

Citation

Parker, S.K. and Andrei, D.M. and Van den Broeck, A. 2019. Poor work design begets poor work design: Capacity and willingness antecedents of individual work design behavior. *Journal of Applied Psychology*. 104 (7): pp. 907-928. DOI <https://doi.org/10.1037/apl0000383>

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Poor Work Design Begets Poor Work Design:

Capacity and Willingness Antecedents of Individual Work Design Behaviors

Sharon K. Parker and Daniela M. Andrei

Centre for Transformative Work Design,

Faculty of Business and Law, Curtin University

Anja Van den Broeck

Department of Work and Organization Studies, KU Leuven, Faculty of Economics and Business, KU Leuven, Belgium / Optentia, North West University, South Africa

Author Note

This research was funded by an Australian Research Council Laureate Fellowship award to the first author, FL160100033. The third author acknowledges grant support from KU Leuven (VKH-C9278-StG/14/035).

Earlier versions of this manuscript were presented at the 74th *Annual Meeting of the Academy of Management*, Philadelphia, Pennsylvania, August 1-5th, 2014, and the 28th *International Congress of Applied Psychology*, Paris, 8-13 July 2014.

Correspondence regarding this article should be sent to Sharon K. Parker, Centre for Transformative Work Design, Future of Work Institute, Faculty of Business & Law, Curtin University, Perth, s.parker@curtin.edu.au

Abstract

Few studies have systematically considered how individuals design work. In a replication study ($N = 211$, Study 1), we showed that students naturally tend to develop simplified, low variety work. In two further simulation studies, we quantitatively assessed participants' work design behaviors via two new measures ("enriching task allocation", "enriching work strategy selection"). As a comparison measure, we assessed individuals' tendency to choose individualistic rather than work design strategies ("person-focused strategy selection"). We then investigated how work design behaviors are affected by capacity (professional expertise, explicit knowledge, job autonomy) and willingness (life values). For a sample of human service professionals ($N = 218$, Study 2), participants scored higher on enriching task allocation and enriching work strategy selection if they had expertise as an industrial/organizational psychologist and if they had high autonomy in their own job. Explicit knowledge about work design predicted lower scores on person-focused strategy selection, and mediated the effects of professional expertise on this outcome. Individuals high in openness values scored higher on enriching work strategy selection, and those high in conservation values scored lower on enriching task allocation. These findings were replicated in Study 3 among working professionals ($N = 602$). We then showed that openness to change values predicted enriching work strategy selection via the more proximal processes of valence (valuing intrinsic work characteristics) and affect (positive affect when enriching others' work). This article opens up a new area of inquiry: how and why individuals design work for others in the way they do.

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“I linked similar jobs together to maintain clearly defined roles, whilst also maintaining a chain of command. Clearly not everyone is a manager and people need to be aware who the person above and below them in the chain is (...). I think this is the most effective and efficient way to run a company smoothly.” (Part time sales worker and study participant)

Work design, or the content and organization of one’s work tasks, activities, relationships and responsibilities (Parker, 2014), is one of the most important practical and theoretical topics in our field (Miner, 2003). Considerable evidence shows the positive effects of enriched work designs for individual and organizational outcomes (see the meta analysis by Humphrey, Nahrgang & Morgeson, 2007). An enriched work design is one in which incumbents have, for example, the job autonomy to make decisions, a variety of tasks, and an opportunity to use and develop their skills (Hackman & Oldham, 1976). Much evidence also exists from a stress perspective of having job demands that are not excessive, such as individuals not being overloaded, or excessively conflicted, in their roles (e.g., see meta analyses by Alarcon, 2011; Podsakoff, LePine, & LePine, 2007).

Despite this evidence for the merits of psychologically well-designed work, poorly designed jobs continue to exist in many contemporary organizations, raising the important question as to why low quality work designs continue to be prevalent. One set of forces at play concerns the decisions, sometimes indirect and unconscious, that individuals in the local work context (e.g., managers, engineers) make that shape others’ job designs. Preliminary and anecdotal evidence suggests that individuals in the workplace often do not know how to design or enable enriched work, over-relying on deeply ingrained principles of job simplification when decisions are made (Campion & Stevens, 1991).

However, research on this topic is rare. Psychological and management studies have focused on the consequences of job design and almost never directly tackled the question of how individuals develop work designs, whilst sociological and industrial relations studies rarely consider individual processes and tend to concentrate on broader contextual influences on job quality, such as the presence of unions (Parker, Van den Broeck & Holman, 2017). Consequently, our aim in this paper is to investigate how individuals design others' work, or their "work design behaviors". Our first goal is to replicate directly a descriptive study examining how naïve people (students) design work (Study 1). Our second goal is to investigate, using newly-developed quantitative measures of work design behaviors, the individual-level antecedents of how people design others' work (Study 2, 3). We draw on one of the most fundamental theories of work behavior (Blumberg & Pringle, 1982), now often referred to as the Motivation-Opportunity-Ability model (Appelbaum, Bailey, Berg, & Kalleberg, 2000), to theorize and test two categories of individual-level antecedents of work design behaviors: (1) work design-related *capacity* (or ability) and (2) work design-related *willingness* (or motivation). In Study 3, we additionally explore the role of *intrinsic valence* and *positive affect* as mediators of the link between willingness variables and work design behaviors. The research model is shown in Figure 1.

Insert Figure 1 about here

To progress these research goals, our focus is intentionally on how individuals approach work design in a hypothetical situation. The advantage of focusing on a hypothetical situation, rather than a real work setting, is that individuals' work design behavior is unconstrained by contextual forces, with the result that it is possible to isolate the influencing role of capacity and willingness. As identified by Blumberg and Pringle (1982), beyond capacity and willingness, people's work behavior is constrained or enabled

by ‘opportunity’ factors. In other words, in an organizational setting, work design behaviors will not only be shaped by their capacity and willingness, but also by political, social, technological, and other constraints or enablers that exist in the setting (e.g., Nielsen et al., 2010; Parker, Van den Broeck, et al., 2017). To help unpack the complexity, we seek, in this initial investigation, to focus on individuals’ unconstrained work design behaviors in hypothetical situations.

Our study contributes to work design research in several ways. First, we provide insights into how individuals think about and enact work design, which is a neglected topic, yet important given evidence that deskilled work designs remain prevalent, even in advanced economies (e.g., Lorenz & Valeyre, 2005) and within ‘new’ jobs (Fleming, 2017). This topic is also important given the significant changes occurring in work more generally (such as the introduction of artificial intelligence), which researchers have argued makes it more important than ever that work design is considered proactively (Parker, Morgeson, & Johns, 2017).

A second contribution of our study is that we conceptualize the design of work as a behavior, or choice, which implies that well-known theory about the determinants of behavior can be applied to this topic. Our development and testing of theory regarding the individual-level antecedents of work design behavior thus provides a possible point of intervention in the longer term: If we can understand which factors shape when and how individuals design work for others, then we can put in place interventions to support change in these factors, and thereby help to achieve better quality work for employees.

Third, the current research extends related areas of research within psychology and management. In recent times, much attention has been given to how employees design their own work (such as via job crafting or negotiating i-deals). Such research acknowledges the agency of individuals, but this ‘bottom up’ approach to job design neglects how work design is shaped by the decisions of others within the context, such as

supervisors, managers, engineers, and HR-professionals. We cannot rely on job crafting and other self-initiated actions as the only “solution” for achieving better work design in organizations: we additionally need to understand the influences of others. One source of inspiration for our approach is the research showing that leadership styles such as transformational or ethical leadership can have their effects on positive outcomes via work characteristics, which highlights that leaders may influence work design (Nielsen, Randall, Yarker, & Brenner, 2008; Piccolo, Greenbaum, Den Hartog, & Folger, 2010). However, a focus on leadership style alone as the vehicle by which those in the immediate context shape work design is insufficient as it disregards the specific work design choices that leaders might make, irrespective of their style. It also disregards the fact that, beyond managers or leaders, others in the local context make decisions that affect work design (e.g., union officials, IT specialists). Our research contributes by examining what work design behaviors individuals engage in, and why they make the decisions they do.

Existing Work Design Theory and The Role of Local Work Designers

To understand work design behavior, we need to recognize that different choices can be – and indeed are - made about work design (Parker, Morgeson, et al., 2017). Historically, the Industrial Revolution saw the emergence of job simplification as the key way to design work; an approach that is indeed still prevalent today. Influenced by Frederick Taylor, and others, this approach focuses on achieving efficiency through the design of simplified jobs characterized by low decision-making autonomy and low task and skill variety. Evidence for the detrimental effects of job simplification for both individuals and organizations (e.g., Walker & Guest, 1952) spurred new approaches to work design that focus on improving the motivational quality of work design through ‘job enrichment’. Motivational theories (e.g., Hackman & Oldham, 1976), as well as related theories that, at least traditionally, approached work design from a stress perspective (notably the Job Demand-Control Model, Karasek, 1979, and the Job Demand-Resources

Model, Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), propose that high quality work design means jobs with enriched work characteristics such as autonomy, variety and social support, whilst ensuring reasonable levels of job demands such as work load.

Reviews and meta-analysis attest to the value of such enriched work designs, including for physical health outcomes (e.g., Babu et al., 2014; Fransson et al., 2012); mental health and well-being (e.g., Luchman & González-Morales, 2013; Ng & Sorensen, 2009); for positive job attitudes such as job satisfaction and organizational commitment (e.g., Humphrey et al., 2007); and indeed for job performance (Humphrey et al., 2007) and innovation (Hammond, Neff, Farr, Schwall, & Zhao, 2011), also at the team level (e.g., Cohen, Ledford, & Spreitzer, 1996; Hülsheger, Anderson, & Salgado, 2009). Longitudinal studies and field experiments likewise provide strong evidence that enriched work design can enhance job performance (e.g., Grant et al., 2007; Griffin, 1991), reduce absence (e.g., Schaufeli, Bakker, & Van Rhenen, 2009), reduce turnover (Fochsen, Josephson, Hagberg, Toomingas, & Lagerström, 2006; McEvoy & Cascio, 1985), and improve physical and mental health (Gonzalez-Mulé & Cockburn, 2016; Holman, et al., 2010).

Despite the evidence for the benefits of well-designed work, large-scale studies from the UK (Felstead, Gallie, Green & Zhou, 2010), the US (Vidal, 2013), Australia and Asian countries (Kawakami, Park, Dollard & Dai, 2014) conclude that poor quality work designs remain rather common. For example, in Europe, only 16% of the employees have enriched jobs of high quality, with 49% having jobs of mixed quality including being overly demanding, and 35% having what can readily be classified as low quality work (Holman, 2013). Indeed, trends from some national research indicates that, over the past twenty to thirty years, there has been an intensification of workload across the US and some large European economies (e.g., France, Germany, Italy, the UK), with increases in physical demands, and declines in job autonomy in several European (Eurofound, 2015; Green & McIntosh, 2001; Handel, 2005; Kalleberg, 2011) and Asian countries (e.g.,

Cheng, Chen, Burr, Chen, & Chiang, 2013). Some scholars argue that the digitalization of work will further enhance this trend because these technologies are increasingly being applied to simplify knowledge work (e.g., Manyika, et al., 2011).

Altogether, therefore, despite strong theory and evidence for the economic and social value of enriched work, simplified and intensified work designs continue to be prominent, raising the question as to why. Scholars have advocated a ‘reinvigorated’ approach to quality of work life research that gives much more attention to how work designs emerge (Burton, Cohen, & Lounsbury, 2016; Findlay, Warhurst, Keep, & Lloyd, 2017; Grote & Guest, 2017). To aid such research, Parker, Van den Broeck, and Holman (2017) proposed a framework that summarized multi-level influences on work design, including global and international influences (e.g., international supply chains), national influences (e.g., national culture), organizational influences (e.g., strategy), work unit influences (e.g., managers’ behaviors, technology), and individual-level influences (e.g., job incumbents’ own personality shapes job crafting).

In their model, Parker et al., (2017) recognized the vital influence of those in the immediate work context, such as managers, IT professionals, accountants, HR staff, and front-line supervisors, in shaping employees’ work designs. According to O*Net, for example, first line supervisors prepare duty assignments, while HR-professionals are involved in job analysis and description. On a more general level, literature argues that these individuals make decisions and take actions that shape job characteristics for others in the system and, indeed, often mediate the effects of higher-level forces such as organizational culture on work design (Boxall & Winterton, 2015). In the present research, of the many factors that can shape work design, our focus is on how individuals think about and enact the design of work for others. For example, Grote and Guest (2017, p. 159) argued for research that “recognizes the various ways in which management exercises control or permits employee autonomy, and understands their motives for doing so”. We

seek to set the platform for this research in the current article by investigating how individuals design work for others in an unconstrained situation. Our first goal is to replicate an early descriptive study that suggested that untrained individuals tend to design poor quality work for others. Our second research goal is to model the antecedents of individuals' work design behavior.

Research Goal 1: Replication Studies to Understand Individual Work Design Behaviors

In one of the only studies that have directly tackled the question of how people design work, Campion and Stevens (1991) investigated how undergraduate students (who they referred to as 'naïve job designers') allocated tasks to create clerical jobs in a work design simulation. These authors showed that, prior to training, students' dominant logic of work design was focused around simplification and efficiency. More than half (56.7%) of the sample indicated that their primary strategy for work design was to group tasks together that had similar activities or functions. Very few individuals (2.9%) identified as a strategy the desire to design satisfying jobs. The authors concluded (p. 185) that:

“the mechanistic (or work simplification) approach to job design best reflects the unprompted efforts of these subjects... The pervasiveness of efficiency considerations and the low priority given to job satisfaction among these subjects is highly consistent with practices among those who design jobs in industry”.

Unfortunately, this research by Campion and Stevens is one of the only studies that systematically investigate how individuals approach work design. We do not know whether the findings from this research hold true now, more than 25 years later, nor do we know whether the findings can be applied to working samples or will be obtained using different methodologies.

The first goal of our research, therefore, is to constructively replicate this descriptive study. Replication research has traditionally been scarce in management and organizational sciences. But it is on the rise (Makel, Plucker, & Hegarty, 2012), reflecting

scholars' dissatisfaction with the expectation that every piece of research needs to "make a theoretical contribution" (Eden, 2002, p. 842) that can suggest stronger evidence for a novel effect than exists in reality (Munafò et al., 2017). Despite cultural differences (an Australian vs. a US sample) and cohort differences, we propose that the tendency of naïve work designers (untrained students, Study 1) will be to report work design behaviors that involve grouping similar tasks together, which we expect participants to consider most "logical" and efficient. We expect that few participants will report designing enriched work and/or trying to achieve motivating or low strain work. For Study 2 (a sample of human service professionals) and Study 3 (a sample of working professionals participating in survey panels), we expect to see continued evidence of a simplifying approach to work design, albeit not as pervasive given the greater work experience within these samples.

Research Goal 2: Modeling Antecedents of Individual Work Design Behaviors

Not only is relatively little known about how people design work, we also know little about why people make the work design decisions that they do (Findlay, Lindsay, et al., 2017). Our second research goal, therefore, is to model the effects of work design-related capacity and work-design related willingness on individuals' work design behaviors.

Such modeling requires a quantitative assessment of work design behaviors, and since such measures do not currently exist, we need to create appropriate measures. We develop and validate two measures of work design behavior: enriching task allocation and enriching work strategy selection. 'Enriching task allocation' is measured in an amended version of the task allocation activity used by Campion and Stevens (1991), and assesses how many enriched tasks (as opposed to simplified, routine tasks) participants allocate when designing a hypothetical job. 'Enriching work strategy selection' refers to participants choosing enriched work design strategies as solutions to hypothetical work problems such as increased work stress or a drop in work productivity. We also measure 'person-focused strategy selection' to show differential

validity. This measure assesses the extent to which participants choose strategies that focus on the person rather than the work (e.g., sending people for training or counselling).

We drew on existing theory on the drivers of work behaviour and performance (Appelbaum, et al., 2000; Blumberg and Pringle, 1982; Campbell, McCloy, Oppler, & Sager, 1993; Diefendorff & Chandler, 2011), to identify both more distal and more proximal determinants of work design behaviour. In an early article, Blumberg and Pringle (1982) identified capacity and willingness as key categories of determinants of work performance. Capacity includes proximal capacity determinants such as knowledge and skill, as well as more distal antecedents such as experience and ability (Campbell, McCloy, Oppler, & Sager, 1993; Griffin & Neal, 2000). For example, knowledge – in either more explicit or implicit forms - is a well-recognized determinant of work behavior (Jiang, Chuang, & Chiao, 2014; Jundt, Shoss, & Huang, 2015). Willingness includes distal determinants such as values, as well as motivational proximal determinants such as affect and valence (Diefendorff & Chandler, 2011). We elaborate the specific capacity and willingness antecedents that we consider for work design behaviors next (see also Parker, Van den Broeck et al., 2017).

Hypotheses Regarding Work-design Related Capacity Variables

We propose *professional expertise* as an important capacity variable. More specifically, we propose the importance of being a registered industrial/organizational psychologist for designing enriched work. As we elaborate next, the registration process for this qualification involves both masters-level training in this topic (which fosters explicit knowledge) as well as supervised practical experience (which fosters implicit knowledge).

Turning to the former, masters-level training typically includes explicit training in psychosocial work design theories (e.g., the Job Characteristics Model, the Demand-Control model), as well as training in other topics that are relevant to the design of enriched work (e.g., concepts such as motivation, work stress, person-organization fit). We therefore expect that these individuals will have higher explicit knowledge about motivational and stress-related

work design theories relative to others without such training. There is some evidence that untrained individuals lack an understanding of such theories. Indeed, in interviews with senior executives, Guest, King, Conway, Michie, and Sheehan-Quinn (2001) observed that several interviewees reported being “baffled by what job design and job redesign meant”, with many others simply making the assumption that employees prefer simplified work (Guest et al., 2001, p. 48). However, evidence also suggests that possessing knowledge about motivational and stress-related theories of work design influences work design behaviors. Specifically, Campion and Stevens (1991) showed that students designed more enriched jobs after they had received training in these theories. Altogether, we propose that professional expertise in terms of being a registered industrial/organizational psychologist will predict explicit knowledge about psychosocial work design theories, which will in turn predict enriched work design behaviors.

We also expect that professionals with relevant expertise will have higher *implicit knowledge* about work design. Implicit knowledge reflects learning processes that are not necessarily conscious and that can occur quite automatically as a result of experience (Reber, 1976). Part of the accreditation criteria for certifying oneself as an industrial/ organizational psychologist includes demonstrating experience with work design. Industrial/ organizational psychologists should therefore be more likely to have developed, through their work experience, implicit knowledge about the value of enriched work. Implicit knowledge affects behavior (George, 2009), and we expect it to be important for work design behaviors. Indeed, implicit forms of learning have been shown to be particularly effective when tasks are non-decomposable, such as when one makes decisions involving strategy and human resource management issues (Dane & Pratt, 2007). Such tasks are hard to approach sequentially, and contain too much unstructured information to consciously harness all the relevant information to arrive at a rational decision. Rather, such tasks benefit from an intuitive approach allowing one to make holistic associations by unconsciously encoding and chunking information into patterns (Dane & Pratt, 2007). One could argue that designing work involves a number of non-

decomposable tasks that therefore makes this process amenable to implicit learning. Altogether, we expect that the effect of professional expertise on work design behaviors will be partially mediated by implicit knowledge. Implicit knowledge is not measured in our research, so we focus on the (partial) mediating role of explicit knowledge only. Our hypotheses are:

Hypothesis 1: Individuals with relevant professional expertise (i.e. registered industrial/organizational psychologists) will be more likely to engage in enriching task allocation and enriching work strategy selection.

Hypothesis 2: Individuals with higher explicit knowledge about psychosocial work design theories will be more likely to engage in enriching task allocation and enriching work strategy selection.

Hypothesis 3: The relationship between professional expertise and work design behaviors will be partially mediated by explicit knowledge.

We further propose that individuals' own *work design experience* will affect their work design behaviors. Specifically, we propose that individuals whose own jobs are more enriched will be more likely to engage in positive work design behaviors themselves, likely because they acquire knowledge about the design of good work via implicit learning. Scholars have argued that "work behavior as a conscious process may be the exception rather than the norm" (George, 2009, p. 1321), with unconscious, intuitive knowledge - obtained from intense and repetitive exposure - often guiding one's behavior. Just like students who have played competitive basketball themselves are better in rating basketball shots (Dane, Rockmann, & Pratt, 2012), we expect that the experience of enrichment in one's own job results in individuals' developing implicit knowledge about 'good work' which then guides their work design behaviors.

More specifically, we focus on job autonomy as a key indicator of job enrichment that is likely to foster individuals' tacit or implicit learning about good work design. Reviews and meta-analyses show that job autonomy is one of the strongest predictors of health,

performance, and well-being outcomes (e.g., Humphrey et al., 2007; Parker, 2014; Ryan & Deci, 2000). In part, the positive effects of autonomy occur because having control over one's work methods and operational decisions enhances meaning at work, which is one of the most important psychological states for fostering job satisfaction and internal motivation (Humphrey et al., 2007). We therefore suggest that one's current job autonomy provides a source of implicit knowledge about the value of good work design, leading individuals with autonomy in their own work to be more likely to design enriched work for others. Our hypothesis is:

Hypothesis 4: Individuals who have high job autonomy in their own work will be more likely to engage in enriching task allocation and enriching work strategy selection.

Work-design Related Willingness Variables

With respect to work design-related willingness, we focus on individuals' life values, as important antecedents of how individuals design work for others. Pocock and Charlesworth (2017, p. 13) argued that, even when a clear business case is made for the importance of well-designed work, individuals' values intervene to shape the actual work design choices made, to the extent that the values of supervisors and managers are "more influential than any anticipated bottom line effects" in guiding how they design work. This acknowledged role of values in shaping work design behavior is consistent with broader arguments that values are desirable end states or guiding life principles that affect how people construe a situation, which choices they make, and which behaviors they enact (Schwartz, 1992). In essence, individuals seek to behave in ways consistent with their values, which is supported by much research across multiple domains (e.g., Van den Broeck, Vansteenkiste, Lens, & De Witte, 2010; Verplanken & Holland, 2002).

Following the literature that theorizes that values (as 'distal' willingness variables) have their effect on behaviour through more 'proximal' motivational processes (Diefendorff & Chandler, 2011), we argue that values may shape work design behaviours through valence and affect. Life values indeed guide the valence attached to more specific situational characteristics.

When people need to make choices (e.g., designing enriched work versus non-enriched work), they compare the motivating force values for each of their options to decide which one to pursue (Feather, 1995). Believing that a choice or action helps attaining valued goals, also triggers the automatic positive affective responses: while negative affect leads people away from particular behaviours, positive affect leads people to pursue the desired end state (Diefendorff & Chandler, 2011).

Building on this reasoning, we expect that *openness to change values* will positively predict individuals' propensity to design enriched work. The openness to change (versus conservatism) dimension is one of two key dimensions of Schwartz's prominent framework of values (Schwartz, 1992; Schwartz et al., 2012). Openness to change includes the values of self-direction and stimulation that emphasize, respectively, independence of thought, action, and feelings, as well as readiness for change and adventure (Schwartz et al., 2012). We propose that individuals high in openness to change are likely to appreciate intrinsic work characteristics (valence) and to experience positive affect when providing enriched work for others (affect), leading them to engage in enriching work design behaviors. Openness values guide attention towards intrinsically rewarding activities and intrinsic motivation (Ryan & Deci, 2000). We therefore expect that high openness will lead individuals to appreciate intrinsic job characteristics (e.g., working on a variety of tasks and making one's own individual decisions) for themselves and for others as these characteristics allow for intrinsic motivation (Verplanken & Holland, 2002). Furthermore, when providing autonomy and variety for others, people high in openness to change values likely do not experience the anxiety that can be associated with losing control and uncertainty (Schwartz, 2009). Rather, individuals high in openness values are likely to experience low arousal positive affect (e.g., feeling comfortable, calm, relaxed) when designing enriched work for others. Positive affect with regard to providing enriched work for others is likely to stimulate people to engage in enriching work design behaviors. Our hypotheses are:

Hypothesis 5: Individuals higher in openness to change values will be more likely to engage in enriching task allocation and enriching work strategy selection.

Hypothesis 6. Individuals high in intrinsic valence (valuing intrinsic work characteristics) and positive affect (positive affect when providing enriched work for others) will be more likely to engage in enriching work design behaviors.

Hypothesis 7: The effect of openness to change on work design behaviors will be mediated by intrinsic valence and positive affect.

Conservation values, in contrast, include security, conformity and tradition, which all express a preference for stability, predictability and meeting obligations (Schwartz et al., 2012). Conservation values make people comply with traditions and obligations and make them aversive to actual or potential risks, threats and feelings of insecurity and unsafety (Higgins, 1997). We argue that conservation values lead people to engage less in designing enriched work because they attach less valence to intrinsic work characteristics and are less comfortable designing enriched jobs. Designing work with intrinsic job characteristics can imply certain risks. For example, job variety can challenge the predictability of the order in which things are done, while autonomy might compromise a clear hierarchy, challenging people's position in the traditional social order (see also Warr, 1987). Thus, rather than holding high valence, intrinsic job characteristics pose a threat to the traditional outcomes that conservative people value. Moreover, because people high in conservation values are oriented towards protecting themselves, promoting a status quo, and defending against anxiety and stress (Schwartz et al., 2012), we expect them to feel less positive affect when providing enriched work to others, with enriching work design behaviors likely to be experienced as risky and anxiety-raising.

In a similar vein, we expect individuals high in conservation values to be more inclined to select person-focused strategy selection, rather than enriching work design strategies, when solving hypothetical work problems. This is because individuals high in

conservation values tend to make dispositional attributes, seeking the cause for people's behavior in the person rather than in the situation (Skitka, Mullen, Griffin, Hutchinson, & Chamberlin, 2002). Thus, in line with their values, they prefer to keep the situation stable and secure, while pointing to the responsibility of the person to change. We hypothesize:

Hypothesis 8: Individuals higher in conservation values will be less likely to engage in enriching task allocation/ enriching work strategy selection and more likely to opt for person-focused strategy selection.

Hypothesis 9. The effect of conservation values on work design behaviors and enriching work design will be mediated by intrinsic valence and positive affect.

Study Approach

We examined the research goals in three studies. In Study 1 ($N = 211$ students), our focus was on the first research goal, which was to replicate Campion and Stevens (1991) descriptive findings with a student sample. In Study 2 ($N = 218$) and Study 3 ($N = 602$), as well as replicating the descriptive findings with other samples, our focus was on the second research goal involving modeling the capacity and willingness antecedents of work design behaviors. Specifically, in Study 2, using a sample of professionals in human service jobs, we tested the hypotheses linking capacity and willingness variables to work design behaviors, including the role of explicit knowledge in mediating the link between possessing relevant professional experience and work design behaviors. In Study 3, we provided further tests of the hypotheses, while also testing the mediating role of valence and affect in linking life values to work design behaviors (which we were not able to do in Study 2). Together, Study 2 and Study 3 tested all the hypotheses. Ethical approval for the three studies was granted by the Human Research Ethics Committees of the University of Western Australia (RA/4/1/6809) and Curtin University (HRE2018-0477).

Study 1: Descriptive Investigation of Work Design Behaviors (Research Goal 1)

In Study 1, we examined how naïve work designers (students) design jobs for others.

Participants and Procedure

We recruited working students ($N = 211$) in an Australian university to take part in an online study. Most of the participants were recruited via word-of-mouth, although approximately one quarter ($N = 53$) were masters students participating in the study as a course requirement for the topic of organizational development. The average age of the sample was 22.45 years ($SD = 7.31$; range 17-59 years), and 62% were female. All were full time or part time students. Most participants (79%) were employed at the time of the survey, with the remaining participants (21%) reporting that they had been employed within the past year. Average work experience was 5.11 years ($SD = 6.23$ years). Consistent with their student status, about half (55.9%) worked in casual jobs, with the remaining participants working on part-time (28.9%), full-time (14.2%) or fixed term contracts (0.9%). The average weekly work hours were 18.55 hours ($SD = 13.45$ hours). Most participants worked in hospitality (24.1%), retail and consumer products (19%) and administration and office support (10.1%). Other sectors that were represented were: financial services, banking and accounting (2.5%), education (7%), call-center and customer service (2.5%), healthcare (5.7%), human resources and marketing (5%), sales (5.1%), trades and services (2.5%), sport and recreation (1.3%) and other (11.4%).

Measures

To assess students' approach to work design, we used a task allocation simulation similar to the one used by Campion and Stevens (1991). This simulation involves, first, asking participants to assign clerical tasks to create jobs, and, second, assessing participants' strategies and reasons for their task allocations. The focus was on clerical jobs because most naïve participants are expected to be familiar with these sorts of tasks, and hence industry-specific knowledge on the part of the respondents should not contaminate responses. Following Campion and Stevens, we used task statements from clerical jobs listed in the current Occupational Information Network (O*NET) to ensure that task statements were contemporary. An example task statement was: "Schedule and confirm appointments for clients, customers, and executives".

More specifically, respondents were asked to assume that they were the manager of an administrative support department, and as such, to allocate 32 tasks so as to create four administrative jobs for four employees. The tasks were independent in that no task had to be performed in conjunction with, or in sequence with, any other task. Respondents were told that the tasks could be combined in any manner, and that each job could contain any combination of tasks, but that each job must have eight tasks. The exercise was presented online, and respondents allocated one task to each of the four jobs until all tasks were assigned. It was not possible for participants to allocate fewer than, or more than, eight tasks per job. After the respondents had allocated eight tasks to each of the four jobs, they were asked to give a descriptive title to each of the jobs that had been created. Two open-ended questions then followed: (i) What method or strategy did you use in deciding how to assign tasks to your different jobs? and (ii) Is there any particular reason why you chose to use this strategy? Explain. Following Campion and Stevens (1991), we conducted a content analysis on the job titles that were created, as well as on the strategies and reasons for the work designs.

Results

Participants did not report any difficulties in performing the simulation tasks. We reviewed job titles, strategies, and reasons, and allocated each a code. As far as possible, we used codes identified in Campion and Stevens' research, although there were some new categories emerging from the present data. A subsample of 50 randomly chosen responses were double-coded to check for inter-rater reliability. Sufficient inter-rater agreement (computed with a syntax by Hayes & Krippendorff, 2007) was achieved across all three dimensions: strategy ($\alpha = 0.78$; 95% CI_{LL} 0.61 to CI_{UL} 0.92), reason ($\alpha = 0.79$; 95% CI_{LL} 0.66 to CI_{UL} 0.92), and job titles ($\alpha = 0.95$; 95% CI_{LL} 0.88 to CI_{UL} 1.00), therefore the remaining responses were coded by one coder, the second author of this paper. Table 1 shows the results of this content analysis compared with the results obtained by Campion and Stevens (1991).

Focusing first on the strategies by which individuals allocated tasks to jobs, the most common strategy (67.8% of participants) was to allocate tasks to jobs because of their “similarity of function, activity, or task”. Next most common was using a strategy that related to their “previous knowledge of clerical jobs” (8.1%), followed by “similarity of level of responsibility” (7.6%), followed by “similarity of skills/difficulty/education” (5.7%). Strikingly, only a small number (2.4%) reported strategies like trying to make the job more interesting or motivational for the employees. These findings are similar to those obtained by Campion and Stevens (1991). Our visual inspection of the jobs created by participants confirmed that almost all participants created jobs by grouping together similar tasks, such as by allocating all photocopying tasks to a single job.

Focusing on participants’ reasons for adopting any particular strategy, more than half of participants (51.2%) thought their strategy was the most “logical, organized” approach; 14.2% of participants wanted to increase specialization, and 11.4% wanted to increase efficiency and productivity. Almost 10% of participants reported that they relied on their own experience of how this type of work is generally organized. Less than one percent of participants reported that they were trying to achieve a satisfying or motivating job.

With respect to job titles, compared to the initial Campion and Stevens study (1991), the wording of job titles chosen by participants reflected more contemporary titles like administrative assistant (22.6%), replacing the more classical ‘secretary’. It is also interesting to note that over one fifth of the sample created a hierarchical position such as team leader or supervisor (20.9%).

When we examined the actual jobs created, it became apparent that most of the tasks had been allocated based on functional principles; for example, tasks involving data management such as entering data, updating databases and spreadsheets, filing data were typically allocated to the same role, while another role typically received all the tasks related to scheduling, and maintaining calendars, and making appointments. What was even more striking

was that more complex tasks related to these functional areas, such as “come up with new ideas for improving scheduling” tended to be assigned to a managerial role instead of being grouped together with similar tasks. Indeed, some participants created three hierarchical levels amongst the four jobs (e.g., one or two administrative assistants, one supervisor, and one manager).

Insert Table 1 about here

These results are consistent with the conclusion that Campion and Stevens (1991) reached more than 25 years ago that, despite much research showing the benefits of enriched jobs, naïve job designers tended to design largely simplified, functional jobs for others.

Study 2: Antecedents of Work Design Behaviors for Human Service Professionals

In Study 2, using a sample of professionals in human service jobs, we tested the hypotheses linking capacity and willingness variables to work design behaviors.

Participants and Procedure

A total of 218 human service professionals participated in our second study. 179 (82.1%) were members of the Safety Institute of Australia¹, and hence were professionals practicing in organizational health and safety roles at various organizational levels, and 39 (17.9%) were registered industrial/organizational psychologists². All participants were invited to participate into the study prior to attending a presentation on the topic of work design given by the first author of this paper. Participants completed a 30 minutes survey online.

¹ Criteria for becoming an Organizational Health and Safety (OHS) practitioner certified by the Safety Institute of Australia include a diploma/ advanced diploma in OHS, 3 years in a OHS practitioner role, and a capability assessment including a practitioner portfolio and referee checks.

² In Australia, all psychologists practising in organizations are required to register with the Psychology Board of Australia, which is a member of the Australian Health Practitioner Regulation Agency, and to also have an area of practice endorsement in organizational psychology. Qualifications required for registration typically include six years full time (or equivalent) university training, which includes but it is not restricted to postgraduate study in a recognized program, plus further supervised practice as an organizational psychologist.

Participation was voluntary and anonymous, and participants received an individualized feedback report after completing the survey.

Just over one third (39%) of the sample was female and the average age was 49 years ($SD = 11.3$). Participants reported an average work experience of 29.4 years ($SD = 11.97$). Almost all (95%) reported being employed at the time of the data collection; most in full time work (61.9%), 5.5% working on casual contracts, 7.8% were working part-time, 6.5% worked on fixed term contracts and 13.4% were self-employed. Of the 4.6% of participants reporting that they were currently not employed, 2.3% specified other types of employment status, such as being recently retired. The average weekly work hours reported was 40.82 hours ($SD = 14.72$ hours). Most participants reported working in human resources and recruitment (10.8%), education (8.5%), administration and office support (5.2%) or trades and services (4.7%). The rest of the participants reported various other sectors of activity, with most of them specifying working in the field health and safety (31.3%), government and administration (4.4%), various types of consultancy (4%) or research (1.5%), among others.

Measures of Work Design Behavior and the Comparison Measure

We developed two measures to assess participants' work design behavior: enriching task allocation and enriching work strategy selection. Enriching task allocations assessed work design behavior in an unconstrained setting, allowing individuals to design a job from its inception. Enriching work strategy section was included as an additional measure as it might be relatively rare for individuals to have the opportunity to build a job 'from scratch' (Cohen, 2013), as assessed via the first measure, whereas it is more common for individuals to make decisions about work-related problems that potentially have their roots in poor work design. We also developed a comparison measure (person-focused strategy selection) to provide evidence of differential validity.

Enriching task allocation. To quantify the Campion and Stevens' (1991) simulation, and to reduce the cognitive load of this activity (it took more than ten minutes to complete), we

amended the task to asked participants to “complete” the design of a single clerical job within a court environment. Participants were informed that four one-hour tasks had been assigned to the clerical job, each of which were highly simplified and routine tasks (e.g., ‘Making photocopies of Court A documents’). The participants were asked to select four new tasks from a set of eleven to create a full-time job. Five of the new tasks lacked task variety and autonomy, such as “Making photocopies of Court C documents”, whereas the remaining tasks had some degree of enriched work characteristics, such as variety, autonomy, social interaction, and task identity (for example, “Help with a project to computerize court documents”; see appendix).

Participants were advised that the administrative worker was capable of carrying out all of the tasks, and that if the tasks were not assigned to the administrative worker, they would not be neglected but would be carried out by someone else. Participants were also informed that the job would be a permanent one. These instructions were important for ensuring that participants did not choose only what they thought were the most important tasks, nor choose tasks that they judged to be able to be carried out by the worker, nor assume that it was a temporary job and therefore ‘acceptable’ to be highly simplified. To score the measure, we counted the number of enriched tasks that were added to the job. For example, if an individual assigned the administrative worker two additional photocopying or filing tasks as well as two more enriched tasks, they would receive a score of “2”.

For validation purposes, we included a supplementary set of questions aimed at identifying the reasoning behind participants’ work design behavior. After completing the above measure, participants were asked to rate a series of statements on a five-point Likert scale ranging from 1 (not at all) to 5 (to a very large extent). Enriching reasoning was assessed using three items (e.g., “I was trying to achieve a job that is motivating for the worker”), whilst simplification reasoning was measured by three items such as “I was trying to achieve a job with low risk of poor decision-making”.

To assess the validity of this measure, we conducted a one-way ANOVA to compare the scores of our sample of professionals ($N=218$), with a new sample of students (distinct from Study 1, $N=72$) and a sample ($N=10$) of experts (academics, postdoctoral researchers and PhD students working in the area of work design). The results are shown in Table 2. When homogeneity of variance could not be assumed, we used the *Welch's F-ratio*. Results showed that the means for designing an enriched job were significantly different across the three samples, $Welch's F(2, 27.69) = 10.82, p < .001, \omega = .21$. There was a significant linear trend, $F(1, 292) = 15.57, p < .001, \omega = .22$, indicating that, as the level of expertise increases, participants designed more enriched jobs. Planned contrasts showed that professionals had significantly higher scores on enriching task allocation relative to the students sample, $t(75.31) = 4.32, p < .001, r = .45$, and that experts in work design had significantly higher average scores compared to the professional sample, $t(12.35) = 3.23, p < .007, r = .68$. These results support the construct validity of the measure.

Combining the samples together, our analyses also showed that there was a positive correlation between participants' score on designing an enriched job with the self-reported enriching reasoning measure ($r = .38, p < .001$) and a negative correlation between participants' score on designing an enriched job and their self-reported simplification reasoning ($r = -.26, p < .001$). This data further shows support for the validity of the measure.

Insert Table 2 about here

Enriching work strategy selection. This measure of work design behavior assessed the extent to which individuals identify enriching work design as an effective strategy for solving organizational problems. We developed four scenarios, each describing an organizational problem (see Appendix). The first scenario was about an employee working in a warehouse who seriously struggled to meet the times allocated for her tasks. This scenario was based on the article published by investigative journalist Mac McClelland reporting on her experience as

a worker in the warehouse of a global online commerce company (McClelland, 2012). The second scenario was about stressed managers who are overloaded, the third scenario described a hotel struggling due to higher cleaning costs, and the last scenario presented the situation of a team of consultants dealing with increased working hours that impact on work-family balance. We deliberately opted for a range of scenarios, covering different types of industries, different types of work (blue and white collar), and different types of problems (performance, stress, cost issues, etc.). For each of these problems, the literature suggests work design as a viable cause.

For each scenario, participants were asked to rate the effectiveness of various strategies from 1 (not at all effective) to 5 (very effective). Analogous to the concept in the stress literature of primary interventions that address the root cause of stress (Cooper & Cartwright, 1997; Murphy, 1988), some strategies were focused on work design. These strategies sought to address the problems by trying to find better ways of organizing work (e.g., “redesign the jobs so that Karen and her colleagues have more meaningful work”) as well as involving employees in diagnosing the core problem and/or in finding a solution (e.g., “involve the managers in a review to identify ways to reduce work stress”). Scores on these strategies were summed to create the measure of *enriching work strategy selection* (see below for validity evidence).

Person-focused strategy selection. In the measure above, some strategies implied that the problem lay with the individual employees. Analogous to the concept of secondary stress interventions (which aim to change the person, such as by improving time management) and tertiary stress interventions (which aim to alleviate the person’s symptoms of stress, such as via the provision of counseling), these strategies aimed to change the employee’s behavior through positive and negative reinforcements (e.g., “discretely observe Karen’s behavior to see how fast she’s moving”) or through procedures aimed at changing the personal characteristics of the workforce (e.g. “improve the selection system: recruit only managers who thrive on pressure”). Scores on these strategies were summed to create a measure of *person-focused strategy selection*, which we used to establish the discriminant validity of findings.

Validity evidence. We expected that items would load onto two overarching factors: enriching work strategy selection and person-focused strategy selection. We conducted a CFA in MPlus (Muthen & Muthen, 1998-2011) using item parcels. Using the item-to-construct balance parceling procedure, we computed eight parcels by averaging the items with the highest loadings with the items with the lowest loading, thus minimizing the loading differences among the manifest variables (Little, Cunningham, Shahar, & Widaman, 2002). Four parcels loaded on each factor. This model had a good fit, $\chi^2(19) = 23.31, p > .05$, CFI = .974, TLI = .962, RMSEA = .050 (90% CI [.000; .085]), supporting factorial validity.

We carried out a similar construct validity check for this measure as that reported above (see Table 2) using the same samples. Where homogeneity of variance could not be assumed, we used *Welch's F*-ratio and Games-Howell post hoc tests (if not, Gabriel's test was used). Scores were significantly different across the three samples of professionals, students and experts, $F(2, 27.68) = 10.50, p < .001, \omega = .21$), and there was a significant linear trend, $F(1, 292) = 15.99, p < .001, \omega = .22$, indicating that, as the level of expertise increases, participants identified more enriching work strategy selection as effective solutions. Planned contrasts revealed that participants with professional expertise had higher scores compared to students, $t(63.75) = 4.61, p < .001, r = .71$, and participants with specific expertise in work design had higher scores than professionals, $t(12.3) = 2.36, p < .05, r = .56$.

It is relevant to note that scores for person-focused strategy selection also differed significantly across the 3 samples, $F(2, 292) = 57.03, p < .001, \omega = .52$, with a significant linear trend $F(1, 292) = 105.14, p < .001, \omega = .51$ such that, as the level of expertise increased, participants scored person-focused strategy selection as less effective. Planned contrasts revealed that professionals had lower scores on person-focused strategy selection, compared to the student sample, $t(292) = -7.97, p < .001, r = .42$, although there was no difference in scores between experts in work design and professionals, $t(292) = -1.05, ns, r = .06$.

Further evidence of construct validity was shown by the significant positive correlation between scores on enriching work strategy selection and enriching task allocation (the work design behavior described above) ($r = .22, p < .001$), as well as a significant negative correlation between participants' scores on person-focused strategy selection with enriching task allocation ($r = -.20, p < .01$). Scores on simplification reasons (from the task allocation measure) positively correlated with person-focused strategy selection ($r = .38, p < .001$) and enriching reasons correlated with enriching work strategy selection ($r = .36, p < .001$).

Taken together, these results provided good support for the validity of the work design behavior measures used in the study.

Measures of Antecedents

Professional expertise. Individuals who were registered industrial/organizational psychologists were given the score of 1, and all others scored 0. In total, 17.9% of the sample were registered industrial/organizational psychologists.

Explicit knowledge. We developed a five-item measure to assess participants' explicit knowledge about work design theory. Items were similar to test questions usually used for tertiary education assessments, and we created items using content from textbooks. An example item was: "Job enlargement means that employees get more difficult tasks in their job" (see the Appendix for the full list of items). Participants responded with "Yes", "No" or "I don't know". Only correct answers were coded with 1 point, and scores were summed across the items to create the measure. The overall level of explicit knowledge about work design theory was relatively low ($M = 1.79, SD = 1.44$).

To assess the validity of the measure, we conducted a one-way ANOVA to compare the scores of our sample of professionals ($N = 218$), with a new sample of students ($N = 235$) and a sample ($N = 7$) of experts in work design (academics, postdoctoral researchers and doctoral students working in the area of work design). Results showed that the means for work design knowledge were significantly different across the three samples, *Welch's* $F(2, 16.59) = 65.12, p$

$< .001$, $\omega = .43$. There was a significant linear trend, $F(1, 74.04) = 48.5$, $p < .001$, $\omega = .30$, indicating that, as professional expertise increases, participants' scores on the explicit work design knowledge scale increase. Further, planned contrasts revealed that having professional expertise significantly increased the scores for work design knowledge relative to the students sample, $t(9.38) = 11.16$, $p < .001$, $r = .96$, and that having specific expertise in work design associated with higher work design knowledge scores compared to the professional sample, $t(7.13) = 6.63$, $p < .001$, $r = .93$. These results supported the measure's discriminant validity.

To further assess the relevance of the items, each item was administered to first year Belgian Business Administration students ($N = 72$) before and after instruction on work design theory. Most items were incorrectly scored by participants when they had received no instruction in work design theory ($M = 1.03$, $SD = .11$), but after a class on job design, students provided significantly more correct answers ($M = 2.75$, $SD = .14$), as shown by a repeated measures ANOVA of pre- versus post- class scores ($F(1,62) = 121.01$, $p < .001$). An additional study showed a similar set of results from an international group of second year MBA students ($N = 107$) filling out the measure before and after participating in a job design class. Full details of these analyses are available from the authors on request.

Current job autonomy. We assessed job autonomy with six items from the decision-making autonomy and work methods autonomy subscales in the Work Design Questionnaire (WDQ) developed by Morgeson and Humphrey (2006). The items measure how much decision-making autonomy participants have in their work ("The job allows me to make a lot of decisions on my own") and how much autonomy they have over how they go about their tasks ("The job allows me to decide on my own how to go about doing my work"). Responses were given on a 5-point Likert scale ranging from 1 "Strongly disagree" to 5 "Strongly agree" and internal consistency for the overall scale was high ($\alpha = .93$).

Openness to change values. We measured participants' openness to change values using eight items from three openness to change subscales from Schwartz et al. (2012) Value

Inventory ($\alpha = .77$): self-direction thought (e.g., “Being creative is important to him/her”), self-direction action (e.g., “Doing everything independently is important to him/her”), and stimulation (e.g., “He/She is always looking for different kinds of things to do”). Participants were required to rate how much each description of a person was characteristic of himself or herself, on a 6-point Likert scale ranging from 1 “not like me at all” to 6 “very much like me”.

Conservation values. We measured participants’ conservation values using 13 items from 5 conservation subscales of Schwartz et al. (2012) Value Inventory ($\alpha = .75$): security - personal (e.g., “He/She avoids anything that might endanger his safety”), security- societal (e.g., “He/She wants the state to be strong so it can defend its citizens”), tradition (e.g., “It is important to him to maintain traditional values or beliefs”), conformity – rules (e.g., “He/She believes he should always do what people in authority say”), and conformity – interpersonal (e.g., “It is important to him/her to avoid upsetting other people”). Participants were required to rate how much each description of a person was characteristic of himself or herself, on a 6-point Likert scale ranging from 1 “not like me at all” to 6 “very much like me”.

Control Variables

In testing the hypotheses about antecedents, we included as control variables work experience and managerial role because it was possible that these variables would co-vary with both the capacity antecedents (e.g., managers/ individuals with more work experience are likely to have more job autonomy) as well as with the dependent variables (e.g., managers/individuals with more work experience might have a better understanding of good work design), and hence could create a confounding effect. *Work experience* was measured by asking participants to report, in years, the total amount of paid work experience they accumulated over their whole lives. *Managerial role* was assessed by asking participants to report their total number of subordinates. A dummy variable was created coding all participants who reported managing subordinates as 1, and others as 0.

Results

Table 3 shows the internal reliabilities of the scales, descriptive information, and inter-correlations between the variables. Interestingly, the mean score for allocating enriched tasks was moderate ($M = 3.10$), with rather large variance around the mean ($SD = 1.23$). Closer inspection of frequencies for this variable showed that almost one third (30%) of the sample chose to allocate no enriched tasks to the already simplified clerical job, 28% allocated between one and three enriched tasks, and 42% allocated four enriched tasks. Thus, even though the sample included professionals working in human service fields, the tendency to design simplified and narrow work was still high for many of these individuals.

With respect to inter-correlations, the patterns of associations amongst variables were largely as expected. However, because zero-order correlations do not account for controls, or inter-correlations amongst scales, we used regression analyses to test the hypotheses.

Insert Table 3 about here

We conducted a series of hierarchical multiple regression analysis for each work design behavior measure (i.e., enriching task allocation; enriching work strategy selection, see Table 4). As a comparison, and because one of our hypotheses included this dependent variable, we also included a regression predicting participants' scores on person-focused strategy selection. In each analysis, the first step was the control variables (overall work experience, managerial role). In step 2, we included the antecedent variables (explicit knowledge, professional expertise, current job autonomy, openness to change values, and conservation values).

Insert Table 4 about here

Hypothesis 1, that individuals with relevant professional expertise (registered I/O psychologists) will be more likely than others to design enriched work, was supported. Having

this professional background predicted enriching task allocation ($\beta = .20, p < .05$) as well as enriching work strategy selection ($\beta = .16, p < .05$).

Hypothesis 2, that those with explicit knowledge about work design theory would design more enriching jobs, received marginal support. Explicit knowledge about work design was not a predictor of enriching task allocation or enriching work strategy selection, although it negatively predicted person-focused strategy selection ($\beta = -.22, p < .01$). Thus, the more knowledgeable the participant was about psychosocial work design theories, the less likely the participant was to rate as effective those strategies that attribute the problem to the employees.

To examine if explicit work design knowledge partially explained the relationship between professional expertise and work design behaviors (Hypothesis 3), we followed the procedures recommended by Preacher and Hayes (2004). We used the multiple mediation model (Model 4), employing the macro of Preacher and Hayes (2008) in SPSS using bootstrapping analysis (with 1000 iterations). We controlled for overall work experience and managerial role, as well job autonomy, openness to change values and conservation values.

Explicit work design knowledge did not mediate the relationship between professional expertise and enriching task allocation (95% CI [-.26, .11], n.s.) or enriching work strategy selection (95% CI [-.05, .08], n.s.). However, given that there was a negative relationship between work design knowledge and person-focused strategy selection, we explored the mediation effect of work design knowledge for this outcome and found that explicit knowledge mediated this relationship. Specifically, professional expertise predicted explicit work design knowledge ($B = 1.40, SE = .27, p < .001$), explicit work design knowledge was negatively related to person-focused strategy selection ($B = -.09, SE = .03, p < .01$), and the indirect effect was significant (95% CI [-.22, -.05]). The direct effect between professional expertise and person-focused strategy selection, controlling for the mediating mechanisms, was non-significant ($B = .09, SE = .11, ns$).

Hypothesis 4, that one's own work design would shape how work was designed for others, was supported. Current job autonomy predicted enriching task allocation ($\beta = .16, p < .05$), as well as enriching work strategy selection ($\beta = .16, p < .05$).

Hypothesis 5 about the role of openness to change was partially supported, with this willingness variable predicting enriching work strategy selection ($\beta = .22, p < .01$).

Hypotheses 6 and 7 are tested in Study 3.

Hypothesis 8, about the role of conservation values, was partially supported. As expected, individuals high in conservation values scored lower on enriching task allocation ($\beta = -.16, p < .01$) and higher on person-focused strategy selection ($\beta = .25, p < .001$). Conservation values, however, was not a negative predictor of enriching work strategy selection.

We also tested all of the above hypotheses without control variables, as recommended by Berneth & Aguinis (2016) and we found a largely similar pattern of findings³.

Study 3: Antecedents of Work Design Behaviors for Panel Study

In Study 3, we provided further tests of the hypotheses, while also testing the mediating role of valence and affect in linking life values to work design behaviors (Hypotheses 6, 7, 9, 10) which we were not able to do in Study 2. Because Study 3 was conducted using workers from survey panels, we sought to reduce the survey length by using one measure of work design behavior (i.e., enriching work strategy selection) and the comparison measure (person-focused strategy selection). We were not able to examine the role of possessing relevant specific professional expertise in Study 3 because of the nature of the sample, so we focused on explicit knowledge and job autonomy as the key capacity variables.

³ The only variation found for these analyses was that the effect of professional expertise on enriching strategy selection became non-significant when control variables were excluded ($\beta = .11, p > .05$). All tests of indirect effects resulted in the same findings, with just minor variations in coefficient values. More specifically, the indirect effect of explicit work design knowledge continued to be significant for person-focused strategy selection (95% CI [-.20, -.05]) while remaining non-significant for both enriching task allocation and enriching strategy selection (95% CI [-.20, .11] and 95% CI [-.03, .10] respectively).

Participants and Procedure

We recruited participants from the online response panels run by Amazon (i.e., Mechanical Turk by using TurkPrime) and Qualtrics (i.e., an online survey, software and market research company) to participate in an online survey study. To qualify in the study, MTurk participants ($N = 350$) had to be employed at the time or having been employed within the past year; be 17 years of age or older; work in the United States, Canada, UK, Ireland, Australia or New Zealand; and have a past work approval rating of at least 95% on MTurk (which is an indicator of data quality). To ensure heterogeneity in the sample, in the study run through Qualtrics panels ($N = 341$), we specifically targeted working professionals, which was facilitated by Qualtrics' better tools for targeting specific populations. Participants had to work full time (i.e. at least 35 hours/week), be 17 years of age or older, work in Australia, and work in a professional job as defined by the Australian Department of Employment.

We took several other steps to enhance the quality of our data. We excluded people who reported English was not their first language to minimize the possibility of items being misinterpreted. As response time has been shown to indicate insufficient effort in responding to surveys (Huang et al., 2012), we also included a speeding check, and removed participants who completed the survey in less than half the median time needed for survey completion. We also removed participants who failed one of the instructed-response items (e.g., "Please select strongly disagree to this item") (Ward & Pond, 2015) and also reported in a single item measure at the end of the survey that they did not dedicate much effort and attention to the study (Meade & Craig, 2012). This resulted in $N = 89$ participants being excluded from the analysis, and the final sample consisted of $N = 602$ participants.

Most participants were Caucasian (86.7%), with some Asians (6.0%), Africans (5.0%) or other (2%). The average age was 44.19 years ($SD = 12.11$), and 52% were female. Nearly all participants (96.5%) reported they were employed at the time of the survey, and remaining participants (3.5%) had been employed within the past year. Most of the participants worked

full time (88.5%), with the rest being part-time (5.1%), fixed term (1%) or casual (1.2%) contracts or self-employed (3.7%). Average work experience was 24.25 years ($SD = 12.15$ years). People worked on average 41.23 hours per week ($SD = 8.91$ hours). Most participants worked in administration/office support (17.9%), healthcare (9.1%), retail and consumer products (8.6%), education (8.6%) or trades and services (8.3%). Other sectors that were represented were: accounting (4%), financial services and banking (4.7%), sales (4.5%), call-center/customer service (3.3%), hospitality (2.5%), self-employed (2.5%), advertising (2.5%), marketing (2.2%), human resources (1.5%), sports and recreation (1.2%) and other (18.6%).

Measures

Work design behaviors. We used an expanded version of the enriching work strategy selection and person-focused strategy selection measures used in Study 2. To ensure that items for scales were balanced across the four scenarios, which was not previously the case, we added additional items (see Appendix for the full list). We also re-worded the instructions to ensure the measure focused on behaviors. Specifically, we asked participants to choose strategies that “they would use” if they had to solve the hypothetical organizational problems.

To ensure that the revised measure maintained its overall factor structure, we ran a CFA analysis in MPlus (Muthen & Muthen, 1998-2011) using the same item parcels approach described in Study 2. For this extended version of the scale we computed nine parcels: four loading on the first factor (enriching work strategy selection) and five loading on the second factor (individually targeted strategies). The model had a good fit to the data, $\chi^2(26) = 63.65$, $p < .001$, CFI = .981, TLI = .973, RMSEA = .049 (90% CI .034 - .064) providing support for its hypothesized structure. We created two scales (enriching work strategy selection, person-focused strategy selection), which had excellent reliabilities ($\alpha = .80$ and $\alpha = .85$, respectively).

Mediating variables: Valence and Affect. The mediators were measured after the work design behaviors, and were specifically framed to refer to respondents' approach during the task. Before filling in the items, the respondents were instructed to “think back to the way you

approached the previous task and to the strategies you were more likely to choose to solve the organizational problems. The next sets of questions might help you describe your approach during the task, so please read each carefully...". Valuing intrinsic work characteristics was measured with six items ($\alpha = .79$) from the Work Values Survey (Taris & Feij, 2001; Feij et al., 1995). Sample work aspects included "autonomy (you decide how/when to do your work)", "interesting work" and "responsibility".

To measure positive affect when providing enriched work for others, respondents were asked to rate how "having to allow employees to make decisions about their own work" made them feel. We chose three adjectives used by Warr (1990) to measure low-activated positive affect: "calm", "contented" and "relaxed". The α was .90.

Other measures

Explicit knowledge about work design and current job autonomy ($\alpha = .93$) were measured using the same variables as in Study 2. To shorten the length of the questionnaire, and to improve the internal reliabilities of these measures, we assessed values by selecting the values of self-direction thought/self-direction action ($\alpha = .81$) to assess openness to change values, and tradition values ($\alpha = .87$) to assess conservation values. As in Study 2, we controlled for work experience and managerial role. Additionally, as the data was collected using two different survey panels, we also controlled for the source of the data (MTurk versus Qualtrics panel).

Results

Internal reliabilities of the scales, descriptive information, and inter-correlations between the variables are shown in Table 5. To test the main effect hypotheses, we conducted hierarchical multiple regression analysis with enriching work strategy selection and person-focused strategy selection as the dependent variables (see Table 6). Control variables were introduced in the first

step, followed by the antecedent variables (i.e., explicit knowledge of work design theory, current job autonomy, openness to change values, and conservation values)⁴.

 Insert Table 5 and Table 6 about here

Hypotheses 1 and 3 regarding professional expertise as an industrial/organizational psychologist was not tested in this study due to the different sample composition.

Consistent with Study 2, Hypothesis 2, received marginal support. As in Study 2 explicit work design knowledge was unrelated to enriching work strategy selection ($\beta = -.01$, *n.s.*) but negatively related to person-focused strategy selection ($\beta = -.09$, $p < .05$).

Hypothesis 4 was supported: current job autonomy positively predicted enriching work strategy selection ($\beta = .12$, $p < .01$).

Hypothesis 5 was supported: openness to change values positively predicted enriching work strategy selection ($\beta = .37$, $p < .001$).

The relationships between valence and affect and work design behaviors, as well as their mediating role in the relationship between openness to change and work design behaviors, were examined using the same multiple mediation model (Model 4) reported in Study 2, employing the macro of Preacher and Hayes (2008). Results provided support for Hypothesis 6, as both valuing intrinsic work characteristics ($B = .20$, $SE = .03$, $p < .001$) and positive affect ($B = .11$, $SE = .02$, $p < .001$) were positively related to enriching work strategy selection.

Moreover, Hypothesis 7 regarding the mediating role of valence and affect in the relationship between openness to change and work design behaviors also received support. Openness to change related positively to valuing intrinsic work characteristics ($B = .38$, $SE = .03$, $p < .001$) and to positive affect when providing enriched work to others ($B = .23$, $SE = .05$,

⁴ We have also tested this model with the control variables excluded or added in the last step of the regression analyses and found the same results for our hypothesis, with only minor variations in coefficient values.

$p < .001$). Tests of the indirect effects showed that openness to change values predicted enriching work strategy selection via valuing intrinsic work characteristics (95% CI [.05, .11]) and positive affect (95% CI [.01, .04]). After controlling for the mediating variables, openness to change still predicted enriching work strategy selection ($B = .15$, $SE = .03$, $p < .001$).

As with Study 2, Hypothesis 8 was partially supported: conservation values were not linked to enriching work strategy selection ($\beta = .01$, *n.s.*), but were positively linked to person-focused strategy selection ($\beta = .18$, $p < .001$).

Hypothesis 9 regarding mediators of conservation values to enriching work strategy selection was not supported. Conservation values were unrelated to both valuing intrinsic work characteristics ($B = .01$, $SE = .01$, *n.s.*) and positive affect ($B = .03$, $SE = .03$, *n.s.*). The main and direct effect of conservation values on person-focused strategy selection remained ($B = .09$, $SE = .02$, *n.s.*). The results reported here were also confirmed with controls removed.

Given that managers may play a particularly stronger role in shaping work design for others (Parker, Van den Broeck et al., 2017), and based on a request from the reviewers, we conducted some post-hoc analyses to explore the interaction effects between predictor variables and participants' managerial status on all outcomes across both studies. Results were largely non-significant, but for the professional sample (Study 2), there was a significant interaction effect between openness to change values and managerial role on enriching task allocation ($B = .89$, $SE = .30$, $t = 3.02$, $p < .01$, 95%CI [.31, 1.47]). Tests of the conditional effects showed that whilst for non-managers the relationship between openness to change values and enriching task allocation was not significant, for managers there was a positive relationship ($B = .80$, $SE = .25$, $t = 3.26$, $p < .01$, 95%CI [.32, 1.28]). This result suggests that some managers – professional managers who value independence, self-direction, and change – do appear to use their managerial experience to design enriched work for others.

Discussion

Despite thousands of studies on the effects of work design (e.g., Humphrey et al., 2007), little attention has been given to the issue of why particular work designs emerge, and especially the role of local decision-makers. In this study, we set out to provide a platform for future research on this topic by investigating how individuals design work in an unconstrained situation, as well as the drivers of this work design behavior.

Our initial descriptive study showed that ‘naïve’ work designers (students) continue to have a tendency to rely on a functional approach that leads to simplified jobs. A strikingly low proportion of the sample (less than three percent) reported giving any attention to human or psychological issues such as satisfaction or motivation when making their work design choices. These findings echo the conclusion of Campion and Stevens (1991, p. 188) that “a mechanistic or work simplification approach may be the most natural or predisposed orientation for untrained individuals”. Even for a sample of professionals within the human services, almost one third allocated mostly repetitive, low autonomy tasks to an already simplified job. It seems that understanding how to design work that is motivating and healthy does not necessarily come naturally, which might be one contributing factor to the continued rather high proportion of low quality psychosocial work design in contemporary work places, despite much evidence as to their negative human and organizational effects.

Importantly, our research went beyond the descriptive level to model factors that influence individual participants’ work design strategies. For a sample of professionals, as well as a heterogeneous panel sample of workers, consistent with arguments about the determinants of behavior (Appelbaum et al., 2000; Blumberg & Pringle, 1982), and consistent with a recent model of the influences on work design (Parker, Van den Broeck et al., 2017), we showed the importance of capacity and willingness influences on work design behaviors. Indeed, together, these variables explained 10% and 13% of the variance in work design behaviors in Study 2, and 17% of the work design behaviour variable in Study 3. The effect sizes of specific

predictors roughly fall into the range of “medium” sized effects. For enriching task allocation, the absolute value of correlations between this variable and predictors ranged from .15 to .24, which (assuming enriching task allocation is a behavior) fits into Bosco et al.’s, (2015) classification of correlation sizes as medium ($|r|$ between .10 and .25). The correlations between predictors and the enriching work strategy selection were higher, ranging from .17 to .37 in Study 2 and from .19 to .41 in Study 3, which suggest larger than medium effect sizes, although one should perhaps assume these measures are closer to ‘intentions’ than actual behaviour (for which Bosco et al.’s., criteria of medium effect sizes is between .20 and .40). Altogether, these results suggest that work design strategies can be seen as a behavior, subject to similar sets of influences as other important work behaviors, and therefore potentially malleable.

Turning first to capacity influences, perhaps most strikingly, across both studies, participants’ own work design shaped how they designed the work of others. Specifically, participants’ level of job autonomy was an important positive influence on the tendency to allocate enriched tasks to others and to choose enriching strategies to solve work problems. This finding suggests the possibility of a virtuous cycle in which individuals with autonomy in their own jobs tend to create and support autonomous work for others. It, of course, also suggests the possibility of a vicious cycle in which individuals who lack autonomy in their jobs tend to recreate such poor work designs for others. Although we did not test the mechanism underpinning this finding (an area for future research, see later), we made the assumption that participants’ own work design offers a form of implicit knowledge about work design that is then applied, perhaps rather unconsciously, to one’s approach to designing work for others. From the perspective of self-determination theory (Ryan & Deci, 2000), allowing individuals’ autonomy over important aspects of their (work) lives is argued to fulfill the fundamental needs of individuals, as indeed shown in a recent meta-analysis (Van den Broeck, Ferris, Chang, & Rosen, 2016). From the perspective of work design theory, in their meta-analysis, Humphrey et al. (2007) found that job autonomy – mediated by meaningfulness - was one of the most

important work characteristics for consistently predicting attitudinal (e.g., job satisfaction, commitment) and behavioral outcomes (e.g., job performance). In essence, our study suggests that having job autonomy not only motivates people by meeting their personal needs and enhancing meaning but autonomy effects also “spill over” to positively shape how one designs work for others, perhaps because of the development of implicit knowledge about what constitutes ‘good work’.

We also found in Study 2 that industrial/organizational psychologists are more likely than other human service-oriented professionals to design enriched jobs, even when controlling for differences in individuals’ own work design and/or their values. This finding has parallels with that of Campion and Stevens (1991), who showed that training in the form of a work design lecture resulted in an immediate improvement in how undergraduate students designed jobs. However, our study goes further to show that these learning effects endure beyond an immediate training session. Importantly, our study also suggests that it is not the accumulation of explicit knowledge about work design that explains why industrial/organizational psychologists design better work long after their training, although this explicit knowledge does appear to prevent them engaging in a person-focused approach. Perhaps the more powerful process underpinning the effect of this professional status on work design behaviors is their opportunity for work experience in the practice of I/O psychology, which then enables the acquisition of implicit knowledge about work design.

Altogether, with respect to capacity variables, this research suggests the importance for shaping work design behaviors of understanding work design “deeply”, such as through work experiences (similar to the ones acquired by industrial/ organizational psychologists) or via the implicit knowledge that accumulates as a result of an individual having an enriched work design for him/herself (see also George, 2009). Whilst explicit knowledge about work design theory means that individuals are less likely to choose strategies that ‘blame the individual’, this capacity variable does not on its own lead to enriching work design behaviors. We suspect

this finding occurred because having a knowledge of psychosocial work design theories means people know that enrichment ‘matters’, but they lack practical knowledge about how to translate the theory into improved work designs.

Turning now to willingness variables, our research shows that designing enriched work for others is also shaped by one’s values, over and above professional experience or one’s own work design. This finding is consistent with research showing that individuals make choices in accordance with their values (Frieze, Olson, Murrell, & Selvan, 2006; Verplanken & Holland, 2002). Specifically, across both Study 2 and 3, individuals high in openness to change values were more likely to identify enriching work strategies as solutions to organizational problems. Mediation analyses suggested individuals high in openness to change experience more positive affect when making decisions that give control to others, and that they are more likely to value enriched work characteristics themselves, which likely makes them more open to strategies that support growth, development and intrinsic motivation for others (Schwartz et al., 2012). Altogether, individuals high in openness values appear to have a natural comfort with, and preference for, work enrichment as a viable strategy in organizations.

Also as hypothesized, individuals with conservation values were less likely to allocate enriched tasks in the court administrative task (Study 2), and were more likely to choose person-focused strategy selection to solve hypothetical work problems (Study 2, 3). In fact, our analyses suggested that these effects do not arise through affect or valence processes. It might be that individuals high in conservation values make different appraisals about the ‘risks’ that might be associated with enriched work, which is not a process we measured. Practically, this finding suggests that highly conservative individuals might be more resistant to, or struggle with, applying the ideas from psychological work design theories. Additional motivation or persuasion might be necessary for individuals high in conservation values. In the light of these findings regarding the possible influence of life values in designing work for others, it would be

also interesting to check if these effects translate to how people design work for themselves, a topic that the literature on job crafting has not yet addressed.

Some results were not quite as expected. As discussed above, explicit knowledge played a role, but it was not as strong as we had theorized. We also found that individuals high in conservation values tend to select person-focused strategies and tend to allocate simplified tasks as hypothesized, but they were not more negative about selecting enriching work strategies. It seems that conservative individuals make narrower and essentially more conservative decisions, but they do not necessarily ‘block out’ enriching options. Likewise, individuals high in openness values rated enriching work strategies more positively, but were not significantly more enriching in their actual task allocation. These results suggest that our two work design behavior measures tap into slightly different aspects of behavior and that we need further research to understand their similarities and differences.

Finally, it is relevant to comment on the findings for the control variables. It seems that being a manager does not bestow upon individuals the inclination to design better work for others. In fact, in Study 3, managers were less likely to select enriching work strategies and were more likely to prefer strategies that attribute problems to individuals. Managerial roles do not necessarily come with any specific education about work design or even broader organizational behavior topics, nor are there usually processes in place to foster individuals’ acquiring experience about psychosocial work design. Nor are managers particularly likely to have values that align with the design of enriched work; indeed, the controlling responsibilities that are part of a managerial role might even attract individuals with low motivation to give individuals autonomy. It might also be something about the specific experience of being a manager that engenders these less psychosocially-oriented work designs. Since managers arguably have the opportunity, more so than others in a work environment, to create or support better work designs, this an important direction for future research, as we elaborate next.

Limitations and Future Research

This study focused on individuals' work design strategies in an unconstrained situation. We went beyond self-reports or espoused beliefs to examine participants' work design behaviors. Nevertheless, although it was a deliberate research design decision on our part to do this so that we could focus on capacity and willingness as antecedents, our approach is limited in its focus on responses to hypothetical activities rather than actual work behavior within an actual organizational context. We recommend further research to explore the broader enablers and constraints on work design behavior within the context (that is, considering the 'opportunity' determinants of behavior, Cummings & Blumberg, 1987). A field study, for example, could seek to model systematically the influence on individuals' work design decisions of social and political processes that have been discussed in other research (e.g., Nielsen et al., 2010), including the influence of higher-level factors such as organizational design and national institutional factors (Parker, Van den Broeck et al., 2017).

We suggest it is especially important to further consider within a field study the work design strategies of managers and first-line supervisors because these individuals have greater opportunities to shape work design directly through decision making about, for example, the division of labor or coordination of tasks (Parker, Van den Broeck et al., 2017). Further field research is particularly important given our study's finding that managers do not tend to design enriched work for others and even have a tendency to design more deskilled work. It is possible, for instance, that in a 'real' situation, managers are willing to design enriched work for those job incumbents they judge to be highly capable. On the other hand, the rather pessimistic findings we obtained here might be even more likely in real settings, for example, because managers already foresee the organizational constraints.

If our findings are upheld, this suggests that more attention to managers' work design behaviors is warranted. One avenue involves establishing whether behavior can be shifted via training. For example, one might question how much attention (relative to, say, leadership) the topic of work design gets in MBA programs, executive development or leadership programs,

and even supervisory training courses. Our sense is that work design is relatively rarely the topic of such training and development programs. A further avenue is to explore sub-samples of managers in line with our exploratory post-hoc analyses suggesting that only managers with particular willingness attributes utilize their managerial experience to design more enriched work. More research is needed to test the robustness of these findings and potentially expand them to other personal or situational characteristics.

We also recommend considering the work design behavior of other stakeholders whose behaviors might affect employees' work designs, such as engineers, human factors experts, accountants, safety professionals, human resource specialists, union representatives, and IT professionals, to name a few. For example, scholars have long argued that work design principles should be incorporated into the processes of designing new technology (e.g., Clegg, 1984), but such consideration rarely occurs, with engineering and other technical concerns dominating the agenda. This neglect can then result in technological systems that strip control from humans, such as Davis's (2010) example of how performance-monitoring technology severely curtailed staff autonomy in a retail shop. There will be merit in understanding how different professionals consider work design (or do not consider work design) and what sorts of training, work experience, or other opportunities might shape their work design behaviors, beyond the factors identified here.

Although our study showed the importance of one's own level of job autonomy in affecting one's work design strategies, further research could investigate the mediators of this variable. We suggested that individuals with job autonomy implicitly learn about the value of this work attribute and perhaps quite unconsciously create it for others. However, we did not measure implicit knowledge about work design (which is a substantive research task in and of itself, see Uhlmann et al., 2012) but we recommend researchers take up this challenge. Attention should also be given to other work characteristics (beyond job autonomy) as potential influences on individuals' work design behaviors. We recommend moving beyond a cross-

sectional test of the role of key mediators, and including social desirability as a control variable to rule out its possible role.

Methodologically, we propose the need for attention to the measures of work design behavior. The existing two measures differed in their emphasis. The first measure, enriching task allocation (in which participants allocated tasks to a hypothetical clerk role) essentially involved the design of a new job. The second measure, enriching work strategy selection, addressed whether work enrichment is considered as a viable strategy for a range of jobs (from warehouse pickers to consultants) in the face of problems that research suggests often stem from poor work design. Each measure has some advantages and disadvantages. For instance, the enriching task allocation measure has the advantage of getting participants to actually design work but it also focuses only on one type of job (clerical). There would be value in extending the measure of enriching task allocation to other types of work, especially professional and knowledge work, which scholars have argued is increasingly vulnerable to erosions in autonomy and skill use. For instance, Oldham and Hackman (2010) argued “they got it wrong” because they predicted in their original early research that the prospects for enriching front line work were grim, whereas more recently it seems that professional jobs “appear to be shrinking” (p. 467). The enriched task allocation measure also focused primarily on enriching work through increasing task variety and responsibility, rather than through increasing job autonomy, so this is a further way the measure could be developed. All together, we hope our research will ignite interest in the topic of how work designs emerge.

References

- Alarcon, G. M. (2011). A meta-analysis of burnout with job demands, resources, and attitudes. *Journal of Vocational Behavior, 79*(2), 549-562.
- Appelbaum, E., Bailey, T., Berg, P., & Kalleberg, A. L. (2000). *Manufacturing advantage: Why high-performance work systems pay off*. Ithaca, NY: ILR Press.
- Babu, G. R., Jotheeswaran, A. T., Mahapatra, T., Mahapatra, S., Kumar, A., Sr., Detels, R., & Pearce, N. (2014). Is hypertension associated with job strain? A meta-analysis of observational studies. *Occupational and Environmental Medicine, 71*, 220–227.
- Bernerth, J. B., & Aguinis, H. (2016). A critical review and best-practice recommendations for control variable usage. *Personnel Psychology, 69*(1), 229-283.
- Blumberg, M., & Pringle, C. D. (1982). The missing opportunity in organizational research: Some implications for a theory of work performance. *Academy of Management Review, 7*, 560–569.
- Bosco, F. A., Aguinis, H., Singh, K., Field, J. G., & Pierce, C. A. (2015). Correlational effect size benchmarks. *Journal of Applied Psychology, 100*, 431-449.
- Boxall, P., & Winterton, J. (2015). Which conditions foster high-involvement work processes? A synthesis of the literature and agenda for research. *Economic and Industrial Democracy*, E-pub ahead of print, 2 September 2015.
<http://doi.org/10.1177/0143831X15599584>
- Burton, D. M., Cohen, L. E., & Lounsbury, M. (2016). Introduction: Bringing jobs back in: Toward a new multi-level approach to the study of work and organizations. *The structuring of work in organizations, 47*, 1. <http://doi.org/doi:10.1108/S0733-558X20160000047001>

- Campbell, J. P., McCloy, R. A., Oppler, S. H., & Sager, C. E. (1993). A theory of performance. In N. Schmit & W. C. Borman (Eds.), *Personnel selection in organizations* (pp. 35-70). San Francisco: Jossey-Bass.
- Campion, M. A., & Stevens, M. J. (1991). Neglected questions in job design: How people design jobs, task-job predictability, and influence of training. *Journal of Business and Psychology*, 6, 169–191.
- Cheng, Y., Chen, I. S., Burr, H., Chen, C. J., & Chiang, T. L. (2013). Changes in psychosocial work conditions in Taiwanese employees by gender and age from 2001 to 2010. *Journal of Occupational Health Psychology*, 55(5), 323-332.
- Clegg, C. W. (1984). The derivation of job designs. *Journal of Occupational Behavior*, 5(2), 131. <http://doi.org/10.2307/3000123>
- Cohen, L. E. (2013). Assembling jobs: A model of how tasks are bundled into and across jobs. *Organization Science*, 24(2), 432–454. <http://doi.org/10.1287/orsc.1110.0737>
- Cohen, S. G., Ledford, G. E., & Spreitzer, G. M. (1996). A predictive model of self-managing work team effectiveness. *Human Relations*, 49, 1996, 49(643–677).
- Cooper, C. L., & Cartwright, S. (1997). An intervention strategy for workplace stress. *Journal of psychosomatic Research*, 43(1), 7-16.
- Crowley, M., Tope, D., Chamberlain, L. J., & Hodson, R. (2010). Neo-taylorism at work: Occupational change in the post-fordist era. *Social Problems*, 57(3), 421–447. <http://doi.org/10.1525/sp.2010.57.3.421>
- Cummings, T., & Blumberg, M. (1987). Advanced manufacturing technology and work design. *The human side of advanced manufacturing technology*, 37, 60-75.

- Dane, E., & Pratt, M. G. (2007). Exploring intuition and its role in intuition managerial decision making. *Academy of Management Review*, *32*(1), 33–54.
<http://doi.org/10.5465/AMR.2007.23463682>
- Dane, E., Rockmann, K. W., & Pratt, M. G. (2012). When should I trust my gut? Linking domain expertise to intuitive decision-making effectiveness. *Organizational Behavior and Human Decision Processes*, *119*(2), 187–194.
<http://doi.org/10.1016/j.obhdp.2012.07.009>
- Davis, G. F. (2010). Job design meets organizational sociology. *Journal of Organizational Behavior*, *31*, 302–308.
- Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512.
<http://doi.org/10.1108/02683940710733115>
- Diefendorff, J. M., & Chandler, M. M. (2011). Motivating employees. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology, Vol 3, Maintaining, expanding and contracting the organization. APA Handbooks in Psychology*. (pp. 65–135). Washington, DC, US: American Psychological Association.
- Eurofound (2015). *Convergence and divergence of job quality in Europe from 1995 to 2010*. Luxembourg: Publications Office of the European Union.
- Feather, N. T. (1995). Values, valences, and choice: The influences of values on the perceived attractiveness and choice of alternatives. *Journal of Personality and Social Psychology*, *68*(6), 1135–1151. <http://doi.org/10.1037/0022-3514.68.6.1135>
- Felstead, A., Gallie, D., Green, F. & Zhou, Y. (2010). Employee involvement, the quality of training and the learning environment: an individual-level analysis. *International Journal of Human Resource Management* *21*(10), 1667-1688.

Fleming, P. (2017). The Human capital hoax: Work, debt and insecurity in the era of uberization. *Organization Studies*, 38(5), 691–709.

<http://doi.org/10.1177/0170840616686129>

Findlay, P., Lindsay, C., McQuarrie, J., Bennie, M., Corcoran, E. D., & Van Der Meer, R. (2017). Employer choice and job quality. *Work and Occupations*, 44(1), 113–136.

<http://doi.org/10.1177/0730888416678038>

Findlay, P., Warhurst, C., Keep, E., & Lloyd, C. (2017). Opportunity knocks? The possibilities and levers for improving job quality. *Work and Occupations*, 44(1), 3–22.

Fochsen, G., Josephson, M., Hagberg, M., Toomingas, A., & Lagerström, M. (2006). Predictors of leaving nursing care: a longitudinal study among Swedish nursing personnel.

Occupational and Environmental Medicine, 63(3), 198–201.

<http://doi.org/10.1136/oem.2005.021956>

Fransson, E. I., Heikkilä, K., Nyberg, S. T., Zins, M., Westerlund, H., Westerholm, P.,

Vaänänen, A., Virtanen, M., Vahtera, J., Theorell, T., Suominen, S., Singh-Manoux, A.,

Siegrist, J., Sabia, S., Rugulies, R., Pentti, J., Oksanen, T., Nordin, M., Neilsen, M. L.,

Marmot, M. G., Hanson, L. L. M., Madsen, I. E. H., Lunau, T., Leineweber, C., Kumari,

M., Kouvonen, A., Koskinen, A., Koskenvuo, M., Knutsson, A., Kittel, F., Joeckel, K.

H., Joensuu, M., Houtman, I. L., Hooftman, W. E., Goldberg, M., Geuskens, G. A.,

Ferrie, J. E., Erbel, R., Dragano, N., De Bacquer, D., Clays, E., Casini, A., Burr, H.,

Borritz, M., Bonenfant, S., Bjorner, J. B., Alfredsson, L., Hamer, M., Batty, G. D., &

Kivimäki, M., et al. (2012). Job strain as a risk factor for leisure-time physical inactivity:

An individual-participant meta-analysis of up to 170,000 men and women. *American*

Journal of Epidemiology, 176, 1078–1089.

- Frieze, I. H., Olson, J. E., Murrell, A. J., & Selvan, M. S. (2006). Work values and their effect on work behavior and work outcomes in female and male managers. *Sex Roles, 54*(1–2), 83–93. <http://doi.org/10.1007/s11199-006-8871->
- George, J. M. (2009). The illusion of will in Organizational Behavior research: Nonconscious processes and job design. *Journal of Management, 35*(6), 1318–1339. <http://doi.org/10.1177/0149206309346337>
- Gonzalez-Mulé, E., & Cockburn, B. (2016). Worked to death: The relationships of job demands and job control with mortality. *Personnel Psychology, 73*–112. <http://doi.org/10.1111/peps.12206>
- Grant, A. M., Campbell, E. M., Chen, G., Cottone, K., Lapedis, D., & Lee, K. (2007). Impact and the art of motivation maintenance: The effects of contact with beneficiaries on persistence behavior. *Organizational Behavior and Human Decision Processes, 103*(1), 53–67. <http://doi.org/10.1016/j.obhdp.2006.05.004>
- Green, F., & McIntosh, S. (2001). The intensification of work in Europe. *Labour Economics, 8*, 291–308.
- Griffin, M. A., & Neal, A. (2000). Perceptions of safety at work: a framework for linking safety climate to safety performance, knowledge, and motivation. *Journal of occupational health psychology, 5*(3), 347.
- Griffin, R. W. (1991). Effects of work redesign on employee perceptions, attitudes and behaviors. *Academy of Management Journal, 34*, 425–435.
- Grote, G., & Guest, D. (2017). The case for reinvigorating quality of working life research. *Human Relations, 70*(2), 149-167.

- Guest, D., King, Z., Conway, N., Michie, J., & Sheehan-Quinn, M. (2001). *Voices from the boardroom*. London: CIPD Publishing.
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, *16*, 250–279.
- Hammond, M. M., Neff, N. L., Farr, J. L., Schwall, A. R., & Zhao, X. (2011). Predictors of individual-level innovation at work: A meta-analysis. *Psychology of Aesthetics, Creativity, and the Arts*, *5*(1), 90–105. <http://doi.org/10.1037/a0018556>
- Handel, M.J. (2005). Trends in perceived job quality, 1989 to 1998. *Work and Occupations*, *32*(1), 66-94.
- Hayes, A. F., & Krippendorff, K. (2007). Answering the call for a standard reliability measure for coding data. *Communication Methods and Measures*, *1*, 77-89.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, *52*(12), 1280–1300.
- Holman, D. (2013). Job types and job quality in Europe. *Human Relations*, *66*(4), 475–502. <http://doi.org/10.1177/0018726712456407>
- Holman, D., Axtell, C. M., Sprigg, C. A., Totterdell, P., & Wall, T. D. (2010). The mediating role of job characteristics in job redesign interventions: A serendipitous quasi-experiment. *Journal of Organizational Behavior*, *31*, 84–105.
- Huang, J., Curran, P., Keeney, J., Poposki, E., & DeShon, R. (2012). Detecting and deterring insufficient effort responding to surveys. *Journal of Business and Psychology*, *27*(1), 99–114.
- Hülshager, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: a comprehensive meta-analysis spanning three decades of research. *The Journal of Applied Psychology*, *94*(5), 1128–1145. <http://doi.org/10.1037/a0015978>

Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social, and contextual work design features: a meta-analytic summary and theoretical extension of the work design literature. *Journal of Applied Psychology, 92*(5), 1332–56.

<http://doi.org/10.1037/0021-9010.92.5.1332>

Jiang, K., Chuang, C.-H., & Chiao, Y.-C. (2014). Developing collective customer knowledge and service climate: The interaction between service-oriented high-performance work systems and service leadership. *Journal of Applied Psychology, 100*(4), 1–62.

<http://doi.org/10.1037/apl0000005>

Jundt, D. K., Shoss, M. K., & Huang, J. L. (2015). Individual adaptive performance in organizations: A review. *Journal of Organizational Behavior, 36*, 53–71.

<http://doi.org/10.1002/job>

Kalleberg, A. (2011). *Good jobs, bad jobs: The rise of polarized and precarious employment systems in the United States, 1970s-2000s*. New York, NY: Russell Sage Foundation.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*, 285–308.

Kawakami, N., Park, J., Dollard, M. F., & Dai, J. (2014). National status of psychosocial factors at work in Japan, Korea, Australia, and China. In M. F. Dollard, A. Shimazu, R. B. Nordin, P. Brough & M. R. Tuckey (Eds.), *Psychosocial factors at work in the Asia Pacific, 27–52*. Netherlands: Springer.

Lorenz, E., & Valeyre, A. (2005). Organisational innovation, human resource management and labour market structure: A comparison of the EU-15. *Journal of Industrial Relations, 47*, 424–442.

- Luchman, J. N., & González-Morales, M. G. (2013). Demands, control, and support: A meta-analytic review of work characteristics interrelationships. *Journal of Occupational Health Psychology, 18*, 37–52. <http://doi.org/10.1037/a0030541>
- Makel, M. C., Plucker, J. A., & Hegarty, B. (2012). Replications in psychology research: How often do they really occur. *Perspectives, 7*(6), 537–542.
<http://doi.org/10.1177/1745691612460688>
- Manyika, J., Chui, M., Brown, B., Bughin, J., Dobbs, R., Roxburgh, C., & Byers, A. H. (2011). *Big data: The next frontier for innovation, competition, and productivity*. McKinsey Global Institute.
- McClelland, M. (March-April 2012). I was a warehouse wage slave. *Mother Jones*, March/April 2012 Issue. Retrieved from:
<http://www.motherjones.com/politics/2012/02/mac-mcclelland-free-online-shipping-warehouses-labor/>
- McEvoy, G. M., & Cascio, W. F. (1985). Strategies for reducing employee turnover: A meta-analysis. *Journal of Applied Psychology, 70*, 342-353.
- Meade, A. W., & Craig, S. B. (2012, April 16). Identifying careless responses in survey data. *Psychological Methods*. Advance online publication. doi: 10.1037/a0028085
- Miner, J. B. (2003). The rated importance, scientific validity, and practical usefulness of organizational behavior theories: A quantitative review. *Academy of Management Learning & Education, 2*, 250–268. <http://dx.doi.org/10.5465/AMLE.2003.10932132>
- Morgeson, F. P., & Humphrey, S. E. (2006). The Work Design Questionnaire (WDQ): Developing and validating a comprehensive measure for assessing job design and the nature of work. *Journal of Applied Psychology, 91*, 1321–1339.

- Munafò, M. R., Nosek, B. A., Bishop, D. V. M., Button, K. S., Chambers, C. D., Percie, N., Wagenmakers, E. (2017). Perspective: A manifesto for reproducible science. *Nature Human Behaviour*, 1(January), 1–9. <http://doi.org/10.1038/s41562-016-0021>
- Murphy, L.R. (1988). Workplace interventions for stress reduction and prevention. In: C.L. Cooper & R. Payne (Eds.). *Causes, coping and consequences of stress at work*. Chichester: John Wiley & Sons.
- Muthén, L. K., & Muthén, B. O. (1998-2011). *Mplus User's Guide*. Sixth Edition. Los Angeles, CA: Muthén & Muthén.
- Ng, T. W. H., & Sorensen, K. L. (2009). Dispositional affectivity and work-related outcomes: A meta-analysis. *Journal of Applied Social Psychology*, 39(6), 1255–1287. <http://doi.org/10.1111/j.1559-1816.2009.00481.x>
- Nielsen, K., Randall, R., Yarker, J., & Brenner, S.-O. (2008). The effects of transformational leadership on followers' perceived work characteristics and psychological well-being: A longitudinal study. *Work & Stress*, 22(1), 16–32. <http://doi.org/10.1080/0267837080197943>
- Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of Organizational Behavior*, 31, 463–479.
- Parker, S. K. (2014). Beyond motivation: Job and work design for development, health, ambidexterity, and more. *Annual Review of Psychology*, 65, 661–691
- Parker, S. K., Morgeson, F., & Johns, G. (2017). Work design theory and research: Looking back over 100 years and looking forward to the future. *Journal of Applied Psychology*, 102, 403–420.

- Parker, S.K, Van den Broeck, A., & Holman, D. (2017). Work Design Influences: A Synthesis of Multilevel Factors that Affect the Design of Jobs. *Academy of Management Annals*, *11*(1), 267-308.
- Piccolo, R. F., Greenbaum, R., Den Hartog, D. N. D., & Folger, R. (2010). The relationship between ethical leadership and core job characteristics. *Journal of Organizational Behavior*, *31*, 259–278. <http://doi.org/10.1002/job>
- Pocock, B., & Charlesworth, S. (2017). Multilevel Work–Family Interventions. *Work and Occupations*, *44*(1), 23–46. <http://doi.org/10.1177/0730888415619218>
- Podsakoff, N. P., LePine, J. A., & LePine, M. A. (2007). Differential challenge stressor-hindrance stressor relationships with job attitudes, turnover intentions, turnover, and withdrawal behavior: a meta-analysis. *Journal of applied psychology*, *92*(2), 438.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, *36*(4), 717-731.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior research methods*, *40*(3), 879-891.
- Reber, A. S. (1976). Implicit learning of synthetic language. *Journal of Experimental Psychology: Human Learning and Memory*, *2*, 88-94.
- Ryan, R. M., & Deci, E. L. (2000). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry*, *11*, 319–338. <http://doi.org/10.1207/S15327965PLI1104>

- Schaufeli, W. B., Bakker, A. B., & Van Rhenen, W. (2009). How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *Journal of Organizational Behavior, 30*, 893–917. <http://doi.org/10.1002/job>
- Schwartz, S. H. (2009). Basic values: How they motivate and inhibit prosocial behavior. In M. Mikulincer & P. R. Shaver (Eds.), *Prosocial motives, emotions, and behavior: The better angels of our nature* (pp. 221–241). Washington, DC: American Psychological Association.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25*(C), 1–65. [http://doi.org/10.1016/S0065-2601\(08\)60281-6](http://doi.org/10.1016/S0065-2601(08)60281-6)
- Schwartz, S. H., Cieciuch, J., Vecchione, M., Davidov, E., Fischer, R., Beierlein, C., ... Konty, M. (2012). Refining the theory of basic individual values. *Journal of Personality and Social Psychology, 103*(4), 663–688. <http://doi.org/10.1037/a0029393>
- Skitka, L. J., Mullen, E., Griffin, T., Hutchinson, S., & Chamberlin, B. (2002). Dispositions, scripts, or motivated correction? Understanding ideological differences in explanations for social problems. *Journal of Personality and Social Psychology, 83*(2), 470–487. <http://doi.org/10.1037/0022-3514.83.2.470>
- Uhlmann, E. L., Leavitt, K., Menges, J. I., Koopman, J., Howe, M., & Johnson, R. E. (2012). Getting explicit about the implicit: A taxonomy of implicit measures and guide for their use in organizational research. *Organizational Research Methods, 15*(4), 553–601.
- Van den Broeck, A., Ferris, D. L., Chang, C.-H., & Rosen, C. C. (2016). A review of self-determination theory's basic psychological needs at work. *Journal of Management, 42*(5), 1195–1229. <http://doi.org/10.1177/0149206316632058>

Van den Broeck, A., Vansteenkiste, M., Lens, W., & De Witte, H. (2010). Unemployed individuals' work values and job flexibility: An explanation from expectancy-value theory and self-determination theory. *Applied Psychology, 59*(2), 296–317.

<http://doi.org/10.1111/j.1464-0597.2009.00391.x>

Verplanken, B., & Holland, R. W. (2002). Motivated decision making: effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology, 82*(3), 434–447. <http://doi.org/10.1037/0022-3514.82.3.434>

Vidal, M. (2013). Low-autonomy work and bad jobs in post- Fordist capitalism. *Human Relations, 66*, 587–612.

Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.

Walker, C. R., & Guest, R. H. (1952). *The man on the assembly line*. Cambridge: Harvard University Press.

Ward, M. K., & Pond III, S. B. (2015). Using virtual presence and survey instructions to minimize careless responding on Internet-based surveys. *Computers in Human Behavior, 48*, 554-568.

Warr, P. B. (1987). *Work, Unemployment, and Mental Health*. Oxford: Clarendon Press

Warr, P. B. (1990). The measurement of well-being and other aspects of mental health. *Journal of Occupational and Organizational Psychology, 63*(3), 193-210.

Table 1

Content Analysis of the Work Design Strategies, Reasons and Job Titles in the Clerical Work Design task (Study 1)

Categories Coded in the Data	% of Times Mentioned in Campion & Stevens (1991); N=145	% of Times Mentioned in Our Study; N=211
<u>Strategy for Allocating Tasks to Jobs</u>		
1. Similarity of function/activities/tasks	56.7	67.8
2. Similarity of skills/difficulty/education (specialization)	18.2	5.7
3. Similar equipment, procedures or location	8.6	0
4. Observed strategy in previous work experience	2.1	1.9
5. Previous knowledge about clerical jobs	-	8.1
6. Similarity in level of responsibility	3.7	7.6
7. Logical approach	4.3	2.8
8. Job enrichment (to make job interesting/motivational)	-	2.4
9. Other	6.4	3.8
<u>Reason for Choosing Strategy</u>		
1. Best, easiest, most logical, organized or systematic approach	43.3	51.2
2. To increase specialization and utilization of skills	21.1	14.2
3. To increase efficiency and productivity	17.3	11.4
4. Observed grouping in previous experience	5.8	9.5
5. To give clear responsibilities	4.3	5.2

6. Assumed knowledge of how clerical jobs are structured	-	4.3
7. To make more satisfying/ motivating jobs	2.9	0.5
8. Other	5.3	3.8
<u>Titles given to jobs</u>		
1. Secretary	19.2	5.6
2. Accounting Clerk/ Bookkeeper / Clerk	15.1	4.7
3. Personnel Assistant	13.9	0
4. Personal/ Administrative/ Executive/ Support Assistant	-	22.6
5. Warehouse/ Stockroom Clerk	13	0
6. Production Assistant	9	0
7. Receptionist	7.8	11.8
8. Supervisor/ Team leader/Manager	7	20.9
9. Mail Room Attendant	6	0
10. Data(bases) Processor/ Operator	5.9	4.5
11. Costumer Care/ Public Relations Support	-	5
12. Human Resource Manager/Specialist	-	5.9
13. Analyst/Research Assistant	-	2.5
14. Archiver/Archivist/Filer	-	2.3
15. Planner/ Organizer/ Schedule officer	-	2.1
16. Other	3.1	12.1

Table 2

Validity Data for the Measures of Enriching Work Design Behaviors (Enriching task allocation and Enriching work strategy selection), Study 2

Work Design Behaviors	Students		Professionals		Experts in		Correlations				
	(N=72)		(N=218)		(N=10)		(Combined Sample N=300)				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
1. Enriching task allocation	2.48	1.62	3.10	1.23	3.8	.63	-				
2. Enrichment reasoning	3.69	.92	3.93	.73	4.57	.35	.38***	(.69)			
3. Simplification reasoning	2.90	.75	2.23	.78	1.77	.55	-.26 ***	-.11	(.67)		
4. Enriching work strategy selection	4.15	.53	4.40	.50	4.61	.26	.22***	.36***	-.10	(.79)	
5. Person-focused strategy selection	2.85	.57	2.05	.56	1.86	.45	-.20**	-.12	.38***	-.09	(.79)

Note. Alpha coefficients appear across the diagonal in parentheses. *p<.05; **p<.01; ***p<.001

Table 3

Means, Standard Deviations and Correlations Among the Study Variables (Study 2, N = 218)

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Overall work experience	29.4	11.98										
2. Managerial role ^a	.35	.48	.05									
3. Professional expertise ^b	.18	.38	-.37***	-.07								
4. Explicit knowledge	1.79	1.44	.03	.00	.32***							
5. Current job autonomy	4.23	.74	-.02	.22**	.04	.14	(.93)					
6. Openness to change values	4.88	.63	.02	.11	.01	.08	.27***	(.77)				
7. Conservation values	4.11	.77	.11	-.02	-.13	-.06	.02	.25***	(.75)			
8. Enriching task allocation	3.10	1.23	-.17*	-.06	.24***	.05	.16*	.11	-.15*			
9. Enriching work strategy selection	4.40	.50	.05	.03	.07	.11	.22**	.37***	.17*	.19**	(.79)	
10. Person-focused strategy selection	2.05	.56	-.06	.12	.01	-.22**	-.01	.15*	.27***	-.14*	-.01	(.74)

Note. Scores for variable 4 vary from 0-5, scores for variables 5, 9, and 11 vary between 1-5, scores for variables 6 and 7 vary between 1-6, and scores for variable 8 can vary between 0-4. Because of incidental missing values, N varies from 197 and 218. Coefficient alphas appear across the diagonal in parentheses. ^a dummy variable with 0=not a manager, 1= manager. ^b dummy variable with 0= members of the Safety Institute of Australia (SIA), 1= registered industrial/organizational psychologists, members of the WA college of organizational psychologists (COPWA). *p<.05, **p<.01, ***p<.001

Table 4

Hierarchical Regression Analyses Predicting Work Design Behaviors and a Comparison Measure (Study 2, N = 218)

	Enriching work design behaviors								Comparison measure			
	Enriching task allocation				Enriching work strategy selection				Person-focused strategy selection			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	B(SE)	β	B(SE)	β	B(SE)	β	B(SE)	β	B(SE)	β	B(SE)	β
<u>Step 1: Control variables</u>												
Overall work experience	-.02 (.01)	-.15*	-.01(.01)	-.06	.00 (.00)	.06	.00 (.00)	.11	-.00 (.00)	-.07	.00 (.00)	-.07
Managerial role ^a	-.15 (.18)	-.06	-.25 (.18)	-.10	.03 (.07)	.03	-.01 (.07)	-.01	.13 (.08)	.11	.15 (.08)	.13
<u>Step2: Capacity & willingness variables</u>												
Professional expertise ^b			.62 (.25)	.20*			.19 (.10)	.16*			.09 (.11)	.06
Explicit knowledge			-.05 (.06)	-.06			.01 (.02)	.02			-.09 (.03)	-.22**
Current job autonomy			.26 (.12)	.16*			.10 (.05)	.16*			-.03 (.05)	-.05
Openness to change values			.20 (.15)	.10			.17 (.06)	.22**			.10 (.07)	.11
Conservation values			-.26 (.11)	-.16*			.05 (.04)	.07			.18 (.05)	.25***
F	2.78		3.84***		.47		4.38***		1.73		4.68***	
df1, df2	2, 194		7, 189		2, 194		7, 189		2, 194		7, 189	
R ²	.03		.13***		.01		.14***		.02		.15***	
ΔR ²			.10***				.13***				.13***	

Note. ^a Dummy variable with 0=not a manager, 1= manager. ^b Dummy variable with 0= members of the Safety Institute of Australia (SIA), 1= members of the WA college of organizational psychologists (COPWA). *p<.05; **p<.01; ***p<.001

Table 5

Means, Standard Deviations and Correlations Amongst Study Variables (Study 3, N = 602).

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Overall work experience	24.25	12.15											
2. Managerial role ^a	.42	.49	.06										
3. Data source ^b	.47	.50	.16***	-.03									
4. Explicit knowledge	.99	1.06	.09*	.10**	.01								
5. Current job autonomy	3.95	.84	.08*	.22***	-.08	.01	(.93)						
6. Openness to change values	4.94	.75	-.04	.09*	-.23***	.00	.27***	(.81)					
7. Conservation values	3.81	1.45	.05	.11**	-.01	.02	.17***	.11**	(.87)				
8. Valuing intrinsic work characteristics	4.04	.58	.08	.12***	.09*	.09*	.31***	.46***	.09*	(.79)			
9. Positive affect	3.08	.98	.02	-.03	-.09*	.12***	.18***	.19***	.07	.20***	(.90)		
10. Enriching work strategy selection	4.29	.47	.21***	-.08*	.06	.01	.19***	.36***	.06	.41***	.33***	(.80)	
11. Person-focused strategy selection	2.87	.68	-.14***	.16***	-.10**	-.09*	.11**	.14***	.20***	.08*	-.08*	-.04	(.85)

Notes. Scores for variable 4 can vary between 0 and 5, scores for variables 5, 8, 9, 10 and 11 range from 1 and 5, scores for variables 6 and 7 range from 1 and 6. Because of incidental missing values, N varies from 600 and 602. Alpha coefficients appear across the diagonal in parentheses.^a Dummy variable with 0=not a manager, 1= manager. ^b Dummy variable with 0= participant from MTurk panels, 1= participant from Qualtrics panels. *p<.05, **p<.01, ***p<.001

Table 6. Regression Analyses Predicting Enriching Work Strategy Selection and Person-focused Strategy Selection (Study 3, N = 602)

	Enriching work design behavior				Comparison measure			
	Enriching work strategy selection				Person-focused strategy selection			
	Model 1		Model 2		Model 1		Model 2	
	B(SE)	β	B(SE)	β	B(SE)	β	B(SE)	β
<u>Step 1: Control variables</u>								
Overall work experience	.01 (.01)	.21***	.01 (.01)	.21***	-.01 (.01)	-.13***	-.01 (.01)	-.14***
Managerial role ^a	-.09 (.04)	-.10*	-.15 (.04)	-.16***	.22 (.06)	.16***	.19 (.06)	.14***
Data source ^b	.02 (.04)	.02	.11 (.04)	.11**	-.11 (.06)	-.08*	-.08 (.06)	-.06
<u>Step 2: Capacity & willingness variables</u>								
Explicit knowledge			.00 (.02)	-.01			-.06 (.03)	-.09*
Current job autonomy			.07 (.02)	.12**			.03 (.03)	.04
Openness to change values			.26 (.02)	.37***			.07 (.04)	.08
Conservation values			.00 (.01)	.01			.08 (.02)	.18***
F-values		11.07***		23.76***		10.88***		9.73***
df1, df2		3, 596		7, 592		3, 596		7, 592
R ²		.05***		.22***		.05***		.10***
ΔR ²				.17***				.05***

Note. ^a Dummy variable, 0=not a manager, 1= manager. ^b Dummy variable 0= participant from Mturk, 1= participant from Qualtrics.

*p<.05; **p<.01; ***p<.00

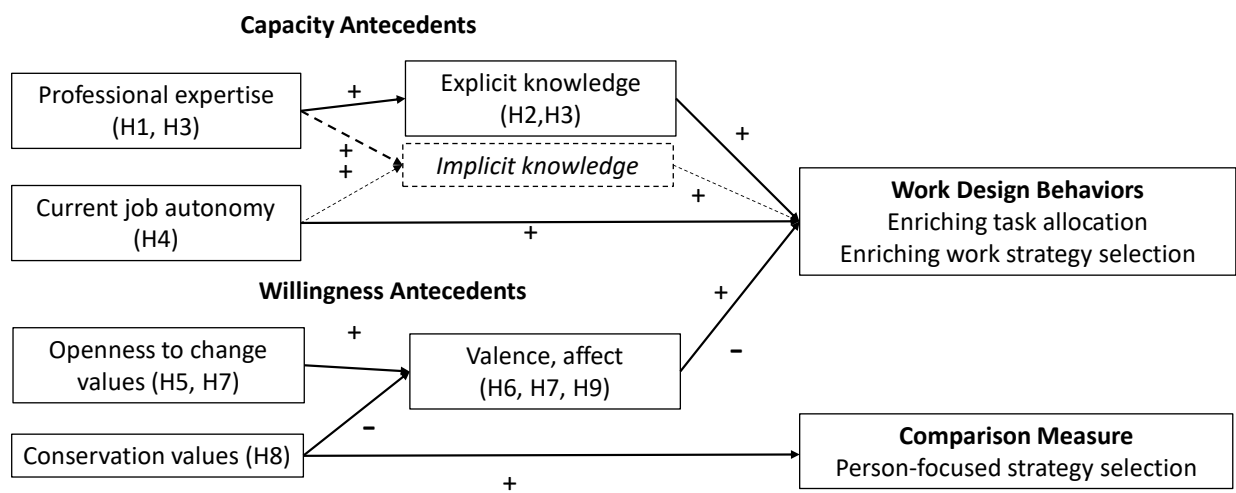


Figure 1. Research model.

Note. Dotted lines indicate these paths are unmeasured theorized pathways

Appendix

Explicit Knowledge About Work Design Theory

The following questions describe some principles in job design. Please indicate for each of the questions whether they are true or false. If you are very unsure, please select "don't know".

1. Job enlargement means that employees get more difficult tasks in their job (*)
2. Herzberg designed one of the first motivational job design models
3. Most job design models assume that autonomy should only be given to a subset of employees (*)
4. The essential premise in the job design literature is that employees need to be paid well for their efforts (*)
5. Hackman and Oldham's job characteristics model describes the impact of the demanding and stressful aspects of work (*)

(*) Item is false and needs to be inversely coded.

Enriching Task Allocation

In the following task, you are asked to create a full-time job for an administrative worker who will join a team as a permanent employee. The team helps to support the running of legal courts. It is already decided that the job of the administrative worker includes the following 4 responsibilities:

1. Making photocopies of Court_A documents
2. Filing Court_A documents in the correct folders
3. Making photocopies of Court_B documents
4. Filing Court_B documents in correct folders

For this to be a full-time job, it needs four additional responsibilities. Which of the following would you select? Please assume that administrative workers can readily carry out any of the responsibilities, and that they are willing to do any of them. Also, those responsibilities not allocated to this worker will be assigned to other administrative workers or to the manager, so no responsibility will be neglected.

Choose four responsibilities to create the administrative worker's job:

1. Making photocopies of Court C documents
 2. Make suggestions to redesign the filing system to improve it (*)
 3. Filing Court C documents in the correct folders
 4. Retrieve from the folders relevant files for lawyers and arrange delivery (*)
 5. Help with a project to computerize court documents (*)
 6. Making photocopies of Court D documents
 7. Greet and direct court visitors (*)
 8. Help a colleague in arranging meetings at the court (*)
 9. Miscellaneous photocopying and filing
 10. Filing Court D documents in the correct folders
 11. Make reports on the numbers of cases that got delayed because of mistakes in the archives or files (*)
- (*) Enriching tasks

Enriching Work Strategy Selection and Person-Focused Strategy Selection

For each of the questions that follow, please read the scenario, and then answer the questions below:

Question 1. Karen works in the warehouse for an on-line company. Her job is to fill the on-line orders. After clocking in, Karen logs into the hand-held device she uses. She is informed of an item she is to gather from the warehouse, as well as how long this is expected to take. Karen then moves quickly, sometimes running, to get the item and take it to dispatch. She receives feedback as to whether she meets the time allocated or not. Karen repeats this process about fifteen times per day. About 50% of the time, Karen's response is slower than the time that has been allocated for the task

Imagine it is your responsibility to address this situation. How likely would you to do any of the following on a scale from (1) extremely unlikely to (5) extremely likely:

1. I would change the selection system so that we only hire people who are physically fit
2. I would discretely observe Karen's behavior to see how fast she is moving ♣
3. I would advise Karen to improve her physical fitness ♣
4. I would involve Karen and her colleague in a review to identify ways in which their work could be organised better (*)
5. I would try to re-organise the work so that tasks don't need to be timed (*)♣
6. I would give Karen and her colleagues a bonus when they meet the allocated times
7. I would try to redesign the jobs so that Karen and her colleagues have more meaningful work (*)♣

Question 2. The managers in Company Brittain have challenging jobs with good salaries and high job security. But they have a large amount of work and are very busy. For example, they are often in the office on weekends and evenings. Some very good managers have left recently because they experienced high work stress.

Imagine it is your role to address this situation. How likely would you be to do any of the following on a scale from (1) extremely unlikely to (5) extremely likely.

1. I would try to improve the selection system and recruit only managers who thrive on pressure ♣
2. I would give bonuses to managers willing to work long hours ♣
3. I would change the tasks or how they are allocated to reduce the managers' work load (*)♣
4. I would involve the managers in a review to identify ways to reduce work stress (*)♣
5. I would ask the consultants to attend counselling sessions to help them cope with stress
6. I would allow more freedom to consultants to decide when and how they organize their work as long as deadlines are met (*)
7. I would transfer consultants who are struggling most to easier projects

Question 3. A luxury hotel is under financial pressure. Cleaning costs for the hotel are higher than at comparable hotels. Most cleaners have been employed at the hotel a long time. They are paid a wage that is average in the industry.

Imagine it is your role to address this situation. How likely would you be to do any of the following on a scale from (1) Extremely Unlikely to (5) Extremely Likely.

1. I would identify the slowest cleaners and lay them off ♣
2. I would involve cleaners in a review of how cleaning is done (*)♣
3. I would set strict cleaning times for each room ♣
4. I would ask cleaners for their ideas on how to save cleaning costs (*)♣
5. I would have staff clock in and out to ensure they are working the full day ♣
6. I would introduce a bonus for staff who clean fastest ♣
7. Based on cleaners' suggestions, I would reorganize the work to be more efficient (*)

Question 4. A team of five consultants (three male and two female) work together to satisfy demanding clients. The team is very busy, with members regularly working late and keeping their mobile phone on at all hours. The work hours cause serious problems for managing home and family demands, especially for the consultants with young children. Even though flexible working is allowed in the company (e.g., choosing one's own work hours, working part time, job share), no one in the team has considered these possibilities. The manager of the team, Bob, oversees team activities and decides each week who does which tasks.

Imagine it is your role to address this situation. How likely would you be to do any of the following on a scale from (1) Extremely Unlikely to (5) Extremely Likely.

1. I would introduce a bonus for the consultants who put in the most hours
2. I would advise consultants with families to hire appropriate help so that family doesn't stand in the way of important project deadlines
3. I would encourage the team to experiment with new and better ways of working together (*)♣
4. I would encourage the team to re-think how they do their tasks to achieve work that is both effective and more home-friendly (*)♣
5. I would avoid allocating important clients to consultants with young children to make sure they are delivered on time
6. I would allow the team to organize the work in any way they like, as long as the work gets done effectively (*)♣

Key:

(*) Enriching work strategy selection.

♣ These items were used in the shorter version of the measure reported in Study 2.