Beyond Motivation: Job and Work Design for Development, Health, Ambidexterity, and More

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Abstract

Much research shows it is possible to design motivating work, which has positive consequences for individuals and their organizations. This article reviews research that adopts this motivational perspective on work design, and it emphasizes that it is important to continue to refine motivational theories. In light of continued large numbers of poor-quality jobs, attention must also be given to influencing practice and policy to promote the effective implementation of enriched work designs. Nevertheless, current and future work-based challenges mean that designing work for motivation is necessary but insufficient. This review argues that work design can be a powerful vehicle for learning and development, for maintaining and enhancing employees' physical and mental health, and for achieving control and flexibility simultaneously (for example, in the form of ambidexterity); all these outcomes are important given the challenges in today's workplaces. The review concludes by suggesting methodological directions.

Contents

INTRODUCTION

Ten hours (a day) is a long time just doing this. . . . I've had three years in here and I'm like, I'm going to get the hell out. . . . It's just the most boring work you can do.

—Ford autoworker

I love my job. . . . I've learned so much. . . . I can talk with biochemists, software engineers, all these interesting people. . . . I love being independent, relying on myself. . . . I just do whatever works, it's exciting.

—Corporate headhunter

We see about a hundred injuries a year and I'm amazed there aren't more. The main causes are inexperience and repetition. . . . People work the same job all the time and they stop thinking.

—Slaughterhouse human resources director

These quotations, from a book in which Americans talk about their jobs (Bowe et al. 2000, pp. 38, 12, and 52, respectively), highlight the diverse outcomes one's work design can cause. Work design, or the content and organization of one's work tasks, activities, relationships, and responsibilities, has been linked to almost every end goal that is of concern in an organization—safety, performance, and innovation, to name a few. Work design also matters for individuals; it affects their sense of meaning, their health, and their development. On the global front, the importance of work design is exemplified by the International Labor Organization's Decent Work Agenda, which focuses not just on obtaining work for all but on ensuring quality work that provides "better prospects for personal development and freedom for people to express their concerns, organize and participate in the decisions that affect their lives" (**http://www.ilo.org/global/topics/decent-work/lang–en/index.htm**). On the theoretical front, Miner (2003) rated work design theory as one of the few theories in the field of organizational behavior that are simultaneously important, valid, and useful.

Despite its salience for practice and policy, and its sound theoretical underpinning, work design has not received the research attention that is warranted (Humphrey et al. 2007), especially given radical shifts in work organization (Grant & Parker 2009). As an example, work design has not been the focus of any previous Annual Reviews article. The goal of this article is thus,

unashamedly, to help promote work design research as a distinct area of psychological inquiry. The review has two parts. First, it discusses dominant motivational approaches to work design. Contemporary challenges mean that designing work for motivation is necessary but insufficient, so the second part of the review identifies three goals of work design that are central given enhanced complexity in many workplaces: work design for learning and development, work design for health and well-being, and work design for the dual outcomes of control and flexibility. In both parts, the focus of this review is on more recent research and new theoretical directions [for further advances, see also the special issue of the *Journal of Organizational Behavior*, with an introduction by Grant et al. (2010)]; for reviews of earlier work, the reader is referred to the online reference list (follow the Supplemental Material link from the Annual Reviews home page at **http://www.annualreviews.org**). In addition, this review uses the term work design instead of job design to reflect that the topic is concerned not only with employees' prescribed technical tasks within a fixed job but also with employee engagement in emergent, social, and self-initiated activities within flexible roles (Morgeson & Campion 2003, Parker & Wall 1998).

Definition and Brief History

Imagine designing the role of a police officer. Illustrative work design decisions include the following: Which activities should be grouped together to form a meaningful job? Which decisions should be made by officers and which by their supervisors? Should individual jobs be grouped together into a team? Can one build in routine tasks amid complex ones to ensure officers are not overwhelmed by demands? These decisions about the content and organization of officers' tasks, activities, relationships, and responsibilities will affect outcomes at multiple levels, including individual officers, such as how engaged they feel or their level of strain; the wider organization, such as whether the police service achieves its targets; and society, such as how effectively crime is detected and prevented.

Historically, interest in the topic of work design arose in response to the wide-scale adoption of scientific management principles in the design of early industrial jobs. A key principle is job simplification, in which mental work is allocated to the managers while workers perform only the manual work. The negative consequences of job simplification, such as turnover, strikes, and absenteeism, prompted interest in redesigning work. At the group level, the application of sociotechnical systems theory led to the design of autonomous work groups, which are still popular today. At the individual level, job rotation, job enlargement, and job enrichment emerged as motivational antidotes to simplified jobs; job enrichment is the most important of these approaches because of its emphasis on increasing employees' autonomy. The theory underpinning these and related work redesigns, and research regarding their effects, is discussed next.

PART 1: MOTIVATIONAL WORK DESIGN PERSPECTIVES

Unsurprisingly, given that work design emerged from studies of alienating and meaningless jobs, psychological research on the subject has motivation at its core (Campion 1988). The first section of Part 1 describes established motivational perspectives on work design. The second section reviews expanded motivational perspectives on work design. The third section discusses the embedding of motivational work design principles into policy and practice.

Established Motivational Perspectives: The Job Characteristics Model, Elaborations, and Group Work Design

The dominant motivational model of work design is the job characteristics model (JCM). This section reviews the JCM as well as elaborations to this model and its extension to groups.

Scientific management: a theory of management focused on achieving efficiency by analyzing work and breaking it down into simplified tasks. Employees carry out the simplified tasks while managers make decisions and engage in mental work

Sociotechnical systems theory: the idea that the technical and social aspects of work should be jointly optimized when designing work

Autonomous work group: a group of interdependent members that have collective autonomy over day-to-day aspects of their work

Job rotation: rotating employees from one job to another job

Job enlargement: expanding the content of jobs to include additional tasks

Job enrichment: increasing employees' autonomy over the planning and execution of their own work

▶ Supplemental Material

Job variety: the degree to which a job involves a variety of activities and uses a number of different skills

Job significance: the degree to which a job has a substantial impact on the lives or work of others

Job feedback: the degree to which a job incumbent obtains clear information about his or her effectiveness in performing the job

Job identity: the degree to which a job requires completion of a whole job, from beginning to end

Job autonomy: the degree to which a job provides discretion over daily work decisions, such as when and how to do tasks

Job demands: aspects of jobs that require sustained and/or high levels of physical, mental, or emotional effort (e.g., time pressure, emotional demands)

Job characteristics model. Hackman & Oldham (1976) proposed in the JCM that work should be designed to have five core job characteristics (job variety, job autonomy, job feedback, job significance, and job identity), which engender three critical psychological states in individuals—experiencing meaning, feeling responsible for outcomes, and understanding the results of their efforts. In turn, these psychological states were proposed to enhance employees' intrinsic motivation, job satisfaction, and performance, while reducing turnover. Although some more specific propositions of the JCM have not been consistently supported (such as the idea that individuals with a high need for growth will benefit most from the core job characteristics), the central proposition that work characteristics affect attitudinal outcomes has been well established in several meta-analyses. The most recent meta-analysis (Humphrey et al. 2007), of 259 studies, showed that all or most of the five core work characteristics relate to the JCM outcomes of job satisfaction, growth satisfaction, and internal work motivation, as well as to other outcomes such as organizational commitment, coworker satisfaction, burnout, and role perceptions. In addition, experienced meaning was the key psychological state that mediated the relationship between job characteristics and outcomes. These meta-analytic findings—based mostly on studies with cross-sectional research designs—are supported by longitudinal and quasi-experimental studies showing positive effects of job enrichment on attitudes and affective reactions (see the review by Parker & Wall 1998). Longitudinal studies also show that low autonomy and low support increase absence, and that job enrichment can reduce employee turnover.

Meta-analyses show clear links between work characteristics and subjective job performance, although when objective job performance is considered, only job autonomy is important (Humphrey et al. 2007). Several quasi-experimental and longitudinal studies also show positive performance effects of motivating work characteristics, although a smaller set of other studies have failed to show performance effects (Kopelman 2006), which suggests that the relationship between enrichment and performance is moderated, as discussed in the next section.

An issue that has long dogged the JCM is the use of job incumbents' perceptions to assess job characteristics. For instance, critics have argued that individuals' perceptions of their job characteristics are constructions that arise from social influences, such as the attitudes of their peers. However, although social cues do affect perceptions of work characteristics, there is plenty of evidence that using perceptions to assess job characteristics is valid in most situations (see Daniels 2006, Morgeson & Campion 2003).

Elaborated job characteristics approaches. The JCM's core elements have been expanded. For example, the elaborated job characteristics model proposed the need to extend the core work characteristics, moderators, outcomes, mechanisms, and antecedents of work design (Parker et al. 2001; see also Morgeson & Humphrey 2008), as discussed below.

First, there are important job features beyond the JCM's five core job characteristics. Over the years, much attention has been given to social characteristics such as task interdependence (Langfred 2005). Further job characteristics have become salient as a result of changes in work organization. For example, the rise of dual working parents highlights the need to consider autonomy over working hours; the growth in service work identifies the need to consider emotional job demands; the rise of individuals working from home highlights the role of social contact during work; and changes in career structures bring to the fore opportunities for skill development. In their Work Design Questionnaire, Morgeson & Humphrey (2006) distinguished 21 job characteristics covering four categories: task motivation (i.e., the five JCM characteristics), knowledge motivation (e.g., problem-solving demands), social characteristics (e.g., social support), and contextual characteristics (e.g., work conditions). In Humphrey et al.'s (2007) meta-analysis, motivational work characteristics explained 34% of the variance in job satisfaction;

social and contextual characteristics explained a further 17% and 4%, respectively. Besides expanding what work characteristics are considered, it is important to consider interactions between them, such as the balance between individual autonomy and group autonomy (Langfred 2000).

A second extension is to consider outcomes of work design beyond those specified in the JCM. In some cases, the outcomes are extensions of established ones—for example, going beyond increased effort and productivity as the key indicators of performance to examine performance outcomes such as customer loyalty and employee creativity. In other cases, outcomes have been extended to reflect changes in the nature of work or the workforce. For example, the increasing number of employed women means it is important to consider how work design affects family functioning (see, e.g., Kelly et al. 2011), and interest in social responsibility raises questions about how poor-quality work might lead individuals to seek out enriching volunteer opportunities (Grant 2012a). Additional work design outcomes are further considered in Part 2 of this article (see also reviews such as Demerouti & Bakker 2011, Morgeson & Humphrey 2008).

Third, scholars have identified mechanisms by which work design might affect job attitudes and behaviors beyond the JCM's critical psychological states. Some of these expanded mechanisms are motivationally oriented, such as self-efficacy (Parker 1998) and psychological empowerment (Morgeson & Campion 2003). Other mechanisms are nonmotivational. For example, employees with autonomy can often respond to problems faster than specialists can (Wall & Jackson 1995), and they can often make better decisions than supervisors can because they can access unique information that is only available to those doing the work (Langfred & Moye 2004). Job enrichment can promote learning and more effective coping, mechanisms considered further in the second part of this review.

Fourth, scholars have considered an elaborated set of moderators of how work characteristics affect outcomes. When it comes to individual differences, the concept of fit suggests that which work characteristics are valued varies according to individual preferences, desires, and demographics. Individual differences do moderate work design effects, although these findings are rather inconsistent (Morgeson & Campion 2003). Moreover, there is no basis for expecting that any single individual difference variable will moderate all work characteristic–outcome relationships, because the processes underpinning these links vary according to the work characteristic and the outcome. A theoretical approach will help move this area forward, such as Raja & Johns's (2010) study that drew on trait activation theory (which predicts that people behaviorally express their traits in situations that cue those traits) to understand the link between personality, job scope, and performance. Several theoretical predictions remain untested, such as Fried et al.'s (2007) proposal that simplified jobs might not cause adverse effects early in one's career if a job is seen as a stepping stone for future enriched jobs.

The most consistent contextual moderator of work design is uncertainty. Job enrichment appears to most enhance performance when operational uncertainty is high rather than low (see Wall & Jackson 1995). This is probably because, in unpredictable situations, knowledge is incomplete and flexible responses are required, and autonomy facilitates both the speed and quality of decision making. Scholars have also argued that enriched work design is most effective when it aligns with organizational and human resource systems (Cordery & Parker 2007), a perspective that concurs with the high-performance work systems perspective that bundles of aligned practices enhance organizational performance (see, e.g., Combs et al. 2006). In contrast to these arguments, Morgeson et al. (2006) found that autonomous work groups are effective only when reward, feedback, and information systems are poor. Although studies have considered national cultural influences on work design, there is no clear overall picture of cultural effects (Erez 2010), which is a salient void in the context of globalization.

Interdependence: the degree to which individuals need to work closely with others to carry out their roles

Social support: the provision of emotional or instrumental help, typically from a peer or supervisor

Empowerment (psychological): an individual's experience of meaning, impact, competence, and self-determination

A fifth elaboration of the JCM has been to consider individual and contextual factors that shape, influence, and/or constrain work characteristics. Regarding individual factors, job incumbents can proactively craft their own job designs (see Expanded Motivational Theories, below). Regarding contextual factors, variables such as institutional regimes, organizational design, leadership, occupational context, and organizational practices (e.g., structural empowerment, lean production, temporary employment, downsizing, teleworking) can directly affect or generate work characteristics or exert a cross-level influence on work characteristics (see Motivational Work Design in Practice, below). An implication of these findings is that work can be redesigned not only by direct manipulation of job characteristics but also, for example, by developing empowering leaders or by restructuring. A further implication is that work design should be proactively considered when new technologies and strategies are introduced (although, unfortunately, work design is often disregarded). Occupations can also shape or constrain work characteristics (Dierdorff & Morgeson 2013), and the relationship between broader practices and work design can be reciprocal, for example, a positive leader-member exchange relationship between a manager and the job incumbent might contribute to more enriched work that, in turn, reinforces and enhances the positive relationship between the manager and the job incumbent.

Altogether, the JCM has been expanded in useful ways. It can, and should, be expanded further to reflect changes in work in general (e.g., a growth in virtual work, changes in employment contracts, and an increase in service and knowledge work) and changes in the nature of the workforce (e.g., aging, more women, increased diversity as a result of migration patterns).

Group work design. Group work design is appropriate when individual roles are interdependent and there is a need for collective working. Sociotechnical systems principles were early influences on group work design. Scholars (see, e.g., Campion et al. 1993) extended these ideas, proposing input-process-output models of team effectiveness. Inputs include group-level work design, contextual influences, and group composition; processes include intermediary group states or attributes such as group norms; and outputs include team-level performance and team-member affective reactions. Subsequent team research expanded these models in various ways, although the work design characteristics focused on are still primarily group-level versions of the JCM, with the additional inclusion of interdependence.

Most attention has been given to group autonomy, which is when team members are allocated collective responsibility for their work. There is encouragingly consistent evidence across studies of autonomous work groups, team effectiveness, and team empowerment that group autonomy is associated with positive team member job attitudes and reactions, such as job satisfaction and organizational commitment (Maynard et al. 2012, Parker & Wall 1998). One dent in this positive picture is the question of whether team autonomy can operate as an insidious form of control. Barker's (1993, p. 432) ethnographic study showed that in self-managing teams, workers imposed values on themselves in an increasingly rigid way, such that initially enthusiastic participants became "strained and burdened." Such findings might not be generalizable. For example, Gaille (2013) reported for a large sample of UK workers that, although individual autonomy was more strongly correlated with well-being and satisfaction than participation in a semiautonomous work group was, the latter had no negative effect on well-being and had a positive effect on learning.

Just as for individual-level work design and performance, the story for performance and behavioral outcomes of group autonomy is more complex (Cohen & Bailey 1997). Reviews and meta-analyses identify positive performance and behavioral effects of group autonomy (see, e.g., Cohen & Bailey 1997), for example, via psychological empowerment (Maynard et al. 2012). However, at least a few rigorous studies have shown nonsignificant or mixed effects (see Parker & Wall 1998). Null effects might be partly explained by a mismatch between group autonomy and team

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Empowerment (structural): structures, policies, and practices designed to delegate power and authority

member task interdependence: Group work does not make sense if team members have low task interdependence. Consistent with this premise, Langfred (2005) reported that teams with high task interdependence perform better with high levels of team autonomy, whereas low-interdependence teams perform better with high levels of individual autonomy. Likewise, a meta-analysis by Burke et al. (2006) showed that empowering leadership predicts team productivity most strongly when interdependence in the team is high rather than low.

Beyond interdependence, other moderators of group autonomy effects have been identified; for example, self-managing teams have more positive effects when team members are not isolated from external influences (Haas 2010), when task uncertainty is high (Cordery et al. 2010), and when teams engage in conceptual tasks for which the means-ends is not clear rather than simpler behavioral tasks (Stewart & Barrick 2000). Virtuality also appears important: Kirkman et al. (2004) showed that team empowerment is a stronger predictor of team effectiveness when teams meet face to face less often; their explanation for this finding is that empowerment is especially important for facilitating learning within a challenging virtual context.

Another question concerns the higher-level effects of group autonomy. A case study showed that autonomous group work design can enhance intrateam performance while hampering interteam coordination because of the high team ownership experienced by team members (Ingvaldsen & Rolfsen 2012). Similarly, in a simulation study, decentralized planning was associated with increased team member proactivity and aspiration, but also with coordination problems across teams, resulting in net negative effects on multisystem performance (Lanaj et al. 2013).

A broader literature on concepts such as high-performance work systems (HPWSs) typically considers self-management of teams to be one of the important practices, alongside other elements such as incentive compensation and extensive training. HPWSs are associated with organizational performance, and the link is stronger when a system of practices is considered rather than one single practice (Combs et al. 2006). One would anticipate that these positive organization-level effects are partly accounted for by the positive effects of individual or group work design at lower levels of analysis, although most studies have not examined these pathways.

Expanded Motivational Theories: Proactive, Prosocial, and Other Perspectives

This section extends beyond intrinsic motivation to consider the effect of work design on proactive and prosocial forms of motivation (see also Grant & Parker 2009), as well as on other forms of motivation.

Proactive perspectives on work design. The JCM is relatively passive in terms of the type of outcomes it considers as well as the presumed causes of work design.

Regarding outcomes, job satisfaction is one of the most popular outcomes of work design, yet satisfaction can be experienced as a form of passive contentment. Likewise, task performance concerns carrying out expected tasks well, but more active types of performance, such as taking initiative and proactively introducing improvements, are considered increasingly important in today's dynamic workplaces. Consequently, scholars have increasingly become concerned with how work design can facilitate more proactive attitudes and behaviors. Parker et al. (2010) argued that work design can promote "can do," "reason to," and "energized to" motivational states that in turn stimulate proactivity. Thus, varied and challenging tasks provide employees the opportunity for enactive mastery, which, in turn, cultivates self-efficacy beliefs that they can take charge of their environment (Parker 1998). Enriched jobs also enhance individuals' reason to be proactive, for example, by giving individuals a better appreciation of the impact of their work (Grant 2007) and by promoting flexible role orientations in which individuals feel ownership for broader work goals

Job resources:
aspects of a job that
help employees to
achieve their work
goals, to develop
personally, and to deal
with job demands

(Parker et al. 2001). Interestingly, time pressure and situational constraints—which are typically considered to be stressors in work settings—can also generate a reason to be proactive. From a control theory perspective, these stressors signal a mismatch between a desired and an actual situation, which stimulates employees to want to proactively rectify the situation (Fay & Sonnentag 2002). Finally, enriched jobs can promote "energized to" states, such as feelings of enthusiasm and vigor (Parker et al. 2009). A meta-analysis by Tornau & Frese (2013) highlighted the importance of job control and social support in predicting proactive work behavior.

A second proactive perspective relates to the causes of work design. The traditional work design approach assumes that others (e.g., managers) design jobs, or that work design derives from broader organizational and technological choices. However, individuals mold their work characteristics to fit their individual abilities or personalities. Much recent attention has been given to how individuals redesign their own work, for example, through job crafting, proactive work behavior, or obtaining personalized employment arrangements in the form of idiosyncratic deals (Grant & Parker 2009). Groups can also initiate work design change (see, e.g., Leana et al. 2009). Training individuals to proactively craft their work might increase the effectiveness of top-down work redesign efforts by equipping job incumbents with the skills and attitudes to realize the opportunities offered. Knowledge and professional workers might particularly benefit from redesigning their own work, because these individuals typically have more autonomy, higher education, and higher aspiration for career progression and are increasingly subjected to excessive work demands that might require crafting to be manageable (see below). Theoretically, although scholars recognize that individuals' proactivity can shape their work design, the mechanisms by which this process occurs have barely been considered (Grant & Parker 2009).

The above proactive perspectives come together in the idea of a positive spiral, in which work design promotes proactive attitudes and behaviors that, in turn, lead individuals to shape their work design, causing further development of proactive attitudes and behaviors, ad infinitum. In support of such a spiral, Frese et al. (2007) showed that autonomy and job complexity predict control orientation (a motivational state that includes self-efficacy), which predicts personal initiative, which in turn leads to perceptions of autonomy and complexity. Research on the job demands–resources model (see below) is similarly concerned with positive spirals between job resources and personal resources (Demerouti & Bakker 2011). One issue to explore further is how work design might, via such positive spirals, contribute to positive organization-level outcomes, such as organizational innovation or corporate entrepreneurship.

Prosocial motivation and relational work design. Attention to social and relational aspects of work design has recently gathered pace, in part because of shifts in practice, such as a greater level of collaboration across intra- and interorganizational boundaries (Grant & Parker 2009). A key advance is the relational job design perspective, which focuses on how work structures can provide more or fewer opportunities for employees to interact with others, which in turn affect their motivation, attitudes, and job performance (Grant 2007). In an extension of research on task significance, Grant (2007) argued that when jobs are structured such that incumbents have contact with those who benefit from their work (i.e., beneficiaries, such as clients, customers, and patients), job incumbents empathize with the beneficiaries, which encourages incumbents' effort, persistence, and helping behavior.

A series of studies by Grant and colleagues has supported and extended these ideas. In a field experiment in a call center, callers were given brief contact with a beneficiary—in this case, a scholarship recipient who benefited from funding raised by callers. Compared with controls, these callers spent significantly more time on calls over the next month and vastly increased their average weekly revenue (Grant et al. 2007). In another study, nurses who volunteered to help assemble surgical kits

for use in disadvantaged countries met and heard vivid stories from beneficiaries (in this case, health care practitioners who had previously used surgical kits in former war zones). Compared with controls, these nurses had increased prosocial motivation and assembled more kits (Bellé 2013), an effect that was even stronger for individuals high in prosocial motivation at the outset. The positive effects of relational work design are boosted by transformational leadership (Grant 2012b).

A key theoretical contribution of the relational perspective is that work design can activate employees' prosocial motivation, that is, their desire to bring benefit to others. This contrasts with the traditional emphasis on designing work to enhance intrinsic interest in the job. Practically, relational work design can be a path for increasing work meaning when enriched types of work redesign are impossible or politically untenable. It is also likely that different forms of relational work design will suit different contexts. For a sample of doctors who already had frequent contact with patients, structural support was a powerful form of relational work design, albeit one focused on enhancing relationships among employees rather than between employees and their beneficiaries (Parker et al. 2012).

Self-determination theory, regulatory focus, and goal regulation. Parker & Ohly (2008) incorporated recent developments in motivation theory into their theorizing about work design. One contribution of their model derives from the application of self-determination theory (SDT; see Gagné & Deci 2005) to work design. From a SDT perspective, an individual can experience an unenjoyable task (or task that is not intrinsically motivating) as meaningful because the task is seen as important (identified motivation) and/or because the task is congruent with the individual's values (integrated regulation). Integrated and identified motivation occur when individuals take in external values or regulations through a process of internalization, which is in turn aided by their needs for relatedness and social processes (Gagné & Deci 2005). Work designs such as self-managing teams and relational work design likely exert some of their performance effects via identified and integrated motivation, yet such processes have not been explicitly considered (Parker & Ohly 2008). A further issue relates to the meaning of autonomy. In SDT, autonomy refers to an internalized sense of choice (Gagné & Deci 2005); in the JCM, in contrast, job autonomy refers to actual freedom of choice and discretion in one's job (Hackman & Oldham 1976). As discussed below (see Enabling Bureaucracy), some scholars argue that employees can be motivated even if they lack job autonomy so long as they have a sense of choice through participation in decision making, a concept consistent with the SDT perspective.

Parker & Ohly (2008) proposed several further neglected motivational pathways by which work design might exert its effects, such as activating individuals' regulatory focus (Higgins 1998). For example, enriched work design increases control, which enhances the salience of internal forces of behavior and activates a promotion focus, which in turn is associated with creativity (Meyer et al. 2004). Work design can also affect the goals people choose or set (goal generation), as well as how they regulate effort during goal pursuit (goal striving; see Kanfer 1990). In terms of the former, job enrichment should result in individuals setting more difficult goals (job enrichment enhances commitment, which leads to setting challenging goals); more creative goals (job enrichment increases positive affect, which broadens thinking), and more long-term goals (feedback from a customer promotes internalization of customer goals, resulting in wanting to satisfy customers). Likewise, goal striving involves processes that are likely enhanced by work design. For example, staying on track with a goal requires resolving discrepancies between current performance and the desired goal state (Kanfer 1990), a process that occurs only if individuals see factors that affect their performance as controllable, a belief affected by job enrichment. Successful self-regulation is also aided by having tasks with attentional pull or tasks that feel important or interesting (Beal et al. 2006), which again is likely fostered by job enrichment.

Relational work design: designing roles to enhance opportunities for employees to interact positively with others, such as the beneficiaries of their work

Goal generation and striving processes might also be affected by work design via unconscious mechanisms (Parker & Ohly 2008). When goal-directed behaviors are repeated consistently in a similar situation with positive reinforcement, they can become habitual (Bargh & Chartrand 1999). For example, a job with little autonomy might reduce self-efficacy and promote a prevention focus, which leads an individual to avoid difficult goals. Over time, avoiding difficult goals might become a habitual response that involves little conscious processing. Thus, work characteristics potentially create situational cues, which people respond to in habitual ways or with automatic routines. Such a possibility has yet to be explored.

Motivational Work Design in Practice

How relevant are motivation perspectives in today's workplaces? Listening to the rhetoric about highly skilled jobs in the knowledge economy, one could be forgiven for assuming that most jobs these days are complex and enriched. Certainly this is true for some sectors and some jobs. However, there continues to be a large (and in some cases growing) number of low-wage, low-quality jobs in advanced and developing economies (Osterman & Shulman 2011). Indeed, evidence in the United States suggests an increasing polarization of job quality—more "good jobs" and more "bad jobs," with a growing gap between them (Kalleberg 2011). The fifth European Working Conditions Survey, conducted in 2010, of 44,000 workers across 34 European countries, identified more than one-fifth of jobs as having poor intrinsic quality. Examples of poor contemporary work design abound, even in new jobs. For example, weatherization jobs (making houses more energy efficient) in the United States have primarily been designed as low-wage, poor-quality jobs with little opportunity for development (Osterman & Shulman 2011).

Why do poor-quality work designs continue to exist when there is clear evidence about the negative individual consequences of job simplification, as well as considerable evidence about the negative organizational consequences, such as poor performance, absence, and turnover? One could argue that enriched jobs, which have greater compensation and training requirements, are prohibitive in industries in which efficiency and cost effectiveness are key. However, whether deskilled jobs are the optimal economic option in these industries is highly debatable, especially taking into account turnover, absenteeism, and other such costs. Moreover, the long-run social and health costs of these jobs "are real and quantifiable, and they are paid by families and communities" (Osterman & Shulman 2011, p. 144).

The forces that perpetuate job simplification and poor-quality work reside at many levels, which suggests that changing the situation will require insights and action from multiple stakeholders. Globally, the rise of poor-quality jobs is driven by changes in technology and other macroeconomic and social forces (Davis 2010). For example, owing to increased competitive pressure coupled with the decline of unions, organizations can use outsourcing and contingent contracts to design work in ways they might not otherwise have been able to (Osterman & Shulman 2011). Likewise, technology has eradicated many middle-level jobs, leaving low-skilled jobs that cannot be computerized.

Work design is also affected by national policies, regulation, and institutions (Holman 2013). In regard to the weatherization jobs referred to above, although various advocacy groups pushed for quality jobs, this goal was held back by other stakeholders' competing goals as well as by complex political pressures. In this vein, Payne & Keep (2003) argued that the United Kingdom has adopted a "low road" set of competitive strategies, such as low-cost production, that are less conducive to enriched job designs with high-level skill use. In contrast, the Nordic countries are considered world leaders in supporting high-quality work designs; in the fifth European Working Conditions Survey, their jobs were of the highest quality. Norway has a long history of industrial democracy,

underpinned by a long-term agreement between the key employers' organization and the key trade union. Likewise, whereas low-wage retail jobs exist in Germany, these jobs are broader and more interesting than those in the United States as a result of Germany's strong vocational training system (Osterman & Shulman 2011). Thus, although unions, business associations, academics, and community groups can shape job quality, redesigning work on a large scale likely requires supportive government policy. The Norwegian model of involving social scientists in changing practice might enable academics to play a more active role in shaping work design policy. Policy would also be aided by systematic tracking of work characteristics at a national level, as is carried out by the large-scale European work survey.

At the level of the organization, poor-quality work design sometimes represents a continuation of traditional practice, with insufficient knowledge or motivation on the part of CEOs, managers, engineers, or other job designers to create better jobs (similar issues apply to the take-up of high-performance work systems). Many managers continue to maintain the "enduring cultural frame of Taylorism" (Vidal 2013, p. 604). Even if organizations attempt work redesign, there is no guarantee of success. Davis (2010) drew on new institution theory to suggest that organizations copy what others are doing in order to reduce uncertainty, but whether an initiative works or is well implemented is of less concern, and the result is that business fads come and go. Davis urged scholars to investigate organizations' motives for work redesign (e.g., mimicry, legitimacy) prior to evaluating it because the motive will likely affect success. Work redesign is also more difficult to copy effectively than are other interventions such as technology and training because it involves the redistribution of power and challenges implicit assumptions about control and leadership (Parker & Wall 1998). From this perspective, the development of evidence-based tools, case studies, processes, and guidance will help practitioners and managers to analyze and successfully redesign work.

Considering the level of the individual work designer, scholars need to revisit why those responsible for work design tend to design and implement simplified jobs. Campion & Stevens's (1991) study of naive job designers (MBA students) showed that there is a dominant logic of work design focused around simplification and efficiency, although this logic can be changed with training. We need more research to understand whether this logic still exists among today's job designers and, if so, what biases, attitudes, or knowledge bases drive this logic and how these might be altered.

PART 2: EXPANDED WORK DESIGN PERSPECTIVES

Motivational theories of work design have dominated psychological approaches to work design. A continued focus by psychologists on motivation is justified given the prevalence of demotivating jobs, as noted above. However, advances in technology, a growth in knowledge work, and other such forces mean that many jobs are becoming more complex. There has been a growth in abstract tasks, or jobs that are difficult to computerize, as well as a rise in expectations for job quality and flexibility as a result of a more educated workforce, an increasing number of women in the work place, and a change in the mind-sets of young people (Kalleberg 2011). This heterogeneity in work design practice needs to be matched by theoretical heterogeneity. We need to expand the criterion space beyond motivation, not just by adding extra dependent variables to empirical studies but by exploring when, why, and how work design can help to achieve different purposes.

To address increased complexity, work should be designed to achieve three key outcomes. First, work design as a vehicle for learning and development is important at the aggregate level, because of projected global skills shortages, and at the individual level, because skill development is needed for effectiveness within a complex environment. Second, the level of demands and the pace of change, combined with the pressures of dual-career families, bring to the foreground the role of work design in facilitating health and well-being. Third, because organizations are under

pressure to meet the needs of multiple stakeholders, scholars must consider how to design work that promotes more than one outcome at the same time—for example, control and flexibility.

Designing Work for Learning and Development

The idea that work design affects individual development is a long-standing one. In 1957, Argyris argued that bureaucratic jobs can result in adults becoming infantlike—that is, passive, dependent on others, and focused on the short term. Since then, scholars have argued that enriched work designs promote positive forms of development in which an individual "changes the world through work actions and thereby changes him or herself" (Frese & Zapf 1994, p. 86). Nevertheless, the role of work design as a vehicle for learning and development has mostly been advanced by industrial sociologists and European organizational researchers. The time is ripe for this perspective to become more mainstream.

At a global level, as a result of technological and economic change, there is an increasing premium on highly skilled employees (Manyika et al. 2012). The traditional solution to this challenge is to improve the supply of skills, for example, through better education. But attention must also be given to the demand side: Organizations need to be encouraged to design work that both requires greater skill utilization and facilitates skill development (Osterman & Shulman 2011, Payne & Keep 2003). Promoting learning and development is also important at the individual level. Individuals need to develop sufficient cognitive, self, social, and affective complexity in order to interact adaptively in dynamic and unpredictable environments (Lord et al. 2011). The development of this complexity also facilitates their career effectiveness in a context that demands adaptive capabilities for success (Hall & Heras 2010).

This section considers how work design might promote job incumbents' learning and development. Development is distinct from learning or change in that it involves structural transformation—that is, moving to a qualitatively distinct state that is progressive as well as internally directed (Moshman 1998). For example, acquiring knowledge about a topic is cognitive change, whereas increasing structural complexity in the organization of knowledge is cognitive development. Much development occurs in childhood as a result of biology and maturation, but development also occurs in adulthood as a result of experience, especially work. Next the article considers how work design can shape cognitive, identity, and moral processes in the short term and cognitive, identity, and moral development in the long term. The final section proposes that work design can also speed up individuals' learning and development.

Cognitive processes and development. Influenced by the German action theory principle that all actions involve goal setting, planning, decision making, monitoring, and feedback, Frese & Zapf (1994, p. 43) argued that lower levels of job control and lower job complexity inhibit learning because individuals engage in an incomplete action sequence. From this perspective, job control is important because control means it is possible to choose adequate strategies to deal with a situation, resulting in feedback and learning. Complexity in a job also promotes learning because, although work on a challenging task must initially be regulated at the highest intellectual level, with practice the actions become more automatized and can be regulated at lower, less conscious levels. Over time, skills become routinized, freeing up resources for learning yet more skills. For example, if a job frequently involves long-range goal setting, individuals will increasingly routinize this metacognitive skill.

In a similar vein, Wall & Jackson (1995) in the United Kingdom argued that when individuals have the autonomy to control variance at the source, they obtain immediate feedback about the effects of their actions, which promotes the development of elaborated mental models. In

addition, when problem rectification is under their control, individuals can observe cause and effect, and thus develop anticipatory knowledge that enables them to prevent problems. In support of these ideas, a series of innovative studies have shown that job autonomy reduces machine downtime because operators learn to prevent faults (see, e.g., Leach et al. 2003). Further studies have identified moderators of these learning effects; for example, work design promotes more learning for individuals who are able to control their attention via psychological flexibility (Bond & Flaxman 2006).

Over the longer term, work design might promote changes in the structure and organization of knowledge (i.e., cognitive development). Building on earlier work, Schooler et al. (2004) reported that, controlling for levels of these variables assessed 20 years prior, having complex work with low supervision predicted employees' later intellectual flexibility, including the ability to deal with complex cognitive problems. Although these findings are not lagged effects, this study supports the premise that enriched work design affects adult cognitive development. Related evidence comes from studies showing that complex, intellectually demanding occupations are associated with better cognitive functioning in later life (Karp et al. 2009). Indeed, a study of more than 10,000 twins concluded that "greater complexity of work, and particularly complex work with people, may reduce the risk of Alzheimer's disease" (Andel et al. 2005, p. 257).

One critical cognitive aspect that can develop during adulthood is epistemic cognition, that is, how one thinks about knowledge. Development of epistemic cognition involves moving from a dualist, objectivist view of knowledge to a more relativist and contextualized view—for example, by being less black and white in one's thinking. One pathway by which enriched jobs might promote epistemic cognition is through increasing individuals' tendency to adopt others' perspectives (Parker & Axtell 2001). Another pathway is through affecting epistemic motivation, or the desire to hold well-informed conclusions about the world, which in turn affects epistemic cognition. Epistemic motivation is enhanced by accountability but reduced by time pressure and fatigue, suggesting that autonomous jobs that are not overly demanding might facilitate epistemic motivation and, ultimately, more complex ways of thinking.

Identity processes and development. It is unsurprising that work affects individuals' role identities as well their occupational identities. For example, the introduction of new technology reduces purchasers' job autonomy and their opportunity to interact with suppliers, which damages their sense of professional identity (Eriksson-Zetterquist et al. 2009, Johns 2010). Perhaps more interesting is that work design can potentially affect an individual's personal identity, that is, how one perceives the entirety of oneself—such as one's goals, traits, and characteristics—in relation to the environment (Oyserman 2001). Bosma & Kuunen (2001) identified three facilitators of identity development, all of which are potentially affected by work design: opportunities for growth, successful development experiences, and openness to experience. Challenging, enriched jobs obviously can provide the first of these two elements. In regard to openness to experience, prior evidence shows that enriched jobs promote self-efficacy for more proactive and interpersonal tasks (Parker 1998), which, aggregated over long periods, potentially translates into openness to experience. Consistent with this reasoning, the Schooler et al. (2004) study referenced above showed that individuals in complex jobs develop a more self-directed orientation (see also Frese et al. 2007), and Xanthopoulou et al. (2007) reported that job resources such as autonomy and support result in higher levels of personal resources (self-efficacy, optimism, and organization-based self-esteem) that potentially lead to greater openness to experience.

One mechanism that might explain the development of one's self-concept as a result of work design is need fulfillment. From a self-determination perspective, autonomy-supporting and

need-satisfying environments satisfy one's basic needs of autonomy, relatedness, and achievement and thereby promote identity development (Grolnick et al. 1997). In contrast, controlling social environments, such as bureaucratic job structures, detract from internalization, that is, the process by which identity-relevant explorations are brought into alignment with the self. Thwarted needs also foster a fragile self-esteem, which is less conducive to growth, whereas meeting basic needs fosters a secure self-esteem in which individuals like and accept themselves, "warts and all," and thereby develop their identity (Kernis 2000).

An uninvestigated mechanism underpinning the link between work design and identity development is that enriched jobs might allow individuals to explore and experiment with different identities, or try out what Ibarra (1999) referred to as provisional selves (Hall & Heras 2010). For example, in self-managing teams, members have the opportunity to try out supervisory tasks that are distributed throughout the team and to potentially develop a leader identity. Once individuals have a leader identity, they will then behave in identity-congruent ways that lead them to engage in yet more leadership activities (Oyserman 2001). Work design likely also facilitates a form of identity development argued to be important for effective leadership, which is a shift in focus from an individual identity (me) to a relational identity (you and me) or a collective identity (all of us) (Lord et al. 2011). For example, members of self-managing teams have shared accountability for team outcomes. The outcome dependencies, as well as the need for cooperation in self-managing teams, motivate team members to engage in intrateam perspective taking, which likely fosters a stronger relational identity orientation.

Moral processes and development. Moral processes include recognizing a moral issue, engaging in moral reasoning to identify the ideal behavior, being motivated to focus on moral concerns, and then carrying out the chosen moral action (see Treviño et al. 2014). Individuals in narrow, deskilled jobs might not identify an issue as a moral concern because they lack an understanding of the bigger picture and/or are unable to see the perspectives of others (Parker & Axtell 2001). Because of their restricted jobs, they may have little understanding of the consequences of their actions and may not even realize ethical implications. Thus, poor-quality work designs might impede recognition of a moral issue, the first step in the moral process.

Individuals with poor job designs might also lack the motivation to focus on moral concerns. That is, even if one recognizes a moral concern and is able to identify what should be done, moral temptations require one to have the self-regulatory capacity to resist one action in favor of another action (Hannah et al. 2011). Deskilled jobs can result in narrow, "not my job" role orientations, reduced perspective taking, and lowered self-efficacy, which suggests that employees in deskilled jobs often lack ownership of, and self-efficacy for, addressing moral issues. As an example, in the well-known aircraft brake scandal, in which brakes designed by Goodrich engineers subsequently failed, an employee made the following note in regard to diagrams that he knew had been falsified: "After all, we're just drawing some curves and what happens to them after they leave here—well we're not responsible for that" (Vandivier 1972; cited in Jones & Ryan 1998, p. 438). Excessive bureaucracy and overly narrow jobs appeared in this case to result in diffused responsibility; that is, no individuals take ownership of the decisions. In addition, work designs that keep group members isolated from other members isolate individuals from the big picture and therefore render them unable to compare notes on moral problems (Jones & Ryan 1998). Cross-functional teams, in which individuals have access to information from multiple parties, can reduce feelings of isolation and increase self-efficacy and motivation to address a moral issue.

Even when individuals have recognized a moral issue and are motivated to act ethically, they still need to take action. Moral action is affected by self-regulation: Unethical behaviors are more likely when individuals' self-regulatory resources are depleted after mentally taxing activities (Gino

et al. 2011), which suggests the need to carefully manage the level of work demands in any job with significant moral temptation. In addition, moral action is likely affected by autonomy. As with all behavior, the implementation of moral action is likely constrained in low-autonomy situations because of the lack of opportunity to act. However, this link also means that if individuals are motivated to behave unethically, autonomy allows them the latitude to do so, as occurs, for example, in the case of rogue traders. Thus, autonomy might be an important moderator of the effects of moral motivation on action.

A further influence on ethical behavior is an individual's level of moral reasoning. Treviño (1986) argued that individuals at higher stages of moral reasoning development are less susceptible to external temptations and are more likely to take moral action or to self-select out of unethical situations. This brings us to the potential role of work design in fostering moral development. Similarly to cognitive development, the development of moral reasoning is facilitated by exposure to new situations that cannot be understood using existing schemas, therefore necessitating the development of new schemas. Social experiences involving role taking, such as educational experiences, are especially powerful: "Faced with the 'unique' other, the individual is constantly challenged to rise to a more general perspective that preserves the unique perspectives of both self and other" (Wilson et al. 1992, p. 32). Treviño (1986) proposed that jobs in which individuals are required to engage in complex role taking, such as democratic leadership roles in which the leader needs to be sensitive to others' views, can help individuals to develop advanced moral reasoning. As an illustration, self-managing team members make complex decisions, manage colleagues' poor performance, and engage in other self-directed activities; all of these actions involve consulting with peers and navigating dynamic hierarchies of influence. Such complex role taking should, over time, expand moral reasoning complexity.

To date, little empirical research links job design to moral reasoning development, although Wilson et al. (1992) reported in a 10-year longitudinal study that, over and above occupational and educational attainment, individuals' career fulfillment predicts moral reasoning development. These authors recommended further consideration of work variables in promoting moral reasoning. The role of autonomy is especially intriguing. As noted above, on the one hand, autonomy allows individuals who want to act unethically the opportunity to do so (autonomy as a moderator), but on the other hand, autonomy with other enriched work characteristics might facilitate awareness and ownership of moral issues as well as, in the longer term, more complex moral reasoning (autonomy as an antecedent).

Accelerating learning and development. In the field of leadership development, experiences that accelerate learning include assessment, challenge, and support (Day et al. 2009). Assessment provides feedback that motivates individuals to close skill gaps, challenge motivates individuals to try new behaviors, and support helps individuals to cope with setbacks. Work design is a powerful source of assessment, challenge, and support because these elements can be embedded into the work design, yielding continuous rather than single development opportunities. In contrast, challenge in leadership programs is often achieved via participation in temporary stretch projects. Theories of learned industriousness and adaption-level theory suggest that having a sustained opportunity to adapt to high demands can promote the development of resources to aid in self-regulation. Converse & DeShon (2009) showed that exposure to two demanding tasks can lead to adaption effects, whereas exposure to one demanding task results in depletion. One would predict that work design allows more adaptation, and potentially greater self-regulatory capacity, relative to one-off development opportunities.

Evidence also suggests that learning is accelerated when challenge occurs within an individual's "zone of proximal development" rather than adopting a sink-or-swim approach (Day et al. 2009,

p. 29). Work redesign is recommended to be incremental, with job enrichment expanding as the capability of the individual or team grows (Parker & Wall 1998). Social support, a key job design resource, also increases an individual's zone of proximal development (Day et al. 2009). A further important facilitator of accelerated learning is developmental readiness—that is, receptiveness to challenge, feedback, and support—which is shaped by the interaction of learning orientation, self-efficacy, and metacognitive ability. As discussed above, work design can influence these elements, so enriched work design potentially facilitates developmentally ready employees.

Designing Work for Mental and Physical Health

The World Health Organization (WHO) defined health as a "state of complete physical, mental, and social well-being, and not merely the absence of disease of infirmity" (World Health Organ. 1948, p. 100). Consistent with this definition, Parker et al. (2003) reviewed evidence that work design affects distress, strain, and injury, as well as indicators of active mental and physical health such as aspiration, self-efficacy, engagement, and safe working. Because outcomes related to active mental health are covered above, this section focuses on designing work to prevent or mitigate strain and other negative health outcomes.

The incorporation of work design into policy in some countries indicates its relevance for health. For example, Sweden has explicitly built work design principles into occupational health statutes. Nevertheless, the increased complexity in many jobs, the pressures associated with dual-parent working, and heightened concerns about health issues in society all highlight the need for more attention to the design of healthy work. As observed in the fifth European Working Conditions Survey (see also Holman 2013), the average level of work intensity of jobs has increased; almost half of jobs are identified as potentially unhealthy due to their poor intrinsic quality and/or their poor working-time quality.

Strain arises as a result of an individual's interaction with the work environment. According to Spector (1998), if situations and events are appraised as a threat (a stressor), negative emotions arise that can lead to psychological strain such as anxiety, physical strain such as heart disease, and/or behavioral strain such as smoking. Reverse paths can also occur, for example, when an individual who is feeling anxious is more likely to appraise a situation as threatening. Individual differences in characteristics such as coping style affect paths in this model, for example, when different individuals place themselves into different environments, appraise different events as stressors, and respond differently when negative emotions arise.

Job demands–control model. Work characteristics are important features of the external environment that are appraised by individuals, especially the levels of job demands and job control (or job autonomy). The influential demand-control model (Karasek 1979) proposes that high job demands and low job control cause psychological strain and, in the long term, stress-related illnesses such as heart disease. A unique element of the model is the interaction hypothesis that high job demands cause strain when accompanied by low decision latitude (i.e., low job control and low skill discretion), but if demands occur in the presence of high decision latitude—a so-called active job—then strain will not accrue. Instead, an active job leads to feelings of mastery and confidence, which, in turn, help the person to cope with further job demands, promoting more learning, and so on, in a positive spiral (Karasek & Theorell 1990).

Like the JCM, the demand-control model has received many criticisms, including its focus on a narrow set of work characteristics. Nevertheless, also like the JCM, the demand-control model has spurred much research. Support for the model is strongest in regard to the negative strain effects of excess job demands. In a review on 19 longitudinal studies, De Lange et al.

(2003) reported that two-thirds of the studies showed negative strain effects of high job demands, especially on psychological well-being and sickness/absence. However, the effects of demand on absence are complex; there is some evidence that higher demands result in lower absence, perhaps because these individuals have more pressure to attend (Smulders & Nijhuis 1999) or perhaps because the demands are experienced as a challenge. High demands combined with low control have also been shown to affect cardiovascular disease in a series of rigorous studies, particularly for men (Belkic et al. 2004); an explanation for this effect is that these jobs promote psychological strain, hypertension, and/or physical risk factors like smoking, which then increase the likelihood of heart disease. A handful of intervention studies support these conclusions. Excess job demands can also reduce safety (Nahrgang et al. 2011); for example, when employees face heightened production goals, they are more likely to ignore safety procedures to get the job done.

Job control can affect the strain process through several pathways. Scholars have argued that individuals have a need for control, so if this need is unfulfilled, negative strain effects arise (Gagné & Deci 2005). Control also promotes active coping, which leads to learning and mastery and thus to reduced strain (Karasek 1979). Consistent with these predictions, Daniels et al. (2013) showed that changing work activities in order to solve problems, a process the authors conceptualized as enacting job control, subsequently reduced employees' negative affect, cognitive failure, and fatigue. In terms of strain outcomes, many cross-sectional studies show that a lack of perceived job control relates to anxiety, depression, burnout, excess alcohol consumption, and other such outcomes, although the results are more mixed in longitudinal studies. In their review, De Lange et al. (2003) reported that only approximately one-half of the longitudinal studies showed a main effect of job control on subsequent health outcomes. The strain-reducing effects of job autonomy likely depend on individual differences or contextual variables (Warr 2007).

Although the main effect of job control on health has been investigated, there has been even more interest in whether the negative strain effects of demand can be buffered by high job control, as implied in the demand-control model (Karasek 1979) and the job demands–resources model (see below) and as demonstrated in laboratory studies (Sonnentag & Frese 2003). This interaction hypothesis is of practical value because it suggests that high demands are not negative for health so long as they are accompanied by high control. Multiple reviews have concluded that support for this interaction effect is not convincing (see, e.g., De Lange et al. 2003, Van der Doef & Maes 1999), although reviews of this research tend to conclude that conceptual and methodological imprecision has made interactive effects difficult to detect (Sonnentag & Frese 2003). For example, interactions have been observed in studies that use an unconfounded measure of job control or multilevel approaches or that take into account moderators such as self-efficacy (Schaubroeck et al. 2000). Multilevel studies allow the opportunity to separate the variance of job demands and job control into individual-level and group-level components. Future studies must also pay more attention to mechanisms and their timing. For example, if the positive effects of control depend on an individual learning how to use this control to cope with the demands, buffering effects of control will be realized only after sufficient time.

Extensions to the demand-control model. There are further models of strain that relate to work design (see Sonnentag & Frese 2003). The job demands–resources model (Bakker & Demerouti 2007) identifies a broader set of job resources beyond autonomy and skill discretion that includes career opportunities and participation in decision making. One of the most important resources is social support, which can fulfill basic needs for belongingness and facilitate achievement of work goals, thereby promoting both motivational outcomes (e.g., engagement)

and alleviating strain (Demerouti & Bakker 2011). Much evidence suggests that receiving social support from supervisors and peers matters for employees' health (De Lange et al. 2003, Van der Doef & Maes 1999). Intriguingly, the act of giving support also appears to have health benefits (Brown et al. 2003), likely because of the positive affect that helping generates, which suggests that structuring jobs so that individuals have the opportunity to help others could facilitate better health. Extensions of the job demands–resources model include the concepts that job resources are especially important for motivation when demands are high and—similar to the learning and development perspective above—that job resources shape, and are shaped by, personal resources such as self-efficacy and optimism (Demerouti & Bakker 2011).

The conservation of resources theory (Hobfoll 1989) proposed that resource loss is especially salient, and loss prompts two distinct strategies by which individuals seek to maintain or secure resources. When an individual's psychological resources are threatened with loss, the recovery of lost resources becomes a central motivating force, so individuals use external resources to protect themselves (a protection mechanism). In contrast, when individuals are not threatened by resource loss, they are motivated to use external resources in order to further enrich their resource pool (an accumulation mechanism). In a quasi-experimental study of junior doctors, Parker et al. (2013) showed that a social support intervention led to reduced workload for those doctors experiencing high resource loss (i.e., suffering from anxiety and depression), consistent with a protection mechanism, whereas the support intervention boosted proactivity and skill development for doctors not experiencing resource loss, consistent with an accumulation mechanism. This study suggests that support matters for health, although how it is mobilized and used depends on individual differences.

In a further extension of the demand-control model, scholars have differentiated challenge demands from hindrance demands (LePine et al. 2005). Challenge demands create the opportunity for development and achievement, such as job scope, whereas hindrance demands are seen as obstacles to achievement and growth, such as role ambiguity. Meta-analyses support this distinction and have shown that both types of demands are associated with strain; however, hindrance stressors are also associated with turnover and withdrawal, whereas challenge stressors are positively related to motivation and performance (Crawford et al. 2010). Hindrance demands arguably trigger negative emotions and passive coping, whereas challenge demands trigger positive emotions and cognitions and active coping. This stream of research is consistent with studies that show that demands can sometimes promote active health outcomes (for example, time pressure predicts proactive behavior at work).

The challenge-hindrance approach provides a more nuanced approach to demands. However, rather than categorizing some demands as challenges and others as hindrances, it may ultimately be more useful to integrate appraisal theory to consider how demands are appraised by an individual (see Ohly & Fritz 2009). An appraisal-based approach can assess why someone might perceive a particular demand as a challenge, whereas someone else perceives the same demand as a hindrance. One could consider primary appraisals of the demand (e.g., is it irrelevant, benign, or harmful?), attributions about the demand (e.g., is it controllable?), and secondary appraisals of the demand (e.g., can I cope?). Appraisals will also vary within individuals according to the situation, and this variation has consequences for momentary experiences of strain. For example, in a within-person study, Fisher et al. (2013) showed how, for individuals with high performance goal orientation, appraisals of task importance were associated with negative emotions.

Even with challenge stressors, there might be a tipping point at which excess or sustained levels are damaging. On the basis of earlier observations of U-shaped relationships between job demands and health, Johns (2010) observed that some jobs can be too rich. Bunderson & Thompson (2009,

p. 50) likewise reported how zookeepers who conceptualized their work as a calling experienced that work as a source of meaning and identity but also as "unbending duty, sacrifice, and vigilance."

Strategies for designing healthy work. On the basis of the above analysis, the most obvious strategy is to directly change work characteristics, using approaches such as reducing strain-inducing demands and/or increasing job resources. For example, increased scheduling control over work hours and location leads to improved work-family fit (Kelly et al. 2011). Such a strategy is a primary stress intervention because it changes the environment. Scholars now need to extend this research to consider how to redesign work to support employee health across a range of contemporary work situations, such as working from home, in virtual teams, or on temporary employment contracts.

A further primary intervention strategy is to design jobs in a way that prevents the emergence of strain-inducing demands in the first place. For example, allowing customer agents the authority to deal with complaints on the spot speeds up service and reduces customer anger. Dealing with angry customers likely requires considerable emotional regulation on the part of the employee, and such self-control is highly depleting of one's regulatory resources (Muraven & Baumeister 2000). A related strategy is to design work in a way that enables and motivates individuals to proactively reduce job demands and/or increase job resources themselves. For example, Elsbach & Hargadon (2006, p. 471) proposed that, to avoid professional work becoming "relentlessly mindful and stress inducing," each workday should be designed with bouts of undemanding tasks inserted between challenging tasks. Job autonomy allows individuals to implement this type of strategy, or indeed any other coping strategy they find valuable. A variant of this strategy is to design jobs that promote positive feelings and meaning, such as jobs with the opportunity to support others, which might counteract stress reactions.

Secondary stress-intervention strategies involve changing individuals, including how they perceive and react to the environment. Stress-management training is an example. Yet, as argued in this article, work design can shape an individual's motivation (e.g., self-efficacy), behavior (e.g., proactivity), and emotional and cognitive capabilities, all of which can affect how individuals perceive and react to stressors in the work environment. For example, self-efficacious individuals are likely to perceive demands as less threatening and are more likely to take up any proactive job-crafting opportunities to reduce demands (Parker et al. 2001). Tertiary interventions are concerned with treatment and rehabilitation processes, such as counseling, for individuals who are experiencing strain. Yet again, work design might play a role. Scholars have examined how work design can promote recovery inside and outside of work. For example, individuals who have higher levels of control in their job, and lower demands, feel less need for recovery in the evening (Sonnentag & Zijlstra 2006). Work design can also potentially protect and enhance regulatory resources and facilitate their replenishment, for example, by allowing timing autonomy so employees can rest when required.

Secondary and tertiary interventions are often more popular than primary interventions because changing the individual is seen as more palatable and straightforward than changing the environment. However, secondary and tertiary interventions can have effects that are short term because they do not address the root cause of strain. Work design might be a powerful and more enduring intervention precisely because it changes both the environment and the individual. As Hackman (2009, p. 316) observed, "humans are 'wired up' for both adaption and growth": Redesigning work can promote growth, whereas individually oriented interventions such as stress-management training promote adaption. Hackman urged scholars to go beyond a focus on individual interventions

to "explore ways to develop and exploit the structural features of the social systems within which people live and work," a perspective supported in this review.

Designing Work for Control and Flexibility: Ambidexterity, Enabling Bureaucracy, and High-Reliability Organizing

Thus far, this article has focused on work design for separate outcomes such as motivation, learning, and health. However, increased environmental complexity, pressures to satisfy many stakeholders, and globalized competition mean that multiple outcomes are often desired at the same time. Work design that promotes multiple outcomes likely differs from that which promotes a single outcome (Johns 2010), especially if the outcomes are recognized as competing—for example, achieving both exploitation and exploration, both efficiency and innovation, or both safety and productivity.

Many of these competing outcomes can be summarized as a tension between control and flexibility (Quinn & Rohrbaugh 1983). Whereas control is about achieving consistency and efficiency (internal control, e.g., via standardization procedures) and achieving alignment with the mission (external control, e.g., via feedback systems), flexibility focuses on achieving responsiveness via job enrichment and related practices (internal flexibility) and achieving adaptability within a changing environment (external flexibility). It is typically assumed that practices to achieve control and flexibility are incompatible. For example, bureaucratic controls like standardization and hierarchy enable efficiency but impede the opportunity for mutual adjustment that enables flexibility. In the work design literature, scholars have observed that autonomy has benefits for flexibility and creativity but drawbacks for efficiency and coordination (Lanaj et al. 2013). Likewise, Biron & Bamberger (2010, p. 168) stated that a key challenge of structural empowerment is reconciling "the potential loss of control inherent in sharing authority with the potential motivation and productivity benefits that often accompany empowerment."

The question of how to achieve control and flexibility simultaneously is especially pertinent in professional sectors that have traditionally emphasized flexibility. Controls are increasingly being introduced into these sectors in the quest for consistency and cost efficiency. Examples include detailed guidelines that specify sentences judges should impose, standardized protocols for doctors to follow in diagnosis and treatment, and the specification of content and pedagogies for teachers (Davis 2010). Is it possible to introduce such controls and retain high levels of job enrichment, and the associated benefits for flexibility and creativity? Or is the introduction of these controls "perverse because professionals are the people we rely on to make wise decisions in uncertain circumstances" (Oldham & Hackman 2010, p. 467)? Understanding how to reconcile this tension between control and flexibility is an issue that will likely become more pressing in the future, given the projected growth in knowledge work. For example, it will be a particular challenge in large-scale collaborative creativity activities, such as the design of a new aircraft, involving several thousand engineers, in which the tasks are highly interdependent (requiring control) but also uncertain and complex (requiring flexibility and creativity) (Adler & Chen 2011).

The traditional contingency theory solution to the tension between control and flexibility is that bureaucratic structures (emphasizing control) should be in place when tasks are stable, whereas organic structures (emphasizing flexibility) should be preferred in dynamic, uncertain situations (Burns & Stalker 1961). However, this trade-off approach has been criticized. Both control and flexibility are increasingly required in many situations, and paradox perspectives suggest that it is possible to achieve seemingly contradictory outcomes simultaneously (Smith & Lewis 2011). This section reviews three perspectives relevant to achieving the dual outcomes of control and flexibility, with a focus on the implications of each for work design.

Ambidexterity. Scholars (e.g., O'Reilly & Tushman 2007) have argued that successful organizations are ambidextrous, both exploiting current capabilities (a control-oriented perspective) and exploring new possibilities (a flexibility-oriented perspective). Although external strategies for achieving these dual outcomes, such as outsourcing, have been suggested, ambidextrous organizations achieve a focus on exploration and exploitation simultaneously through internal strategies (Raisch & Birkinshaw 2008).

One internal structural solution is that different business units carry out different activities; for example, one unit may focus on innovation while the other focuses on manufacture (O'Reilly & Tushman 2007). The work design implications of structural solutions have rarely been discussed, but one would expect that business units pursuing exploration require job enrichment to stimulate creativity and innovation, whereas units pursuing exploitation would tend to be more bureaucratic with lower job enrichment. Nevertheless, questions arise. For example, is some degree of enrichment important for units designed to exploit capabilities? Research reviewed in this article suggests that at least moderate enrichment is preferable for most outcomes. Perhaps some types of autonomy (i.e., over when and how to do things) are appropriate for exploitation units, whereas members of exploration units should have broader autonomy (i.e., over what to do)? Some work characteristics (such as job feedback) might be important for both exploration and exploitation, whereas others (such as connecting with end users) might be more important for exploration than for exploitation. In addition, the top management team plays a central role in coordinating activities across the different types of units (O'Reilly & Tushman 2007), but perhaps there are also work design options, such as job rotation or joint membership of project teams, that complement the leader-oriented approach.

A second strategy for ambidexterity is one in which leaders create a supportive context that builds the whole business unit's capacity to be ambidextrous, thereby alleviating the coordination issues between subunits that can exist with structural solutions. Individual or group work design is central to this strategy of contextual ambidexterity: Scholars argue that it is achieved when individuals are empowered to judge for themselves how to best divide their time between the conflicting demands of exploration and exploitation (Gibson & Birkinshaw 2004). Besides a high level of autonomy, work characteristics one might expect to see in contextually ambidextrous organizations include task variety (employees engage in both exploration and exploitation tasks), task identity (employees don't just execute tasks but also improve them), and task significance (employees can have more impact through implementing improvements). Such an enriched work design likely promotes not only creativity, as a result of intrinsic motivation, but also proactivity, citizenship, and employee learning and development; all these outcomes should support the dual goals of exploration and exploitation. In addition, Gibson & Birkinshaw (2004) argued that individuals working in ambidextrous contexts need high levels of behavioral and cognitive complexity, which this article proposes can be facilitated by enriched jobs that involve challenge, feedback, and support. Altogether, enriched work design potentially plays a central role in achieving contextual ambidexterity, although this proposition is untested.

Nevertheless, enriched work design likely needs to be complemented with forms of control in order to ensure alignment, albeit not necessarily traditional forms of internal control such as standardization and monitoring. Informal forms of control, such as leadership and culture, potentially help employees work out the right way to behave without stifling flexible behavior. Gibson & Birkinshaw (2004) argued that, in addition to job enrichment, behaviorally complex leaders and a shared vision combine to inspire employees to deliver results, ensure the discipline to meet standards, and provide the stretch to induce ambitious goals. In a similar vein, Bledow et al. (2009) proposed that transformational leaders' intellectual stimulation and individual consideration promote creativity and exploration, whereas leaders' vision and inspirational motivation

Ambidexterity: an individual, team, or organization that simultaneously exploits current capabilities and explores new possibilities

assist in alignment and integration. Careful selection, training, and compensation practices can also be used to limit opportunistic behavior on the part of enriched employees.

Additional work design features beyond enrichment might be important in enabling organization-level and team-level ambidexterity. For example, connecting individuals with end users or beneficiaries potentially provides an important source of external information that can stimulate innovation. At the team level, Haas (2010) showed teams high in both group autonomy and external knowledge were most effective for achieving both operational and strategic performance, but only when knowledge content was scarce and the source of knowledge was nonorganizational. Switching from exploration to exploitation tasks is also likely to be cognitively demanding; scholars have observed that these processes require very distinct learning processes. One would therefore expect to find high levels of cognitive demands in jobs in ambidextrous organizations, which creates a need to consider how to design work to support effective self-regulation and protect against health risks. Exactly how work design supports and enables organizational ambidexterity is a topic worthy of empirical investigation, especially given the existing dearth of studies in this domain.

Enabling bureaucracy. A different approach for reconciling the tension between control and flexibility is that put forward by Adler and colleagues. Rather than establishing cultural controls to balance job autonomy, these scholars advocated limiting job autonomy and instead creating an enabling context that combines employee participation with motivating formal control systems. A classic example of an enabling bureaucracy is New United Motor Manufacturing, Inc. (NUMMI), a Toyota car manufacturing facility that previously operated in California (Adler & Borys 1996). In a Tayloristic manufacturing plant, repair and improvement are separated from routine production, whereas at NUMMI, employees could repair and solve breakdowns. Rather than following set procedures designed by engineers, NUMMI workers could help to design and standardize their own work methods. Adler & Borys (1996) characterized such practices as participative centralization: participation in that employees can contribute to important decisions, and centralization in the form of standardization and hierarchical authority.

Importantly, in this system, motivation arguably does not come from job autonomy; rather, employees are motivated by participative leadership, extensive training, employment security, engagement in continuous improvement, and other such positive features of the work context. The enabling context, combined with a clear understanding of the organization's mission, allows employees to experience identified motivation, that is, the internalization of values (Adler & Borys 1996, p. 80). A strong level of identification means that employees see formal controls such as standardized procedures as an effective way of achieving valued goals rather than as a coercive control mechanism. Clear organizational goals and values, enabling rules and procedures, and high trust are also argued to help foster interdependent self-concepts among employees, rather than solely independent self-concepts, which further aids coordination (Adler & Chen 2011).

In an analysis of lean production, Treville & Antonakis (2006) similarly argued that a lack of autonomy over work timing and methods can be compensated for by other positive aspects of work design, including high levels of accountability (because employees can influence decisions), high skill variety and task identity (because employees are involved in repair and improvement), high levels of feedback (because employees have access to information), and high work facilitation (because lean production emphasizes the removal of obstacles to help performance). These authors draw on ideas of gestalt cognition, that individuals store, process, and recall information in a configural or schematic form (Fiske & Taylor 1991), to suggest that employees working in lean systems experience motivation not by "summing their isolated evaluations of individual practices;" they instead "make a complex and holistic evaluation by giving each job characteristic meaning

Enabling bureaucracy: organizational design that combines formalization and other controls with an enabling and supportive context

from the other practices with which it occurs" (Treville & Antonakis 2006, p. 115). In essence, the overall positive work design configuration under lean production is argued to be motivating despite low job autonomy.

Altogether, these perspectives raise an intriguing set of questions about the motivational properties of job designs in an enabling bureaucracy. Adler (2012, p. 248) has argued that these systems can be motivating, although in a study of enabling bureaucracy among software developers, some embraced the approach ("In this business, you've got to be exact, and the process ensures that we are. You have to get out of hacker mode!") whereas other developers felt alienated by the bureaucracy ("Programmers like to program. They never like to document."). Research is needed to understand whether, how, and which employees are motivated under enabling bureaucracy forms, or whether and how creativity, proactivity, and other outcomes are jeopardized by the high level of formal control in these systems. Studies of lean production have shown varied results (see Cullinane et al. 2013), from mixed effects on work characteristics with no net impact on strain (Jackson & Mullarkey 2000) to outright negative effects on both work characteristics and strain (Parker 2003). No clear conclusions can be drawn, but the question of whether a supportive context can substitute for autonomy is a critical one.

High-reliability organizing. Yet another way to resolve the tension between control and flexibility is high-reliability organizing. Classic examples of high reliability organizations (HROs) are nuclear power plants, air traffic control systems, and space shuttles. In these environments, the tension between control and flexibility often manifests as a tension between safety and service.

Scholars (e.g., Roberts 1990) have identified various elements that are essential for effective HROs, including a strategic focus on safety, careful attention to procedures, limited trial-and-error learning, continuous training, and strong safety cultures. From a work design perspective, Weick et al. (2008) proposed the importance of the underspecification of structures for aiding flexibility. Underspecification of structures refers to the subordination of hierarchical authority structures during critical events, such that decisions can be made by whoever has the expertise rather than whoever has the highest rank. For example, on the flight deck of an aircraft carrier out at sea, when an aircraft is landing or departing, any person on the deck "can call it foul" and make decisions (Roberts et al. 1994, p. 622).

A further example of HROs is the effective incident command systems in which public safety professionals such as firefighters manage the temporary control systems for dealing with emergencies (Bigley & Roberts 2001). These systems are highly bureaucratic, with extensive rules and procedures, functional division of labor, specialized job roles, and a clear hierarchy of positions. The incident commander is the highest-ranking position, and the person in this role is responsible for all activities that take place at an incident. Nevertheless, this high-control system can also be extremely flexible and enable reliable performance under challenging circumstances. Flexibility is enabled by the structure that develops at the scene. The incident commander is the first person to arrive, and this individual builds the structure from that point. In the words of one chief, "I go in. I've got my hat on. I'm the incident commander. I'm also the operations chief and also the division supervisor. And until that thing gets big enough to where I'm dividing it, I wear all those hats" (Bigley & Roberts 2001, p. 1287). The structure can then change over time as higher-ranking officers arrive. In addition, because roles are clear and well defined, it is easy for individuals to engage in role switching according to needs during an incident. A further element that supports flexibility is that supervisors transfer authority to those with the expertise and allow individuals with sufficient experience to improvise or depart from standard procedures when required. Shared mental models among members are also important: Dysfunction can occur when individuals are

High-reliability organizing: an approach to obtaining nearly error-free operations within a complex and hazardous environment

empowered to improvise yet lack the knowledge of or concern for bigger-picture perspectives (Bigley & Roberts 2001).

A related example of a clear hierarchy of roles that nonetheless allows flexibility in the moment is described in Klein et al.'s (2006) analysis of emergency medical teams. These teams face unpredictable patient demands and constantly changing team composition, yet they also need to achieve highly reliable performance and to train and develop novices. Control and flexibility are achieved when clearly designated leaders dynamically delegate the leadership role to junior leaders but also withdraw the leadership role according to the urgency and novelty of the situation. Dynamic delegation is supported by shared routines and values among team members.

Achieving control and flexibility via HROs involves a work design that changes quite dramatically according to the situation. Theories of work design, as well as the dominant methodological approaches, do not currently cater to such dynamism.

METHODOLOGICAL DIRECTIONS

A strength of research in this field is that quasi-experiments and field experiments have often been used to evaluate work redesign. Rigorous evaluation studies continue to be important for informing practice and policy: It is one thing to demonstrate a causal relationship between variables, and another to show that work redesign can be successfully implemented with positive outcomes. Also important are true longitudinal studies (in which all variables are assessed at each time wave) to investigate reverse causality, reciprocal effects, and the timing of processes (Parker et al. 2014). To understand whether work design has consequences for individual development, very long term studies are also required.

Thus far, with the exception of a burgeoning number of within-person diary studies, multilevel processes have not been well articulated or investigated in the work design literature. As noted by Morgeson & Campion (2003), work design theory tends to focus on a job, yet studies are typically operationalized at the level of an individual. Multilevel approaches can be used to identify job-level versus individual-level sources of variation in job perceptions. For example, aggregating perceived work characteristics across job incumbents in the same job can help to reduce idiosyncratic individual influences on job perceptions. A further important multilevel approach is to examine the top-down processes by which individuals' perceptions of work characteristics are formed, which will allow the opportunity to better understand the role of context. Researchers also need to assess the effects of work design at higher levels to identify possible unintended consequences (Johns 2010), such as team autonomy improving team performance but impairing overall system performance. Related to this point is the need to understand the potential role of work design in facilitating higher-level organizing, for example, how team-level autonomy might enhance organization-level ambidexterity.

A related methodological direction is to consider units of analysis other than a whole job, such as work design at the daily level, work design at the event level, work design at the project level, and even work design across a career. For example, in high-reliability contexts, it might be that team effectiveness is most strongly determined by individuals' autonomy during critical events rather than by their general or average level of job autonomy.

Applying a configuration approach is likely a fruitful way forward in studies of work design (Johns 2010, Treville & Antonakis 2006). From this perspective, work designs can be understood as bundles of interconnected work characteristics, rather than discrete job aspects, that cause particular outcomes. The assumption is that the bundle accounts for more variance (and possibly different outcomes) than discrete job aspects do, perhaps because the elements co-occur or operate together in meaningful ways, or perhaps because individuals perceive work design in a holistic way

rather than as separate elements. For example, high significance–low autonomy configurations might occur because autonomy is reduced when a job is so important that the cost of error is very high, as occurs when firewalls are introduced to prevent employees from having direct contact with customers (Johns 2010). Regression approaches do not allow for the possibility that job characteristics might have different meanings depending on what attributes they co-occur with. Configurational approaches also allow for the possibility of equifinality; for example, work design research has tended to assume there is one optimal sociotechnical systems design—the autonomous work group—but it might be that different configurations of social and technical systems are compatible with different types of organizational strategies. A configuration approach is also likely a useful way to examine work organization archetypes or combinations of work design and broader organizational systems (Cordery & Parker 2007).

Finally, Barley & Kunda (2001) argued that there are insufficient data on what people actually do in their work. Ethnographic studies, participant observation, and rich qualitative studies that provide detailed contextualized accounts of work in situ, such as that by Klein et al. (2006), will likely be especially helpful in understanding what actually happens in contemporary jobs.

SUMMARY AND CONCLUSION

Work design as a field of theoretical inquiry was largely developed as a response to the technically oriented design of demotivating and alienating jobs that emerged after the industrial revolution. As such, it is unsurprising that work design research has predominantly focused on motivation. Indeed, the dominant work design model, the JCM, was articulated in a paper entitled "Motivation Through the Design of Work: Test of a Theory" (Hackman & Oldham 1976). Work design continues to feature in the motivation section of articles [for example, job design is labeled as a first-generation motivation theory in Miner's (2003) review of organizational theories]. As outlined in this article, motivational work design theory has been extended in various ways, such as by employing proactive and relational approaches to designing work (Grant & Parker 2009), and can be extended further, such as by investigating how work design might affect goal generation, goal striving, and self-regulation. Importantly, beyond refining theory, more needs to be done to embed the core principles of motivational work design in policy and practice. Large numbers of simplified, deskilled jobs still exist, and the gap between "good jobs" and "bad jobs" continues to grow.

But designing work for motivation is not enough. In the context of globalization and rapid technological change, we are witnessing an increase in challenge and complexity in many jobs. The second part of this article argues that work design for other critical ends warrants mainstream attention. First, it is important to give more attention to how work design can support individuals' cognitive, identity, and moral development. The analysis of work design as a vehicle for learning and development hopefully illustrates the untapped potential of work design. The nature and organization of individuals' work roles may have profound consequences, maybe even as extreme as reducing individuals' chance of dementia as they age or, at the aggregate level, helping nations to meet projected skill gaps.

Second, although considering work design from a health perspective has a long history, we need to extend this perspective given the demands many employees increasingly face in their work lives. Work redesign might promote physical and mental health in more ways than hitherto considered, serving not only as a primary intervention but also as a secondary intervention that boosts employees' active coping and as a tertiary intervention that facilitates recovery. Hackman's (2009) plea for scholars to focus on changing the situation and thereby promoting individual growth, instead of solely changing the individual and thereby promoting adaptation, reiterates the importance of work design for health and well-being.

Third, this article considers how we might design work for control and flexibility at the same time. Different possibilities exist, from combining enriched work designs with informal control mechanisms (contextual ambidexterity); to combining low job autonomy with positive work characteristics, participation in decision making, and a supportive context (enabling bureaucracy); to creating a bureaucratic structure with roles that can be flexibly deployed and dynamically altered (high-reliability organizing). The pros and cons of these different work design options across various situations are currently unexplored. The need to understand how to design jobs that support the dual outcomes of control and flexibility will become more pressing given the growing application of bureaucratic principles to professional settings such as health care.

In the final section, beyond the frequent plea for rigorous, multilevel longitudinal studies, this article recommends the consideration of units of analysis other than a whole job, a configurational approach to work design, and contextualized studies of contemporary jobs. Work design research has a long and important history. It also has a bright future, but we need to go beyond the dominant motivational paradigm.

DISCLOSURE STATEMENT

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