The value of job crafting for work engagement, task performance, and career satisfaction: longitudinal and quasi-experimental evidence

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The value of job crafting for work engagement, task performance, and career satisfaction: longitudinal and quasi-experimental evidence

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ABSTRACT
We examine how job crafting (i.e., seeking resources, seeking challenges, decreasing demands) increases the person-job fit of employees. In Study 1, we studied job crafting’s effects over time. 111 employees filled out a questionnaire at two time points with 6 months in between. We found that seeking resources behavior at Time 1 positively affected work engagement, task performance, and career satisfaction at Time 2. Decreasing demands at Time 1 negatively affected work engagement, task performance, and career satisfaction at Time 2. In Study 2, we tested a job crafting intervention using a quasi-experimental design (i.e., intervention group, N = 60, and a control group, N = 59). The intervention was successful, as participants in the intervention group increased seeking resources and decreasing demands behaviors. Furthermore, seeking resources behavior was the main driver of increased participants’ work engagement, task performance, and career satisfaction.

The workforce becomes more diverse, in terms of demographic characteristics (Ployhart, 2006), and in terms of career (Strauss, Griffin, & Parker, 2012) and motivational needs (Strauss et al., 2012; Tims & Bakker, 2010). Therefore, a top-down approach to meet the needs of all employees is no longer a feasible option for organizations (Demerouti, 2014) and it warrants examining how bottom-up or employee-initiated approaches affect work motivation, career development, and task performance. Job crafting is an employee-initiated approach which enables employees to shape their own work environment such that it fits their individual needs by adjusting the prevailing job demands and resources (Tims & Bakker, 2010). Job demands are work environment characteristics that require energy and effort (e.g., workload, insecurity), whereas job resources are characteristics that provide energy, motivate employees, and minimize the impact of demands (e.g., feedback, coworker support; Bakker & Demerouti, 2007). Having sufficient job demands and resources is necessary to flourish at work (e.g., Bakker, Van Veldhoven, & Xanthopoulou, 2010).

Given the value of a balance between these job characteristics for employee well-being and performance (Bakker & Demerouti, 2007), job crafting strategies can help employees create the work environment that is beneficial to them. There is some evidence that job crafting helps performance and well-being at work (e.g., Bakker, Tims, & Derks, 2012; Tims, Bakker, & Derks, 2013). A few studies suggest job crafting can increase well-being, job and personal resources, and adaptive performance (Gordon et al., 2018; Van Den Heuvel, Demerouti, & Peeters, 2015) but it is unclear whether job crafting can increase both career satisfaction and task performance. Career satisfaction represents an indicator of employees’ happiness with how they are managing their own career (Strauss et al., 2012) and it greatly determines whether employees want to stay within the organization (August & Waltman, 2004). Task performance is an indicator whether employees are retained and get promoted within the organization (Batt & Colvin, 2011). Therefore, Study 1 contributes to the job crafting literature not only by examining the longitudinal relationships between job crafting and motivational (work engagement), and performance outcomes (task performance) but also by examining whether job crafting can contribute to higher satisfaction with one’s own career over time.

In line with previous intervention studies (Gordon et al., 2018; Van Den Heuvel et al., 2015), we developed an intervention based on job crafting theory (Wrzesniewski & Dutton, 2001) and experiential learning theory (Kolb & Kolb, 2012). This job crafting intervention aims to increase the individual employees’ job crafting behavior such that they can create a fit between their motivational, career, and task needs on the one hand, and the job demands and job resources needed to fulfill these needs on the other hand. The second study aims to contribute to the job crafting literature by examining whether an increase in job crafting behavior explains how the intervention affects employees’ career satisfaction, task performance, as well as their work engagement. This would provide some evidence on the causal effects of job crafting, and would suggest employees can be trained to practice individual job (re)design (i.e. job crafting) which helps them becoming more engaged and better functioning in their job and to become more satisfied with their career.
Study 1

Job crafting is defined as making small changes within the boundaries, conditions, and relationships of one’s job (Wrzesniewski & Dutton, 2001) by seeking demands/challenges (e.g., acquiring new responsibilities), decreasing demands (e.g., combining tasks) or seeking resources (e.g., asking for feedback; Tims & Bakker, 2010). It is proactive behavior that employees use when they feel that changes in their job are necessary (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012). The idea of job crafting is that employees can increase their person-job fit by adapting the job characteristics, meaning supplies and demands, to their personal needs and ability respectively (Tims & Bakker, 2010). When these factors are in balance, the employee is likely to experience a good fit to the job, but there may also be a misfit when one (or both) of the aspects are not balanced. Job crafting is suggested to be a good way to accomplish fit, because the employee knows what causes the misfit and how to reduce it. The better the fit, the more employees are involved in the job (Blau, 1987) and the better they perform (Caldwell & O’Reilly, 1990).

Job crafting is supposed to bring positive outcomes as it can increase gains, and having a sense of ability to act (Wrzesniewski & Dutton, 2001), may help employees to achieve work goals (Parker, Bindl, & Strauss, 2010), to take control, to find meaning in work, to fulfill the need for connection (Wrzesniewski & Dutton, 2001), and to improve the person-job fit (Tims & Bakker, 2010). Assuming that individuals are successful in their job crafting attempts, seeking resources should enlarge the pool of resources (which per definition stimulate motivation and goal achievement), seeking challenges should result in a challenging job (which motivate individuals to focus on their tasks) and reducing demands to a job with less hindering aspects (and lower stress). Empirical evidence generally demonstrates that crafting directed towards expanding the scope of the job (i.e. expansion-/promotion-/approach-focused or seeking resources and challenges) is beneficial (Bruning & Campion, 2018; Demerouti, Bakker, & Halbesleben, 2015; Lichtenhaller & Fischbach, 2018; Rudolph, Katz, Lavigne, & Zacher, 2017; Weseler & Niessen, 2016). However, crafting aiming at reducing the scope of the job (reducing/decreasing demands or contraction-/prevention/avoidance crafting) is rather detrimental as it is considered as a reactive way to protect one’s health (Demerouti & Peeters, 2018), which may help to prevent employees’ exhaustion but does not act as a motivator (Lee & Lee, 2018). Rather it indicates withdrawal behavior (Lee & Lee, 2018) and an avoidance strategy (Bruning & Campion, 2018).

More specifically, job crafting in the form of seeking resources and challenges is found to be positively related, whereas reducing demands is negatively related to employees’ work engagement (Petrou, Demerouti, Schaufeli, 2018; Tims, Bakker, & Derks, 2015). Job crafting increases person-job fit such that demands and resources are more in line with preferences and needs (Oldham & Hackman, 2010). For example, seeking resources that are in line with one’s own needs can stimulate intrinsic as well as extrinsic motivation, because resources stimulate personal growth and are instrumental in achieving goals (Halbesleben, 2010). Crafted jobs may stretch employees’ skills (Oldham & Hackman, 2010), because new challenges foster mastery experiences which in turn stimulate well-being and willingness to spend effort at work (Gorgievski & Hobfoll, 2008). However, reducing demands indicates a kind of withdrawal behavior which is not favorable for motivation (Rudolph et al., 2017).

There is some evidence that job crafting in the form of seeking resources and challenges increases employees’ performance (Bakker et al., 2012; Leana, Appelbaum, & Shevchuk, 2009; Petrou, Demerouti, & Schaufeli, 2015). Job crafters may be better at fulfilling the formal job requirements (Goodman & Syvante, 1999), because they ask for feedback or help during the process of task fulfillment and take on challenging assignments. On the contrary, decreasing demands has been found to negatively predict both in-role performance (Gordon, Demerouti, Le Blanc, & Bipp, 2015; Petrou et al., 2015) and extra-role performance (Demerouti et al., 2015) because it reduces the scope of the job and indicates withdrawal behavior (Lee & Lee, 2018).

Research suggests that employees often compare their current career status with their ideal career status (Strauss et al., 2012). Assessing career needs based on individuals’ career goals, job crafting can help employees to achieve their ideal career status. For example, younger employees may value development opportunities more than older workers (Fried, Grant, Levi, Hadani, & Slowik, 2007). Job crafting seems relevant for employees’ career satisfaction, because engaging in job crafting is likely to enhance person-job fit (Oldham & Hackman, 2010) by satisfying career needs and consequently increasing career satisfaction. Reducing demands should be detrimental for one’s satisfaction with career because the individual is involved in withdrawal and avoidance of work aspects in order to increase fit.

Looking at the empirical, longitudinal evidence of the specific dimensions of job crafting, seeking resources behavior is consistently and positively related to work engagement and task performance over time (e.g. Petrou, Demerouti, & Schaufeli, 2018; Petrou et al., 2015), however, the (longitudinal) relationships between job crafting and career satisfaction are still unknown. There is also no conclusive evidence about the links between seeking challenges and work engagement and task performance over time (e.g. Tims et al., 2013, 2015) although diary studies (e.g. Petrou et al., 2012) and cross-sectional studies (e.g. Demerouti, Xanthopoulou, Petrou, & Karakounis, 2017) show that they are in general positively related, whereas longitudinal studies fail to provide support for their relationship (e.g. Petrou et al., 2018; Tims et al., 2013). On a daily basis, seeking challenges is found to be positively related to daily counterproductive work behavior (Demerouti et al., 2015). As evidence of longitudinal studies is rather limited and because results may be influenced by the specific occupational context, we do expect a positive relationship between seeking challenges and outcomes based on the theoretical arguments presented above.

Empirical results further show that reducing the scope of the job is either unrelated or negatively related to health, work engagement, and task performance (e.g. Bruning & Campion, 2018; Demerouti et al., 2015; Lichtenhaller & Fischbach, 2018; Rudolph et al., 2017; Tims et al., 2015; Weseler & Niessen, 2016) even in the long term (Petrou et al., 2018, 2015). Therefore, we hypothesize:

Hypothesis 1: Seeking challenges will have a positive effect on a) work engagement, b) task performance, and c) career satisfaction.
Hypothesis 2: Seeking resources will have a positive effect on a) work engagement, b) task performance, and c) career satisfaction.

Hypothesis 3: Decreasing demands will have a negative effect on a) work engagement, b) task performance, and c) career satisfaction.

Method study 1

Participants and procedure

Data were collected within a university specialized in science, technology, engineering, and mathematics. The study had a longitudinal set-up with two measurement points, one in the beginning (October) and one towards the end of the academic year (April). Taris and Kompier (2014) strongly advised researchers to specify the arguments for choosing measurement intervals in longitudinal studies. We decided on a 6-months time interval in our longitudinal study. Although there is to our knowledge no agreement regarding what the ideal time lag is for investigating the longitudinal effects of job crafting, we based our decision on the following arguments. First, many of the work processes of universities are organized around the academic calendar, which starts in September and usually ends late June. Our two measurement points allowed us to capture a significant portion of the academic year. Second, we chose October and April as measurement points because those periods are relatively less busy (e.g., no exam or vacation period, start or end of the academic year, etc.), increasing the chance of employees to participate to both. Third, this time lag offers an appropriate separation between our measures to reduce the risk of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Potential respondents received an email from the HR department with a participation request and the possibility to win a voucher for a weekend trip if they participated at both measurement points. In total 1029 employees received this email of which 306 employees (response rate 29.7%) filled out the first questionnaire and 360 employees (35.0%) the second. 111 employees filled out both questionnaires. Using Little’s MCAR test we examined whether the dropout pattern was random (MAC/ MCAR; \( \chi^2 = 4.60, df = 2, p = .10 \)). Those who dropped out at T2 were not significantly different from the other participants at T1 on the study variables (i.e., seeking challenges, seeking resources, decreasing demands, work engagement, task performance, and career satisfaction). On average employees were working 13.2 years (SD = 11.4) for the organization and worked approximately 36.0 hours a week (SD = 6.8). More men (59.8%) than women (40.2%) filled out the questionnaire, which is representative for the organization. Both academic (52.0%) as well as supportive staff (48%) participated in this study.

Measures

Demographic variables

At both measurement points, participants answered questions about their gender and position within the university (i.e., academic work or supportive work like human resource management, technical support, etc.).

Job crafting

Three items measured seeking challenges (\( \alpha_{T1} = .76; \alpha_{T2} = .78 \)), five items represented seeking resources (\( \alpha_{T1} = .52; \alpha_{T2} = .61 \)), and three items measured decreasing demands (\( \alpha_{T1} = .53; \alpha_{T2} = .65 \); Petrou et al., 2012). Responses were given on a five-point scale (1 = never, 5 = often). Example items are: “I ask for more responsibilities (seeking challenges)”, “I ask my supervisor for advice (seeking resources)”, and “I make sure that my work is mentally less intense” (decreasing demands).

Work engagement

We used two sub-scales (i.e., vigor, dedication) of the short Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). We used only these two dimensions because absorption is a consequence of work engagement whereas the other two are the core dimensions of work engagement (Salanova & Schaufeli, 2008). Responses were given on a 7-point scale (0 = never, 6 = always). Example items are: “At work, I felt bursting with energy” (vigor) and “I am proud of the work that I do” (dedication). The overall reliability of work engagement was \( \alpha = .92 \) at T1 and \( \alpha = .94 \) at T2.

Task performance

Three items measured task performance (\( \alpha_{T1} = .85; \alpha_{T2} = .88 \)), one example was; “You fulfill all the requirements of your job” (Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008). Items were scored on a 7-point scale (1 = not at all characteristic of me, 7 = totally characteristic of me).

Career satisfaction

We used three items (\( \alpha_{T1} = .86; \alpha_{T2} = .80 \)), one example was: “In general, I’m satisfied with my career” (Martins, Eddleston, & Veiga, 2002). Items were scored on a 7-point scale (1 = not at all characteristic of me, 7 = totally characteristic of me).

Analyses

Data were analyzed in AMOS (Arbuckle, 2014), using a latent change score (LCS) approach (also referred to as Latent Difference Score approach; cf., McArdle, 2009). The LCS approach represents a novel method for cross-lagged structural equations modeling of data with multiple measurement moments. LCS is superior to latent growth curve models (Meredith & Tisak, 1990) and cross-lagged regression models (Selig & Little, 2012), because it considers both dynamic differences between individuals and intra-individual changes within a two-wave time series (Ferrer & McArdle, 2003).

The model fit was assessed with different fit indices, namely the \( \chi^2 \) test, the Goodness-of-Fit Index (GFI), the Root Mean Square Error of Approximation (RMSEA) and its confidence interval (i.e., LO90 and HI90), the Comparative Fit Index (CFI), the Incremental Fit Index (IFI), and the Non-Normed Fit Index (NNFI). A well fitted model has a score of .95 of higher on the GFI, CFI, IFI, and NNFI and a 0.07 or lower score on the RMSEA.
of which the confidence interval should be narrow (Hair, Black, Babin, Anderson, & Tatham, 2006).

Results study 1

Descriptive statistics and coefficient alphas of the variables are provided in Table 1. The LCS model consisted of 12 manifest variables which represented the mean scores for the T1 and T2 job crafting dimensions, work engagement, task performance, and career satisfaction. We used the average scores instead of the items because of the rather small longitudinal N. Each observed variable was represented as the indicator of a latent factor for which we corrected for unreliability [using the form: (1 - alpha) x variance]. The latent factors representing the two measures of each construct were related with the latent change score factor in the way presented in Figure 1.

Table 1. Means, standard deviations, correlations, and coefficient alpha’s of all the variables in study 1.

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<td>2.59</td>
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<td>4.77</td>
<td>5.20</td>
<td>4.77</td>
<td>2.57</td>
<td>3.47</td>
<td>2.08</td>
<td>4.70</td>
<td>5.19</td>
<td>4.22</td>
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<tr>
<td>SD</td>
<td>0.50</td>
<td>0.82</td>
<td>0.49</td>
<td>0.68</td>
<td>1.15</td>
<td>1.03</td>
<td>1.15</td>
<td>0.80</td>
<td>0.53</td>
<td>0.70</td>
<td>1.05</td>
<td>0.99</td>
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<td>.04</td>
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<td>2</td>
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<td>-.10</td>
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<td>3</td>
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<td>.94</td>
<td>.80</td>
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</table>

Note: Function type was coded as: 1 = academic staff; 2 = supportive staff. Job crafting had a range of 1 to 5. Work engagement had a range from 0 to 6. Task performance and career satisfaction had a range of 1 to 7. *p ≤ .05, **p ≤ .01.

Figure 1. Visualization of constraints to capture the latent change score of the variable seeking resources. The numbers “1” represent the imposed constraints to specific parameters, whereas “c” indicates the parameters that are constrained for measurement error. The “Delta seeking resources” represents the latent change score of the variable seeking resources.
To let these latent variables represent only the “true” score corrected for measurement error (cf. McArdle, 2009), we constrained corresponding T1 and T2 measures to be identical by constraining the autoregression paths of the latent study variables to 1 and setting the variance of the latent study variable at T2 to zero. In addition, we modeled the latent change score factor to account for all the “residual variance” in the T2 measure (i.e., for the part of the score of T2 that is not identical to T1) by constraining the regression path from the latent change variable to the respective variable at T2 to the value 1. Finally, the synchronous relations between the latent factors at T1, and covariation of the error terms of each observed indicator at T1 with the corresponding error term at T2 were allowed (Finkel, 1995; Meier & Spector, 2013). This model formed our “Latent Change Score (LCS) Base Model”. Figure 1 visualizes the imposed constraints necessary to capture “true” change of a variable over time. This model had a rather unsatisfactory fit ($\chi^2 = 125.76$, $df = 42$, GFI = 0.85, RMSEA = 0.13, LO90 = 0.11, HI90 = 0.16, CFI = 0.84, IFI = 0.85).

Prior to testing our hypothesis, we examined whether the research staff differs from the supportive staff by including this variable in the correlation matrix and as a control variable in the path analysis. However, it was found to be correlated only to work engagement (with the supportive staff reporting higher scores than the research staff). Moreover, in the path analysis, function type did not have any effect on the outcome variables nor did it change the structural paths. Therefore and because of the relatively small N, we decided to exclude it from the path analysis. To test Hypotheses 1 to 3, we added cross-lagged paths from changes in seeking challenges, seeking resources, and decreasing demands to work engagement, task performance, and career satisfaction at T2 (see “LCS Hypothesized Model” see Figure 2). Moreover, we added the cross-lagged paths from changes in work engagement, task performance, and career satisfaction at T1 following the literature (Demerouti & Cropanzano, 2010; Laschinger, 2012). This model had a satisfactory fit ($\chi^2 = 76.67$, $df = 31$, GFI = 0.91, RMSEA = 0.11, LO90 = 0.08, HI90 = 0.14, CFI = 0.91, IFI = 0.92) and was significantly better than the base Model ($\Delta \chi^2 (11 df) = 49.09, p < .01$). Contrary to Hypothesis 1, changes in seeking challenges were unrelated to work engagement, task performance, and career satisfaction at T2. In support of Hypothesis 2, an increase in seeking resources from T1 to T2 was related to higher levels work engagement ($r = .37, p < .01$), task performance ($r = .49, p < .05$), and career satisfaction ($r = .57, p < .01$) at T2. In support of Hypothesis 3, an increase in decreasing demands from T1 to T2 was related to lower levels of work engagement ($r = -.20, p < .01$), task performance ($r = -.24, p < .05$), and career satisfaction ($r = -.39, p < .01$). Finally, we tested an alternative model in which we added the paths from changes in work engagement, task performance, and career satisfaction to T2 job crafting dimensions. This model had a better fit than the hypothesized model ($\chi^2 = 43.30$, $df = 22$, GFI = 0.94, RMSEA = 0.09, LO90 = 0.05, HI90 = 0.13, CFI = 0.96, IFI = 0.96) and was significantly better than the hypothesized model ($\Delta \chi^2 (9 df) = 33.37, p < .01$). However, none of the additional (reversed) paths was significant.

**Discussion study 1**

We aimed to examine whether job crafting is beneficial over time for employees. Overall, we found that work engagement, task performance, and career satisfaction benefitted from seeking resources, whereas decreasing demands was adversely related to these outcomes over time. Seeking resources seems to enhance the person-job fit (Oldham & Hackman, 2010), and is in line with studies illustrating this behavior increases actual resources and, therefore, motivation (Tims et al., 2013), engagement, and optimal functioning at work (Petrov et al., 2018). Accumulating resources helps to maximize the positive motivational state necessary to function optimally.

Decreasing demands, although theoretically useful to deal with high job demands (Bruning & Campion, 2018; Tims & Bakker, 2010), hampered employees in this study. Avoiding demanding situations seems an unsuccessful strategy; when job crafting takes the form of counterproductive behavior it will harm employees and organizations (Oldham & Hackman, 2010).

Seeking challenges did not have any longitudinal effects. The added value of seeking challenges was rather low when tested against the effect of seeking resources and decreasing demands. According to recent research, seeking challenges result in the accumulation of opportunities for growth that stimulates employees to maintain motivation and avoid boredom (Demerouti, Bakker, & Gevers, 2015). However, accumulating challenges alone (without taking care of resource accumulation) is less motivating particularly in a context where demands are already high (Kaulisch & Enders, 2005). Because job crafting seemed helpful for employee outcomes, in Study 2 we go one step further and examine whether job crafting is trainable and whether these changes actually have a positive impact on employees’ work engagement, task performance, and career satisfaction.

**Study 2**

The aim of Study 2 is twofold: 1) examining the trainability of job crafting and 2) examining the mechanism (i.e., job crafting) through which the intervention affects outcomes. Training employees to use job crafting in their daily work can offer organizations a tool that helps to support employees and increase their person-job fit. Such initiatives are important to create engaging work environments and ensure that current employees are all able to create the circumstances that allow them to thrive at work. Employee involvement in such interventions is key, as previous studies have shown that individual level crafting interventions appear to be more successful than collective, participatory job redesign interventions (Daniels, Gedikli, Watson, Semkina, & Vaughn, 2017).

Although recent intervention studies have examined the possibility of training job crafting behavior and the effect of job crafting training on various outcomes, none paid attention to the mechanism through which the intervention affects employee outcomes (Gordon et al., 2018; Kooij, van Woerkom, Wilkenloch, Dorenbosch, & Denissen, 2017; Van Den Heuvel et al., 2015). Nor did previous studies examine the impact of job crafting on outcomes that go beyond one’s job namely the evaluation of one’s own career. Our study tries to fill this gap by examining whether an intervention increases job crafting behavior (i.e., manipulation check) and consequently work engagement, task performance, and career satisfaction. In addition, we examine whether an
increase in job crafting behavior is the mechanism through which such an intervention affects employee outcomes.

Our job crafting intervention was designed in line with job crafting theory and experiential learning theory. In the training we emphasized that employees should focus on making positive changes for themselves without these changes having a negative impact on the organization or their coworkers. For example, the focus of decreasing demands was not on reducing or avoiding tasks that the employee did not like, but rather on reducing distractions and other hindering demands (for examples see Table 2). The intervention highlights participants’ past experiences with job crafting as these experiences play an important role in the learning process and facilitate behavior change (Kolb, Boyatzis, & Mainemelis, 2000). Our intervention incorporated the four stages that are important in the learning process to encourage employees to actively apply all three job crafting dimensions and to stimulate behavioral change (for an overview see Table 3). Learning starts with concrete experiences with the behavior, which are followed by reflecting upon this behavior (Sumsion & Fleet, 1996). After reflection, individuals have reached the third stage of learning and have abstract ideas about the new behavior and that implementation can be beneficial (Kolb et al., 2000). During this stage underscoring the value of the behavior to increase individuals’ willingness to invest energy and time in implementing it, is important (Nielsen, Randall, Brenner, & Albertsen, 2009). During the last stage, individuals actively test the behavior to create new experiences (Kolb et al., 2000). To stimulate the implementation process, goal-setting is extremely important (Arneson & Ekberg, 2005). Incorporating the stages of experiential learning theory in the intervention will result in higher levels of job crafting behavior by the participants compared to the control group.

Hypothesis 4: Employees participating in the job crafting intervention will experience higher levels of a) seeking challenges, b) seeking resources, and c) decreasing demands after the intervention compared to the employees in the control group.

Oldham and Hackman (2010) proposed two explanations for the benefits of job crafting. First, job crafting can lead to substantial changes in the job after which the job is seen as more meaningful, complex, and challenging. Second, the process of making changes in itself may be responsible for the benefits of job crafting. Having the opportunity to adapt one’s job to one’s preferences may be motivating in itself. Regardless which of the two motivational
paths is responsible for positive employee outcomes, we expect the intervention to positively affect participants’ work engagement, task performance, and career satisfaction through increasing their job crafting behavior. We expect that the effect of the intervention on work engagement will occur through changes in job crafting, because gaining control and opportunities to learn may in itself increase work engagement (Bakker & Demerouti, 2007). Moreover, the effect of the intervention on task performance and career satisfaction will be indirect through increases in job crafting behavior. Increases in job crafting will help individuals arrange the conditions (e.g., challenges and resources) necessary to be effective in their work and successful in achieving their career goals (Tims & Bakker, 2010). At the same time, job crafting may help eliminating hindering aspects that interfere with their work or career.

Hypothesis 5: Employees participating in the job crafting intervention will experience higher levels of a) work engagement, b) task performance, and c) career satisfaction after the intervention compared to the employees in the control group.

Hypothesis 6: The intervention will affect work engagement through a) seeking challenges, b) seeking resources, and c) decreasing demands.

Hypothesis 7: The intervention will affect task performance through a) seeking challenges, b) seeking resources, and c) decreasing demands.

Hypothesis 8: The intervention will affect career satisfaction through a) seeking challenges, b) seeking resources, and c) decreasing demands.

Method study 2

Participants

The intervention took place at the same university as the university in Study 1. Participation was voluntary, and participants were recruited via HR and/or a newsletter within the university. The control group matched the intervention group based on position within the university, gender, and age. The total sample at T1 consisted of 60 employees in the intervention group and 59 employees in the control group. The intervention group consisted of 38 women (63.3%) and 25 academics (41.7%). On average participants were 40.8 years old (SD = 9.9), were working at the organization for 9.9 years (SD = 8.4), and were working on average 35.3 hours (SD = 7.6) a week. The control group consisted of 35 women (59.3%) and 25 academics (42.4%). On average participants were 44.8 years old (SD = 13.1), were working at the university for 15.1 years (SD = 12.8) and worked on average 36.3 hours (SD = 5.8) a week.

At T2, there was a dropout of 31.6% in the intervention group and a dropout of 35.6% in the control group leaving N = 40 and N = 38 for experimental and the control group respectively. The dropout pattern was completely random (MAC/MCAR: $\chi^2 = 2.36, df = 3, p = .50$) and the participants who dropped out at T2 were not significantly different from the other participants at T1 on the study variables.

Before the intervention, participants in the intervention and the control group were asked to fill out a pre-intervention questionnaire and six weeks after the intervention we asked them to fill out a post-intervention questionnaire. This procedure mimics previous successful behavioral interventions (e.g.,

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Table 2. Examples of self-set job crafting goals of the participants, study 2.

<table>
<thead>
<tr>
<th>Examples of self-set goals</th>
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<tbody>
<tr>
<td><strong>Seeking challenges</strong></td>
</tr>
<tr>
<td>- On Thursday, I will inquire about internal courses that are available within the organization.</td>
</tr>
<tr>
<td>- Next week, I am going to start a new research project with my colleagues.</td>
</tr>
<tr>
<td>- Tomorrow, I will send an email to my supervisor to say that I will volunteer to coach new colleagues.</td>
</tr>
<tr>
<td><strong>Seeking resources</strong></td>
</tr>
<tr>
<td>- Next week, I will discuss with my colleague the option to divide customer questions such that I handle them in the morning and she will handle them in the afternoon.</td>
</tr>
<tr>
<td>- This week, I will initiate a monthly drink within our department to increase the social cohesion.</td>
</tr>
<tr>
<td>- From now on, I am going to create a folder in outlook in which I am going to save compliments and positive messages.</td>
</tr>
<tr>
<td><strong>Decreasing demands</strong></td>
</tr>
<tr>
<td>- From now on, I am only going to read and respond to email on two set times a day.</td>
</tr>
<tr>
<td>- On Tuesday, I am going to clean my desk to work more efficiently.</td>
</tr>
<tr>
<td>- From now on, I will try to only schedule meetings in the afternoon to avoid being interrupted in my work during the morning.</td>
</tr>
</tbody>
</table>

Table 3. Overview of the intervention of study 2.

<table>
<thead>
<tr>
<th>Steps</th>
<th>Aspects of the intervention that reflect the experiential learning theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Concrete experiences</td>
<td>- Providing real-life examples from interviews conducted with employees</td>
</tr>
<tr>
<td></td>
<td>- Every employee has at least some experience with job crafting (Lyons, 2008) by doing a Situated Learning Narratives (SELN; Benner, 1984) exercise, we encouraged people to think about positive past behavior in problem solving situations.</td>
</tr>
<tr>
<td>Step 2: Reflection</td>
<td>- SELN exercise further encouraged employees to think about how that behavior may be helpful in attaining future goals. In a group context, they stimulate others’ thinking about problem solving behaviors.</td>
</tr>
<tr>
<td>Step 3: Abstract concepts</td>
<td>- Demonstrating the value of job crafting for work-related outcomes such as work engagement (Schaufeli, Salanova, González-Romá, &amp; Bakker, 2002), via the Job Demands-Resources model (Bakker &amp; Demerouti, 2007).</td>
</tr>
<tr>
<td>Step 4: Creating new experiences</td>
<td>- Setting three specific, measurable, acceptable, realistic, and time-bound (SMART) goals (Doran, 1981) for the three weeks after the intervention (i.e., week 1: seeking resources, week 2: decreasing demands, week 3: seeking challenges). By setting three goals, employees could practice all three job crafting strategies.</td>
</tr>
<tr>
<td></td>
<td>- Weekly reminders were send to encourage goal achievement (e.g., Fjeldsoe, Marshall, &amp; Miller, 2009).</td>
</tr>
<tr>
<td></td>
<td>- The trainer encouraged participants to think about possible facilitating factors and obstacles for their goals. This way, employees could think ahead about dealing with obstacles and how to optimally use facilitators.</td>
</tr>
</tbody>
</table>
Gist, Stevens, & Bavetta, 1991; Pattini, Soutar, & Klobas, 2007). In total, five workshops were held for participants in the intervention group with a maximum of 14 participants per workshop. Three of the workshops involved supportive staff and two involved academic staff.

We decided on a 6-week time interval after the intervention, to measure our constructs at T2. This time interval makes sure that all participants could complete their weekly assignments and that there were two or three weeks without assignments. There is not a clear indication on what the ideal time is to examine the effects of a job crafting intervention. The few intervention studies that have been published collect post-intervention measures in the range of two weeks (e.g., Van Wingerden, Bakker, & Derks, 2017a) to one year (e.g., Van Wingerden, Bakker, & Derks, 2017b) after the intervention.

The workshop

Previous job crafting interventions (Gordon et al., 2018; Van Den Heuvel et al., 2015) were the starting point of our workshop design. We added experiential learning theory elements to these workshops to increase effectiveness. The workshop was four hours long. During the workshop, participants received a booklet with a short summary of the workshop and space to write down their individual job crafting goals (see the examples in Table 2). The workshops were given by trainers who were organizational psychologists and experts in the field of job characteristics and training job crafting behavior. Participants were told that the trainers offered strategies that could help them creating a more motivating and efficient work environment. The trainers focused on participants’ needs, past experiences, and present crafting behaviors. We designed the workshop such that the needs of these employees were met. We first consulted the literature to pinpoint critical work characteristics that both groups needed (e.g., Doherty & Manfredi, 2006). In general, supportive staff needs more autonomy, trust, and flexible work hours whereas academic staff needs a manageable workload (Doherty & Manfredi, 2006). Second, we held interviews to assess the specific needs of both academic (N = 4) and supportive (N = 4) staff within this university. We learned that academic staff felt the need for more performance feedback and acknowledgement, a decrease or change in workload, and more challenges. Supportive staff wanted to receive more performance feedback, acknowledgement, and more challenges. Moreover, supportive staff expressed a need for more task diversity and better communication within the organization. This information was used to create tailored examples in the workshop. Four weeks after the workshop and the second questionnaire, participants discussed their job crafting experiences in an evaluation meeting.

**Measures**

In Study 2 the participants were asked to fill out the same measures as in Study 1 and the respective Cronbach’s alphas can be found in Table 4.

**Analyses**

The data have a repeated measures design in which time points (Level 1) are nested within individuals (Level 2). Therefore, multi-level regression analyses were conducted in MLwiN (Rasbash, Steele, Browne, & Goldstein, 2009) to compare the intervention group with the control group over time (Shadish, Cook, & Campbell, 2002). It was not possible to conduct latent growth analyses because we only had two measurement points. Decreasing demands and seeking resources were not significantly related to each other, and only moderately with seeking challenges (see Table 4) therefore multicollinearity was not a concern. Level 1 variables were centered to the person mean and Level 2 variables were centered to the grand mean. Moderation analyses were conducted to test the effect of the intervention on the study variables using dummy variables (i.e., time of measurement was coded as T1 = 0 and T2 = 1, group belonging was coded as control group = 0 and intervention group = 1) and the interaction term of the dummy variables. The advantages of using multi-level analyses compared to the more traditional repeated measures ANOVA are that the variance is correctly distributed to the different analysis levels and it is less affected by violations of sphericity and homoscedasticity meaning that effects are estimated more accurately and Type 1 error rates are lower (Quené & Van Den Bergh, 2004; Snijders & Bosker, 2003). Additionally, we calculated simple slopes for the intervention and control group with the online utilities of Preacher, Curran, and Bauer (2006) to illustrate the moderation effects.

The mediation effect of job crafting was examined following the four steps of Baron and Kenny (1986). Step 1 is met when the independent variable (i.e., “group x time”) predicts

<table>
<thead>
<tr>
<th>Table 4. Means, standard deviations, Cronbach’s alphas, and correlations among the variables of study 2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (SD)</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td>Function type</td>
</tr>
<tr>
<td>Seeking challenges</td>
</tr>
<tr>
<td>Seeking resources</td>
</tr>
<tr>
<td>Decreasing demands</td>
</tr>
<tr>
<td>Work engagement</td>
</tr>
<tr>
<td>Task performance</td>
</tr>
<tr>
<td>Career satisfaction</td>
</tr>
</tbody>
</table>

Note: The coefficient alphas in the table are the average alphas of T1 and T2. Correlations below the diagonal are between-level correlations (N = 119) with correlations $r \geq .18$ being significant at $p \leq .05$ and $r \geq .24$ being significant at $p \leq .01$. Correlations above the diagonal are within-level correlations (N = 194) with correlations $r \geq .14$ being significant at $p \leq .05$ and $r \geq .19$ being significant at $p \leq .01$. Function type is coded as: 1 = Scientific staff; 2 = Supportive staff. Job crafting had a range of 1 to 5. Work engagement had a range from 0 to 6. Task performance and career satisfaction had a range of 1 to 7.
the outcome variable (e.g., work engagement), Step 2 requires the independent variable to predict the mediator (i.e., job crafting behavior), Step 3 requires the mediator to predict the outcome variable, and Step 4 requires the effect of the independent variable on the outcome to be 0 when the mediator is included. We further conducted a Sobel test to know whether the mediation effect was significant (Preacher & Leonardelli, 2003). In all analyses, function group (i.e., supportive staff or academic staff) was added as a covariate.

Results study 2

Means, standard deviations, and correlations of the study variables are provided in Table 4. The intervention and control group did not significantly differ on the study variables at T1 (i.e., seeking challenges $t = 1.76, df = 114, ns$; seeking resources $t = -0.16, df = 114, ns$; decreasing demands $t = -0.49, df = 114, ns$; work engagement $t = -1.84, df = 113, ns$; task performance $t = 0.30, df = 113, ns$; career satisfaction $t = -1.68, df = 113, ns$). The means and standard deviations of the intervention and control group are provided in Table 5.

Hypotheses testing

Intra-class correlations showed that enough variance could be explained at the within-person level to justify multi-level analyses (i.e., seeking challenges: 26.2%; seeking resources: 29.8%; decreasing demands: 51.2%; work engagement: 27.4%; task performance: 46.6%; career satisfaction: 24.9%). Table 6 provides a complete overview of the multi-level analyses.

We first looked whether we could replicate the results of Study 1. The multilevel analysis showed that similar to the findings of Study 1, seeking resources were significantly related to work engagement ($\beta = 0.78, SE = 0.19, t = 4.17, p < .01$), task performance ($\beta = 0.85, SE = 0.28, t = 3.01, p < .01$), and career satisfaction ($\beta = 0.52, SE = 0.25, t = 2.08, p < .05$) (see Table 6). Both seeking challenges (H2) and decreasing demands (H3) were not related to any of the outcome variables in Study 2. Thus, we partially replicated the findings of Study 1.

In Hypothesis 4, we expected that the intervention would increase job crafting. The intervention increased participants’ seeking resources behavior ($\beta = 0.29, SE = 0.10, t = 3.04, p < .01$) and decreasing demands behavior ($\beta = 0.40, SE = 0.14, t = 2.81, p < .01$). The simple slopes analyses showed that the intervention successfully boosted seeking resources in the intervention group ($z = 1.80, p = .07$) compared to the control group where seeking resources decreased ($z = -2.58, p < .01$; Figure 3). Similarly, decreasing demands behavior in the intervention group increased ($z = 2.41, p < .05$) compared to the control group ($z = -1.62, ns$; Figure 4). Hypothesis 4b-c were supported. The intervention did not increase seeking challenges behaviors of employees ($\beta = 0.13, SE = 0.14, t = 0.89, ns$). Therefore, Hypothesis 4a was not supported.

Hypothesis 5a, suggesting that the intervention positively affects work engagement, was supported: the “group x time” interaction was significantly related to work engagement ($\beta = 0.57, SE = 0.18, t = 3.19, p < .01$). The effect was in the expected direction such that the work engagement of the intervention group increased ($z = 2.78, p < .01$) compared to the control group ($z = -0.08, p = 0.41$; Figure 5). Hypothesis 5b suggested that the intervention had a direct effect on the task performance of employees. The results showed that the intervention did not have a direct effect on task performance ($\beta = -0.13, SE = 0.25, t = -0.50, ns$). Regarding Hypothesis 5c, the effect of the intervention on career satisfaction was not significant ($\beta = 0.28, SE = 0.22, t = 1.24, ns$).

To test the mediating effect of job crafting in the relationship between the intervention and work engagement, we followed the four steps of Baron and Kenny (1986). Given the non-significant results of the intervention on seeking challenges, this dimension was excluded from further analyses. Step 1 was met as the intervention had a significant effect on work engagement. We further saw that Step 2 was fulfilled, because the intervention had a significant effect on seeking resources and decreasing demands. Step 3 was supported for seeking resources such that seeking resources had a positive effect on work engagement ($\beta = 0.78, SE = 0.19, t = 4.17, p < .01$) but not for decreasing demands ($\beta = -0.17, SE = 0.12, t = -1.38, ns$). Step 4 was not met because the interaction “group x time” still had a significant effect on work engagement ($\beta = 0.40, SE = 0.18, t = 2.27, p < .05$) meaning that seeking resources partially mediates the relationship between the effect of the intervention on work engagement. The Sobel test showed that the mediation was significant ($z = 18.52, SE = 0.01, p < .01$), thus Hypothesis 6a was supported.

We did not find a direct effect of the intervention on career satisfaction and this excludes the possibility of a mediation effect of job crafting in the relationship between the intervention and career satisfaction (Hypothesis 7). However, it is possible that there is an indirect effect of the intervention on career satisfaction through job crafting. An indirect effect is there, when the independent variable predicts the mediator, the mediator predicts the dependent variable (Mathieu & Taylor, 2006), and the Sobel test is significant (Preacher & Leonardelli, 2003). The first condition was met for seeking resources and decreasing demands (see results above). The second condition was met for seeking resources which had a positive effect on task performance ($\beta = 0.85, SE = 0.28, t = 3.01, p < .01$) but not for decreasing demands ($\beta = -0.23, SE = 0.18, t = 1.27, ns$). The Sobel test showed that there was an indirect effect of the intervention on task performance via seeking resources ($z = 8.61, SE = 0.03, p < .01$). Thus, we found a significant indirect effect

Table 5. Means and standard deviations of the Intervention and control group, study 2.

<table>
<thead>
<tr>
<th></th>
<th>Intervention group</th>
<th>Control group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>T1 seeking challenges</td>
<td>2.86</td>
<td>1.04</td>
</tr>
<tr>
<td>T2 seeking challenges</td>
<td>3.10</td>
<td>1.05</td>
</tr>
<tr>
<td>T1 seeking resources</td>
<td>3.48</td>
<td>0.63</td>
</tr>
<tr>
<td>T2 seeking resources</td>
<td>3.54</td>
<td>0.52</td>
</tr>
<tr>
<td>T1 decreasing demands</td>
<td>2.17</td>
<td>0.68</td>
</tr>
<tr>
<td>T2 decreasing demands</td>
<td>2.41</td>
<td>0.64</td>
</tr>
<tr>
<td>T1 work engagement</td>
<td>3.32</td>
<td>1.27</td>
</tr>
<tr>
<td>T2 work engagement</td>
<td>3.66</td>
<td>1.16</td>
</tr>
<tr>
<td>T1 task performance</td>
<td>5.11</td>
<td>1.32</td>
</tr>
<tr>
<td>T2 task performance</td>
<td>5.15</td>
<td>1.18</td>
</tr>
<tr>
<td>T1 career satisfaction</td>
<td>3.81</td>
<td>1.52</td>
</tr>
<tr>
<td>T2 career satisfaction</td>
<td>4.05</td>
<td>1.38</td>
</tr>
</tbody>
</table>
Regarding Hypothesis 8a-c, the first step of the Baron and Kenny (1986) procedure was not met: the intervention did not significantly and directly affect career satisfaction. Therefore, we examined whether there was an indirect effect of the intervention on career satisfaction via job crafting. The results showed seeking resources had a significant effect on career satisfaction ($\beta = 0.52, SE = 0.25, t = 2.08, p < .05$) whereas decreasing demands had not ($\beta = -0.31, SE = 0.16, t = -1.87, ns$). The Sobel test showed that the intervention had an indirect effect on career satisfaction via seeking resources ($z = 7.19, SE = 0.02, p < .01$). We again found an indirect effect of the intervention on career satisfaction via seeking resources.

**Discussion study 2**

The aim of Study 2 was to examine the impact of a job crafting intervention on job crafting behavior, work engagement, task performance, and career satisfaction. Additionally, we

### Table 6. Multi-level regression effects of the intervention on the outcome variables, study 2.

<table>
<thead>
<tr>
<th>Outcome variables</th>
<th>Seeking challenges</th>
<th>Seeking resources</th>
<th>Decreasing demands</th>
<th>Work engagement</th>
<th>Work engagement</th>
<th>Task performance</th>
<th>Career satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$t$-value</td>
<td>$\beta$</td>
<td>$t$-value</td>
<td>$\beta$</td>
<td>$t$-value</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Intercept</td>
<td>2.39</td>
<td>15.43**</td>
<td>3.46</td>
<td>35.67**</td>
<td>2.16</td>
<td>20.00**</td>
<td>4.49</td>
</tr>
<tr>
<td>Function type</td>
<td>0.28</td>
<td>1.71</td>
<td>0.09</td>
<td>0.88</td>
<td>0.11</td>
<td>0.96</td>
<td>0.49</td>
</tr>
<tr>
<td>Time</td>
<td>0.09</td>
<td>0.83</td>
<td>−0.18</td>
<td>−2.58**</td>
<td>−0.17</td>
<td>−1.62</td>
<td>−0.11</td>
</tr>
<tr>
<td>Group</td>
<td>0.30</td>
<td>1.76</td>
<td>−0.03</td>
<td>−0.28</td>
<td>−0.05</td>
<td>−0.43</td>
<td>−0.45</td>
</tr>
<tr>
<td>Time x group</td>
<td>0.13</td>
<td>0.89</td>
<td>0.29</td>
<td>3.04**</td>
<td>0.40</td>
<td>2.81**</td>
<td>0.57</td>
</tr>
<tr>
<td>Seeking resources</td>
<td>0.78</td>
<td>4.17**</td>
<td>0.85</td>
<td>3.01**</td>
<td>0.52</td>
<td>2.08*</td>
<td>0.17</td>
</tr>
<tr>
<td>Decreasing demands</td>
<td>−0.17</td>
<td>4.19**</td>
<td>0.85</td>
<td>3.01**</td>
<td>0.52</td>
<td>2.08*</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Note: Group is coded as 1 = intervention; 2 = control. Function type was coded as 1 = academic staff; 2 = Supportive staff. *$p \leq .05$; **$p \leq .01$.

**Figure 3.** Simple slopes for the intervention and control group representing the slope of seeking resources over time.

**Figure 4.** Simple slopes for the intervention and control group representing the slope of decreasing demands over time.
examined whether increases in job crafting behavior were the mechanism through which the job crafting intervention had an impact on employee outcomes.

The intervention had a positive direct effect on seeking resources and decreasing demands and on the work engagement of participants. These findings are in line with previous research into job crafting (Demerouti et al., 2017; Gordon et al., 2018; Van Den Heuvel et al., 2015). Through increasing the amount of job resources employees may close the gap between their preferred amount of job resources and the job resources that are available to them, making their work environment more motivating (Oldham & Hackman, 2010) and more fitting to their personal needs (Kooij et al., 2017). We did not find direct effects of the intervention on task performance and career satisfaction. Instead, we found that the intervention affected task performance and career satisfaction via seeking resources behavior. Additionally, we found that seeking resources behavior mediated the relationship between the intervention and work engagement. Thus, the intervention had an effect on employee outcomes through seeking resources. These findings extend previous job crafting intervention studies (Gordon et al., 2018; Van Den Heuvel et al., 2015; Van Wingerden et al., 2017a) and indicate that a Hawthorne effect cannot explain the effects of the intervention.

The intervention did not affect seeking challenges behavior. Challenges can trigger development, but taking on a new challenge also requires more effort (Crawford, LePine, & Rich, 2010). The effort to seek and act upon challenges may cancel out the benefits of developing oneself on the short-term. Participants in the intervention condition mentioned during an evaluation meeting they simply did not had time to seek for challenges due to their workload. Therefore, they may not feel the need to seek for more challenges rather to decrease the demands (Petrou et al., 2012). We conducted post-hoc analyses by including workload as a covariate in the multi-level analyses, however, this did not change the results and could not explain our findings.

Lastly, similar to earlier research the intervention was able to increase decreasing demands behavior (Demerouti et al., 2017; Gordon et al., 2018). However, decreasing demands did not affect the outcomes. This is in line with the conclusion of Demerouti et al.’s (2017) intervention that decreasing demands was not helpful for employees’ adaptive performance. Even though theoretically, decreasing demands can have a positive impact on employee functioning (Petrou et al., 2012), the potential benefit may not always outweigh the counterproductive effect it can have. Most research nowadays points at the negative impact that decreasing demands can have. A meta-analysis by Rudolph et al. (2017) showed that including decreasing demands as indicator weakens the effect that increasing resources and challenges had on work engagement and self-rated job performance. Moreover, a study by Weseler and Niessen (2016) showed that reducing task demands and relations was related to lower self-rated performance. Therefore, fostering decreasing demands in employees may not be wise after all.

**General discussion**

Based on elaborate research designs (a longitudinal and a quasi-experimental study), we established causal relationships between job crafting and employee outcomes. Employees benefitted from seeking resources behavior in terms of higher task performance, higher work engagement, and more career satisfaction. Expanding the focus of the job (in terms of challenges) was not found to be an effective way to increase one’s fit with the job. Moreover, decreasing demands was negatively related to favorable outcomes in Study 1 but unrelated to the same outcomes in Study 2. Thus, reducing the strenuous aspects of work was not consistently related to the focal outcomes and when it was it impaired them. Furthermore, we were able to manipulate the level of job crafting of participants and consequently showed that job crafting is important for employee outcomes (in- and outside of the job) but can also be altered. Seeking resources plays a vital role in transferring the effect of the intervention onto actual employee outcomes.

In both the longitudinal and the intervention study, we did not find any effect of seeking challenges behavior. We are surprised by that finding, because theoretically the idea of seeking challenges behavior is that it results in growth and development which helps employees to stay motivated and to avoid boredom (Csikszentmihalyi & Nakamura, 1989). We are not sure about the reason for not finding any effect. It might
be because of specifics of our samples. Looking at the mean values of seeking challenges and seeking resources in both samples, the means for seeking resources are consistently higher than those for seeking challenges. This might indicate that there was a stronger need for resources to stay motivated and not so much a need for seeking challenging demands, which may be strengthened by the experience of high workload as reported by employees. And perhaps, in order to seek for challenges employees first need a large enough resource pool. On the other hand, one could argue that in an academic work setting perhaps challenges are the norm rather than exception (Bovill & Mårtensson, 2014), but we do not have any data to test this idea. It may also be that other types of outcomes are more likely to be affected by seeking challenges, for example employees’ feelings of well-being or self-worth. We think these suggestions are worthwhile to investigate in future research.

Theoretical contributions

This paper contributes to the job crafting literature in the following ways. Our first contribution is establishing a relationship between job crafting to motivational (work engagement) and performance (task performance) outcomes over time. As most studies on job crafting are diaries or cross-sectional it is important to know that through job crafting behavior individuals can achieve long-term improvements of their own motivation and task performance behavior. Within the university context, seeking resources (positively) and reducing demands (negatively) were the crafting behaviors with the highest predictive validity. Increasing person-job fit by seeking job resources did result in higher intrinsic motivation (i.e., work engagement; Halbesleben, 2010). By seeking resources employees can arrange the conditions at work such that they create a motivating work environment for themselves (Bakker & Demerouti, 2018; Demerouti, Bakker, De Jonge, Janssen, & Schaufeli, 2001), whereas minimizing the scope of the job is not.

The second contribution of our study is that we uncovered the link between job crafting and career satisfaction. Specifically, university employees who seek resources, for example asking their supervisor for advice, and who are not involved in making their job less demanding become more satisfied with their career over time. By proactively increasing the pool of resources, employees create a work environment which helps them to better achieve their career goals. Increasing their pool of resources enables employees to gain (more) control over their career and hence, they experience a better fit with their job and feel more satisfied with their career path.

Third, we explained why job crafting may increase favorable outcomes, such as work engagement. Namely, manipulating job crafting behavior in a field experiment (Study 2) we showed that it is the increase in seeking resources behavior that predicts the hypothesized improvements of outcomes. Others have found that a job crafting intervention can enhance employee outcomes such as task performance (e.g., Van Wingerden et al., 2017a), but were unable to demonstrate the mediating role of the increase in job crafting behavior.

Finally, we think that the results of the intervention study demonstrate the value of combining insights of the experiential learning theory (Kolb & Kolb, 2012) with job crafting theory (Wrzesniewski & Dutton, 2001). Experiential learning is a valuable process to train job crafting behaviors; it supports employees learning to use a bottom-up approach. We found that intervening in job crafting behavior altered seeking resources and decreasing demands behavior and consequent changes in employee outcomes. In line with Oldham and Hackman (2010) arguments, the process of making changes in the job is responsible for the positive outcomes of job crafting. Being able to adapt and change the job to one’s needs improves the job, but also other outcomes such as career satisfaction. We ruled out a Hawthorne effect by demonstrating that simply participating in a workshop did not increase the fit between job demands, job resources, and participants’ task and career needs. Actual changes in seeking resources behavior were necessary to increase task performance and career satisfaction.

Limitations and future research

In addition to the strengths of this paper, we have to acknowledge some shortcomings of this research. First, in both studies participants dropped out during the course of the study which could affect the power of the study (Cohen, 1992). A meta-analysis on the effectiveness of organizational interventions reported that psychological interventions have a mean effect size of 0.44 (Arthur Jr., Bennett Jr., Edens, & Bell, 2003) which leads us to believe that we did have sufficient power to detect effects in Study 2. Moreover, we partly replicated the findings of Study 1 in Study 2.

Second, we do believe that replication of our results is necessary. We do not know the longer term effects of the intervention as the last measurement in Study 2 was six weeks after the workshop. It remains unclear whether the positive effects of the intervention are still present after six months, or whether the effects have become larger, for example. Future research could study the long-term effects of the job crafting intervention but may also want to look into the beneficial effects of revision exercises on the retention of job crafting behaviors.

Third, some suggest that individuals who are in need of change will respond more readily to invitations of interventions (Shadish, 2002). Therefore, we checked for differences between the intervention and control group on the T1 variables in Study 2. Although we did not find significant differences between the intervention and control group, ideally, we would have randomly assigned the participants to the two conditions but the organization did not allow us to do this.

Another limitation of our studies is that all our measures are based on self-reports, which may have caused common method bias. However, if common method bias was a problem there would be positive relationships between all variables in general (Holman, Axtell, Sprigg, Totterdell, & Wall, 2010). There would also be a similar change pattern in both the control group as well as the experimental group that would wipe out any mediation effects. Nevertheless, it is important for future research to use other-reports for...
measuring career progress or task performance in order to establish more objectively whether job crafting affects these outcomes. Related, we do not know whether participants of Study 1 talked to participants of Study 2 and whether that may have affected Study 2 participants’ decision to participate or whether that may have resulted in a bias. The way that we recruited participants for Study 2 (via HR and the newsletter) informed every employee of the university about the training. At the time we conducted these two studies the university had more than a thousand employees, which made it impossible for us to monitor their behavior and their conversations with other employees. To exclude any bias, future studies may want to replicate our studies using employees of two universities instead of one.

The internal consistencies of seeking resources and decreasing demands were rather low even though we used a validated job crafting measure (i.e., Petrou et al., 2012). Demerouti et al. (2017; study, p. 1) also found that the same job crafting dimensions had low reliability among employee confronted with organizational change. The internal consistency can be different for different groups of individuals (Cronbach & Shavelson, 2004) and our measure was validated among employees experiencing organizational change (Petrou et al., 2012) thus perhaps specific work situations determine how employees react to these survey items. Adding more items per dimension could be a solution as this improved the reliability in Demerouti et al. (2017; study, p. 2).

**Practical implications and conclusion**

Given the benefits of job crafting in both studies, we think it is important that organizations support and facilitate individuals’ job crafting behaviors. In order to job craft, individuals need to do (some) tasks independently (Tims & Bakker, 2010), have some autonomy to make small changes in their job, and know that job crafting is encouraged not punished (Wrzesniewski & Dutton, 2001). Organizations can create the conditions to facilitate job crafting behaviors, for example by stimulating the desired behavior through increasing the complexity of jobs. Research has demonstrated that demanding aspects of the job encourage crafting behaviors (Berg, Wrzesniewski, & Dutton, 2010). Furthermore, supervisors can motivate employees to craft their jobs, allow freedom and show the trust to do so, and also to model “good” crafting behaviors (i.e., the crafting that has positive effects for the employee and the organization) (cf. Demerouti, 2014). Last but not least, organizations can also offer job crafting training to stimulate and support their employees, which helps to retain employees within the organization.

Our study demonstrates the value of stimulating proactive behavior of employees. Such interventions offer opportunities for employees to shape their work environment to fit their needs, abilities, and goals. Past job crafting interventions have shown it helps employees to cope with organizational change (Gordon et al., 2018; Van Den Heuvel et al., 2015). Therefore, organizations could consider adding a positive organizational behavior intervention to their HR portfolio. Such an intervention would be a competitive advantage as bottom-up approaches enable employees to create a motivating and resourceful work environment.

Furthermore, the effectiveness of our intervention stresses the value for practitioners to incorporate different aspects of experiential learning theory (Kolb et al., 2000) in the intervention to achieve behavioral change. Focusing on past experiences with job crafting, reflecting upon them, underlining the value of such behavior, and encouraging behavioral experimentation with the help of self-set goals, are important for the effectiveness of the job crafting intervention. The importance of setting specific, measurable, attainable, relevant, and timely (i.e., SMART) goals should not be underestimated (Doran, 1981).

In conclusion, organizations are confronted with a great diversity in motivational needs of their workforce. This research directed attention to the benefits of job crafting behavior to tailor employee needs. Organizations can support employees by offering the job crafting intervention presented in this paper. The intervention gives employees tools to create a work environment that allows them to excel in their work and in their career.

**Disclosure statement**

No potential conflict of interest was reported by the authors.

**Notes**

1. We removed one item from the analyses to improve the internal reliability of the decreasing demands scale.
2. Unfortunately, we were not able to provide a workshop to the control group as the responses of the control group were anonymous.
3. Before conducting Study 2, the effect sizes of the hypothesized relations were calculated based on findings of previous studies. These effect sizes ranged from 0.32 to 0.66 and only the effect of seeking challenges on career satisfaction was below 0.44.

**References**


