and attendance.

In terms of regulatory focus, we propose that enriched jobs will promote a promotion focus. A promotion focus is concerned with advancements, growth and accomplishment; that is, fulfilling ideals and minimizing discrepancies with the ‘ideal’ self (Higgins, 1996). It contrasts with a prevention focus, which is concerned with security, safety, and responsibility, or fulfilling obligation, and minimizing discrepancies with the ‘ought’ self. In their integrated model of commitment and motivation, Meyer and colleagues (Meyer, et al., 2004) suggested that employees will experience more autonomous regulation and a stronger promotion focus as the relative salience of internal forces for behavior (i.e., needs, values, personal disposition) increases, but will experience more external regulation and a stronger prevention focus as the relative salience of external inducements (rewards, punishments) increases. Following from this, narrow job designs with low autonomy (often accompanied by tight job descriptions, directive supervisors, and other external inducements such as bonus-based reward systems) are expected to lead to a sense of external control, and hence a prevention focus. In contrast, enriched jobs with high job autonomy are likely to promote feelings of internal control, which goes hand in hand with a promotion focus (Meyer et al., 2004).

In turn, promotion and prevention focus have been shown to affect different types of behaviors. As suggested by Freitas and colleagues “goals within a promotion focus are seen as opportunities to try for optimal outcomes, whereas goals with a prevention focus are seen as basic requirements” (Freitas, Liberman, Salovey, & Higgins, 2002, p. 122). For example, promotion-focus eliciting cues have been shown to enhance creative processes, compared to prevention-focus eliciting cues (Friedman & Foerster, 2001; Friedman & Foerster, 2005). Meyer et al., (2004) proposed that a prevention focus is likely to be associated with behavior that is limited in scope aimed as satisfying minimum response, whereas a promotion focus is likely to be associated with more discretionary behavior and higher levels of accomplishment, such as setting and accepting more difficult goals (Meyer et al., 2004). Consistent with this idea, Wallace and Chen (2006) showed that a promotion focus was an important positive predictor of productivity (which entails work quantity and speed), whereas prevention focus was a negative predictor of this outcome. In contrast, a prevention focus was an important positive predictor of safety performance (which entails compliance with rules and regulations) whilst promotion focus was a negative predictor.

Goal orientation

We propose that job characteristics will, over the long term, affect one’s goal orientation. Goal orientation refers to the character of the goals that an individual implicitly pursues (Dweck, 1986; Dweck, 1989; Elliott & Dweck, 1988). Goal orientations are important because they create perceptual-cognitive frameworks for how individuals approach, interpret, and respond to achievement situations, and have been shown to affect numerous important outcomes (e.g., Dweck, 1999; Van Yperen, 2003; for meta-analytic results: Payne, Youngcourt, & Beaubien, in press). Three goal orientations have received most attention in relation to performance: A learning goal orientation and two types of performance goal orientation (Elliot & Harackiewicz, 1994; VandeWalle, 1997). A learning goal orientation refers to an emphasis on the development of knowledge, skills, and competence, and mastering new situations. A ‘prove performance goal orientation’ is one focused on proving competence and gaining favorable judgments, and an ‘avoid performance goal orientation’ is focused on avoiding disproving of one’s competence and negative judgments about it. In addition, state and trait versions of goal orientation have been identified and shown to operate differently (Payne et al., in press).

Not surprisingly, such distinctly different orientations towards achievement predict different patterns of affective, cognitive, & behavioral responses when individuals encounter adversity on a challenging task (Dweck, 1999). Learning goal orientations tend to lead to more task-focused, adaptive, mastery-oriented behaviors in contrast to the more ego-focused, instrumental and defensive behaviors promoted by a performance orientation (Elliott & Dweck, 1988). Learning goal orientation is typically associated with positive performance and achievement outcomes (e.g., Button, Mathieu

& Zajac, 1996; Payne et al., in press). Recent evidence also suggests that a learning orientation might be particularly important for proactive work behavior (Parker & Collins, June-July 2005) and innovative job performance (Janssen & Van Yperen, 2004). Evidence is somewhat more mixed for performance goal orientation, with several studies showing this orientation is negatively related to performance outcomes (e.g., Ford, Smith, Weissbein, Gully, & Salas, 1998) or unrelated (e.g., Button, et al., 1996), but at least some studies showing positive effects on performance (Tenebaum et al., 2001). These mixed findings might occur because the effect of performance goal orientation depends on the strength of an individual's learning orientation, or other contingencies (for reviews on learning and performance goal orientation see (DeShon & Gillespie, 2005; Payne, et al., in press). Also, more recent evidence suggests that the prove and avoid types of goal orientation differ in their consequences. The avoid performance goal orientation appears to be especially dysfunctional (Payne et al., in press).

Given the well-established evidence of their different consequences, it is important to consider how work design might affect goal orientation, and particularly state goal orientation. As already discussed, an enriched job with, for example, opportunity for skill acquisition and use can lead to outcomes such as mastery and self-efficacy, which one might expect over time to create a state goal orientation. Payne et al., (in press) reported meta-analytic evidence that generalized self-efficacy is positively associated with learning orientation. In addition, work characteristics can create expectations about performance, resulting in a climate that is more or less conducive to learning. For example, the level of job autonomy afforded to a job incumbent conveys a certain level of trust, and in so doing, helps to create a supportive learning climate. Leaders can also shape work characteristics, such as the level of challenge within a job, that consequently affect opportunities for learning. Dragoni for example, theorized that leaders who encourage experimentation and assign tasks to stretch and develop employees will promote a learning orientation, whereas those that focus on comparing work performance with others and assign jobs only to those who have proven themselves will convey a performance orientation focused on proving one's ability.

Our proposition, therefore, is that work characteristics, both objective and perceived, can affect one's orientation to achievement situations. This idea is an exciting one to explore. As Dragoni (2005, p. 1093) suggested: "Ample conceptual space exists to articulate how and why objective task characteristics (e.g., number of tasks, change in task demands, diversity of tasks) impact state goal orientation". However, the relationships might be complex. For example, Langfred (2004) suggested that job autonomy might have performance-debilitating effects in self-managing teams when team members do not monitor each other, indicating that job autonomy is not sufficient on its own to induce an achievement-enhancing orientation. The timing of effects will also be important to consider as it is unlikely that goal orientation will be affected by job characteristics in the short term.

Beyond motivational states: A resource allocation perspective

Above we have focused on how employees' perceive themselves at work. Based on these motivational states, employees decide how, when, and where to allocate their effort at work. In other words, they engage in goal generation and goal striving. These behavioral manifestations of motivational states, however, have had little attention in relation to work design. This neglect reflects the broader situation, which is that influential work motivation theories such as goal-setting theory (Locke & Latham, 1990) and Kanfer's task specific motivation formulation (1990) have been infrequently linked to work design. Textbooks and review articles typically treat these topics separately. Yet as we suggest in this chapter, there is much to be gained from integrating ideas across these theoretical perspectives. We consider work design in relation to goal generation and goal striving in turn.

Work design and goal generation

Goal generation processes are those by which an individual allocates his or her time or energy across behaviors or tasks, including evaluating and selecting goals or actions, and planning activities

to achieve these goals or actions (Locke & Latham, 1990). Goal generation processes occur prior to actual task engagement, essentially creating a 'road map for action' (Chen & Kanfer, 2006). At the team level, for example, Chen and Gogus (this volume) identified mission analysis, goal specification, and strategy formulation (based on Marks, Mathieu, & Zaccaro, 2001) as examples of goal generation processes.

As indicated in Figure 2, we suggest several ways that work design might affect goal generation and its relationship with performance. First, work design will affect goal generation through its effect on motivational states [Paths A & B, Figure 2]. Evidence shows that motivational states affect both the goals employees' set and their striving to achieve them (see Kanfer, this volume). At both the individual and team levels of analysis, goal generation and goal striving processes have been shown to mediate between motivational states (e.g., efficacy and goal commitment) and performance (Aube & Rousseau, 2005; Chen, et al., 2005; DeShon, Kozlowski, Schmidt, Milner, & Wiechmann, 2004; Durham, Knight, & Locke, 1997). Thus, if work characteristics affect motivational states, we can assume they also will affect how individuals allocate effort. In broad terms, we are suggesting that work design not only affects the *intensity* component of motivation (e.g., being more or less satisfied or committed) but also the *direction* of motivation (e.g., towards what goals and what type of behavior).

More specifically, one can consider how work characteristics affect the difficulty of goals set by employees. Job enrichment can enhance commitment towards work goals by changing perceptions of performance-utility relations and/or effort-utility relations, or by increasing individuals participation or autonomy over goal setting. Goal commitment, in turn, is especially important in facilitating the achievement of difficult goals (Klein, Wesson, Hollenbeck, & Alge, 1999). Work design will also increase goal difficulty via building self-efficacy. As already indicated, work characteristics such as job autonomy and job complexity increase self-efficacy, which in turn will increase the difficulty of self-set goals (Locke, 1996). Thus, although not yet investigated, there is good reason to suggest that job enrichment can result in employees setting and accepting more difficult goals. Similarly, work enrichment might change the type of goal one aims for, from a performance-oriented or prevention-focused goal to a learning-oriented and promotion-focused goal. As already discussed, the latter motivational states are not only likely to result in individuals' setting and accepting more challenging goals, but also in them directing their effort towards more discretionary and proactive action.

Within organizational settings, it is common to expect individuals to commit to goals that have a reasonably long time horizon, that have a higher-level focus than one's immediate job (e.g., focused on the team or the broader organization), and that encompass elements that might seem contradictory (e.g., goals focused on both cost and quality). We propose that job enrichment can expand the content and complexity of goals that individuals pursue along these dimensions. Increasing autonomy over factors that affect goal achievement can increase the sense of ownership one has for a broader range of goals (Parker et al., 1997). For example, if an individual has autonomy over budget setting and quality monitoring, they are likely to develop increased sense of responsibility for cost goals as well as quality goals. Other work characteristics and processes can also play a role. For example, a work design that provides feedback direct from the customer might promote internalization of longer-term and higher-level organizational goals relating to customer satisfaction. Job characteristics that have been linked to enthusiasm, such as task significance, autonomy and feedback (Saavedra & Kwun, 2000), might also result in an expanded set of goals through the generated positive affect, which can result in broadened attitudes and behaviors (Fredrickson, 2001). On the other hand, work designs that create negative affect (such as the feelings of frustration or anger that arise from not being in control of factors that cause customer dissatisfaction) might mean more attention is required to deal with off-task demands, thereby inhibiting the resources available to apply to goal generation. Affective events theory suggests that

work design is linked to affect by making certain affect-eliciting events more likely (Weiss & Cropanzano, 1996). For example, sales clerks with little control over planning cannot avoid specific disliked customers, and are more likely to experience anger-eliciting interactions.

The effect of other work characteristics on goal choice and planning, such as job demands, is important to explore. For example, on the one hand, excess job demands are likely to result in an individual setting easier or narrower goals. On the other hand, Sonnentag and others (Fay & Sonnentag, 2002; Ohly, et al., 2006; Sonnentag, 2003) show job demands can increase self-starting proactive behavior. High job demands indicate a problem that needs to be addressed, motivating employees to set the goal to do something about it (Fay & Sonnentag, 2002).

A second way that work design might relate to goal generation is through non-motivational processes (Path C, Figure 2). Thus, evidence suggests that job characteristics can affect one's level of expertise, knowledge and understanding (e.g., Leach, Wall, Rogelberg, & Jackson, 2005; Wall & Jackson, 1995; Parker & Wall, 1998), which in turn is likely to influence the goals employees' aim for, as well as their strategies for achieving them. For example, Parker and Axtell (2001) showed that job autonomy led to greater integrated understanding (i.e., a better understanding of broader aspects of one's work, such as how one's job relates to the wider work flow). Integrated understanding, in turn, was associated with increased capacity to appreciate the view point of internal suppliers, and hence a greater propensity to help these colleagues. Thus in this case, allocating effort to team-oriented goals flowed from job enrichment leading to a better understanding of the bigger organizational picture. Long-term exposure to enriched and complex jobs can also promote more complex thinking (Brousseau, 1978; Kohn & Schooler, 1978), which could lead to the pursuit of more complex goals that are at higher levels and with longer time frames, as well as the development of more effective strategies for achieving goals. Thus, we propose job characteristics can affect the content and type of goals one sets or accepts, and the quality of the strategies for achieving them, through increasing knowledge acquisition and cognitive complexity.

Goal generation processes are also potentially affected by work design via unconscious mechanisms (Path C, Figure 2). Thus, some personal resource allocation is done fairly automatically, without much apparent conscious processing (Gollwitzer, 1999; Bargh & Chartrand, 1999). For example, when particular goal-directed behavior is repeated frequently and consistently in a similar situation, with positive reinforcement, it becomes automatic or habitual (Bargh & Chartrand, 1999). Habitual behavior requires little conscious attention, decision-making or reasoning, and it can be automatically elicited by environmental cues without conscious guidance. Such processes might apply in the work context. For example, one could imagine how low job control and a highly directive supervisor might reduce self-efficacy (e.g., because low control signals low trust in one's capability) and enhance a prevention focus, which ultimately result in the individual avoiding difficult goals or setting lower goals. With long-term repeated exposure to such a work design, avoiding difficult goals might become a habitual response by the individual, with little conscious processing involved. In essence, work characteristics can create situational cues, which people respond to in habitual ways or with automatic routines.

A third way that work characteristics might affect the goal generation process is via a moderating impact on the relationships between motivational states and motivational processes (Path D, Figure 2) and between motivational processes and performance (Path E, Figure 2). As we discuss later (see goal striving), task complexity is likely to moderate the link between the allocation of effort and performance (Path E). In complex or novel tasks, goal striving becomes increasingly important, over and above goal generation, for effective performance. Work characteristics can also inhibit or enhance the translation of positive motivational states into goal generation (Path D). For example, high levels of demands, such as conflicting task requirements, might mean that feelings of self-efficacy do not translate into effective goal generation. Similarly, a strong feeling of organizational commitment might not result in the allocation of effort to a difficult goal if the

individual does not have autonomy over the goals they set. Considering work characteristics in this way, as potential constraints or opportunities, has parallels with Peters and O'Connor's (1980) proposal that the impact of personal factors (e.g., motivation and personality) on performance will be constrained by situational factors in the work place such as the degree of job control. Similarly, the prediction is consistent with the view that the impact of personality is less in “strong” situations, such as where job control is low, than it is in “weak” situations, such as where job control is high (Mischel, 1973). If people have little discretion over their tasks, then whether they are motivated or not, there is not much scope for their behavior to affect performance. We suspect that performance development processes that involve goal setting, without sufficient attention to the supporting job design, are likely to be de-railed through such mechanisms.

Work design and goal striving

Goal striving pertains to the psychological mechanisms by which individuals purposively seek to accomplish goals to which they are committed (Kanfer, 1990). Whereas goal generation places a limit on total resource availability during task engagement, goal striving involves the regulation of effort during goal pursuit, such as keeping focused on the task rather than being distracted by off-task demands. Nevertheless, goal generation and striving processes are related. The more effective goal generation processes are in terms of generating an appropriate and complete roadmap for action, the more effective goal striving is likely to be in terms of the execution of task goals and plans (Chen & Gogus, this volume). Therefore one way that goal striving will be affected by work characteristics is via their (proposed) impact on goal generation, as discussed above.

In addition, through their effect on motivational states (Path B, Figure 2), work characteristics can also affect goal striving processes more directly, including their occurrence, how effectively these processes operate, and their overall impact on job performance. Prior research (Kanfer & Ackerman, 1989) has delineated the basic structure and mechanisms involved in goal striving, including the interdependent processes of self-monitoring (monitoring one's behavior and its consequences), self-evaluation (comparing current performance with the desired goal state), and managing self-reactions (affective reactions and self-efficacy). One simple way that work design might influence the self-monitoring process is by influencing how important an outcome is to the incumbent. For example, in deskilled jobs, where employees carry out only a small part of the overall task and do not receive feedback on how they affect the ultimate outcome, they are unlikely to care much about performance beyond meeting minimum requirements, which will make them less likely to engage in self-monitoring. Work characteristics are also likely to affect self-evaluation. For example, Williams, Donovan, and Dodge (2000) found that, if there was goal-performance discrepancy, athletes tended to maintain or increase the goal so long as the perceived factors affecting performance were controllable. Those who lowered their goal tended to perceive factors affecting performance as out of their control. Thus, because work enrichment increases the perceived controllability of environment, then performance-goal discrepancies will have a different and more positive impact on self-regulation than in the case of deskilled work. The third type of self-regulation involves self-reactions, both affective judgments (e.g., self-satisfaction) and task-specific self-efficacy, which interact with self-monitoring and self-regulation to affect decisions about resource allocation. For example, a large negative performance discrepancy can result in dissatisfaction. If self-efficacy is high, then dissatisfaction is likely to spur a decision to allocate more effort in order to reduce the discrepancy, whereas if self-efficacy is low, then there might be little motivation to improve performance (Bandura & Cervone, 1983). We have already discussed the role of job design in building self-efficacy, which we suggest here will not only affect goal generation but also goal striving.

It is important to remember that these self-regulatory processes themselves require attentional effort; effort that can compete with on-task and off-task demands. In their model of episodic performance, Beal and colleagues (Beal, Weiss, Barros & MacDermid, 2005) proposed two key

factors as influencing successful self-regulation: regulatory resources and task attentional pull. Regulatory resources focus attention and resources on the work task rather than being distracted. However, these resources deplete over time, making further self-regulation difficult until the resources are renewed with time and rest (Muraven & Baumeister, 2000). Evidence suggests, for example, that under certain goal setting conditions, individuals who are allowed to take breaks perform better than those who are not allowed to take breaks (Doerr, Mitchell, Klastorin, & Brown, 1996; Kanfer, Ackerman, Murtha, Dugdale, & et al., 1994). Task attentional pull refers to the importance and intrinsic interest of the task, and the presence and difficulty of task goals. For example, if the task is intrinsically motivating, then it will be easier for the employees to focus on the task rather than be distracted (Beal et al., 2006).

From a work design perspective, jobs can be designed to enhance regulatory resources and their replenishment, as well as to enhance task attentional pull. The latter path is quite straightforward since a major thrust of work enrichment is making tasks more intrinsically motivating. In regard to the former, one way that job characteristics can be important is in facilitating replenishment and renewal of regulatory resources. For example, jobs with autonomy over work timing allow employees to rest when required. Such control over breaks might be especially important in situations where high levels of regulatory resources are required, such as in complex or emotionally demanding jobs. Job designs that reduce off-task distractions, such as interruptions, thoughts about work-family issues, negative emotions, stress, or day-dreaming due to boredom, will also facilitate focus on core tasks and hence enhance performance.

A further way that job characteristics might affect goal striving is via their impact on affect. Affective experiences can create cognitive demand and influence resource allocation (Beal et al., 2006). For example, experiencing an insult from a customer can result in anger, rumination, and emotion regulation strategies such as trying to control one's anger; all of which reduce one's ability to focus on the core task and deplete regulatory resources. Designing jobs that reduce negative affect, such as by allowing employees' greater control over factors which cause customer complaints, is likely to improve employees' allocation of resources to the core task, and to prevent the depletion of regulation resources. Evidence does indeed suggest that work design can reduce customer complaints. For example, the introduction of semi-autonomous work groups in street and pavement cleaning increased customer satisfaction (Krause & Dunckel, 2003). Suppressing emotions in a particularly demanding form of emotional regulation (Richards & Gross, 1999, 2000), which further suggests the good sense of work designs that reduce sources of negative affect, rather than expecting employees to engage in emotion regulation.

As we proposed in relation to goal generation, it is also likely that work characteristics moderate the relationship between motivational states and striving (Moderating path D, Figure 2), as well as the relationship between striving and performance (Moderating path E, Figure 2). For example, in regard to the former, even though one is motivated to do so, one might not persist on a task if one has an especially high level of demands. In regard to the latter, task complexity is likely to be an important moderating variable. Thus, goal striving is argued to be especially important in guiding and sustaining effort when tasks are more complex, novel, and require greater attentional resources (Kanfer & Ackerman, 1989). Therefore, the more complex a job, the greater the relative importance of goal striving processes for overall performance. As Beal et al. (2006, p. 1061) suggested, if performance requirements are very complex, requiring more cognitive resources, then the cognitive attention required to deal with off-task demands (such as emotions) draws focus away from the task and lowers performance: "people who must engage in multitasking in order to successfully perform are perhaps more susceptible to attentionally-demanding affective experiences". This means that, when designing jobs, one needs to simultaneously consider cognitive and emotional resource requirements in order to maximize goal striving.

A final way in which work design might affect goal striving, albeit harder to bring about than the processes described above, is through changing individuals' rather more enduring capacities and dispositions (Path F, Figure 2). As already discussed, there is evidence that enriched work design, over the long-term, can enhance cognitive complexity. Work design might similarly affect more stable dispositional attributes of individuals. For example, work design might fulfill self-determination, competence and relatedness needs, thereby promoting what Kernis (2000) referred to as "secure self-esteem" (e.g. Kernis, Grannemann, & Barclay, 1992) rather than "fragile self-esteem". Secure high self-esteem reflects positive feelings of self worth that are well anchored and secure. Individuals like, value and accept themselves "warts and all". People with a fragile high self-esteem are very proud of who they are, feel superior to most other people, and are willing and able to defend against threats to their positive self view. They frequently engage in self-promoting activities and they constantly seek validation of their worth (one might expect to see a stronger performance orientation amongst such individuals). Kernis (2000) argue that fragile self-esteem emerges from "thwarted fundamental needs", such as need for autonomy, competence, and relatedness proposed by Deci and Ryan. They therefore suggest fostering the emergence of secure high self-esteem by satisfying these fundamental psychological needs. As we have already suggested, work characteristics like autonomy and skill variety help to fulfill autonomy and competence needs, and social work characteristics help to fulfill relatedness needs. We propose, therefore, that poor quality work designs can, in the long-term, interfere with the development of perceptions of self-worth. This perspective relates to the idea in German action theory (summarized in Frese & Zapf, 1994) of occupational socialization, in which it is argued that a person develops their 'personality' through action, and thus that work has some influence on the development of personality. It is therefore possible that work design affects goal striving via changes in individuals' more enduring traits. However it is important to note that such a change in personality is likely to be more difficult to achieve than changes in affect or motivational state, and might only occur when individuals experience particular job characteristics over the very long term.

Reciprocal influences of motivation on work design

Thus far in this chapter, we have considered employees as relatively passive recipients of work characteristics. However, the job incumbent can influence work characteristics (Ilgen & Hollenbeck, 1991; Parker, et al., 2001). Employees can take a more active role in work design by choosing tasks, assigning particular meaning to their tasks or jobs, and negotiating different job content, such as greater autonomy or more feedback. Earlier research in this field referred to this process as role innovation (Van Maanen & Schein, 1979) and task revision (Staw & Boettger, 1990). Parker and colleagues (1997) and Frese and Fay (2001) described this process of revising goals and tasks as integral to the display of personal initiative. More recently, this process of employees as actively shaping their jobs has been referred to as job crafting (Wrzesniewski & Dutton, 2001). These researchers argued that people craft and shape their jobs to achieve meaning and identity in the work place. This job crafting can be cognitive, involving changes in one how sees the job, such as nurses seeing their work as being about total patient care, rather than the delivery of high-quality technical care; and it can be physical, involving changes in task and relational boundaries, such as via processes of role and task innovation. For example, Morgeson, Delaney-Klinger, and Hemingway (2005) showed that secretaries with high cognitive abilities and high job autonomy took on more responsibilities, resulting in a broader work role. Employees who actively shape their jobs thereby increase their fit to the job, which benefits both the individual and the organization (Latham & Pinder, 2005). In addition to shaping their jobs, there is evidence that individuals also self-select into jobs with characteristics that fit their motivational tendencies (Judge, Bono, & Locke, 2000).

However, even though it is well recognized that people can craft and shape their jobs, there has been little explicit research on how individual's motivational state, goal choices, or striving affect work characteristics (Path Hi, Hii, Figure 2). Latham and Pinder (2005) argued: "As Bandura

(1997) noted, people are not simply dropped into situations. Research is now needed on the ways they choose, create and change job characteristics” (p. 495). For example, as individuals develop greater self-efficacy, or as individuals internalize broader organizational goals (identified motivation), they are likely to seek out greater job autonomy and challenge in their work. Positive spirals might arise, such as that proposed by Karasek and Theorell (1990) in which an active job promotes learning, which reduces perceptions of events as stressful and facilitates more effective coping: “Over time, these accumulated learning experiences result in a sense of mastery and confidence, which then helps people to cope with strain and further frees up their capacity to accept increasingly challenging situations that promote more learning and positive personality change, *ad infinitum*” (p. 103). Conversely, excessively narrow and low control jobs will result in negative motivational states (e.g., lowered self-efficacy) and perhaps change stable dispositions (e.g., lower one’s aspiration), which in turn mean individuals are likely to avoid responsibility, set easier goals, and give up in the face of obstacles. Karasek and Theorell (1990) proposed a similar negative spiral in which jobs with high demands but low control lead to the accumulation of strain that, in turn, means people are less able to take on less challenging situations, and learn fewer coping strategies, thereby experiencing more strain, *ad infinitum*. Although there has been recent research providing support for some aspects of these spirals (e.g., that work design affects self-efficacy and mastery), the pathways in the process from motivation to work characteristics has rarely been investigated.

These dynamic relationships between motivational states, processes and work characteristics are likely to occur over different time spans. For example, work design can impact on positive affect, which might have a relatively immediate (although perhaps short-lived) effect on job crafting consistent with the broaden-and-build theory (Fredrickson, 2001). However work design might also affect employees’ level of self-esteem or their aspiration (as suggested earlier), which will likely have longer-term and more enduring consequences on role innovation and job crafting.

As a final point, it is worth noting that as well as motivation affecting actual job characteristics; motivation may affect the way that work characteristics are perceived. Evidence suggests that the same objective situation can be perceived differently depending on the motivational structures of different people or of individuals at different times. For example, individuals with highly activated affiliation goals are particularly sensitive to social cues (Pickett, Gardner, & Knowles, 2004). One might expect, therefore, motivational states and processes to affect perceptions of jobs, both within individuals over time or between individuals. For example, a highly motivated individual with a strong promotion focus and learning orientation is perhaps likely to perceive more autonomy in a job than an individual with a focus on proving their worth by avoiding mistakes.

Summary and a research agenda

The main thrust of existing work design research has been to examine the effect of job characteristics on motivational states like job satisfaction, intrinsic work motivation, and affective commitment. In this respect, there is well-established evidence of the motivating effects of the five core job characteristics (autonomy, feedback, skill variety, task identity, and task significance), as well as accumulating evidence of the motivating consequences of an extended array of work characteristics including social work characteristics (e.g., social support) and knowledge work characteristics (e.g., complexity). Work load demands, at either very low or very high levels, are typically associated with lower motivation, and demands such as role conflict or role ambiguity also tend to suppress motivation. Emotional demands, such as is present in emotional labor, are increasingly prevalent, and there is a need to more routinely include this aspects in work design studies so that we better understand their impact on motivation. We also suggested other work characteristics that are more salient in today’s work places that can affect employee job satisfaction and motivation, such as electronic performance monitoring.

Expanding the range of work design variables that are investigated in relation to motivational outcomes, and other outcomes, will enable more comprehensive recommendations when it comes to

diagnosing and redesigning work. Importantly it will also allow one to more fully understand the effects of some of the wider changes occurring in the work context. Nevertheless, as well as simply expanding the range of work characteristics considered, there is much more scope to consider how they interact with each other (for example, does job control buffer emotional demands in the same way as proposed and sometimes demonstrated for work load demands?) as well as with individual difference variables. The latter was not a particular focus in the current chapter (see Parker et al., 2001 for a review and extensions relevant here), but it remains important to recognize that the effect of work characteristics on motivation is likely to depend on individual's personality and ability (path I). Some individual difference variables that have been examined in relation to work characteristics include cognitive ability (Morgeson, et al., 2005) and proactive personality (Parker & Sprigg, 1999). Such individual differences are likely to interact with work characteristics not only in their effect on motivational states (path J, as has been the focus of traditional research) but also on motivational processes. For example, individuals with a proactive personality might set more difficult goals under conditions of high job autonomy relative to individuals with a more passive personality.

Likewise, in the current chapter, we have largely considered work design characteristics in isolation from the broader organizational systems within which they are embedded. It is well known that reward, feedback, training, and information systems affect, and are affected by, work characteristics (Cordery & Parker, 2006). How these elements inter-relate to affect motivation needs more attention. Recently, for example, Morgeson and colleagues (2006) showed that self-managing teams only increased employee ratings of their performance when the contextual conditions were poor, suggesting that work enrichment can substitute for context. There are therefore many questions surrounding work characteristics in relation to the wider organizational systems that warrant attention.

In recent times, job design research has developed to consider a broader array of motivational states, such as psychological empowerment and self-efficacy, as mediators of the link between work characteristics and outcomes. Although there is quite a large overlap between the states of psychological empowerment and the earlier JCM's critical psychological states, the former are proving more tractable. There is now a solid amount of evidence that feelings of empowerment arise from work characteristics and in turn affect performance. Importantly, the focus of work design research on active, learning oriented states such as self-efficacy, openness to change, and flexible role orientation helps us to understand how work characteristics can lead individuals to engage in more proactive and self-initiated behaviors. We anticipate that, as interest in the link between work design and an expanded array of outcomes (e.g., creativity, voice, prosocial behavior) gains ascendancy, such active learning-oriented motivational states will attract even more attention.

Beyond existing developments, we recommend examining how work characteristics affect one's promotion-focus, learning-orientation, and autonomous extrinsic motivation. We believe there is much value to be gained by considering these different motivational status and foci because of their expected impact on more flexible, creative, and proactive behaviors. For example, if it is indeed the case that, at least in the long term, enriched work designs promote a stronger learning orientation, this has quite profound practical implications. Innovation is important for survival in today's increasingly globalized organizations (Miles, Snow, & Miles, 2000), and the sorts of behaviors promoted by a strong learning orientation – persistence, learning from mistakes, and a willingness to experiment – are all likely to be critical in such environments. We also see much merit in explicitly thinking about work design in regard to stimulating autonomous extrinsic motivation; in essence, designing work that motivates not through changing the intrinsic appeal of tasks but through changing its meaning. In general, explicitly considering an expanded set of motivational states will allow one: To better predict the different behavioral effects of various types of work design; to strengthen the potential benefits of work redesign, and the ease of redesign, by attention to processes such as internalization; and to make specific design recommendations to match the desired outcomes.

There are, of course, other potential motivational states that warrant attention in relation to job characteristics that we have not discussed here. For example, there is evidence that work characteristics can affect perceptions of justice. Greater autonomy can result in a stronger sense of procedural fairness since employees are given control over the decision-making process (Elovainio, Kivimaki, & Helkama, 2001). Moreover, in our discussion, we have primarily speculated on the potential consequences of job enriching characteristics for expanded motivational states, but what are the consequences on these states of work characteristics like social support or task complexity? We suggested that social work characteristics might be essential for internalization processes, for example, but what role do social contact and interdependence play in affecting one's learning orientation and promotion focus?

As well as considering a broader array of motivational states, we further recommend closer attention to the behaviors of goal generation and goal striving, and how they are affected by work characteristics and their interaction. We proposed that, through their impact on motivational states as well as non-motivational states, and through both conscious and unconscious processes, work characteristics affect the extent to which individuals pursue goals that are difficult, learning and promotion-focused, and complex (i.e., higher level, longer-term, and more encompassing). Work characteristics will also influence the extent to which individuals stay focused on goals, rather than being distracted by off-task demands. Enriched job content will affect this goal striving through its impact on goal generation, as well as more directly. For example, task characteristics like job autonomy will allow workers to remain focused on the task without substantial decrements in regulatory resources. We further suggested that work characteristics can play a moderating role, by disrupting or enhancing the translation of positive motivational states into goal generation and striving, or the translation of appropriate goals and goal striving into performance.

Inherent within these general propositions are many unanswered questions. For example: What is the effect on performance of a specific yet difficult goal if the job incumbent has little control over the factors that allow achievement of the goal? Is the effect of high work load demands on self-regulatory processes in the work place buffered by the level of control, as suggested by Karasek's model? None of these issues, or the broader propositions, has had much, if any, attention, in the literature. Yet, considering the relationships between work characteristics and goal generation will help to explain when and how work characteristics and job designs affect different types of performance. For example, if work designs have an affect on goal choice via creating particular self-expectations, it is not surprising that the process of work redesign is so difficult and can take many years to achieve. An implication would be that work redesign interventions might need to be coupled with leadership change so that new expectations are more readily accepted.

In essence, by incorporating attention to the motivational process of goal generation and striving, the challenge of how to design motivating work becomes a more focused one – how to design work that motivates the setting and acceptance of particular goals as well as persistence and striving on these goals. Considering the topic in this way leads to more specific questions (and hopefully answers), such as how does one design work so that individuals stay focused on the core task. Moreover, considering how work design affects goal generation and goal striving, which are relatively proximal behaviors, will lead to a much better understanding of when and how job characteristics ultimately affect more distal performance outcomes such as efficiency, productivity, and quality. Some of the inconsistency in findings linking work design to performance thus far (see Parker & Wall, 1998) might be explained by the traditional focus on very distal outcomes, which are often influenced by factors outside of an individual's control. In an example of a study adopting our recommended focus on more proximal behaviors that are affected by motivation, Morgeson and colleagues (2006) showed that self-managing teams increased the level of team members' self-reported effort.

How might the research advocated in this chapter develop motivation theory? Kanfer's argument is relevant here, that "the most pressing practical questions associated with these workplace changes do not relate to the operation of self-regulatory mechanisms within a single or short-term cycle, but rather how personal and contextual factors influence the development, use and maintenance of different self regulatory patterns over time" (p. 189). Work design is a pertinent contextual factor. Indeed work characteristics such as autonomy, variety, and feedback potentially have a dramatic effect on self-regulatory processes because they are sustained (and potentially cumulative) influences. In essence, the work characteristics discussed in this chapter are contextual factors that are relevant for the motivation of many individuals for most of their work time. We focused mostly here on the importance of autonomy (or job control) in relation to self-regulation, but also other work characteristics (e.g., job demands, social support) need similar attention. Job design is also rarely a static intervention. Because individuals adapt, learn, and develop, work redesign initiatives such as enrichment typically need to continue to evolve to keep pace with enhanced aspirations, skills, and self-efficacy (Parker & Wall, 1998). The broader transformation occurring within today's organizations also means that work characteristics are continually open to change. Thus far, little is known so far about the self-regulatory processes involved in dealing with change in the workplace, so the type of research advocated in this chapter offers a useful framework for such research on the dynamic workplace. Indeed, there is as much to be gained for motivation theory by considering it in relation to work characteristics, as there is to be gained for our understanding of work design by drawing on advances in motivation theory.

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Figure 1: Elaborated Model of Work Design from Parker, Wall & Cordery (2001)

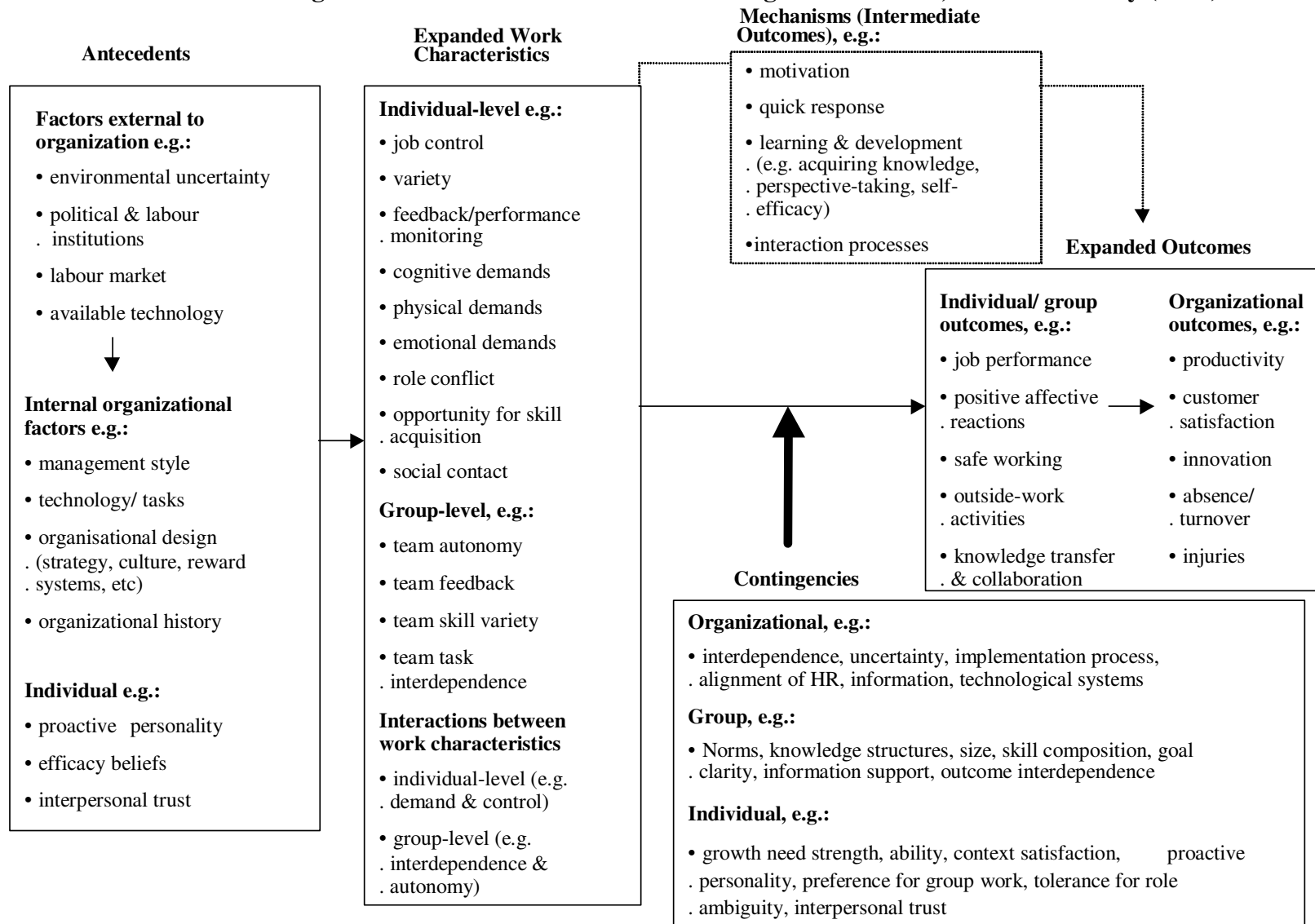


Figure 2. Framework for research investigating the motivational consequences of work design

