Crafting a job on a daily basis: Contextual correlates and the link to work engagement

PARASKEVAS PETROU[1]*****, **EVANGELIA DEMEROUTI**[2], **MARIA C. W. PEETERS**[1], **WILMAR B. SCHAUFELI**[1] **AND JØRN HETLAND**[3]

[1]*Department of Psychology, Utrecht University, Utrecht, The Netherlands*
[2]*Department of Industrial Engineering and Innovation Sciences, Eindhoven University of Technology, Eindhoven, The Netherlands*
[3]*Faculty of Psychology, University of Bergen, Bergen, Norway*

Summary   This study focused on daily job crafting and explored its contextual determinants and one motivational outcome (i.e., work engagement). Job crafting was conceptualized as "seeking resources," "seeking challenges," and "reducing demands." Participants were 95 employees from several organizations who completed a 5-day diary survey. As hypothesized, we found a 3-factor structure for the job crafting instrument, both at the general and day levels. We hypothesized and found that the combination of high day-level work pressure and high day-level autonomy (active jobs) was associated with higher day-level seeking resources and lower day-level reducing demands. Furthermore, we found that day-level seeking challenges (but not resources) was positively associated with day-level work engagement, whereas day-level reducing demands was negatively associated with day-level work engagement. Findings suggest that job crafting is a daily employee behavior with implications for management practice and future research. Copyright © 2012 John Wiley & Sons, Ltd.

Keywords: job crafting; work engagement; active jobs; diary study; multilevel analysis

Recently, a more active role of employees has been emphasized in addition to classic work design perspectives. Two notable reviews of work (re)design theories (Grant & Parker, 2009; Oldham & Hackman, 2010) acknowledge job crafting as a promising new approach to organizational behavior. The conceptual model that guides job crafting research proposes that employees proactively shape the task, as well as the relational and cognitive boundaries of their jobs (Wrzesniewski & Dutton, 2001). Job crafting is a proactive behavior requiring adaptation to challenges and constraints posed by a job (Berg, Wrzesniewski, & Dutton, 2010). In an ever-changing world of work, job crafting calls employees to anticipate and create changes in the way of work on the basis of increases in uncertainty and dynamism (Grant & Parker, 2009). This reflection activity can help them cope with ongoing changes. Therefore, job crafting is a strategic advantage during change (Van den Heuvel, Demerouti, Bakker, & Schaufeli, 2010).

Apart from preliminary, mostly qualitative, research (Berg, Grant, & Johnson, 2010; Leana, Appelbaum, & Shevchuk, 2009; Lyons, 2008), there is scarce evidence on the dimensionality and correlates of job crafting. Whether job crafting is a continuous process or a single incident producing lasting changes and whether it has dysfunctional consequences still remain open questions (Oldham & Hackman, 2010). Building on such calls, our aim is to contribute to the job crafting literature via (i) conceptualizing job crafting as a day-level phenomenon

*Correspondence to: Paraskevas Petrou, Department of Psychology, Utrecht University, PO Box 80140, 3508 TC Utrecht, The Netherlands.
E-mail: P.Petrou@uu.nl

targeted on specific job aspects, thereby capturing its dynamic nature and its value next to other proactive behaviors, and (ii) examining its day-level contextual and motivational correlates. To achieve this, we conducted a diary study in organizations experiencing micro-scale changes (e.g., task or technological change). We assumed that in these organizations, employees feel a greater need and potential to craft their (changing) jobs.

Conceptualizing Job Crafting as a Daily Behavior

Merging individual tendencies *and* momentary states is necessary to understand the dynamics of organizational behavior as they unfold daily (Ilies, Schwind, & Heller, 2007). In this paper, we follow previous diary studies (e.g., Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009) by examining daily correlates of daily behaviors controlling for the general, baseline level of these behaviors. We define day-level constructs as state-like variables fluctuating from day to day, thus showing intraindividual variation (Fritz & Sonnentag, 2009), whereas the general level of variables refers to relatively stable individual tendencies with interindividual variation (Xanthopoulou et al., 2009). Whereas a day-level behavior is demonstrated on a specific day, possibly triggered by events of that day, the general level refers to the way individuals generally behave, their "baseline" (Sonnentag, 2003).

There are at least two reasons why organizational behavior should be studied at the day level. First, diary studies eliminate recall biases (Bolger, Davis, & Rafaeli, 2003; Ohly, Sonnentag, Niessen, & Zapf, 2010) because retrospective summaries of individuals' experiences are often biased by semantic memory (Beal & Weiss, 2003). Second, diary methods enable researchers to control for general individual tendencies and therefore assess the unique effect of day-level predictors to day-level outcomes (Daniels & Harris, 2005).

The strengths of diary methods particularly hold true for job crafting. Literature calls for dynamic methodologies to reveal intraindividual variation in proactive behaviors (Parker, Bindl, & Strauss, 2010). Evidence indicates that next to a trait component, proactive behaviors display intraindividual variation over time (Sonnentag, 2003). Workplace factors trigger proactive behaviors, implying that proactivity includes a situational component and is not entirely stable (Ohly & Fritz, 2010). Diary approaches, thus, shed light on what triggers the initiation of proactive behaviors (Fritz & Sonnentag, 2009). Finally, examining job crafting and its correlates daily is in line with the affective events theory (Weiss & Cropanzano, 1996) proposing that job features influence employee affect through specific work events. For example, day-level job characteristics affect mood, which translates into well-being (Teuchmann, Totterdell, & Parker, 1999) or proactive behaviors on a daily basis (Ohly & Fritz, 2010).

Job Crafting: Conceptualization and Dimensionality

Earlier views on job crafting suggest that crafting behavior is directed toward the job on the whole or general job aspects. Those aspects include tasks, relationships, and the cognitive view of one's job (Wrzesniewski & Dutton, 2001). In this study, we intend to describe more precisely the demanding aspects of the tasks that employees craft on a daily basis (i.e., task crafting) and the kind of help they arrange for themselves to manage their work (i.e., relational crafting). Therefore, we draw on the job demands–resources (JD–R) model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), and we use a conceptualization that focuses on the specific job characteristics (i.e., job demands and resources) that can be crafted (Tims, Bakker, & Derks, 2012).

Job characteristics are distinguished in demands and resources (Demerouti et al., 2001). Job demands refer to "physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs." Job resources refer to "physical, psychological, social or organizational aspects of

the job that are either/or: (a) functional in achieving work goals; (b) reduce job demands and the associated physiological and psychological costs; (c) stimulate personal growth, learning and development" (Bakker & Demerouti, 2007, p. 312). In two distinct processes proposed by the JD–R model, demands relate primarily to impaired health (i.e., health impairment process), whereas resources primarily relate to engagement (i.e., motivational process).

The JD–R model incorporates demands and resources of particular interest in organizations without focusing on predefined job features. We propose that by allowing for a wide list of demands and resources that can represent targets of crafting, the JD–R model offers an advantage in the study of job crafting behaviors. We are, thereby, provided with an opportunity to describe Wrzesniewski and Dutton's (2001) "task crafting" and "relational crafting" on the basis of job demands and job resources. In doing so, we add to existing definitions of proactive behaviors, viewing active employees as "attacking problems" or "searching for solutions" (Frese, Fay, Hilburger, Leng, & Tag, 1997, p. 161) and to generic definitions of job crafting as modifying job tasks or relationships on the whole (Wrzesniewski & Dutton, 2001). Therefore, our conceptualization describes *what exactly employees do* when they craft their job *on a particular day*.

In line with Tims et al. (2012), we examined three distinct job crafting behaviors. For the aims of this study, we defined job crafting as a proactive employee behavior consisting of seeking resources, seeking challenges, and reducing demands. Reducing resources is not distinguished, as it does not seem a purposeful behavior (Hobfoll, 2001). In the succeeding texts, we describe the job crafting dimensions based on theoretical background to illustrate how job resources, challenges, and demands are relevant dimensions of job crafting.

Seeking resources

Help-seeking behaviors at work, such as feedback or information seeking, can be proactive behaviors enacted to gain specific resources (Lee, 1997). The conservation of resources theory (Hobfoll, 2001) holds that human motivation is directed toward the accumulation of resources that are important for the protection of other valued resources. Consequently, accumulation of resources can take the form of proactive coping with positive outcomes for employee motivation and well-being (Salanova & Schaufeli, 2008). In addition to making one's job more motivating, seeking resources can be a way to mobilize more job resources so as to cope with job demands (Tims & Bakker, 2010). Seeking resources may include behaviors such as asking advice from colleagues or supervisors, asking feedback on one's job performance, or seeking learning opportunities.

Seeking challenges

Classic stress theories (Lazarus & Folkman, 1984; Selye, 1987) propose that positive interpretation of stressors results in the perception of challenge. Indeed, job demands are often linked positively to work engagement (Van den Broeck, Vansteenkiste, de Witte, & Lens, 2008). In a related vein, Podsakoff, LePine, and Le Pine (2007) distinguish between "hindrance" and "challenge" stressors. Whereas hindrance stressors have negative relationships with job satisfaction and commitment and positive relationships with turnover, challenge stressors hold the opposite pattern and have positive implications. Similarly, workers in active jobs (characterized by high job demands and high control) seek challenging situations that promote mastery (Karasek & Theorell, 1990), revealing a principally motivating role for challenges seeking behaviors. Such behaviors may include looking for new tasks at work once one finishes one's work or taking on more responsibilities. Obviously, in some work environments, increasing challenges is not an option to consider. When a job is far too demanding, demands are not viewed as challenges anymore, and reducing them might be a necessary health-protecting coping mechanism.

Reducing demands

Although job crafting has a widely accepted positive role, a possibly "negative" side of job crafting has also been suggested (Oldham & Hackman, 2010; Wrzesniewski & Dutton, 2001). Reducing demands would be the dimension to reveal a dysfunctional side of job crafting, if there is such a side. Reducing job demands has not been studied extensively as such. "Task avoidance" can be a withdrawal-oriented coping mechanism (Parker & Endler, 1996). Slow or sloppy work and poor attendance are described as counterproductive behavior (Gruys, 1999). However, Chu and Choi (2005) propose that procrastination can be an "active" behavior with positive outcomes for the procrastinator when it takes the form of deliberate coping strategy. Reducing demands may include behaviors targeted toward minimizing the emotionally, mentally, or physically demanding job aspects or reducing one's workload and time pressure. In this study, we treat reducing demands as conceptually distinct from seeking challenges, because these two behaviors play different roles. For example, whereas seeking challenges is motivational in nature, reducing demands could be either a coping strategy or an indication of low motivation. Although the coping and the motivational role are distinct, they should not be viewed as mutually exclusive.

Lyons (2008) defined job crafting as changes or modifications in one's work activities and reported a mean of 1.49 crafting episodes performed by employees during the past year. However, job crafting has been described as an "everyday" (Wrzesniewski & Dutton, 2001) or "continuous" (Berg, Wrzesniewski, & Dutton, 2010) activity. By conceptualizing job crafting in a detailed way as targeting specific job demands and resources, it becomes a concrete behavior that might be quantified and manifested on a day-to-day level. We think that job characteristics are often crafted by an employee, whereas the meaning or the overall scope of the job remains the same. For instance, individuals ask advice from colleagues (i.e., seeking resources) more often than changing relationships with people at work (i.e., relational crafting; Wrzesniewski & Dutton, 2001). Asking for more responsibilities (i.e., seeking challenges) is also more frequent than changing one's task (i.e., task crafting; Wrzesniewski & Dutton, 2001). Similarly, employees ask feedback on their performance (i.e., seeking resources) more often than changing their work activities (Lyons, 2008). In line with what has been shown for proactive behavior (Fritz & Sonnentag, 2009), personal initiative (Sonnentag, 2003), and coping (Daniels & Harris, 2005), we want to demonstrate in this study the extent to which job crafting can be conceived at the day level in addition to the general level. Hence, we formulate the following hypothesis:

> *Hypothesis 1:* Both at the general and day levels, job crafting consists of three distinct behaviors, namely seeking resources, seeking challenges, and reducing demands.

Job Crafting and Active Jobs

Proactive behaviors are linked positively to job resources and positively or negatively to job stressors (Frese, Garst, & Fay, 2007; Fritz & Sonnentag, 2009; Hakanen, Perhoniemi, & Toppinen-Tanner, 2008). Similarly, job demands and resources may trigger job crafting. Proposed predictors of crafting include job control (Lyons, 2008), task interdependence (Leana et al., 2009), job demands (Wrzesniewski & Dutton, 2001), task complexity (Ghitulescu, 2006), and job challenges (Berg, Wrzesniewski, & Dutton, 2010). The implication of both job demands and job resources being examined as predictors of job crafting calls "active jobs" (Karasek & Theorell, 1990) into play.

Active jobs are jobs that are not only highly demanding for employees but also provide high job control. They provide opportunities for learning, which facilitate mastery feelings that help employees cope with demands, further enhancing their capacity to learn and develop (Karasek & Theorell, 1990). In this study, we view active jobs as jobs with high work pressure and autonomy (Taris, Kompier, De Lange, Schaufeli, & Schreurs, 2003). Job autonomy refers to employee control over task execution, whereas work pressure refers to quantitative demanding aspects of

a job (Bakker, Demerouti, & Verbeke, 2004). Karasek (1979) proposed that active jobs lead to the development of new behavior patterns both on and off the job. Contrary to high-strain jobs, in active jobs, the high arousal that is imposed by job demands is appropriately channeled into active problem solving because of the job control and the lack of constraints imposed by low control. That may lead to "healthful regeneration" and self-leadership strategies, such as self-job redesign or self-management (Lovelace, Manz, & Alves, 2007, p. 379), which resemble job crafting behaviors. Active jobs are linked to challenge (Karasek & Theorell, 1990), increased development opportunities (Kauffeld, Jonas, & Frey, 2004) work engagement (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007), and individual innovation (Martin, Salanova, & Peiro, 2007). We expect employees in active jobs to engage in seeking challenges and resources but not in reducing demands. Workers in active jobs, being proactive and engaged, will not decrease their workload because the "challenge of high job demands" is an integral part of active jobs (Karasek, 1979, p. 301). It will be just the opposite; employees will enhance the parts of the job that make it active, namely challenges and resources, when they are free to. Therefore, we will test the following hypotheses:

Hypothesis 2: The highest levels of seeking resources will be performed on days when high work pressure is combined with high job autonomy.

Hypothesis 3: The highest levels of seeking challenges will be performed on days when high work pressure is combined with high job autonomy.

Hypothesis 4: The lowest levels of reducing demands will be performed on days when high work pressure is combined with high job autonomy.

Job Crafting and Work Engagement

Several job characteristic frameworks (Demerouti et al., 2001; Hackman & Oldham, 1976) argue that motivation or satisfaction is tied to objective job features. Therefore, by changing aspects of a job so that they fit their own needs, employees enhance their motivation. By being proactive, employees find motivating challenges and engage in effective problem solving which enhances their engagement (Hakanen et al., 2008). There is a paucity of empirical evidence, however, connecting job crafting with engagement. Ghitulescu (2006) found a positive link between job crafting and commitment. Wrzesniewski and Dutton (2001) proposed that job crafters are satisfied workers.

In this study, we investigate whether job crafting has an impact on one indicator of employee motivation, namely work engagement. Work engagement is a positive, fulfilling, and work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli, Bakker, & Salanova, 2006) and is associated with proactive behaviors (Macey & Schneider, 2008). Literature has linked job resources and challenges, which we view as targets of crafting, with work engagement. Resources lead to engagement by playing an intrinsic motivational role, fulfilling human needs, or an extrinsic motivational role, through successful task completion and satisfaction (Bakker & Demerouti, 2007). At the same time, challenge stressors enhance positive employee motivational states via positive emotions and attitudes (Podsakoff et al., 2007). Similarly, in a longitudinal study among teachers, Prieto, Soria, Martinez, and Schaufeli (2008) found a positive link between workload and work engagement. In the light of this evidence, we expect seeking resources and challenges to be associated—through the accumulation of extra resources and challenges—to engagement.

Reducing demands, though, should play a different role in terms of engagement. Although reducing one's workload may protect employee well-being in stressful situations, we would expect this form of crafting to relate negatively to engagement. This is because by reducing their workload, employees will also reduce the triggers or necessity for action, in other words, the optimal level of job challenge (Csikszentmihalyi, 1990) in their daily

activities. Reducing workload is suggested to be counterproductive (Gruys, 1999), whereas procrastination is negatively related to performance (Ferrari, 2001), conscientiousness, and motivation (Steel, 2007). Hence, we formulate the following hypothesis:

Hypothesis 5: Day-level work engagement is positively associated with day-level seeking resources and day-level seeking challenges and negatively associated with day-level reducing demands.

Linking Job Crafting with Organizational Change

Through proactive behaviors, new work roles may emerge in uncertain contexts (Griffin, Neal, & Parker, 2007). Organizational changes offer an exceptional context to study job crafting, because tasks and roles are "in flux." Job crafters alter their work meaning (Wrzesniewski & Dutton, 2001), which is an effective way to deal with change at work (Van den Heuvel, Demerouti, Schreurs, Bakker, & Schaufeli, 2009). Therefore, job crafting can be a useful strategy during organizational change and holds a prominent place in addition to other forms of proactive behavior in today's world of change and uncertainty.

A success factor in embracing change is "re-invention," in other words, modifying the change to suit one's needs (Greenhalgh, Robert, MacFarlane, Bate, & Kyriakidou, 2004), echoing job crafting behaviors. Employees cope with change via seeking resources and intervening on their tasks by working more or by working less (Robinson & Griffiths, 2005; Stensaker, Meyer, Falkenberg, & Haueng, 2002) and are more ready to accept change when they use active problem solving (Cunningham et al., 2002). Therefore, certain organizational changes may call for employee job crafting. Furthermore, work engagement is proposed as an indicator of successful adaptation to change (Van den Heuvel et al., 2010). When change is viewed as a positive challenge (Avey, Wernsing, & Luthans, 2008) and is dealt with successfully, it is likely to have a positive impact on work engagement.

In this study, we explore links between types of organizational change, job crafting, and work engagement. As there is no strong evidence to substantiate hypotheses about these links, we examine the effect of the specific forms of organizational change within the hypothesized relationships. Following organizational change research looking mostly at micro-level types of change (Brotheridge, 2003; Morgan & Zeffane, 2003; Verhaeghe, Vlerick, De Backer, Van Maele, & Gemmel, 2008), we focus on micro-level changes at the work instead of the structural level because we do not expect excessive or major change to facilitate job crafting. Structural changes might not be perceived by an individual if they do not affect an employee's direct work environment. Changes at the micro-level included new tasks, news ways of completing existing tasks, technological changes, new products or services, new clients, relocations, and flexwork.

Method

Procedure and participants

We collected data by using a questionnaire and a diary booklet. Participants were employed from several organizations in the Netherlands, undergoing some type of change at their work. Research assistants recruited participants by contacting organizations in the region known for undergoing some kind of change. Participation was voluntary and no incentives were used for the respondents. We informed participants that upon agreement, they would receive a diary booklet that they were invited to fill out for five consecutive working days at the end of each day. Before starting with the diaries, respondents first had to fill out a general questionnaire in which they provided demographic

data and information on the general level of the measured variables. We sent out a total of 110 questionnaires and diaries by post, and 95 were sent back, reaching a response rate of 86.4 per cent.

Ninety five employees, 55 women and 40 men, comprised the sample. Their mean age was 40.1 years ($SD = 12.4$). Of them, 38.3 per cent were working in the health or education sector, 25.5 per cent in finance or business administration, 13.7 per cent in sales, 9.5 per cent in industrial or construction sector, 8.5 per cent in government, and 4.5 per cent indicated another sector. For 26 per cent of the respondents, the five working days were consecutive weekdays, whereas for the rest of the sample, the working days were interrupted for different reasons such as the weekend or part-time contract. The mean working hours per week were 37.3 ($SD = 9.5$). Compared with the Dutch working population (CBS, 2009), women, full-time employees, and health and education sectors were slightly overrepresented in our sample, but there was a similar distribution of employees across age groups and the remaining occupational groups.

All participants indicated that they faced at least one change at their work. Of the respondents, 44 per cent were faced with the changes more than half a year ago and 19 per cent between three months and half a year ago. Respondents indicated which type(s) of changes they were facing, using a checklist that included the following: new tasks (68 per cent), news ways of completing existing tasks (48 per cent), technological changes (42 per cent), new products or services (31 per cent), new clients (32 per cent), relocations (26 per cent), and flexwork (6 per cent).

General questionnaire

General level of job crafting
To measure the general level of job crafting, we used a modified version of job crafting scale by Tims et al. (2012). We retained the three dimensions, originally labeled as increasing job resources, increasing job demands, and decreasing job demands (Table 3). We selected items on the basis of preliminary factor loadings and adjusted or complemented with new items so that our scale could be used both for the general and day levels. Respondents indicated how often they engaged in every behavior during the past three months using a scale ranging from 1 = *never* to 5 = *often*. *Seeking resources* included six items (Cronbach's $\alpha = .70$), *seeking challenges* included three items (Cronbach's $\alpha = .76$), and *reducing demands* included four items (Cronbach's $\alpha = .69$).

General level of work engagement
We measured the general level of work engagement by using the 9-item Utrecht Work Engagement Scale (Schaufeli et al., 2006) including three subscales, namely vigor (e.g., *At my work, I feel bursting with energy*), dedication (e.g., *I am enthusiastic about my job*), and absorption (e.g., *I am immersed in my work*); and an answering scale ranging from 0 = *never* to 6 = *always*. For the analyses, we used a composite score of all subscales(Cronbach's $\alpha = .92$), because the 1-factor solution has acceptable goodness of fit (Schaufeli et al., 2006).

Daily diary

The diary booklet consisted of five identical questionnaires, one for each day. Similar to that of previous diary studies (Fritz & Sonnentag, 2009), respondents indicated how representative each statement was for the past day[1] using a scale, ranging from 1 = *does not apply to me* to 5 = *totally applies to me*.

---

[1]All daily surveys included the following instruction: "Note! These questions are not about your overall situation but about the past day. Fill in the information and statements at the end of the working day, preferably at your workplace." Moreover, all items of the diaries started with the word "Today ...".

Day-level job autonomy

We used three items from the Bakker et al.'s (2004) Dutch version of Karasek's (1985) job content questionnaire to measure day-level job autonomy. An example item is *Today, I could decide myself how I perform my job*. Cronbach's α was calculated separately for each day and ranged from .56 to .71 ($M = 0.66$).

Day-level work pressure

We measured day-level work pressure by using the 3-item Dutch version (Furda, 1995) of Karasek's (1985) job content questionnaire. A sample item is *Today, I had too much work to do*. Cronbach's α ranged from .85 to .90 ($M = 0.89$).

Day-level job crafting

The day-level job crafting questionnaire consisted of three subscales: *Day-level seeking recourses* included four items, and Cronbach's α ranged from .72 to .79 ($M = 0.75$). *Day-level seeking challenges* included three items, and Cronbach's α ranged from .87 to .92 ($M = 0.90$). We measured *day-level reducing demands* by using three items, and Cronbach's α ranged from .79 to .88 ($M = 0.85$). We present items in Table 3.

Day-level work engagement

The day-level version of work engagement included all nine items of the Utrecht Work Engagement Scale (e.g., *Today, I was enthusiastic about my job*). Cronbach's α ranged from .86 to .91 ($M = 0.88$).

Analytical approach

Our data have a multilevel structure, with repeated measurements nested within persons (Hox, 2002). Our 2-level hierarchical structure included 475 occasions at the lower level and 95 participants at the higher level. We analyzed our data by using Mplus (Muthén & Muthén, 2010). Next to confirmatory factor analysis (CFA) that we conducted to the general level of job crafting, we conducted multilevel confirmatory factor analysis (MCFA) to the day-level job crafting items, to test Hypothesis 1. MCFA examines simultaneously both the within and the between covariance matrix. This technique deals with problems of other approaches, such as analyzing the total covariance matrix derived from the entire data set or averaging the item responses to the group level and then performing factor analysis on the sample between-group covariance matrix (Muthén, 1994). We conducted multilevel structural equation modeling (MSEM) to test Hypotheses 2–5 (Figure 1). In multilevel analysis, the intraclass correlation decomposes the variance in two components: variance at the lower and higher levels. Prior to MCFA, intraclass correlation showed that variance in the day-level job crafting items explained by the higher level, thus attributed to between-persons variations, ranged from 35 to 56 per cent. Prior to the MSEM, intraclass correlation showed that 59 per cent of the variance in seeking resources, 60 per cent in seeking challenges, 53 per cent in reducing demands, and 62 per cent in work engagement are attributed to between-persons variations. Consequently, significant amounts of variance are left to be explained by within-person variations, justifying the multilevel approach.

We treated five types of organizational changes that occurred for a substantial part of respondents (>30 per cent), namely new tasks, news ways of completing existing tasks, technological changes, new products/services, and new clients along with the general level of job crafting and the general level of work engagement, as between-level variables. As within-level variables, we specified day, day-level autonomy, day-level work pressure, and their interaction term. We did not specify four variables, namely the three day-level job crafting variables and day-level work engagement neither as within-level nor as between-level variables, because they were modeled at both levels. Mplus considers them at the within level (Muthén & Muthén, 2010).

At the between level of the MSEM model, control variables included types of change, general level of work engagement, and general level of the three types of job crafting. At the within level, the only control variable was day. Controlling for change permitted us to control for the effect of different changes in the organizations and also
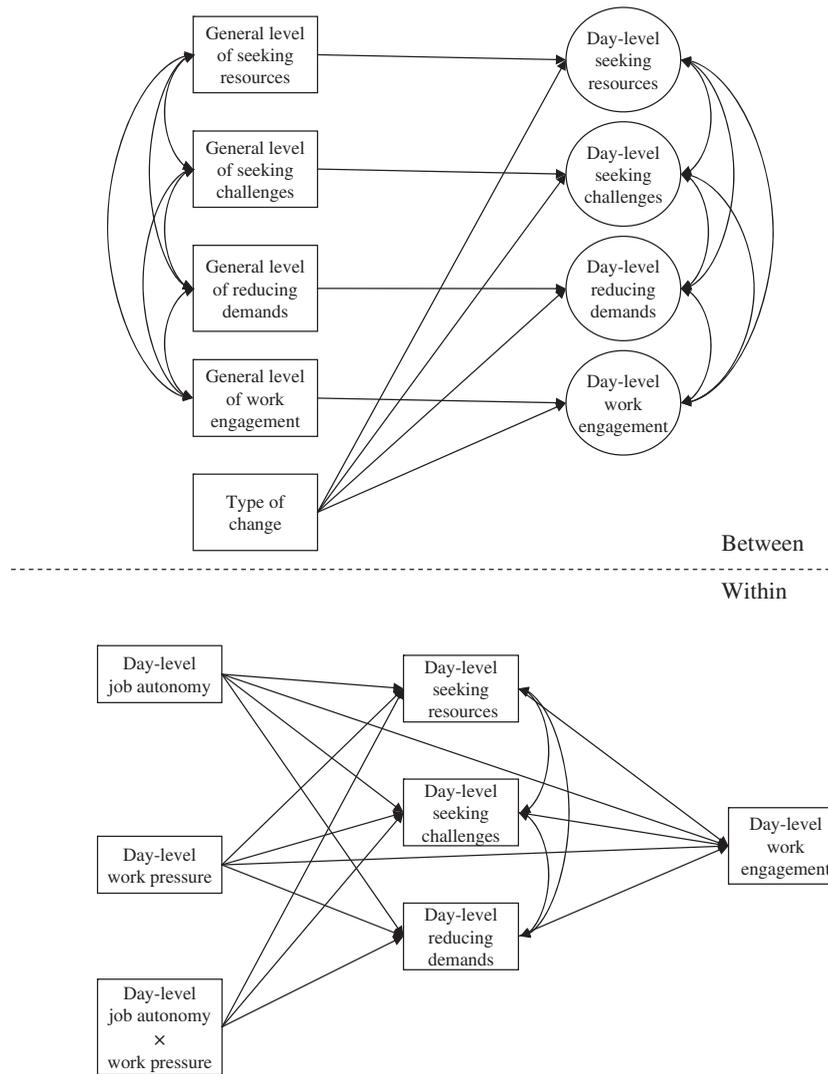
Note. Type of change represents the following five dichotomous variables: new tasks, new ways of completing existing tasks, technological changes, new products/services and new clients

Figure 1. Hypothesized model

to gain insight in the relationship between change and job crafting. Controlling for the effect of general-level variables to the respective day-level variables that were treated as outcomes enabled us to examine relationships between day-level fluctuations after taking into account individual baselines. Controlling for day permitted us to control for the "good day effect" (Sheldon, Ryan, & Reis, 1996).

We modeled paths between day-level variables (from day, day-level autonomy, day-level work pressure, and their interaction term to day-level job crafting and from day-level job crafting to day-level work engagement) at the within part of the model (see the bottom part of Figure 1) because this level refers to fluctuations over time (variations within persons). We modeled paths from between-level variables (types of change, general level of job crafting, and work engagement) to day-level job crafting and day-level work engagement at the between part of the model

(see the upper part of Figure 1) because this level refers to individual baselines (variation between persons). Similar to structural equation modeling practices (Cortina, Chen, & Dunlap, 2001), we did not allow day-level job autonomy and day-level work pressure to correlate with their interaction term. Next to the hypothesized paths, we included the paths from day-level autonomy and day-level work pressure to day-level work engagement at both levels of analysis. We included these paths because they are meaningful and largely considered by past research. Whereas job resources are commonly linked to work engagement (Schaufeli & Bakker, 2004), job demands have been found to be connected to work engagement in both negative (Bakker et al., 2007) and positive ways (Van den Broeck, et al., 2008).

We centered day-level explanatory variables (autonomy, work pressure, and their interaction term) to the person mean and the general-level explanatory variables (general level of job crafting and work engagement) to the sample mean (Ohly et al., 2010). We did not center dichotomous variables (types of change) and variables that were treated both as explanatory variables and outcomes. Therefore, our results can be interpreted as follows: When a day-level variable x is related to a day-level variable y, it means that on days when respondents report the x variable at higher levels than they did on average (within-level variation in variable x), they report high levels of variables y. When a general-level variable x is related to a day-level variable y, it means that when respondents report levels of the variable x higher than the mean score of the sample (between-level variation in variable x), they report higher levels of variable y (Ohly et al., 2010). For all the analyses, we used the maximum likelihood estimator.

Results

Descriptive statistics

Table 1 shows the means, the standard deviations, and the correlations between the study variables. We averaged day-level variables across five days. Significant correlations were found between day-level job crafting, job autonomy, work pressure, and work engagement.

Job crafting scale at the general and day levels

First, we conducted CFA to the general-level job crafting items. The 3-factor solution displayed moderate-to-adequate fit to the data, $\chi^2 = 85.15$, $df = 62$, $p < .05$, $\chi^2/df = 1.37$, Bayesian information criterion $(BIC) = 2986.07$, $CFI = 0.91$, $TLI = 0.89$, $RMSEA = 0.06$, $SRMR = 0.08$ (Table 2). One intercorrelation between the factors was significant: the correlation between general seeking resources and general seeking challenges ($r = .49$, $p < .001$). The 3-factor solution was compared with two alternative models by means of chi-square and BIC difference. When comparing two non-nested models, a difference in BIC larger than 10 is a very strong indicator that the model fits better to the data (Raftery, 1995). The 3-factor model displayed substantially better fit indices and lower BIC value compared with the 2-factor (collapsing seeking resources with seeking challenges into one factor), $\Delta\chi^2(2) = 40.24$, $p < .001$, $\Delta BIC = 31.13$ and 1-factor solutions, $\Delta\chi^2(3) = 114.46$, $p < .001$, ΔBIC difference $= 100.80$ (Table 2). Factor loadings ranged from .39 to .89 (Table 3).

Second, we conducted MCFA to the day-level job crafting items. The 3-factor day-level solution[2] displayed excellent fit to the data (Table 2), $\chi^2 = 106.56$, $df = 65$, $p < .001$, $\chi^2/df = 1.64$, $BIC = 10107.79$, $CFI = 0.98$, $TLI = 0.97$, $RMSEA = 0.04$, $SRMR = 0.05$ (within level) and 0.06 (between level). At the between level of analysis, all factor intercorrelations were significant ($.27 < r < .68$, $p \leq .05$); and at the within level of analysis, seeking

---

[2]Initially, the 3-factor solution resulted in a non-positive definite residual covariance matrix due to negative residual variance $(= -.001)$ of a seeking challenges item (*I have asked for more odd jobs*, see Table 3) at the between level. When a residual variance of an item in a CFA is very low and non-significant, it can be fixed to zero without any consequences for the model estimation (Muthén & Asparouhov, 2011). After the residual variance of this item was constrained to be zero, the estimation ran successfully.

Table 1. Means, standard deviations, and correlations among the study variables (*N* = 475 occasions, *N* = 95 employees).

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Tasks	0.69	0.46	—													
2. Methods	0.48	0.50	.09*	—												
3. Technology	0.42	0.49	.10*	.20***	—											
4. Products	0.31	0.46	.19***	.00	−.01	—										
5. Clients	0.32	0.47	.16***	−.11*	.15***	.34***	—									
General level																
6. Seeking resources	3.70	0.47	.27***	−.01	.07	.08	.19***	—								
7. Seeking challenges	3.09	0.82	.27***	−.06	.06	.01	.03	.41***	—							
8. Reducing demands	2.39	0.63	.08	.04	.14***	−.04	−.04	−.10*	.05	—						
9. Work engagement	3.82	0.93	.20***	−.05	−.04	−.14**	−.08	.31***	.40***	.03	—					
Day level																
10. Autonomy	3.73	0.56	.26***	−.01	−.03	.00	.10*	.25***	.18***	.15**	.23***	—				
11. Work pressure	3.21	0.73	.15***	.23***	−.12*	−.05	−.09*	.00	.01	−.10*	.26***	.12**	—			
12. Seeking resources	2.73	0.68	.13**	−.01	.01	−.05	.21***	.56***	.35***	−.02	.17***	.15***	.19***	—		
13. Seeking challenges	2.08	0.68	.25***	−.10*	−.07	−.08	.14**	.33***	.53***	.13**	.16***	.13**	−.08	.60***	—	
14. Reducing demands	2.02	0.57	.06	.10*	.06	−.04	.06	.07	.13*	.65***	−.09	.16**	−.11*	.22***	.27***	—
15. Work engagement	3.36	0.52	.23***	.04	−.12**	−.16***	.01	.30***	.28***	.00	.80***	.34***	.41***	.29***	.18***	−.02

Note: Variables 1–5 refer to the type of organizational change: tasks, new tasks; methods, news ways of completing existing tasks; technology, technological changes; products, new products or services; clients, new clients. For all day-level variables, we have used aggregate scores of the five days; therefore, for all day-level variables, we have assigned participants a mean score of their five measurements;

*$p \leq .05$;

**$p \leq .01$;

***$p \leq .001$.

Table 2. Fit indices and model comparisons for the 3-factor, 2-factor, and 1-factor confirmatory factor analyses solutions of the general-level and day-level job crafting scales.

Model	χ^2	df	BIC	Comparison	$\Delta\chi^2$	Δdf	ΔBIC	χ^2/df	RMSEA	SRMR	TLI	CFI
General-level job crafting												
One-factor solution	199.61***	65	3086.87					3.07	0.15	0.13	0.39	0.49
Two-factor solution	125.39***	64	3017.20					1.96	0.10	0.09	0.72	0.77
Three-factor solution	85.15*	62	2986.07	3F vs.1F	114.46***	3	100.80	1.37	0.06	0.08	0.89	0.91
				3F vs. 2F	40.24***	2	31.13					
Day-level job crafting												
One-factor solution	865.03***	72	10823.11					12.01	0.15	0.15/0.20	0.42	0.54
Two-factor solution	306.85***	70	10277.26					4.38	0.08	0.10/0.10	0.82	0.86
Three-factor solution	106.56***	65	10107.79	3F vs.1F	758.47***	7	715.32	1.64	0.04	0.05/0.06	0.97	0.98
				3F vs. 2F	200.29***	5	169.47					

Note: BIC, Bayesian information criterion; 3F, 3-factor; 2F, 2-factor; 1F, 1-factor. Seeking resources and seeking challenges are collapsed in one factor in both of the 2-factor solutions (general and day levels). The first values of SRMR for the day-level solutions represent the within level, and the second values represent the between level;
***$p < .001$.

Table 3. Factor loadings for the 3-factor solutions of general-level and day-level versions of job crafting.

| General level of seeking resources		Day-level seeking resources	
I ask others for feedback on my job performance	.58	I have asked others for feedback on my job performance	.44/.80
I ask colleagues for advice	.59	I have asked colleagues for advice	.81/.89
I ask my supervisor for advice	.71	I have asked my supervisor for advice	.48/.80
I try to learn new things at work	.56	I have tried to learn new things at work	.38/.67
I contacted other people from work (e.g., colleagues, supervisors) to get the necessary information for completing my tasks	.39		
When I have difficulties or problems at my work, I discuss them with people from my work environment	.39		
General level of seeking challenges		Day-level seeking challenges	
I ask for more tasks if I finish my work	.65	I have asked for more tasks if I finish my work	.56/.92
I ask for more responsibilities	.81	I have asked for more responsibilities	.92/1.00
I ask for more odd jobs	.76	I have asked for more odd jobs	.77/1.00
General level of reducing demands		Day-level reducing demands	
I try to ensure that my work is emotionally less intense	.89	I have tried to ensure that my work is emotionally less intense	.89/.97
I make sure that my work is mentally less intense	.65	I have made sure that my work is mentally less intense	.82/.98
I try to ensure that my work is physically less intense	.48	I have tried to ensure that my work is physically less intense	.44/.83
I try to simplify the complexity of my tasks at work	.45		

Note: All factor loadings are significant at the $p < .001$ level; the first factor loading for the day-level job crafting scales represents the within level and the second represents the between level.

resources correlated with seeking challenges ($r = .22$, $p < .001$), and reducing demands correlated with seeking challenges ($r = .16$, $p < .01$). The 3-factor model displayed substantially better fit indices and lower BIC value compared with the 2-factor (collapsing seeking resources and seeking challenges in one factor), $\Delta\chi^2(5) = 200.29$, $p < .001$, $\Delta BIC = 169.47$ (Table 2) and 1-factor solutions $\Delta\chi^2(7) = 758.47$, $p < .001$, $\Delta BIC = 715.32$ (Table 2). Factor loadings for the 3-factor solution ranged from .38 to .92 at the within level and from .67 to 1.00 at the between level (Table 3). Hence, Hypothesis 1, regarding the three-dimensional structure of job crafting at the general and daily levels, was supported.

Testing the hypothesized model

The hypothesized MSEM model displayed satisfactory fit to the data (Figure 2), $\chi^2 = 43.18$, $df = 33$, $p = .11$, $\chi^2/df = 1.31$, $CFI = 0.98$, $TLI = 0.93$, $RMSEA = 0.03$, $SRMR = 0.00$ (within level) and 0.06 (between level).

In relation to the active job hypotheses, the interaction term between day-level autonomy and day-level work pressure was significantly related to day-level seeking resources. The highest levels of seeking resources were performed on days when high work pressure was combined with high autonomy (Figure 3). Furthermore, the line representing high job autonomy had a significant slope ($z = 3.02$, $p < .01$), whereas the line representing low job autonomy did not ($z = -0.08$, $p = .38$). Therefore, Hypothesis 2 was supported. The interaction term between day-level autonomy and day-level work pressure was not related to day-level seeking challenges, thus failing to support Hypothesis 3. Finally, the interaction term was significantly related to day-level reducing demands, suggesting that the lowest levels of reducing demands were performed on days when work pressure was combined with high job autonomy
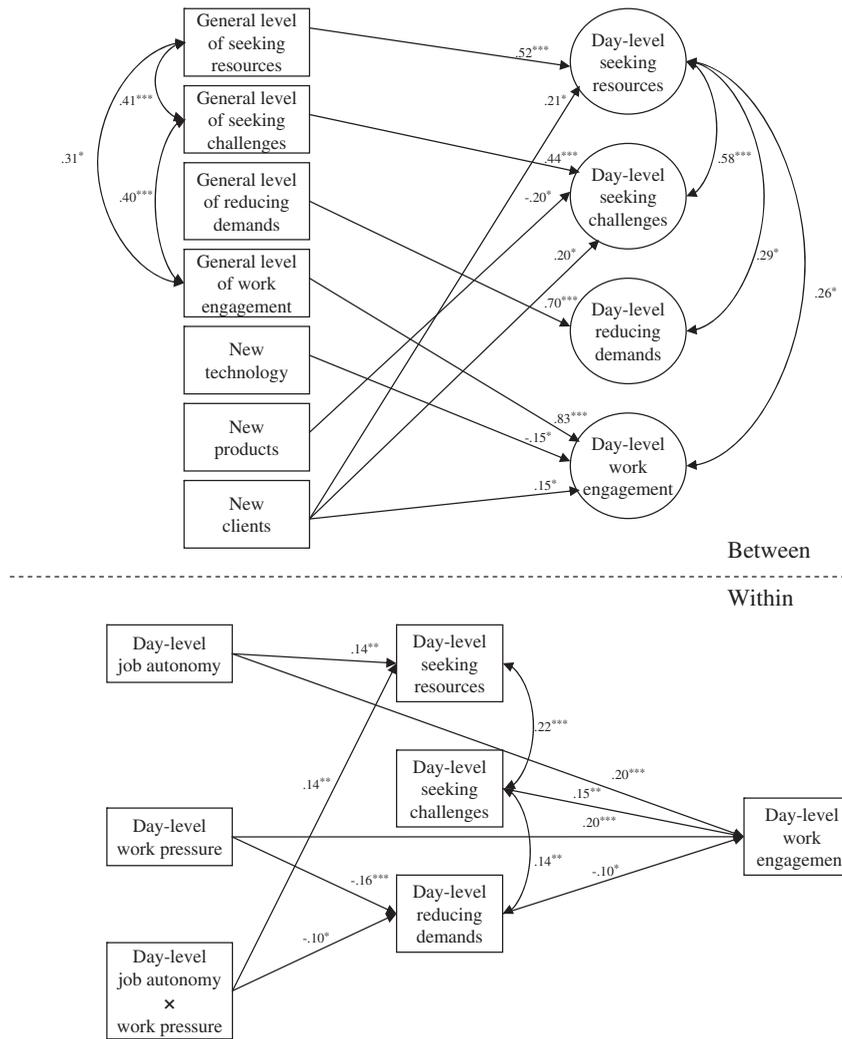
Note. Control variable *day* at the within-level is not shown for clarity purposes; non-significant paths are not shown; $\chi^2 = 43.18$, df = 33, p = .11, χ^2/df = 1.31, CFI = .98, TLI = .93, RMSEA = .03, SRMR = .00 (within-level) and .06 (between-level); $^*p \leq .05$, $^{**}p \leq .01$, $^{***}p \leq .001$

Figure 2. Results for multilevel structural equation modeling

(Figure 4). Furthermore, the line representing high job autonomy had a significant slope ($z = -3.77$, $p < .001$), whereas the line representing low job autonomy did not ($z = -0.96$, $p = .34$). Therefore, Hypothesis 4 was supported.

When there is a mixture of significant and null interaction effects within the same analysis, power analysis could shed light on the relative importance of the results (McClelland & Judd, 1993). We, thus, conducted *post hoc* power analysis via Monte Carlo simulation over 10 000 samples in Mplus. This analysis revealed that the statistical power of the test was .81 when the interaction between day-level work pressure and day-level autonomy predicted day-level seeking resources, .08 when predicting day-level seeking challenges, and .54 when predicting day-level reducing demands. Therefore, the statistical power of the test was insufficient in predicting seeking challenges, which could explain the non-significant effect of the interaction term.
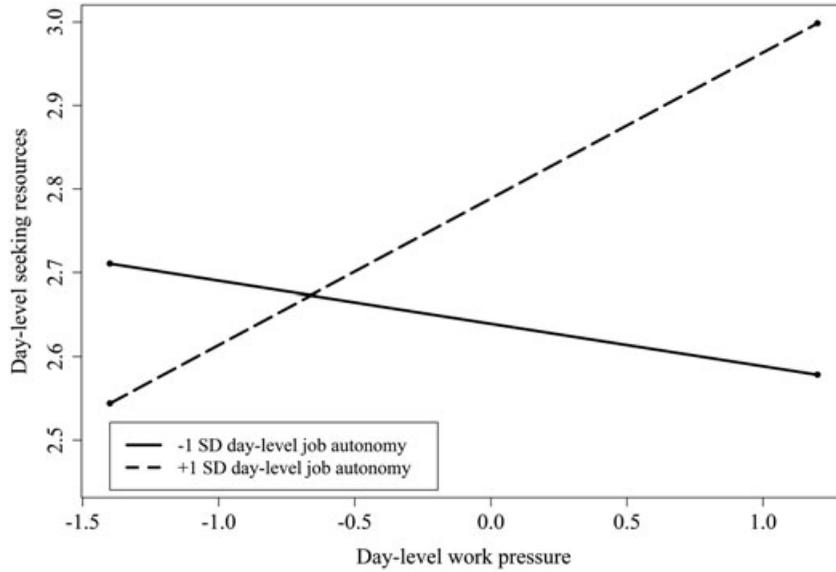
Figure 3. Interaction plot for the relationship between day-level work pressure and day-level seeking resources moderated by day-level job autonomy
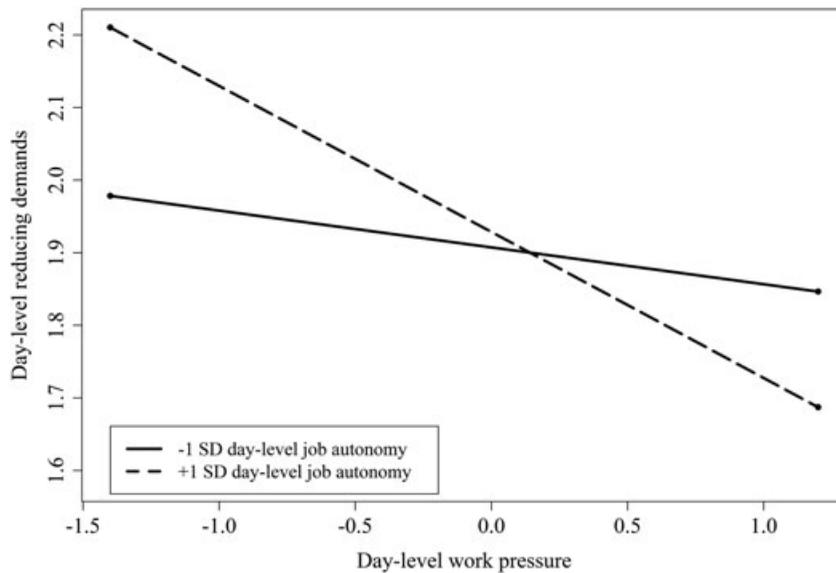

Figure 4. Interaction plot for the relationship between day-level work pressure and day-level reducing demands moderated by day-level job autonomy

Hypothesis 5 suggested a positive link between day-level seeking challenges and resources and day-level work engagement and a negative link between day-level reducing demands and day-level work engagement. Indeed, whereas day-level seeking challenges was positively associated with day-level work engagement, day-level reducing demands was negatively associated with day-level work engagement. Day-level seeking resources did not have a

significant effect on day-level work engagement. Therefore, Hypothesis 5 was partially supported. It is worth noting, though, that day-level work engagement showed significant correlation with day-level seeking resources at the between level ($r = .26$, $p < .05$) and non-significant correlations with day-level seeking challenges ($r = .03$, $p = .81$) and with day-level reducing demands ($r = .14$, $p = .34$) at the between level.

Type of organizational change yielded the following effects: New technologies were negatively related to day-level work engagement. New products were negatively associated with day-level seeking challenges. New clients were positively related to day-level seeking resources, seeking challenges, and work engagement (Figure 2). The other changes had a non-significant effect on daily job crafting and work engagement.

Discussion

The purpose of this study was to get a firmer grip on job crafting behavior in organizations that face organizational change. By combining a daily diary approach with a general survey, our study contributed to the literature in several ways. First, we re-conceptualized job crafting not only at the general level but also at the day level. General-level and day-level job crafting consisted of the expected three dimensions, namely seeking resources, seeking challenges, and reducing demands. Second, we tested the contextual correlates of job crafting. Employees in active jobs performed higher levels of day-level seeking resources (but not seeking challenges) and lower levels of day-level reducing demands. Third, we examined the relationship between work engagement and job crafting. In particular, on days that employees sought challenges more or reduced their demands less, they were more engaged. Fourth, we proposed a possible link between job crafting and organizational change. Whereas "new products" were associated with lower seeking challenges, "new clients" were associated with higher seeking resources and higher seeking challenges.

The added value of our design is to be found in our focus on daily dynamics of job crafting behaviors that was enabled by our diary approach. We found that not only did individuals differ from each other in the degree to which they craft their job but they also differed from day to day in their individual crafting behavior. The 3-factor structure of job crafting was confirmed, not only at the general level but also at the day level with moderately satisfactory fit indices for the general-level and excellent fit for the day-level model. Different types of CFA sample size recommendations (e.g., Boomsma, 1982; Marsh, Hau, Balla, & Grayson, 1998) seem to agree on the fact that a minimum sample size of 100 respondents is required to achieve convergence in our CFA at the general level and that larger samples generally improve model convergence. Therefore, we should be cautious in trusting the CFA results. Our considerably larger number of observations at the day level, however, renders the MCFA results more trustworthy and provides support to a 3-factor dimensionality of job crafting reported as daily behavior. Additionally, the large amount of within-level variance of job crafting indicates that job crafting varies substantially from day to day. Finally, conceptualized at the day-level, job crafting has increased face validity and elicits a higher frequency of reported behaviors by respondents than what is found by previous research (e.g., Lyons, 2008). Changing the aspects of one's job is more likely to happen, at least at the day level, than changing one's job scope overall. All these findings enrich research on the day-level views of proactive behaviors (e.g., Sonnentag, 2003) and form a response to the call for more episodic approaches in the study of discretionary behaviors at work (Fay & Sonnentag, 2010). By expanding the JD–R conceptualization of job crafting to include the day level, job crafting is conceived as unfolding daily and targeting the direct work environment surrounding the individual, illustrating how job crafting is distinct from other similar proactive behaviors.

Our study addressed and partially confirmed a link between an active job environment and job crafting. On days that employees experienced high job autonomy and high work pressure, they were found to engage in higher seeking resources and lower reducing demands. The high levels of seeking resources are consistent with the active learning hypothesis (Karasek, 1979) suggesting that an active job environment will facilitate learning and development. Low levels of reducing demands confirm indirectly Karasek's predictions. Because active behaviors developed within the "good stress" of active jobs predict employee motivation (Karasek, Brisson, Kawakami, Houtman, & Bongers,

1998, p. 323), active workers would be not likely to reduce the job demands that make their jobs challenging. Despite the controversy surrounding Karasek's propositions (e.g., Taris et al., 2003), the link between active jobs characteristics on the one hand and increased seeking resources and decreased reducing demands on the other hand is consistent with previous research connecting active jobs with seeking feedback (Dollard & Winefield, 1998), new skills acquisition (De Witte, Verhofstadt, & Omey, 2007), problem-focused mechanisms comprising seeking social support (Torp, Riise, & Moen, 2001), and working overtime (Van der Hulst, Van Veldhoven, & Beckers, 2006).

The interaction between work pressure and autonomy was not related to seeking challenges. This may have to do with the insufficient power of the test to detect this interaction, which was found to be well below average. Another interpretation might have to do with the organizations under study. Interaction effects of demands and control have often predicted job challenge only in particular occupational groups (De Jonge, Dollard, Dormann, Le Blanc, & Houtman, 2000). Our design used a heterogeneous sample and therefore might not be ideal to detect such an effect. Furthermore, it is very likely that certain active work environments are so demanding as to make the search for more challenges impossible or even counterproductive.

The links that we found between job crafting and work engagement illustrate a potential motivational role for job crafting. Previous research has linked proactivity to organizational commitment (Kirkman & Rosen, 1999) and work engagement (Hakanen et al., 2008; Salanova & Schaufeli, 2008). Job crafting (conceptualized as task, relational, and cognitive crafting) has been associated positively with job satisfaction, commitment, and job effectiveness and negatively with absenteeism (Ghitulescu, 2006). In our study, however, job crafting is conceptualized in terms of demands and resources. The findings that daily seeking challenges is positively associated with daily work engagement and that daily reducing demands is negatively associated with daily work engagement are indicative of a particular pattern. Taken together, the two findings confirm the predictions of two-dimensional challenge and hindrance work stressor framework of Podsakoff et al. (2007). This model proposes that contrary to hindrance stressors, challenge stressors are associated positively with motivational outcomes at work. Therefore, seeking challenges results in the accumulation of challenges that further stimulate employees, whereas reducing demands, by eliminating those challenges, results in a less stimulating environment. This confirms Wrzesniewski and Dutton's (2001) theoretical proposition that job crafting has positive and negative sides and offers a possible answer to Oldham and Hackman's (2010) calls for research on dysfunctional consequences of job crafting.

Contrary to existing evidence on the motivational nature of job resources (Demerouti et al., 2001; Salanova & Schaufeli, 2008), day-level seeking resources was not linked to day-level work engagement. Perhaps, this finding is not so surprising if we consider that this path was modeled at the within level. By looking at the within level, we test if employees report higher engagement on days when they seek more resources than they generally do (intraindividual comparison). Job resources, however, such as feedback, support, or advice have more social and relational aspects than job demands and challenges, and they become more important when examined in comparison with others (interindividual comparison). This possibility is addressed by the correlations that we found at the between level, which is the level that reveals interindividual comparison: Day-level work engagement correlated with day-level seeking resources but not with day-level seeking challenges and reducing demands.

Research has shown that qualitative assessments of job crafting are associated positively with readiness to change (Lyons, 2008), addressing a possible link between job crafting and employee willingness to facilitate or participate in organizational change. In this study, we found that changes involving new clients were linked to higher seeking resources, seeking challenges, and work engagement. That seems to support the proposition of Wrzesniewski and Dutton (2001) and Van den Heuvel et al. (2010) that job crafting can be of particular importance during organizational change. When employees are not in a phase of resistance, they may facilitate their adaptation to the change proactively. The way to achieve this can be by adjusting their work environment. At the same time, new products or services were found to be negatively related to work engagement, and seeking challenges and new technologies were associated negatively with work engagement. In other words, it seems that changes with a technical aspect (new technologies or products) seem to have negative motivational implications, whereas changes with a social aspect (new clients) seem to have positive motivational implications.

Next to the contributions, limitations of the study should be noted as well. First, results concerning the relationships between variables are correlational in nature. The multilevel approach that we followed provides better estimates for the variables by taking into account the individual baselines, but inferences regarding causality or time sequence of the effects are still limited. Second, data relied on self-report and therefore can be subject to common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, controlling for the general level of variables partially rules out the possibility that the effects we found are attributed to general individual tendencies instead of daily factors. Third, our sample was not drawn by random selection, which may introduce biases into the parameter estimates. Fourth, some of the day-level scale reliabilities were below the proposed cutoff levels, although such reliabilities have often been reported in diary studies with small samples (e.g., Xanthopoulou et al., 2009).

Implications and future research

There are a number of issues that future research may want to address. First, longitudinal replications of our study can test whether job characteristics, job crafting, and work engagement form a system of interrelated forces, perhaps of reciprocal nature, rather than being connected through a clear set of causal relationships. Furthermore, longer time intervals between measurements will shed light to patterns not displayed within one day. For instance, workers in active jobs may want to reduce their demands after long exposure to excessive workload. Longitudinal methodologies will also show whether, in the long run, crafters exert an influence on the demands and resources of their work environment. Second, future research could examine more motivational outcomes than engagement or explore extrinsic motivational implications of job crafting. The latter will reveal whether job crafting plays the role of a strategic behavior targeted to external rewards or recognition. Third, the links that we found between types of change and job crafting might serve as preliminary evidence for the implications of job crafting for organizational change. Future research should focus more on how crafters deal with change. Also, whether major change facilitates job crafting, which we considered to be unlikely, remains to be tested. Fourth, research on organizational change can incorporate job crafting as a possible coping mechanism, for instance, through reducing demands as a means to prevent burnout.

Proactive employee behaviors can either be constrained or prompted by management. As far as it concerns organizational implications, job crafting is neither inherently good nor bad. Although management is usually responsible for job redesign and changes in roles and tasks, job crafting is "secretive" in nature. At some extent, employees in any type of job perform job crafting. Some managers will reject the idea of job crafting. On the one hand, excessive job crafting could lead to procrastination, provoke feelings of role ambiguity or unfairness and disrupt group dynamics or managerial control. On the other hand, crafting can be seen as a proactive and problem-focused coping behavior through which employees engage in creative problem solving. It could enhance employee sense of control, job satisfaction, work engagement, and ultimately job performance. Furthermore, it can function as a costless form of informal on-the-job training and individual job redesign. Therefore, the consequences of job crafting may differ per stakeholder. Some type of job crafting that is positive and helpful for the individual could easily prove to be counterproductive for an organization as a whole.

For all these aforementioned reasons, job crafting should be encouraged and facilitated as long as it is in the same line with the organizational aims. One way to do that is through empowerment provided by leaders. Similarly, increasing job control next to high demands is an effective way in which managers can provide an "active learning" environment that will foster personal initiative. Finally, interventions at the workplace can be another way to increase employee awareness and capacity to craft. Daily or weekly workplace interventions targeted to specific job demands or job resources can be used as a concrete and effective way to facilitate job crafting.

On a final note, we should not forget that job crafting does occur and can indeed be very helpful. Acknowledging job crafting as an existing and natural behavior of employees is not merely the only option for managers but also a unique opportunity to maximize employee potential and achieve multiple organizational positive outcomes.

Author biographies

Paraskevas Petrou is a PhD candidate in organizational psychology at Utrecht University, The Netherlands. His research interests include: (1) job crafting (2) regulatory focus and regulatory fit (3) crossover among couples and (4) inequity at work and/or intimate relationships. In his dissertation he examined the role of job crafting and regulatory fit during organizational change.

Evangelia Demerouti is a professor of Organizational Behavior at Eindhoven University of Technology, The Netherlands. Her main research interests concern topics from the field of work and health including burnout, work engagement, work-family interface, and job performance. Her research has been published in journals such as *Journal of Applied Psychology, Journal of Vocational Behavior, and Journal of Occupational Health Psychology*.

Maria C.W. Peeters is associate professor of Work and Organizational Psychology at Utrecht University, The Netherlands. Her expertise as a senior researcher and lecturer is in the field of occupational health psychology. She is also a licensed occupational health psychologist. Her scientific work covers a broad area with special interests in job stress, work-home interaction, ageing and diversity at work. Dr. Peeters has published many articles and chapters in these areas, serves as a reviewer for various national and international scientific journals, and works as an associate editor for the Dutch journal *Behaviour in Organisations*.

Wilmar B. Schaufeli is full professor of Work and Organizational Psychology at Utrecht University, The Netherlands, and visiting professor at Loughborough Business School, UK, and Jaume I Universitat, Castellon, Spain. He published over three-hundred-fifty articles and chapters, and (co-)authored or (co-)edited over twenty books (see: www.schaufeli. com). Initially, his research interest was on job stress and burnout, but in the last decade he shifted towards positive occupational health psychology, including work engagement. Dr. Schaufeli is a fellow of the European Academy of Occupational Health Psychology, a licensed occupational health psychologist, and also works part-time as an organizational consultant.

Jørn Hetland (PhD) is associate professor at the University of Bergen, Norway. His research interests are work and organizational psychology, with a focus on leadership, psychosocial factors at work, and subjective health.

References

Avey, J. B., Wernsing, T. S., & Luthans, F. (2008). Can positive employees help positive organizational change? *The Journal of Applied Behavioral Science*, *44*, 48–70.

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, *22*, 309–328.

Bakker, A. B., Demerouti, E., & Verbeke, W. (2004). Using the job demands-resources model to predict burnout and performance. *Human Resource Management*, *43*, 83–104.

Bakker, A. B., Hakanen, J. J., Demerouti, E., & Xanthopoulou, D. (2007). Job resources boost work engagement particularly when job demands are high. *Journal of Educational Psychology*, *99*, 274–284.

Beal, D. J., & Weiss, H. M. (2003). Methods of ecological momentary assessment in organizational research. *Organizational Research Methods*, *6*, 440–464.

Berg, J. M., Grant, A. M., & Johnson, V. (2010). When callings are calling: Crafting work and leisure in pursuit of unanswered occupational callings. *Organization Science*, *21*, 973–994.

Berg, J. M., Wrzesniewski, A., & Dutton, J. E. (2010). Perceiving and responding to challenges in job crafting at different ranks: When proactivity requires adaptivity. *Journal of Organizational Behavior*, *31*, 158–186.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, *54*, 579–616.

Boomsma, A. (1982). Robustness of LISREL against small sample sizes in factor analysis models. In K. G. Jöreskog, & H. Wold (Eds.), *Systems under indirect observation: Causality, structure, prediction (part I)*. Amsterdam: North Holland.

Brotheridge, C. M. (2003). The role of fairness in mediating the effects of voice and justification on stress and other outcomes in a climate of organizational change. *International Journal of Stress Management*, *10*, 253–268.

Centraal Bureau voor de Statistiek (2009). *Statistisch jaarboek 2009* [Statistical Annual Report 2009]. Den Haag/Heerlen: CBS.

Chu, A. H. C., & Choi, J. N. (2005). Rethinking procrastination: positive effects of "active" procrastination behavior on attitudes and performance. *Journal of Social Psychology*, *145*, 245–264.

Cortina, J. M., Chen, G., & Dunlap, W. P. (2001). Testing interaction effects in LISREL: Examination and illustration of available procedures. *Organizational Research Methods*, *4*, 324–360.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper Perennial.

Cunningham, C. E., Woodward, C. A., Shannon, H. S., Macintosh, J., Lendrum, B., Rosenbloom, D., & Brown, J. (2002). Readiness for organizational change: A longitudinal study of workplace, psychological, and behavioral correlates. *Journal of Occupational and Organizational Psychology*, *75*, 377–392.

Daniels, K., & Harris, C. (2005). A daily diary study of coping in the context of the job demands-control-support model. *Journal of Vocational Behavior*, *66*, 219–237.

De Jonge, J., Dollard, M. F., Dormann, C., Le Blanc, P. M., & Houtman, I. L. D. (2000). The demand–control model: Specific demands, specific control, and well-defined groups. *International Journal of Stress Management*, *7*, 269–287.

De Witte, H., Verhofstadt, E., & Omey, E. (2007). Testing Karasek's learning and strain hypothesis on young workers in their first job. *Work and Stress*, *21*, 131–141.

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*, 499–512.

Dollard, M. E., & Winefield, A. H. (1998). A test of the demand-control/support model of work stress in correctional officers. *Journal of Occupational Health Psychology*, *3*, 243–264.

Fay, D., & Sonnentag, S. (2010). A look back to move ahead: New directions for research on proactive performance and other discretionary work behaviors. *Applied Psychology: An International Review*, *59*, 1–20.

Ferrari, J. R. (2001). Procrastination as self-regulation failure of performance: Effects of cognitive load, self-awareness, and time limits on "working best under pressure". *European Journal of Personality*, *15*, 391–406.

Frese, M., Fay, D., Hilburger, T., Leng, K., & Tag, A. (1997). The concept of personal initiative: Operationalization, reliability and validity in two German samples. *Journal of Organizational and Occupational Psychology*, *70*, 139–l61.

Frese, M., Garst, H., & Fay, D. (2007). Making things happen: Reciprocal relationships between work characteristics and personal initiative in a four-wave longitudinal structural equation model. *Journal of Applied Psychology*, *92*, 1084–1102.

Fritz, C., & Sonnentag, S. (2009). Antecedents of day-level proactive behavior: A look at job stressors and positive affect during the workday. *Journal of Management*, *35*, 94–111.

Furda, J. (1995). Werk, persoon en welzijn: Een toets van het JD-C model [Work, personality, and well-being: A test of the JD-C model] (Unpublished doctoral dissertation). Utrecht University, the Netherlands.

Ghitulescu, B. E. (2006). *Shaping tasks and relationships at work: Examining the antecedents and consequences of employee job crafting*. Unpublished doctoral dissertation, University of Pittsburgh.

Grant, A. M., & Parker, S. K. (2009). Redesigning work design theories: The rise of relational and proactive perspectives. *Academy of Management Annals*, *3*, 317–375.

Greenhalgh, T., Robert, G., Macfarlane, F., Bate, P., & Kyriakidou, O. (2004). Diffusion of innovations in service organizations: Systematic review and recommendations. *The Milbank Quarterly*, *82*, 581–629.

Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal*, *50*, 327–347.

Gruys, M. L. (1999). The dimensionality of deviant employee performance in the workplace.Unpublished doctoral dissertation, University of Minnesota.

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.

Hakanen, J. J., Perhoniemi, R., & Toppinen-Tanner, S. (2008). Positive gain spirals at work: From job resources to work engagement, personal initiative, and work-unit innovativeness. *Journal of Vocational Behavior*, *73*, 78–91.

Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review*, *50*, 337–370.

Hox, J. (2002). *Multilevel analysis: Techniques and applications*. Mahwah, NJ: Erlbaum.

Ilies, R., Schwind, K. M., & Heller, D. (2007). Employee well-being: A multilevel model linking work and nonwork domains. *European Journal of Work and Organizational Psychology*, *16*, 326–341.

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, *24*, 285–307.

Karasek, R. (1985). *Job content instrument: Questionnaire and user's guide, revision 1.1*. Los Angeles, CA: University of Southern California.

Karasek, R. A., & Theorell, T. (1990). *Healthy work: Stress, productivity and the reconstruction of working life*. New York, NY: Basic Books.

Karasek, R. A., Brisson, C., Kawakami, N., Houtman, I., & Bongers, P. (1998). The Job Content Questionnaire (JCQ): An instrument for internationally comparative assessments of psychosocial job characteristics. *Journal of Occupational Health Psychology*, *3*, 322–355.

Kauffeld, S., Jonas, E., & Frey, D. (2004). Effects of a flexible work-time design on employee- and company-related aims. *European Journal of Work and Organizational Psychology*, 13, 79–100.

Kirkman, B. L., & Rosen, B. (1999). Beyond self-management: Antecedents and consequences of team empowerment. *Academy of Management Journal*, 42, 58–74.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.

Leana, C., Appelbaum, E., & Shevchuk, I. (2009). Work process and quality of care in early childhood education: The role of job crafting. *Academy of Management Journal*, 52, 1169–1192.

Lee, F. (1997). When the going gets tough, do the tough ask for help? Help seeking and power motivation in organizations. *Organizational Behavior and Human Decision Processes*, 72, 336–363.

Lovelace, K. J., Manz, C. C., & Alves, J. S. (2007). Work stress and leadership development: The role of leadership, shared leadership, physical fitness and flow in managing demands and increasing job control. *Human Resource Management Review*, 17, 374–387.

Lyons, P. (2008). The crafting of jobs and individual differences. *Journal of Business and Psychology*, 23, 25–36.

Macey, W. H., & Schneider, B. (2008). The meaning of employee engagement. *Industrial and Organizational Psychology*, 1, 3–30.

Marsh, H. W., Hau, K.-T., Balla, J. R., & Grayson, D. (1998). Is more ever too much? The number of indicators per factor in confirmatory factor analysis. *Multivariate Behavioral Research*, 33, 181–220.

Martin, P., Salanova, M., & Peiro, J. S. (2007). Job demands, job resources and individual innovation at work. *Psicothema*, 19, 621–626.

McClelland, G. H., & Judd, C. M. (1993). Statistical difficulties of detecting interactions and moderator effects. *Psychological Bulletin*, 114, 376–390.

Morgan, D. E., & Zeffane, R. (2003). Employee involvement, organizational change and trust in management. *International Journal of Human Resource Management*, 14, 55–75.

Muthén, B. O. (1994). Multilevel covariance structure analysis. *Sociological Methods and Research*, 22, 376–398.

Muthén, B., & Asparouhov, T. (2011). Beyond multilevel regression modeling: Multilevel analysis in a general latent variable framework. In J. Hox, & J.K. Roberts (Eds.), *Handbook of advanced multilevel analysis* (pp. 15–40). New York, NY: Taylor and Francis.

Muthén, L. K., & Muthén, B. (2010). *Mplus users guide (version 6)*. Los Angeles, CA: Muthén & Muthén.

Ohly, S., & Fritz, S. (2010). Work characteristics, challenge appraisal, creativity, and proactive behavior: A multi-level study. *Journal of Organizational Behavior*, 31, 543–565.

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research. *Journal of Personnel Psychology*, 9, 79–93.

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, J. D., & Endler, N. S., (1996). Coping and defense: A historical overview. In M. Zeidner, & N. S. Endler (Eds.), *Handbook of coping: Theory, research, applications* (pp. 3–23). New York, NY: John Wiley & Sons Ltd.

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management*, 36, 827–856.

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, 438–454.

Podsakoff, P. M., MacKenzie, S. B., Lee, J., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88, 879–903.

Prieto, L. L., Soria, M. S., Martinez, I. M., & Schaufeli, W. (2008). Extension of the job demands-resources model in the prediction of burnout and engagement among teachers over time. *Psicothema*, 20, 354–360.

Raftery, A. E. (1995). Bayesian model selection in social research. *Sociological Methodology*, 25, 111–164.

Robinson, O., & Griffiths, A. (2005). Coping with the stress of transformational change in a government department. *The Journal of Applied Behavioural Science*, 41, 204–221.

Salanova, M., & Schaufeli, W. B. (2008). A cross-national study of work engagement as a mediator between job resources and proactive behaviour. *International Journal of Human Resource Management*, 19, 116–131.

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25, 293–315.

Schaufeli, W. B., Bakker, A. B., & Salanova, M. (2006). The measurement of work engagement with a short questionnaire: A cross-national study. *Educational and Psychological Measurement*, 66, 701–716.

Selye, H. (1987). *Stress without Distress*. London: Transworld.

Sheldon, K. M., Ryan, R., & Reis, H. T. (1996). What makes for a good day? Competence and autonomy in the day and in the person. *Personality and Social Psychology Bulletin*, 22, 1270–1279.

Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between non-work and work. *Journal of Applied Psychology*, 88, 518–528.

Steel, P. (2007). The nature of procrastination: A meta-analytic and theoretical review of quintessential self-regulatory failure. *Psychological Bulletin*, *133*, 65–94.

Stensaker, I., Meyer, C. B., Falkenberg, J., & Haueng, A. C. (2002). Excessive change: Coping mechanisms and consequences. *Organizational Dynamics*, *31*, 296–312.

Taris, T. W., Kompier, M. A. J., De Lange, A. H., Schaufeli, W. B., & Schreurs, P. J. G. (2003). Learning new behavior patterns: A longitudinal test of Karasek's active learning hypothesis among Dutch teachers. *Work and Stress*, *17*, 1–20.

Teuchmann, K., Totterdell, P., & Parker, S. K. (1999). Rushed, unhappy, and drained: An experience sampling study of relations between time pressure, perceived control, mood, and emotional exhaustion in a group of accountants. *Journal of Occupational Health Psychology*, *4*, 37–54.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, *36*(2), Art. #841, 9. doi: 10.4102/sajip.v36i2.841

Tims, M., Bakker, A. B., & Derks, D. (2012). The development and validation of the job crafting scale. *Journal of Vocational Behavior*, *80*, 173–186.

Torp, S., Riise, T., & Moen, B. E. (2001). The impact of psychosocial work factors on musculoskeletal pain: A prospective study. *Journal of Occupational and Environmental Medicine*, *43*, 120–126.

Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). Explaining the relationships between job characteristics, burnout, and engagement: The role of basic psychological need satisfaction. *Work and Stress*, *22*, 277–294.

Van den Heuvel, M., Demerouti, E., Bakker, A. B., & Schaufeli, W. B. (2010). Personal resources and work engagement in the face of change. In J. Houdmont, & S. Leka (Eds.), *Contemporary occupational health psychology* (Vol. *1*, pp. 124–150). Chichester: John Wiley & Sons Ltd.

Van den Heuvel, M., Demerouti, E., Schreurs, B. H. J., Bakker, A. B., & Schaufeli, W. B. (2009). Does meaning-making help during organizational change? *Career Development International*, *14*, 508–533.

Van der Hulst, M., Van Veldhoven, M., & Beckers, D. (2006). Overtime and need for recovery in relation to job demands and job control. *Journal of Occupational Health*, *48*, 11–19.

Verhaeghe, R., Vlerick, P., De Backer, G., Van Maele, G., Gemmel, P. (2008). Recurrent changes in the work environment, job resources and distress among nurses: A comparative cross-sectional survey. *International Journal of Nursing Studies*, *45*, 382–392.

Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. *Research in Organizational Behavior*, *18*, 1–74.

Wrzesniewski, A., & Dutton, J. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, *26*, 179–201.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Occupational and Organizational Psychology*, *82*, 183–200.