Journal of Occupational and Organizational Psychology (2015), 88, 511–532

The British Psychological Society

www.wileyonlinelibrary.com

Special issue paper

The job crafting intervention: Effects on job resources, self-efficacy, and affective well-being

Machteld van den Heuvel[1]*, Evangelia Demerouti[2] and Maria C. W. Peeters[3]

[1]University of Amsterdam, The Netherlands
[2]University of Technology, Eindhoven, The Netherlands
[3]University of Utrecht, The Netherlands

This quasi-experimental field study examines the effects of an intervention designed to boost job resources, affective well-being, and self-efficacy via job crafting behaviour. Employees (n = 39) in a Dutch police district received a 1-day training, after which they worked towards self-set crafting goals for a period of 4 weeks. The intervention concluded with a half-day reflection session in which learning points were consolidated. Participating in the intervention was expected to boost job resources such as opportunities for development and leader–member exchange (LMX), as well as enhance self-efficacy and positive affect and to reduce negative affect. Repeated measures ANOVAs did not yield significant results. However, pre–post comparison tests showed that the intervention group reported less negative affect as well as increased self-efficacy, developmental opportunities and LMX in the post-measure compared with the pre-measure. The control group (n = 47) showed no significant changes from pre- to post-measure. In addition, in weeks during which individuals sought more resources, they also reported more developmental opportunities, LMX, and positive affect. Although further research is needed, the job crafting intervention seems to have potential to enable employees to proactively build a motivating work environment and to improve their own well-being.

Practitioner points

- Job crafting is proactive behaviour at work that allows employees to redesign their own jobs.
- In weeks when employees actively focus on building job resources, they also find more job resources and experience more positive affect.
- The job crafting intervention may help employees to build resources and affective well-being at work.

In the last decade, organizations have been faced with financial crises and continuous change in organizational structures as well as budget cuts (Cummings & Worley, 2014). This has put increasing demands on organizational and employee adaptivity and proactivity. At the same time, there are fewer opportunities to change jobs and teams need to do 'more with less people', resulting in a higher workload and an increased need

*Correspondence should be addressed to Machteld van den Heuvel, Weesperplein 4, Amsterdam, The Netherlands (emails: m.vandenheuvel2@uva.nl; maggievdh@gmail.com).

DOI:10.1111/joop.12128

to work efficiently. These pressures demand proactive employees who take control of their own working life by creating a healthy and motivating environment for themselves (Grant & Parker, 2009). 'Job crafting' refers to such proactive employee behaviour (Wrzesniewski & Dutton, 2001). This study describes an intervention to stimulate job crafting behaviour. Wrzesniewski and Dutton (2001) first defined job crafting as 'the physical and cognitive changes individuals make in the task or relational boundaries of their work' (p. 179). The idea that employees can proactively change their work expands existing top-down perspectives of job design (Grant & Parker, 2009). Job crafting can be considered a job redesign approach, describing how employees change (1) the type and number of tasks and activities they do, (2) the way they interact with others at work, and (3) how they cognitively frame the significance of their work such as reframing responsibilities to create more meaningful work (Wrzesniewski & Dutton, 2001).

Recently, job crafting has been integrated into the Job Demands Resources (JD-R) model, which is a model of occupational well-being (Bakker, Demerouti, & Sanz-Vergel, 2014; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). The JD-R model describes relationships between work characteristics and well-being outcomes. Job crafting has been added to describe the specific mechanisms by which employees can redesign work characteristics (Bakker *et al.*, 2014). This model helps to refine the concept of job crafting by focusing on specific types of crafting behaviour. Our intervention is based on the JD-R conceptualization of job crafting and aims to train employees to craft their jobs to increase their own occupational well-being.

In the JD-R conceptualization, employees craft their jobs by increasing or lowering the level of *job demands* and *job resources* (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012; Tims & Bakker, 2010). Job resources and job demands simultaneously impact health, motivation, and organizational outcomes, such as performance or absenteeism (Demerouti *et al.*, 2001). Job resources are work characteristics that support work-related goal achievement and stimulate growth and development (Bakker & Demerouti, 2007). Recently, personal resources like self-efficacy have been added to the model as additional sources of motivation, well-being, and adaptivity (Van den Heuvel, Demerouti, Schaufeli, & Bakker, 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Job demands refer to aspects that require sustained physical and/or psychological effort and are therefore associated with certain costs (Bakker & Demerouti, 2007). Demands can be further specified into two categories. First, regular or 'hindrance' demands refer to demands that 'involve excessive or undesirable constraints that interfere with or hinder an individual's ability to achieve valued goals' (Cavanaugh, Boswell, Roehling, & Boudreau, 2000, p. 67). Secondly, 'challenge demands' are demands that may cause stress responses, but are perceived as rewarding and worth the effort (Cavanaugh *et al.*, 2000). In the present study, we differentiate between regular, or hindrance, demands (referred to as 'demands') and challenge demands. When using job crafting, employees can (1) increase or seek job resources, (2) reduce job demands, and (3) seek challenge demands (Petrou *et al.*, 2012). Decreasing or reducing job resources is excluded because it does not seem to be purposeful behaviour for employees. Seeking job resources refers to behaviours such as looking for learning opportunities or asking advice. Seeking challenge demands refers to behaviours such as asking for more responsibilities or seeking challenging tasks. An example of decreasing or reducing demands is ensuring that the job is mentally or physically less demanding (Petrou *et al.*, 2012).

The purpose of the present study is to test the effectiveness of a newly developed job crafting intervention. The intervention aims to offer employees the opportunity to

improve their work environment and work-related well-being using insights from job crafting and the JD-R model. The contribution of this study is three-fold. First, to our knowledge, this is the first theory-driven job crafting intervention that is empirically tested in a field setting. Secondly, it combines a quasi-experimental design with weekly diary data, which captures weekly fluctuations in our study variables, allowing for insights into processes that may underlie the effects of the intervention. Finally, in addition to job demands and resources, we also include a personal resource, self-efficacy, as an outcome of the intervention. Personal resources help to deal with adversity, goal attainment, and adaptivity (Van den Heuvel, Demerouti, & Bakker, 2014; Van den Heuvel *et al.*, 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009).

Can job crafting behaviour be developed?

Job crafting can have favourable effects on well-being, work engagement, burnout, and performance (Leana, Appelbaum, & Shevchuk, 2009; Petrou *et al.*, 2012; Tims, Bakker, & Derks, 2013). It is therefore worth investigating whether these behaviours can be trained. To test this, we designed the 'Job Crafting Intervention'. Job crafting has been used previously in the 'Job Crafting Exercise', an intervention designed to help students/employees to redesign their roles (Berg, Dutton, & Wrzesniewski, 2008). Our approach is different in that we used the JD-R conceptualization of job crafting. It also differs in length, as we guide participants as they start experimenting with job crafting after the training.

The job crafting intervention: Theoretical mechanisms for change

The intervention consists of one training day and 4 weeks of experimenting with job crafting goals, followed by a half-day reflection session. The intervention aims to teach employees to view their work environment as a constellation of demands and resources that can be altered using job crafting behaviour. The content of the job crafting intervention is based on the role of job crafting in the JD-R model (Bakker *et al.*, 2014), while the learning methods were based on Social Cognitive Theory (SCT, Bandura, 1991, 1989). We expect the learning process that the intervention offers to be effective based on the theoretical mechanisms of SCT (described below). Additionally, based on SCT, we expect the intervention to impact levels of self-efficacy and work-related affective well-being.

The JD-R model plays a dual role in the intervention. Participants are taught how demands and resources are related to motivational and well-being outcomes, and it also outlines how job crafting is the process by which employees shape the presence and balance of their demands and resources (Bakker *et al.*, 2014). The JD-R model also provides an explanation for our proposed relationships; that is, job crafting behaviour may affect the level of demands and resources. Based on the JD-R model, we therefore expect that job crafting can impact levels of job resources. Below we describe SCT, followed by an explanation of how it was used as a basis for the learning methods of the intervention. In the descriptions, we refer to the JD-R model and specific forms of job crafting used in the intervention to build our hypotheses.

Social cognitive theory

According to SCT, behaviour is reciprocally related to and determined by personal factors as well as environmental factors. SCT states that learning occurs in a social context where

information from other people's behaviour is available and can be used to regulate one's own behaviour (Bandura, 1989). Therefore, our intervention begins with a group training to facilitate the social learning process. Through group discussions and the sharing of personal stories relating to increasing resources, reducing demands, or increasing challenge demands, participants inspire each other to challenge assumptions regarding their work characteristics and to initiate crafting.

Social Cognitive Theory describes self-regulatory mechanisms that humans rely on to exercise control over their thoughts, emotions, motivation, and actions (Bandura, 1991, 1989, 2001). A key element in developing self-directedness is self-monitoring, which refers to paying attention to one's current situation and performance (Bandura, 1991). This process of observing oneself provides information that can be used for realistic goal setting and for tracking progress towards desired goals. While working on job crafting goals, self-monitoring helps participants to collect feedback from actions undertaken and from the environment, which provides information to track goal attainment. Self-monitoring plays a key role in the intervention, both during the training as well as afterwards. It is the first step in effective goal setting (Bandura, 2001). In the training, employees reflect on their work environment, in terms of demands and resources. Goal setting is further addressed via a 'personal crafting plan'. Participants draw up a plan with self-chosen job crafting goals to be completed over the 4 weeks following the training. The plan outlines how and when they will increase resources/challenge demands and decrease demands. The goals represent manageable steps, thereby also increasing efficacy beliefs regarding job crafting (Luthans, Avey, Avolio, & Peterson, 2010). During the 4 weeks of job crafting, participants take time at the end of each week to review goal progress and positive events of the previous week.

Job crafting builds job resources

Based on the JD-R, we expect that when participants craft their job, they will be able to change their work environment, specifically by building more job resources. Recent studies on job crafting have shown empirical evidence for this expectation. For example, job crafting behaviour, such as increasing resources, can predict the presence of job resources 1 month later (Tims, Bakker, & Derks, 2013). Another study found that increasing resources and seeking challenge demands daily were related to higher levels of work engagement (Petrou *et al.*, 2012). In this study, we focus on two job resources, opportunities for development and leader–member exchange (LMX). These resources were of specific interest to the organization as there was a need for improvement in both. Theoretically, these resources are interesting as there is a growing need for employees to enhance their own employability by creating opportunities for personal development (Fugate, Kinicki, & Ashforth, 2004; Wittekind, Raeder, & Grote, 2010). Job crafting may aid employees to create both formal and informal learning opportunities. We expect that the intervention will positively affect opportunities for development in two ways. First, during the training, employees are encouraged to reflect on their needs for development, including whether they can learn from working alongside specific others. Secondly, practising job crafting behaviour may lead to an increased awareness of developmental opportunities. For example, a crafting action related to increasing developmental opportunities was 'finding out what budget is available to pursue a course on conflict management skills'. Another example was 'applying for a position in the works council to build my knowledge of the organisation'. Research shows that being proactive is associated with a motivation to learn (Major, Turner, & Fletcher, 2006). When employees

start to craft, they make changes in tasks and relationships and they build new resources and try out actions, all of which may lead to a sense of growth. This is expected to be linked to an increase in learning opportunities.

We also expect LMX to be impacted by the intervention. LMX pertains to the quality of the relationship between employee and leader (Graen & Uhl-Bien, 1995). Studies have mainly taken a top-down, leader-centric focus in studying determinants of leader exchange relationships (Uhl-Bien, Riggio, Lowe, & Carsten, 2014). Recently, there is a growing emphasis on the role of the employee as a follower in leadership theories. This followership perspective stresses the need to move beyond a leader-centric focus and attend to follower behaviour to explain important outcomes for organizations and individuals (Uhl-Bien *et al.*, 2014). In this sense, our study contributes by focusing on how job crafting behaviour by followers may impact the LMX relationship. High-quality LMX relationships are characterized by mutual trust, respect, and a 'liking' between supervisor/employee. LMX has many antecedents, including individual and leader characteristics, interpersonal aspects such as trust, ingratiation (attempts to become more likeable), and assertiveness (Dulebohn, Bommer, Liden, Brouer, & Ferris, 2012). Employees may be able to positively impact the LMX relationship via crafting behaviour to build resources. They may do this by being trustworthy and motivated to build a good relationship (Erdogan & Bauer, 2014) as well as seeking performance feedback (Lam, Huang, & Snape, 2007). We expect the job crafting intervention to positively affect LMX in two ways. First, during the intervention, employees are taught that one way to increase resources is to ask for support/feedback from supervisors. Many participants chose to schedule a meeting with their supervisor as an opportunity to obtain feedback and to discuss goals/needs. It also sends a positive signal that the employee is willing to take responsibility for their own well-being and work performance. Secondly, other planned job crafting actions are likely to be expressed in more proactive behaviour, which can lead to increased performance, well-being, identification, and team effectiveness (e.g., Bindl & Parker, 2010). Supervisors are likely to notice these proactive crafting behaviours, which may positively affect the LMX relationship. Therefore, we hypothesize:

Hypothesis 1: Employees participating in the job crafting intervention will experience higher levels of (a) opportunities for development and (b) LMX after the intervention compared with employees in the control group.

Job crafting builds self-efficacy

We expect that the job crafting intervention will also build work-related self-efficacy. SCT has a specific focus on self-efficacy, which refers to the beliefs people hold about their abilities to exercise control over events (Bandura, 1989; Gist & Mitchell, 1992). Self-efficacy contributes to action-readiness and positive change behaviour (Schaubroeck & Merritt, 1997), and it positively impacts individual learning and goal achievement. Strategies to enhance self-efficacy are as follows: (1) *role modelling*, or learning by seeing others demonstrating effective behaviour; (2) *verbal persuasion*, or verbal statements, feedback, and encouragement from others; and (3) *mastery experiences*, experiences in which one does well by breaking down large tasks into smaller steps that are easily achievable (Bandura, 1997). In the intervention, we focus on building self-efficacy using these strategies. *Role modelling* is integrated in the

training. The trainer and participants help each other by giving examples and modelling desired behaviours related to job crafting. *Verbal persuasion* is part of the training in that encouragement and positive feedback are used to build efficacy and motivation (Bandura, Adams, & Beyer, 1977; Demerouti, van Eeuwijk, Snelder, & Wild, 2011). In addition, receiving feedback on self-set goals is inherent in the process of job crafting; participants formulate crafting goals and receive information on the extent to which they achieved their goals. Verbal persuasion and feedback are also included in the reflection session. Here, participants are asked to reflect on their crafting efforts and give each other positive feedback for goals achieved. Another mechanism used to build self-efficacy is creating *mastery experiences*. Participants are instructed to set specific, realistic, and motivating goals. This can provide a mastery experience, which can boost self-efficacy (Bandura, 1977). The process of reflecting on mastery experiences can also boost self-efficacy. Part of the job crafting plan was to plan time to reflect on mastery experiences, including successes, goal achievements, and learning points, at the end of each week. This exercise was guided by a number of weekly self-monitoring questions such as 'what went well at work?', 'what positive feedback did you receive?', and 'what are you proud of regarding your performance?'. The exercise was designed to build awareness of successful crafting behaviour as well as a broader focus on mastery experiences at the end of each week. We propose that, just as they can craft job resources, employees can also craft personal resources by scheduling time for reflection on mastery experiences. This type of reflection-related crafting can be viewed as a form of cognitive crafting where employees alter the way they view and frame their work (Wrzesniewski & Dutton, 2001). Awareness of successes and accomplishments can raise mastery expectations and provide an influential source of efficacy information (Bandura *et al.*, 1977). Based on SCT and the principles for building self-efficacy (Bandura, 1989), we expect the job crafting intervention to boost self-efficacy. Therefore, we hypothesize that:

Hypothesis 2: Employees participating in the job crafting intervention will experience higher levels of self-efficacy after the intervention than employees in the control group.

Job crafting builds affective well-being

We further expect that the intervention will benefit work-related affective well-being. Findings by Tims, Bakker and Derks (2013) show that job crafting can build well-being in the form of increased engagement, job satisfaction, and decreased burnout over time. Work-related affective well-being can be conceptualized using a two-way structure of positive and negative affective responses (Van Katwyk, Fox, Spector, & Kelloway, 2000). We expect that the intervention will trigger two mechanisms which will result in higher levels of well-being. First, personal goal striving and attainment have been linked to increases in affective well-being (Diener & Fujita, 1995; Sheldon, Kasser, Smith, & Share, 2002). We therefore expect that job crafting, as a goal-oriented behaviour, may lead to increased levels of affective well-being. Participants formulate crafting goals that will help them to build work-related well-being. They formulate specific and realistic goals to ensure goal achievement. The second mechanism that may build affective well-being is the reflection exercise (described above), where participants recalled positive events. Paying conscious attention to positive events has shown to be related to well-being outcomes such as positive affect (Quoidbach, Berry,

Hansenne, & Mikolajczak, 2010). This type of reflection may trigger a more central path of information processing, which may aid a better integration and understanding of the event, and a renewed sense gratitude and meaning. Reflection on positive events may trigger vivid recall of how one felt at the time, which may enhance the positive states involved (Strack, Schwarz, & Gschneidinger, 1985). Also, reflection on positive events may lead to a sense of perspective and self-insight, which may translate in a more positive self-image (Bryant, Smart, & King, 2005). Similar mechanisms have been described in studies that showed that reflection exercises can enhance well-being (Emmons & McCullough, 2003; Lyubomirsky, Sousa, & Dickerhoof, 2006). In line with these findings, we expect that the reflection exercise will lead to higher levels of affective well-being. Therefore, we hypothesize:

Hypothesis 3: Employees participating in the job crafting intervention will experience higher levels of (a) positive affect and lower levels of (b) negative affect at the follow-up than employees in the control group.

The process of job crafting over time

In addition to testing the effects of the intervention, we were interested in studying the process of how job crafting is related to resources and well-being in the short term. Nielsen & Randall (2013) suggest that it is essential to understand how and why interventions work by considering the way employees implement the intervention. To study within-person relationships between job crafting behaviours and outcomes, we collected data during the 4 weeks that participants were working on their crafting goals. We used the within-person approach whereby concepts that fluctuate over time are collected on multiple occasions via weekly or daily diaries (Ohly, Sonnentag, Niessen, & Zapf, 2010). Using this approach, one can answer research questions regarding the relationships of transient constructs. For example, Petrou *et al.* (2012) showed that on days when employees crafted more challenge demands, they also reported more work engagement. We focus on weekly fluctuations in crafting behaviour and associated fluctuations in outcome variables. This enables us to obtain an understanding of how the intervention may work. Our final hypothesis is grounded in the same theoretical perspectives (SCT and the JD-R model) used for Hypotheses 1–3. However, here we use week-level data to test relationships. As employees were instructed to work on their crafting goals over four consecutive weeks, we expect that during weeks in which they managed to act on their crafting goals, they will also perceive more job resources and challenges and less demands. Therefore, we expect that weekly job crafting is positively related to weekly job resources. In addition, because of the mastery experiences linked to crafting goal achievement, we also expect that weekly job crafting behaviour will be positively related to weekly self-efficacy (Bandura, 1977). Further, Tims, Bakker, and Derks (2014) showed that job crafting was positively related to work enjoyment. In addition, as described above, the process of goal striving and attainment has been linked to well-being (Sheldon & Elliot, 1999; Sheldon *et al.*, 2002). Hence, we expect that when participants work on their crafting goals, they will report more affective well-being. Thus, our fourth and final hypothesis is:

Hypothesis 4: Weekly job crafting will be positively related to weekly levels of (a) opportunities for development (b) LMX, (c) self-efficacy, and (d) positive affect and negatively related to (e) negative affect.

Method

Participants and procedure

The quasi-experimental design of this study consisted of pre- and post-measurements among 86 employees of a Dutch police district. Participants completed a survey prior to the intervention (T1, pre-measure) and 1–2 weeks after the intervention (T2, post-measure). All participants received an online feedback report after completing the pre- and post-questionnaire. In between pre- and post-measures, participants completed weekly diaries during the 4 weeks of job crafting. Of the 52 people who participated in the intervention at T1, 39 continued and participated at T2. This group (n = 39) forms our experimental group. A control group of 47 employees was created by requesting participants to ask a colleague with a similar job to fill in the same questionnaires.

Participants in the intervention group were predominantly male 66.7% (n = 26), on average, 44.6 years old (SD = 9.54), were working 35.5 hr per week (SD = 3.6), and had been with the organization for 20.1 years (SD = 12.26). The control group was comparable, with 61.7% males (n = 29), a mean age of 43.4 (SD = 10.42), and a mean tenure of 18.8 years (SD = 12.41). An ANOVA revealed that those participants who returned the post-questionnaire did not differ on any study variable from participants who did not respond to the post-questionnaire. There were no significant differences between the intervention and control group measures on the aforementioned demographics, nor on the initial mean values of the study variables.

Intervention design

Participation in the intervention was voluntary. Prior to the intervention, we conducted interviews with management and potential participants to design the intervention in such a way that it met the organization's and individuals' needs. The intervention was conducted in groups of up to 20 participants to facilitate active participation. The intervention consisted of one training day, 4 weeks of working independently on job crafting goals at work, and a half-day reflection session.[1]

The training day included background theory on the JD-R model (Bakker & Demerouti, 2007) and job crafting (Wrzesniewski & Dutton, 2001). Participants mapped their tasks, demands, and resources on a poster. Reflection on the poster helped them to identify situations at work they would like to craft. Personal crafting stories were shared and analysed in the group. Following this, a plan with specific job crafting goals, such as how to seek resources, how to reduce demands, and how to seek challenges, was drawn up by each participant. An example of seeking resources was as follows: 'Next Tuesday at 09.30 AM I will ask feedback from my colleague regarding my work for the traffic plan'. An example for seeking challenge demands: 'This week I will start approaching third-party contacts to try and better manage these, and to build my negotiation skills'. An example for decreasing demands was as follows: 'Next week, I will take on less written work tasks, and I will make use of my travel time to type up reports'. At the end of each week, participants planned time to reflect on achievements of the past week, making commitments such as 'Next Friday, on my way home, I will reflect on what went well this week'). This personal crafting plan continued for 4 weeks. Afterwards, experiences were shared during a reflection session.

[1] *A more detailed description of the intervention can be requested from the authors.*

Measures

Job crafting was measured using the job crafting scale by Petrou *et al.* (2012) which is based on Tims, Bakker, and Derks (2012). It has 13 items in three subscales: Seeking challenge demands (3 items; e.g., 'I ask for more tasks if I finish my work'), seeking job resources (5 items; e.g., 'I ask others for feedback'), and reducing demands (5 items; e.g., 'I try to ensure that my work is emotionally less intense'). The scale ranged from 1 (never) to 5 (always). Cronbach's alphas for pre-/post-measures were, respectively, .75/.78 for seeking resources, .76/.78 for seeking challenge demands, and .82/.79 for decreasing demands.

Opportunities for development were assessed with three items from the scale constructed by Bakker, Demerouti, Taris, Schaufeli, & Schreurs (2003). An example item is 'My work offers me the possibility to learn new things'. The response scale ranged from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alphas for the pre-/post-measures were .93/.90, respectively.

LMX was assessed utilizing a 5-item Dutch adaptation (Le Blanc, 1994) of Graen and Uhl-Bien's (1991) scale. One such item is 'My supervisor uses his/her influence to help me solve my problems at work'. Responses were made using a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alphas for the pre-/post-measures were .94/.93, respectively.

Job-related affective well-being consists of positive and negative affect, which were measured with the 12-item short version of the Job Affective Well-being Scale (JAWS; Van Katwyk *et al.*, 2000; Schaufeli & Van Rhenen, 2006). Participants were asked to indicate how often they had experienced certain emotions in their jobs in the past month. Sample items from the 6-item positive affect scale are 'enthusiastic' and 'at ease'. Cronbach's alphas for the pre-/post-measures were .93/.90. The 6-item negative affect scale contained items such as 'gloomy' and 'discouraged'. The scale ranges from 1 (never) to 5 (always). Cronbach's alphas for the negative affect scale pre-/post-measure were .88/.83.

Self-efficacy was assessed with four items of the generalized self-efficacy scale (Schwarzer & Jerusalem, 1995). We adapted the items to reflect work-related self-efficacy, for example, 'When I am confronted with a problem *at work*, I can usually find several solutions' and 'I can always manage to solve difficult problems *at work* if I try hard enough'. Items were scored on a scale ranging from 1 (not at all true) to 4 (absolutely right). Cronbach's alphas for the pre-/post-measures of self-efficacy were .89/.86.

Each construct of the weekly questionnaire was operationalized by two items, except for the constructs of job crafting and positive and negative affect, which were operationalized with 13 and 12 items, respectively (6 items for positive affect, 6 items for negative affect). The items were formulated such that they referred to the previous week, such as, 'In the past week. . .work offered me the possibility to learn new things'. Participants could reply on a 7-point scale ranging from 1 (not at all) to 7 (very much so). Full scales were correlated with the condensed scales in the pre–post data file, and we found a correlation of .97** (pre) and .95** (post) between the full scale for opportunities for development and the shortened scale. A correlation of .96** (pre) and .94** (post) was found between the full scale for LMX and the shortened LMX scale. For self-efficacy, the correlations were .92** (pre) and .96** (post). The high correlations are an indication that the abbreviated scales were able to adequately capture the constructs measured.

Strategy of analysis

Data were analysed with SPSS General Linear Modelling (GLM) repeated measures to test the hypothesized intervention effects over time (cf. Hypothesis 1 and 2). We conducted a two-way repeated measures analyses of variance (RM ANOVAs) using time (pre-[T1] and post-[T2] measurement) by group (intervention vs. control). Time was the within-subject factor, and group was the between-subject factor. Subsequently, we conducted paired sample *t*-tests to examine the differences within groups. To test the fourth hypothesis regarding the within-person hypotheses, we used the data from the weekly questionnaires. Multilevel analyses were conducted using the MLwiN 2.25 programme (Rasbash, Steele, Browne, & Goldstein, 2012). These analyses were required because the weekly data have a nested structure wherein the weekly measures (level 1 variables) are nested within individuals (level 2 variables). Multilevel analysis takes the dependencies and hierarchical structure of the data into account (Kenny, Kashy, & Bolger, 19981998). All week-level predictors were centred around the person mean because we were interested in within-person differences (Snijders & Bosker, 1999). We calculated ICCs which showed that 58–77% of variance could be attributed to within-person differences over the weeks.

Results

Table 1 shows intercorrelations between all study variables at pre- and post-measures. Table 2 shows the mean scores pre- and post-intervention as well as the results of the RM ANOVAs. For a manipulation check, RM ANOVAs revealed that participants in the intervention group did not report higher levels of seeking resources; $F(1, 84) = 0.407$, $p = .53$, seeking challenge demands; $F(1, 84) = 0.058$, $p = .81$, or reducing demands; $F(1, 84) = 0.345$, $p = .56$, following the intervention than participants in the control group (Table 2). RM ANOVAs also indicated that the intervention group did not report higher levels of opportunities for development, LMX (cf. Hypothesis 1), or self-efficacy, positive affect, and negative affect (cf. Hypothesis 2 and 3). Power analyses were conducted using the G*Power program, which computes statistical power as a function of significance level α, sample size, and population effect size (Faul, Erdfelder, Buchner, & Lang, 2009).

Table 1. Intercorrelations between study variables for pre- and post-measure ($n = 86$)

	1	2	3	4	5	6	7	8
1. Seeking resources		.42**	.01	.48**	.39**	.48**	−.32**	.58**
2. Seeking challenge demands	.54**		.10	.06	.05	.22*	−.18	.35**
3. Decreasing demands	.20	.10		.12	.16	−.05	.12	.01
4. Opportunities for development	.47**	.12	.10		.43**	.38**	−.52**	.66**
5. Leader–member exchange	.40**	.14	.08	.55**		.45**	−.44**	.58**
6. Self-efficacy	.60**	.50**	.04	.44**	.44**		−.49**	.54**
7. Negative affect	−.03	.10	.34**	−.28**	−.23*	.03		−.71**
8. Positive affect	.70**	.32**	−.03	.68**	.57**	.56**	−.43**	

Note. Correlations within the post-measure are shown above the diagonal.
*$p < .05$; **$p < .01$.

Table 2. Mean scores, *SD*, *t*-tests, and repeated measures ANOVAs for the study variables

Variable	Experimental group		*t*-Test			Control group		*t*-Test		Repeated measures ANOVA Time × Group	
	M	*SD*	*t*	p^a	Cohen's *D*	*M*	*SD*	*t*	p^b	*F*	p^c
JC: Seeking resources pre	3.43	0.52				3.49	0.48				
JC: Seeking resources post	3.33	0.54	1.77	.074	−.18	3.48	0.58	0.07	.94	0.407	.53
JC: Seeking challenge demands pre	3.16	0.79				3.21	0.82				
JC: Seeking challenge demands post	2.99	0.75	1.43	.162	−.22	3.08	0.86	0.98	.33	0.058	.81
JC: Decreasing demands pre	2.41	0.74				2.29	0.73				
JC: Decreasing demands post	2.41	0.67	0.00	1.00	0	2.38	0.70	−0.84	.41	0.345	.60
Opportunities for development pre	3.29	0.77				3.38	1.07				
Opportunities for development post	3.53	0.63	−2.77	.009	.28	3.48	0.98	−0.69	.49	0.783	.38
Leader–member exchange pre	2.65	0.86				2.94	1.02				
Leader–member exchange post	2.92	0.90	−2.26	.003	.31	3.00	0.96	−0.54	.59	1.90	.17
Self-efficacy pre	3.43	0.46				3.40	0.69				
Self-efficacy post	3.56	0.39	−2.40	.021	.30	3.46	0.51	−0.58	.57	0.330	.57
Positive affect pre	3.53	0.60				3.64	0.86				
Positive affect post	3.68	0.51	−1.91	.067	.28	3.69	0.73	−0.47	.64	0.479	.49
Negative affect pre	2.31	0.64				2.15	0.77				
Negative affect post	2.06	0.60	3.05	.004	−.39	2.10	0.71	0.45	.65	2.20	.14

Note. JC = Job Crafting; [a]df = 38; [b]df = 48; [c]df = 1, 84.

We found an average power for these effects $(1 - \beta) = .428$, given $\alpha = .05$. Due to the low power and the improvement in several measures after the intervention for the experimental group, we conducted paired *t*-tests for the intervention and the control group separately. Results showed that the intervention group reported less negative affect, higher self-efficacy, higher developmental opportunities, and LMX in the post-measure compared with the pre-measure (Table 2). Note that the pre- and post-measures for the control group did not differ significantly, indicating that no change took place for this group during the period of the intervention. Taken together, the results of the RM ANOVA provided no support for our hypotheses 1 and 2. However, the results of the *t*-tests provided support for hypotheses 1a and 1b, as well as for 2 and 3b.

Hypothesis 4 tested the relationships of weekly job crafting behaviours with the weekly outcomes of job resources, self-efficacy, and positive and negative affect. The relationships were tested for each variable separately with the weekly data of the

Table 3. Multilevel estimates of weekly data for dependent measures, $n = 24$ participants and $n = 73$–75 data points

	Opportunities for development		Leader–member exchange	
(a)	Estimate	*SE*	Estimate	*SE*
Constant	4.158***	0.259	4.451***	0.268
Seeking resources	0.756***	0.152	0.608***	0.169
Seeking challenge demands	0.187	0.131	0.134	0.142
Decreasing demands	0.185	0.130	0.188	0.141
−2*log (lh)		212.260		216.777
Diff-2*log		39.969***		34.101***
df		3		3
Between-person (Level 2) variance	1.305	0.444	1.375	0.476
Within-person (Level 1) variance	0.517	0.100	0.605	0.120

	Self-efficacy		Positive affect		Negative affect	
(b)	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*
Constant	5.246***	0.248	4.705***	0.201	2.483***	0.222
Seeking resources	0.200	0.129	0.330***	0.097	−0.047	0.120
Seeking challenge demands	0.017	0.111	−0.004	0.083	0.011	0.104
Decreasing demands	−0.004	0.111	0.318***	0.083	−0.074	0.103
−2*log (lh)		193.092		150.847		177.854
Diff-2*log		15.343**		38.735***		14.588**
df		3		3		3
Between-person (Level 2) variance	1.231	0.408	0.817	0.267	0.972	0.326
Within-person (Level 1) variance	0.373	0.072	0.207	0.041	0.321	0.063

Note. *$p < .05$; **$p < .01$; ***$p < .001$.

experimental group. The procedure was as follows: Starting from an empty model, we entered the three job crafting dimensions, which were seeking resources, seeking challenge demands, and decreasing demands. Table 3 depicts the results of the final models. As can be seen in Table 3, weekly levels of seeking resources were positively related to weekly levels of developmental opportunities and LMX. Moreover, weekly levels of seeking resources and of reducing demands are also positively related to weekly positive affect. Thus, we found support for hypotheses 4a, 4b, and 4d. We found no effects of weekly job crafting on weekly self-efficacy and on weekly negative affect (Hypotheses 4c and 4e).

Discussion

The purpose of this intervention study was to develop and examine the effects of an intervention aimed at implementing and encouraging job crafting behaviour at work. Job crafting can result in an increase in positive outcomes such as work engagement and performance (Petrou *et al.*, 2012; Tims, Bakker, Derks, & van Rhenen, 20132013). The intervention consisted of a 1-day training session on the theory and practice of job crafting, a 4-week period of applying job crafting and a half-day reflection session. Employees were trained to make small adjustments to their work situation and formulated job crafting goals in a personal plan. Results show some indications that the intervention may be fruitful for facilitating employee well-being and individual job redesign. However, not all results were as expected, as will be discussed below.

Overall, we found some support that after the intervention, participants reported higher levels of opportunities for development and LMX than before. Also, participants showed an increase in self-efficacy and a reduction in negative affect after the intervention. There was a positive trend regarding increased positive affect. However, it should be noted that these findings are preliminary, as changes were not detected using RM ANOVA, which considers both the intervention and the control group simultaneously, but instead with *t*-tests of the intervention group data. Also, participants in the intervention group did not report higher scores on the job crafting items after the intervention compared with prior to the intervention. Therefore, results are preliminary and should be interpreted with caution. In this sense, the study can be regarded as a pilot study and more research is needed to confirm the effectiveness of the Job Crafting intervention. There were, however, no changes in the control group when we compared pre- and post-measures, while the intervention group did show significant change on some of our outcomes. Also, multilevel analyses indicated that during weeks when participants worked on crafting resources, they also reported more job resources. In addition, during weeks in which participants sought out more resources and reduced their demands, they reported more positive affect. No effects were found of weekly job crafting behaviours on weekly self-efficacy and weekly negative affect.

The intervention had no effect on reported job crafting behaviours. One reason for this may be that participants crafted very specific aspects of their work environment that are not reflected in the job crafting scale. For example, two participants had applied for a new job within the organization. As researchers, we would classify that behaviour as seeking challenge demands. However, on the item level, the specific behaviour might not be captured (e.g., 'I ask for more tasks/responsibilities'). This may also explain why we did not find any effects of seeking challenge demands. It may point to the difficulties of measuring behaviour that is defined at a general level, such as seeking resources (e.g., 'I

ask for advice'), but that can be expressed in much more specific ways ('I used an online platform to look for tips to be more assertive at work'). Participants may not always be aware that their behaviour can be linked to the items. Therefore, there may be a need to review and expand existing ways of measuring job crafting. One suggestion to improve the intervention as well as for future studies may be to include scales for general proactive behaviour alongside a more specific scale to assess job crafting.

Another explanation may be that the effects of the training need more time to emerge. It may be that the intervention works by first increasing self-efficacy, well-being, and job resources and that effects on job crafting behaviour will only be detected later in time. Such 'sleeper effects' or 'delayed treatment effects' indicate that an intervention may have a longer-term effect, while not showing an immediate effect (Seitz, 1981). Further, we think that the fact that we were unable to detect effects with RM ANOVA may be explained by the small sample size. Future intervention studies need to include larger groups in order to find statistically significant effects, as more power is needed to detect effects of interventions (Kristensen, 2005).

Other suggestions to improve the content of the intervention would be to divide the intervention into modules over a number of weeks, separating the type of job crafting activities as well as cognitive crafting or reflection activities to boost personal resources. In this manner, it would be possible to study the effects of each type of activity separately. Also, participants would then have more learning experiences in a group, which may strengthen the effects of the intervention.

Effects on job resources

Our findings indicate that the job crafting intervention inspired participants to explore their options for learning and to take steps to work on their own development. In addition, participants may have experienced the intervention itself as an investment in their development. An example of this, mentioned above, is the decision of two participants to apply for a new position. Given the importance of employability for organizations and employees alike (cf. Fugate *et al.*, 2004; Van Dam, 2004; Van der Heijde & Van der Heijden, 2006) and the need to encourage employees to take control of their own career development, this is a promising finding. We also found positive relationships of increasing resources weekly with developmental opportunities, indicating that even small actions may have an immediate effect on resources. A second job resource that was positively affected by the intervention was LMX. This is an interesting finding considering the fact that employees participated in the training in the absence of supervisors, so there was no change in the supervisors' behaviour. As intended, the intervention may have motivated the participants to seek more support and feedback from the supervisor. In the reflection session, many participants mentioned renewed motivation to start a dialogue with management. In addition, even if the crafting behaviour of participants was not aimed at a dialogue with the supervisor, the fact that employees showed more proactivity during the crafting weeks may have given the supervisor a positive impression of the particular employee. We also found this positive effect in the weekly measures, such that during weeks in which employees were 'seeking resources', they reported an increase in LMX. This may be an indication that small changes can have positive effects on important outcomes like the supervisor–employee relationship.

In the weekly measures, however, we did not find effects of seeking challenge demands. This was surprising, as previous studies found positive effects of this type of crafting on work engagement (Petrou *et al.*, 2012). Perhaps it takes more time before a

small step towards taking on challenging tasks translates into positive outcomes. Intuitively, seeking challenges may at first result in more demands, which may only later result in positive outcomes. Therefore, future studies could use growth models or lagged designs to study effects of job crafting behaviour over time, as well as including the presence of challenge demands.

Effects on self-efficacy and affective well-being

Participants in the job crafting intervention reported higher levels of self-efficacy after the intervention, while the control group remained stable. As part of the intervention, participants were asked to reflect on mastery experiences, and we expected this to lead to increased self-efficacy (Bandura, 1997; Luthans, Avey, & Patera, 2008). In addition, working on a personal crafting plan consisting of realistic goals may have created mastery experiences, which can boost self-efficacy (Bandura, 1989). Employees felt more efficacious and in control of their work environment after the intervention. Our findings resemble studies that found that online interventions using SCT-based elements, such as role modelling and goal setting to create mastery experiences, can boost self-efficacy (Luthans *et al.*, 2008; Ouweneel, Le Blanc, & Schaufeli, 2013). However, the weekly relationships between job crafting behaviours and self-efficacy were not significant. It seems that self-efficacy is not an immediate correlate of job crafting; however, after 4 weeks more self-efficacy was reported. Self-efficacy may be affected by the intervention via the reflection exercise and pursuing/attaining of self-set goals, but not by the crafting behaviours themselves. Perhaps the results of job crafting behaviour accumulate over the 4-week period and effects on self-efficacy are only noted after completion of the intervention, including the reflection session which further facilitated the reflection process. Unfortunately, we could not test these growth effects due to low power, but such mediated effects over time may be interesting for future work. Self-efficacy is a trainable personal resource that forms the basis of many positive employee outcomes, including motivation, performance, and adaptivity (Bandura, 1997; Luthans & Youssef, 2007; Stajkovic & Luthans, 1998). Although our findings are preliminary, our study may contribute to knowledge of the enhancement of self-efficacy using employee training in job crafting. This bottom-up approach may be an important addition to studies that focus on top-down approaches in which leaders or organizations are the focus of interventions (Briner & Reynolds, 1999; Meyers, Van Woerkom, & Bakker, 2013).

With regard to affective well-being outcomes, we found that participants reported a reduction in negative affect after the intervention. The effect on positive affect was not significant; however, a positive trend was noted. In contrast, in the weekly data, a positive relationship between weekly job crafting behaviours and outcomes was found. That is, during weeks in which participants sought more resources and reduced demands, they reported more positive affect, while no effects were found of weekly job crafting (seeking resources, seeking challenge demands and decreasing demands) on negative affect. One possible explanation for this is perhaps the positive affect that accompanies job crafting is short-lived, while the reduction in negative affect takes longer to build but remains more noticeable after the intervention ends. Overall, our findings suggest that the job crafting intervention may have some potential to positively impact well-being. These results resemble previous findings regarding the positive relationship between proactive behaviour and well-being (Greenglass & Fiksenbaum, 2009; Schwarzer & Knoll, 2003). Job crafting can be described as the intentional behaviours and cognitive activities that employees use to shape their work (Demerouti & Bakker, 2014; Wrzesniewski & Dutton,

2001). Our study shows some support that these activities may increase well-being. The relationship between job crafting and affective well-being may be explained in three ways. First, taking charge of one's work environment may satisfy the need for autonomy and self-determination (Ryan & Deci, 2000). Secondly, pursuing self-set goals can increase well-being (Sheldon & Elliot, 1999); thirdly, the outcomes of job crafting actions may be rewarding in itself, such as receiving support or learning something new. In addition, positive affect may enhance proactive motivation (Parker, Bindl, & Strauss, 2010), which could indicate an upward spiral effect where proactive behaviour and positive affect develop together over time.

Linking our findings on well-being to the findings on self-efficacy and job resources does raise the question of how these are related over time. Or, what is the process by which the intervention may lead to effects? Studies have shown that personal resources (e.g., self-efficacy) can be triggered by positive affect, job resources, and vice versa (cf. Fredrickson, Cohn, Coffey, Pek, & Finkel, 2008; Ouweneel, Le Blanc, & Schaufeli, 2012; Van den Heuvel, Demerouti, Bakker, & Schaufeli, 2013). This would suggest that the intervention may have triggered a process in which positive events resulting from job crafting may build positive affect via a sense of goal achievement, which in turn builds self-efficacy, thus empowering employees to further craft job resources. This process would need to be tested in future studies using longitudinal research designs such as latent growth modelling.

Limitations and future research

A number of limitations must be mentioned. First, our sample size was modest and the study had insufficient statistical power due to the small sample size; the average power for these between-group effects were as follows: Power $(1 - \beta) = .428$, given $\alpha = .05$ (Faul *et al.*, 2009). This limited statistical power may have restricted the significance of the analyses. A power analysis using G*Power revealed that to obtain a mean between-group comparison effect size of $d = 0.5$, an n of approximately 64 per group would be needed, and an n of 85 needed for matched pairs comparison (pre–post) to obtain statistical power at the recommended .80 level (Cohen, 1988).

Further, our sample consisted of only one vocational group, which limits the generalizability of results. The intervention should therefore be repeated in other occupational contexts. Also, the intervention consisted of different components, including job crafting exercises to seek resources and demands, reduce demands and a reflection exercise to focus on mastery experiences, increase awareness of job crafting behaviour, and boost self-efficacy. The effects of the different components are difficult to study separately as our design was created to measure effects of the intervention as a whole. We considered the combination of reflection exercises and job crafting actions necessary as the success of one may depend on the success of the other. That is, action has a higher probability of being successful when preceded by reflection, while reflection may only be useful for goal attainment when it translates into action. However, reflection exercises may have different effects than action-oriented exercises. Future studies on job crafting could aim to study these different components separately possibly using experimental designs.

In line with SCT, we believe the group process was an important element for learning (Bandura, 1989). We would recommend including a group session as part of any job crafting intervention. However, it is not clear what the optimal number of group sessions may be to sufficiently prepare participants to begin crafting. Perhaps the 1-day training

before practising job crafting was too brief to impact job crafting behaviours. In addition, staying in closer contact via e-mail or social media while participants are practicing their crafting goals may help to make the intervention more effective, especially because habitual behaviours at work may hinder the execution of the crafting plan. Future studies could make an effort to compare job crafting interventions in terms of methods and intensity, such as number of training days, and use online learning programmes as a comparison group. It might be that blended learning, a combination of group work and online learning, works best (cf. Derouin, Fritzsche, & Salas, 2005).

In addition, we chose two job resources that were of practical and theoretical interest, although there may be many other job resources as well as demands that may be impacted by the job crafting intervention. Future studies should aim to include a broader array of work characteristics. Also, it is possible that only participants who wished to change participated in the study and the intervention. However, the experimental group did not differ from the control group on the pre-intervention scores. Furthermore, we used only self-report measures, which can result in common method biases (Podsakoff, MacKenzie, & Podsakoff, 2012). Future studies should integrate objective indicators of crafting behaviours, such as observations by supervisors/colleagues. Finally, the effectiveness of the intervention was measured approximately 1–2 weeks after the intervention was completed. We cannot be sure whether the effects we found are enduring or short-lived and whether participants will continue to craft their job. These are important issues to examine in future studies and to use when further developing the intervention.

Practical implications and conclusion

This study is the first to test a 'bottom-up' job crafting intervention within a police work setting and to show that participants can learn to build resources, self-efficacy, and affective well-being in their work. The intervention needs further testing and development, but seems to hold potential to create improvements in these areas. We live in an era where self-management in every part of life seems to become the norm. This is also true for organizations, where the need for proactive employees is ever growing (Hamel, 2011). Therefore, an intervention like the one described in this study may be a very important tool to help individuals to become better self-managers at work. The intervention content is not specific to any work environment and may therefore be implemented in diverse organizations, as well as with diverse groups of employees from different departments within the organization. Participants choose which job demands and job resources are relevant for them to craft. Our intervention can be tailored to meet the unique needs of different organizations, for example by focusing on specific resources, such as asking for feedback, or by including extra training days for more in-depth learning and practising. The intervention can be further developed to be used at the team-level (cf. McClelland, Leach, Clegg, & McGowan, 2014). As job crafting is self-directed behaviour, we recommend participation to be voluntary. Further, we recommend to implement the intervention in collaboration with the works council or other participatory groups, as it helps to build buy-in from employees and managers. Lastly, we feel that trying out job crafting is a key ingredient of the intervention; therefore, we recommend to encourage participants during their experimentation after the training day, either via e-mail or social media.

We hope that our intervention will provide a means for organizations to develop proactive and motivated employees, which in turn will contribute to organizational efficiency and competitive advantage.

References

Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, *22*, 309–328. doi:10.1108/02683940710733115

Bakker, A. B., Demerouti, E., & Sanz-Vergel, A. I. (2014). Burnout and work engagement: The JD-R approach. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*, 389–411. doi:10.1146/annurev-orgpsych-031413-091235

Bakker, A. B., Demerouti, E., Taris, T., Schaufeli, W. B., & Schreurs, P. (2003). A multi-group analysis of the job demands – Resources model in four home care organizations. *International Journal of Stress Management*, *10*, 16–38. doi:10.1037/1072-5245.10.1.16

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, *84*, 191–215. doi:10.1037/0033-295X.84.2.191

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, *44*, 1175–1184. doi:10.1037/0003-066X.44.9.1175

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, *50*, 248–287. doi:10.1016/0749-5978(91)90022-L

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*, 1–26. doi:10.1146/annurev.psych.52.1.1

Bandura, A., Adams, N. E., & Beyer, J. (1977). Cognitive processes mediating behavioral change. *Journal of Personality and Social Psychology*, *35*, 125–139. doi:10.1037/0022-3514.35.3.125

Berg, J. M., Dutton, J. E., & Wrzesniewski, A. (2008). *Job crafting exercise*. Ann Arbor, MI: Regents of the University of Michigan. Retrieved from http://www.jobcrafting.org

Bindl, U., & Parker, S. K. (2010). Proactive work behavior: Forward-thinking and change-oriented action in organizations. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 2, pp. 567–598). Washington, DC: American Psychological Association.

Briner, R. B., & Reynolds, S. (1999). The costs, benefits, and limitations of organizational level stress interventions. *Journal of Organizational Behavior*, *20*, 647–664. doi:10.1002/(SICI)1099-1379

Bryant, F. B., Smart, C. M., & King, S. P. (2005). Using the past to enhance the present: Boosting happiness through positive reminiscence. *Journal of Happiness Studies*, *6*, 227–260.

Cavanaugh, M. A., Boswell, W. R., Roehling, M. V., & Boudreau, J. W. (2000). An empirical examination of self-reported work stress among US managers. *Journal of Applied Psychology*, *85*, 65–74. doi:10.1037/0021-9010.85.1.65

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Cummings, T., & Worley, C. (2014). *Organization development and change*. Stamford, CT: Cengage Learning.

Demerouti, E., & Bakker, A. B. (2014). Job crafting. In M. Peeters, J. de Jonge & T. Taris (Eds.), *An introduction to contemporary work psychology* (pp. 414–433). Chichester, UK: Wiley-Blackwell.

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. doi:10.1037/0021-9010.86.3.499

Demerouti, E., van Eeuwijk, E., Snelder, M., & Wild, U. (2011). Assessing the effects of a personal effectiveness training on psychological capital, assertiveness and self- awareness using self-other agreement. *Career Development International*, *16*, 60–81. doi:10.1108/13620431111107810

Derouin, R. E., Fritzsche, B. A., & Salas, E. (2005). E-learning in organizations. *Journal of Management*, *31*, 920–940. doi:10.1177/0149206305279815

Diener, E., & Fujita, F. (1995). Resources, personal strivings, and subjective well-being: A nomothetic and idiographic approach. *Journal of Personality and Social Psychology*, *68*, 926–935. doi:10.1037/0022-3514.68.5.926

Dulebohn, J. H., Bommer, W. H., Liden, R. C., Brouer, R. L., & Ferris, G. R. (2012). A meta-analysis of antecedents and consequences of leader–member exchange integrating the past with an eye toward the future. *Journal of Management*, *38*, 1715–1759. doi:10.1177/0149206311415280

Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective wellbeing in daily life. *Journal of Personality and Social Psychology*, *84*, 377–389. doi:10.1037/0022-3514.84.2.377

Erdogan, B., & Bauer, T. N. (2014). Leader-member exchange (LMX) theory: The relational approach to leadership. In D. Day (Ed.), *The Oxford handbook of leadership and organizations* (pp. 407–433). New York, NY: Oxford University Press.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149–1160. doi:10.3758/BRM.41.4.1149

Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: Positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, *95*, 1045–1062. doi:10.1037/a0013262

Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: A psycho-social construct, its dimensions, and applications. *Journal of Vocational behavior*, *65*, 14–38. doi:10.1016/j.jvb.2003.10.005

Gist, M. E., & Mitchell, T. R. (1992). Self-efficacy: A theoretical analysis of its determinants and malleability. *Academy of Management Review*, *17*, 183–211. doi:10.5465/AMR.1992.4279530

Graen, G. B., & Uhl-Bien, M. (1991). The transformation of professionals into self-managing and partially self-designing contributions: Toward a theory of leader-making. *Journal of Management Systems*, *3*, 33–48.

Graen, G. B., & Uhl-Bien, M. (1995). Relationship-based approach to leadership: Development of leader-member exchange (LMX) theory of leadership over 25 years: Applying a multi-level multi-domain perspective. *The Leadership Quarterly*, *6*, 219–247. doi:10.1016/1048-9843(95)90036-5

Grant, A. M., & Parker, S. K. (2009). Redesigning work design theories: The rise of relational and proactive perspectives. *Academy of Management Annals*, *3*, 273–331. doi:10.1080/19416520903047327

Greenglass, E. R., & Fiksenbaum, L. (2009). Proactive coping, positive affect, and well-being: Testing for mediation using path analysis. *European Psychologist*, *14*, 29–39. doi:10.1027/1016-9040.14.1.29

Hamel, G. (2011). First, let's fire all the managers. *Harvard Business Review*, *89*, 48–60.

Kenny, D. A., Kashy, D. A., & Bolger, N. (1998). Data analysis in social psychology. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 233–265). New York, NY: Oxford University Press.

Kristensen, T. S. (2005). Intervention studies in occupational epidemiology. *Occupational and Environmental Medicine*, *62*, 205–210. doi:10.1136/oem.2004.016097

Lam, W., Huang, X., & Snape, E. (2007). Feedback-seeking behavior and leader–member exchange: Do supervisor-attributed motives matter? *Academy of Management Journal*, *50*, 348–363. doi:10.5465/AMJ.2007.24634440

Le Blanc, P. (1994). *De steun van de leiding: Een onderzoek naar het leader-member exchange model in de verpleging [Supervisory support: A study on the leader-member exchange model among nurses]*. Amsterdam, the Netherlands: Thesis.

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. doi:10.5465/AMJ.2009.47084651

Luthans, F., Avey, J. B., Avolio, B. J., & Peterson, S. J. (2010). The development and resulting performance impact of positive psychological capital. *Human Resource Development Quarterly*, *21*, 41–67. doi:10.1002/hrdq.20034

Luthans, F., Avey, J. B., & Patera, J. L. (2008). Experimental analysis of a web-based intervention to develop positive psychological capital. *Academy of Management Learning & Education*, *7*, 209–221. doi:10.5465/AMLE.2008.32712618

Luthans, F., & Youssef, C. M. (2007). Emerging positive organizational behavior. *Journal of Management*, *33*, 321–349. doi:10.1177/0149206307300814

Lyubomirsky, S., Sousa, L., & Dickerhoof, R. (2006). The costs and benefits of writing, talking, and thinking about life's triumphs and defeats. *Journal of Personality and Social Psychology*, *90*, 692–708. doi:10.1037/0022-3514.90.4.692

Major, D. A., Turner, J. E., & Fletcher, T. D. (2006). Linking proactive personality and the Big Five to motivation to learn and development activity. *Journal of Applied Psychology*, *91*, 927–935. doi:10.1037/0021-9010.91.4.927

McClelland, G. P., Leach, D. J., Clegg, C. W., & McGowan, I. (2014). Collaborative crafting in call centre teams. *Journal of Occupational and Organizational Psychology*, *87*, 464–486. doi:10.1111/joop.12058

Meyers, M. C., Van Woerkom, M., & Bakker, A. B. (2013). The added value of the positive: A literature review of positive psychology interventions in organizations. *European Journal of Work and Organizational Psychology*, *22*, 618–632. doi:10.1080/1359432X.2012.694689

Nielsen, K., & Randall, R. (2013). Opening the black box: Presenting a model for evaluating organizational-level interventions. *European Journal of Work and Organizational Psychology*, *22*, 601–617. doi:10.1080/1359432X.2012.690556

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research. *Journal of Personnel Psychology*, *9*, 79–93. doi:10.1027/1866-5888/a000009

Ouweneel, E., Le Blanc, P. M., & Schaufeli, W. B. (2012). Don't leave your heart at home: Gain cycles of positive emotions, resources, and engagement at work. *Career Development International*, *17*, 537–556. doi:10.1108/13620431211280123

Ouweneel, E., Le Blanc, P. M., & Schaufeli, W. B. (2013). Do-it-yourself: An online positive psychology intervention to promote positive emotions, self-efficacy, and engagement at work. *Career Development International*, *18*, 173–195. doi:10.1108/CDI-10-2012-0102

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management*, *36*, 826–856. doi:10.1177/0149206310363732

Petrou, P., Demerouti, E., Peeters, M. C., Schaufeli, W. B., & Hetland, J. (2012). Crafting a job on a daily basis: Contextual correlates and the link to work engagement. *Journal of Organizational Behavior*, *33*, 1120–1141. doi:10.1002/job.1783

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology*, *63*, 539–569. doi:10.1146/annurev-psych-120710-100452

Quoidbach, J., Berry, E. V., Hansenne, M., & Mikolajczak, M. (2010). Positive emotion regulation and well-being: Comparing the impact of eight savoring and dampening strategies. *Personality and Individual Differences*, *49*, 368–373. doi:10.1016/j.paid.2010.03.048

Rasbash, J., Steele, F., Browne, W. J., & Goldstein, H. (2012). *A user's guide to MLwiN, v2.26*. Bristol, UK: Centre for Multilevel Modelling, University of Bristol.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, *55*, 68–78. doi:10.1037/0003-066X.55.1.68

Schaubroeck, J., & Merritt, D. E. (1997). Divergent effects of job control on coping with work stressors: The key role of self-efficacy. *Academy of Management Journal*, *40*, 738–754. doi:10.2307/257061

Schaufeli, W. B., & Van Rhenen, W. (2006). Over de rol van positieve en negatieve emoties bij het welbevinden van managers: Een studie met de Job-related Affective Well-being Scale (JAWS) [About the role of positive and negative emotions in managers' well-being: A study using the Job-related Affective Well-being Scale (JAWS)]. *Gedrag & Organisatie*, *19*, 223–244.

Schwarzer, R., & Jerusalem, M. (1995). Generalized self-efficacy scale. In J. Weinman, S. Wright & M. Johnston (Eds.), *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35–37). Windsor, UK: NFER-NELSON.

Schwarzer, R., & Knoll, N. (2003). Positive coping: Mastering demands and searching for meaning. In S. J. Lopez & C. R. Snyder (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 393–409). Washington, DC: American Psychological Association.

Seitz, V. (1981). Intervention and sleeper effects: A reply to Clarke and Clarke. *Developmental Review*, *1*, 344–360. doi:10.1016/0273-2297(81)90031-9

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need-satisfaction, and longitudinal wellbeing: The Self-Concordance Model. *Journal of Personality and Social Psychology*, *76*, 482–497. doi:10.1037/0022-3514.76.3.482

Sheldon, K. M., Kasser, T., Smith, K., & Share, T. (2002). Personal goals and psychological growth: Testing an intervention to enhance goal-attainment and personality integration. *Journal of Personality*, *70*, 5–31. doi:10.1111/1467-6494.00176

Snijders, T. A. B., & Bosker, R. (1999). *Multilevel analysis. An introduction to basic and advanced multilevel modeling*. Thousand Oaks, CA: Sage.

Stajkovic, A. D., & Luthans, F. (1998). Self-efficacy and work-related performance: A meta- analysis. *Psychological Bulletin*, *124*, 240–261. doi:10.1037/0033-2909.124.2.240

Strack, F., Schwarz, N., & Gschneidinger, E. (1985). Happiness and reminiscing: The role of time perspective, affect, and mode of thinking. *Journal of Personality and Social Psychology*, *49*, 1460–1469. doi:10.1037/0022-3514.49.6.1460

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *South African Journal of Industrial Psychology*, *36*, 1–9. 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. doi:10.1016/j.jvb.2011.05.009

Tims, M., Bakker, A. B., & Derks, D. (2013). The impact of job crafting on job demands, job resources, and well-being. *Journal of Occupational Health Psychology*, *18*, 230–240. doi:10.1037/a0032141

Tims, M., Bakker, A. B., & Derks, D. (2014). Daily job crafting and the self-efficacy – Performance relationship. *Journal of Managerial Psychology*, *29*, 490–507. doi:10.1108/JMP-05-2012-0148

Tims, M., Bakker, A. B., Derks, D., & van Rhenen, W. (2013). Job crafting at the team and individual level: Implications for work engagement and performance. *Group & Organization Management*, *38*, 427–454. doi:10.1177/1059601113492421

Uhl-Bien, M., Riggio, R. E., Lowe, K. B., & Carsten, M. K. (2014). Followership theory: A review and research agenda. *The Leadership Quarterly*, *25*, 83–104. doi:10.1016/j.leaqua.2013.11.007

Van Dam, K. (2004). Antecedents and consequences of employability orientation. *European Journal of Work and Organizational Psychology*, *13*, 29–51. doi:10.1080/1359432034 4000237

Van den Heuvel, M., Demerouti, E., & Bakker, A. B. (2014). How psychological resources facilitate adaptation to organizational change. *European Journal of Work and Organizational Psychology*, *23*, 847–858. doi:10.1080/1359432X.2013.817057

Van den Heuvel, M., Demerouti, E., Bakker, A. B., & Schaufeli, W. B. (2013). Adapting to change: The value of change information and meaning-making. *Journal of Vocational Behavior*, *83*, 11–21. doi:10.1016/j.jvb.2013.02.004

Van den Heuvel, M., Demerouti, E., Schaufeli, W. B., & Bakker, A. B. (2010). Personal resources and work engagement in the face of change. In J. Houdmont (Ed.), *Occupational health psychology,*

European perspectives on research, education and practice (Vol. 4, pp. 124–150). Nottingham, UK: Nottingham University Press.

Van der Heijde, C. M., & Van der Heijden, B. I. J. M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Human Resource Management*, *45*, 449–476. doi:10.1002/hrm.20119

Van Katwyk, P. T., Fox, S., Spector, P. E., & Kelloway, E. K. (2000). Using the Job-Related Affective Well-Being Scale (JAWS) to investigate affective responses to work stressors. *Journal of Occupational Health Psychology*, *5*, 219–230. doi:10.1037/1076-8998.5.2.219

Wittekind, A., Raeder, S., & Grote, G. (2010). A longitudinal study of determinants of perceived employability. *Journal of Organizational Behavior*, *31*, 566–586. doi:10.1002/job.646

Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, *26*, 179–201. doi:10.5465/AMR.2001.4378011

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management*, *14*, 121–141. doi:10.1037/1072-5245.14.2.121

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. doi:10.1348/096317908X285633

Received 19 June 2014; revised version received 27 May 2015