Design your own job through job crafting

Citation for published version (APA):

Demerouti, E. (2014). Design your own job through job crafting. *European Psychologist*, 19(4), 237-247.
<https://doi.org/10.1027/1016-9040/a000188>

DOI:

[10.1027/1016-9040/a000188](https://doi.org/10.1027/1016-9040/a000188)

Document status and date:

Published: 01/01/2014

Document Version:

Publisher's PDF, also known as Version of Record (includes final page, issue and volume numbers)

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.tue.nl/taverne

Take down policy

If you believe that this document breaches copyright please contact us at:

openaccess@tue.nl

providing details and we will investigate your claim.

Design Your Own Job Through Job Crafting

Evangelia Demerouti

Department of Industrial Engineering & Innovation Sciences, Human Performance Management Group, Eindhoven University of Technology, The Netherlands

Abstract. Job crafting can be viewed as changes that employees initiate in the level of job demands and job resources in order to make their own job more meaningful, engaging, and satisfying. As such, job crafting can be used to complement top-down approaches to improve jobs in order to overcome the inadequacies of job redesign approaches, to respond to the complexity of contemporary jobs, and to deal with the needs of the current workforce. This review aims to provide an overview of the conceptualizations of job crafting, the reasons why individuals craft their jobs, as well as the hypothetical predictors and outcomes of job crafting. Furthermore, this review provides suggestions to organizations on how to manage job crafting in their processes, and how to stimulate more beneficial job crafting behavior. Although research on job crafting is still in its infancy, it is worthwhile for organizations to recognize its existence and to manage it such that it has beneficial effects on the employees and the organization at large.

Keywords: job crafting, job redesign, interventions, proactive behavior

The complexity of professional jobs has increased considerably due to the increasing popularity of self-managing teams, reengineering, and other organizational innovations, coupled with the increased flexibility in work arrangements made possible by advances in information technology. The result of these developments is that every organization contains very specialized job positions with relatively unique constellations of working conditions. Arguing from a job characteristics perspective, the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) assumes that whereas every occupation may have its own specific work characteristics, these characteristics can be classified in two general categories (i.e., job demands and job resources). The central assumption is that job strain develops – irrespective of the type of job or occupation – when (certain) job demands are high and when (certain) job resources are limited. In contrast, motivation is most likely when job resources are high (also in the face of high job demands). Several studies have shown that workplaces that combine high job resources with tolerable demands are jobs that facilitate employee motivation and performance (reviews in Bakker & Demerouti, 2007, 2014; Crawford, LePine, & Rich, 2010).

It is clear that the availability of well-designed jobs and working conditions are most favorable for employee motivation and performance, but what if these favorable working conditions are not available? One possibility is that organizations initiate top-down organizational interventions to improve motivation and organizational performance (e.g., job enrichment). However, these often seem partly ineffective (Aust, Rugulies, Finken, & Jensen, 2010) which is not surprisingly, given the unique constellation of working conditions prevalent in each job. Therefore, organizations currently recognize that bottom-up redesign approaches initiated by the individual or jobholder him- or herself should be promoted and combined with approaches initiated by the organization. According to bottom-up redesign approaches, employees craft their jobs themselves in order to improve the design of their jobs.

Job crafting represents employee behavior that has been recently recognized as something that organizations can stimulate to improve the working conditions for their employees by encouraging them to do so themselves. Job crafting can be seen as a specific form of proactive behavior in which the employee initiates changes in the level of job demands and job resources in order to make his or her own job more meaningful, engaging, and satisfying.

The basic premise is that job crafting can exist next to top-down approaches to improve jobs in order to overcome the inadequacies of job redesign approaches, to respond to the complexity of contemporary jobs, and to deal with the needs of the current workforce.

The goal of this review is twofold. First, the review provides an overview of what job crafting is exactly, the reasons why individuals craft their jobs, and the predictors as well as outcomes of job crafting. The second goal of the review is to provide suggestions to organizations on how to integrate job crafting in their processes, and how to intervene and stimulate job crafting behavior of their employees.

How to Conceptualize and Measure Job Crafting

The central characteristic of job crafting is that employees alter their tasks or job characteristics on their own initiative (Tims, Bakker, & Derks, 2012). It represents voluntary behavior altering the meaning of one's job (Wrzesniewski & Dutton, 2001) and spontaneous unsupervised changes in one's job scope (Lyons, 2008). These characteristics distinguish job crafting from other bottom-up redesign approaches such as idiosyncratic deals (*i-deals*) in which employees negotiate with their employer about their work conditions (Hornung, Rousseau, Glaser, Angerer, & Weigl, 2010), or employee participation in job redesign (Nadin, Waterson, & Parker, 2001). Moreover, job crafting is different from proactive work behaviors. Proactive work behaviors are initiated by the person either by acting in advance of a future situation or by taking control and causing change or both (Parker & Collins, 2010). An important benefit of proactive behavior is that it is targeted at performance: employees who take the initiative to change certain things in their work environment are likely to contribute to organizational effectiveness (Tims et al., 2012). Tims and her colleagues suggest that job crafting is different from proactive constructs because the changes job crafters make are primarily aimed at improving their person-job fit and work motivation.

Job crafting has been defined and operationalized based on the perspective of (1) Wrzesniewski and Dutton (2001) and (2) the JD-R model (Bakker & Demerouti, 2007; Demerouti et al., 2001). These conceptualizations will be explained next.

Job Crafting From the Perspective of Wrzesniewski and Dutton

It has been recently recognized that employees may proactively change the design of their jobs by choosing tasks, negotiating different job content, and assigning meaning to their tasks or jobs (Parker & Ohly, 2008). Wrzesniewski and Dutton (2001) used the term job crafting to refer to the process through which employees shape their jobs.

Specifically, job crafting is defined as the physical and cognitive changes that individuals make in their task or relational boundaries. Changing physical boundaries refers to changes in the form, scope, or number of job tasks one is involved in while working, whereas changing cognitive boundaries refers to changing how one sees the job. Changing relational boundaries indicates changes in the people with whom one interacts while doing the job. By changing any one of these elements, individuals change the design of the job and the social environment in which they work.

To understand what job crafting is, Berg, Wrzesniewski, and Dutton (2010) presented the example of an interview with a maintenance worker, who reported that he crafted his job by taking on additional tasks. After having been in the organization for some time, he proactively started to help new colleagues to learn the job. Because he turned out to be good at this task, he became formally responsible for the training of new employees. Another example of job crafting concerns a medical specialist who organized a meeting for patients with a certain disease. During the time that she was busy with organizing it, she kept asking herself: "Why am I doing this?" Then the day came and about 100 people showed up and she knew why she was doing this. "We gave them information about their disease and it seemed to really help people. Although it took so much time and energy, it gave me a lot of confidence seeing the positive effects of your work" (unpublished interview with female medical specialist).

Job Crafting From the JD-R Perspective

Although Wrzesniewski and Dutton (2001, p. 181) define job crafting as "everyday" behavior, most empirical conceptualizations have not paid attention to this aspect. Lyons (2008) found that employees reported an average of 1.49 crafting episodes for the past year, which is far from being a daily activity. In order to capture the "everyday" changes in job characteristics that employees may pursue, some scholars (Petrouti, Demerouti, Peeters, Schaufeli, & Hetland, 2012; Tims & Bakker, 2010) framed the definition of job crafting in the JD-R model (Bakker & Demerouti, 2007; Demerouti et al., 2001). By doing this, job crafting is defined as the changes that employees may make to balance their job demands and job resources with their personal abilities and needs (cf. Tims & Bakker, 2010). Inspired by Wrzesniewski and Dutton's (2001) view, rather than restricting job crafting to altering tasks and relations, the conceptualization of job crafting from the JD-R perspective expands task crafting to refer to job demands, and relational crafting to refer to job resources. Specifically, Petrouti et al. (2012) defined job crafting as a proactive employee behavior consisting of *resources seeking*, *challenges seeking*, and *demands reducing*. Note that decreasing job resources has not been proposed to constitute a part of job crafting as it does not seem to be a purposeful human behavior (Hobfoll, 2001). According to Petrouti et al.'s (2012) definition, job crafting can be conceived as unfolding on a daily basis and as being directed toward the work environment, which surrounds the individual, namely the specific job demands

and job resources. Like Wrzesniewski and Dutton (2001), Petrou et al. (2012) suggested that even in the most stable environments with detailed job descriptions and clear work procedures, individuals can and do adjust the tasks they perform, and mobilize the resources they need to carry out their tasks successfully. Thus, both views suggest that “the job is being re-created or crafted all the time” (Wrzesniewski & Dutton, 2001, p. 181). This makes job crafting different from job design, which “focuses on employees’ experiences of jobs in which task elements are more static” (p. 181).

Zooming in on the three dimensions of job crafting, seeking job resources (e.g., feedback, advice from colleagues or the manager, maximizing job autonomy) can be viewed as a form of coping with job demands or completing tasks and achieving goals. Past research has examined positive outcomes of several resources-seeking behaviors, such as feedback seeking (Ashford, Blatt, & VandeWalle, 2003), and social support seeking (Carver, Scheier, & Weintraub, 1989). Such behaviors foster goal attainment, enhance performance and an accurate self-image. Hobfoll (2001) also suggested that a basic human motivation is directed toward the accumulation of resources, which are important for the protection of other valued resources.

Challenges seeking may include behaviors, such as seeking new challenging tasks at work, keeping busy during one’s working day, or asking for more responsibilities once one has finished with assigned tasks. Csikszentmihalyi and Nakamura (1989) argued that individuals seek challenges to maintain motivation and avoid boredom, a state that is called flow. This is consistent with the proposition that workers with active jobs (characterized by high job demands and high autonomy) are likely to seek challenging situations that promote mastery and learning (Karasek & Theorell, 1990).

Job crafting, however, not only includes strategies to enhance favorable characteristics but can also include behaviors targeted toward minimizing the emotionally, mentally, or physically demanding aspects of one’s work, reducing one’s workload, or making sure one’s work does not go at the cost of one’s private life. This is called “demands reducing,” which might be viewed as a health-protecting coping mechanism when demands are excessively high. Although such behavior has not been systematically studied, it is in line with constructs like “task avoidance,” which represents a withdrawal-oriented coping mechanism (Parker & Endler, 1996), slow or sloppy work and poor attendance reflecting counterproductive behavior (Gruys, 1999), and procrastination where enjoyable tasks are prioritized above important tasks (Chu & Choi, 2005; Klingsieck, 2013).

Comparison of Both Perspectives

According to Wrzesniewski and Dutton (2001), the aim of job crafting behavior is to change one or more aspects of a job in order to find meaning. These changes can have an

effect on the whole job or certain parts of the job by affecting physical task boundaries, cognitive task boundaries, or relational boundaries of a job. Job crafting according to the JD-R perspective is particularly focused on job characteristics that can influence the motivation and health of employees (Tims & Bakker, 2010; Petrou et al., 2012). Important to note is that job crafting according to the JD-R perspective is linked with the view of Wrzesniewski and Dutton (2001). Task crafting includes altering the form or number of activities and can be interpreted as changing job demands regarding the JD-R perspective. Relational crafting can be seen as changing job resources. Changing cognitive task boundaries is harder to reframe, because this is focused more on one’s inner self and most probably cannot occur daily. Additionally and similar to the job crafting from the JD-R perspective, task and relational crafting generally capture attempts to actual modifications of one’s job, while cognitive crafting represents involvement in a cognitive process of task redefinition. In conclusion, both views focus on employees who are changing their work to handle problems better and find solutions, but they differ slightly in the specific aspects toward which the crafting is directed. This review pays specific attention to the job crafting as conceptualized from the JD-R perspective as more empirical, quantitative evidence is available. Moreover, this perspective has a clear link to job redesign and therefore more clear implications for practice.

Measurement of Job Crafting

As job crafting appeared in the literature only recently and many of the studies are qualitative, it is essential to provide some insight into the measurement of job crafting. The first instrument that aimed to measure job crafting was developed by Wrzesniewski. This instrument measures the dimensions suggested by Wrzesniewski and Dutton (2001) namely task crafting, relationship crafting, and cognitive crafting. However, currently there is no published information about the psychometric qualities of this instrument.

Tims et al. (2012) developed and validated a scale to measure job crafting behavior that includes four independent job crafting dimensions: increasing social job resources, increasing structural job resources, increasing challenging job demands, and decreasing hindering job demands. The scale shows satisfactory convergent validity (compared to proactive personality, personal initiative, and cynicism) and criterion validity (with colleague-ratings of work engagement, employability, and performance). Additionally, self-rated job crafting behaviors correlated positively with peer-rated job crafting behaviors, which indicates that job crafting represents behaviors that others can also observe.

Finally, Petrou et al. (2012) adapted the scale of Tims et al. (2012) to measure crafting on a daily basis. They operationalized daily and general crafting with three dimensions: resources seeking, challenges seeking, and demands reducing. They did not differentiate between structural

and social resources on a daily basis, as both resource-maximizing behaviors might not occur daily. Rather, the essence of maximizing resources was captured in a less detailed degree of specificity. The findings confirmed the factorial validity and reliability of the measure on both the day level and general level. Moreover, job crafting behaviors varied significantly from one day to another as daily fluctuations of job crafting ranged between 31% (challenges seeking) and 78% (demands reducing) (Petrou et al., 2012). This finding justifies that job crafting as conceptualized from the JD-R perspective occurs daily, while Lyons (2008) using a conceptualization similar to Wrzesniewski and Dutton (2001) found that it occurred yearly.

Why Individuals Craft Their Jobs

In order to understand why individuals craft their jobs, it is informative to look at related literature on proactive behavior. Several motivation theories, like self-regulation theory (Bandura, 1991), but also goal-setting theory (Locke & Latham, 1990) and expectancy theory (Vroom, 1964) suggest that individuals' goals are hierarchically organized into two broad systems: Individuals anticipate desired future states or outcomes and develop strategies to reach those goals (goal generation), and then mobilize and monitor their day-to-day behaviors to attain their goals (goal striving) (Parker, Bindl, & Strauss, 2010). Thus, job crafting is driven by the motivation to set and attain goals.

According to Parker et al. (2010), "proactive goal generation involves envisioning and planning, under one's own volition, the goal to bring about a new and different future by changing the self and/or the environment" (p. 831). The individuals act of their own volition rather than following instructions from someone else in order, for instance, to increase person-environment fit. Viewing person-environment fit from a proactive lens, it encompasses proactive goals to create a better fit between one's own attributes and those of the work environment. Proactive goal striving is defined as the behavioral and psychological mechanisms by which individuals purposively seek to accomplish proactive goals. They do so by enacting, that is, undertaking actions to achieve their proactive goals, and by reflecting whether goals are consistent with their core values and interests (Bindl & Parker, 2009). The more the envisioned future is central to one's identity or values, the more one will be motivated to bring about that future (Parker et al., 2010, p. 837).

Moreover, Wrzesniewski and Dutton (2001) suggested that the motivation for job crafting arises from three basic individual needs. First, employees engage in job crafting because they have the need to take control over certain aspects of their work in order to avoid negative consequences – such as alienation from work. Second, employees are motivated to change aspects of their work in order to enable a more positive sense of self to be expressed and confirmed by others. Third, job crafting allows employees

to fulfil the basic human need for connection to others. Thus, according to Wrzesniewski and Dutton (2001) individuals craft their jobs in order to experience enhanced meaning of work and a positive work identity. By making changes in the job, they can experience the job in another way and craft another purpose of the work. In support of this suggestion, Mattarelli and Tagliaventi (2012) found on the basis of qualitative data that offshore professionals responded to threats to work identity through individual job crafting aimed at restoring their psychological well-being. The offshore employees in this study crafted their jobs by adding tasks to jobs and by developing new business ideas.

A final reason why individuals craft their jobs is to create conditions in which they can work healthily and with motivation. Following a work psychological perspective, Petrou et al. (2012) as well as Tims and Bakker (2010) suggest that job crafting might be enabled by the need for certain job characteristics. They state that employees might increase their challenging job demands or job resources in order to match these demands and resources to their individual needs.

Predictors and Outcomes of Job Crafting

Situational Predictors

As crafting represents discretionary behavior on the part of the employee, decision latitude, or job autonomy, was already suggested by Wrzesniewski and Dutton (2001) to be important conditions that stimulate this behavior. Several studies have indeed confirmed that decision latitude is positively related to job crafting (e.g., Leana, Appelbaum, & Shevchuk, 2009; Lyons, 2008). Other predictors of job crafting include task interdependence and discretion to craft a job (Leana et al., 2009), task complexity (Ghitulescu, 2007), and job challenges (Berg et al., 2010). Task complexity and job challenges were found to be positively related to job crafting, indicating that demanding aspects of the job stimulate proactive behavior (Berg et al., 2010; Ghitulescu, 2007). Note, however, that task interdependence was found to inhibit collective job crafting (the degree to which teams crafted jobs), but was unrelated to individual crafting (Leana et al., 2009).

Petrou et al. (2012) conducted a diary study in which they could examine the situational conditions influencing job crafting on a daily basis. They showed that on days that work pressure and autonomy were both high (i.e., "active jobs"; cf. Karasek, 1979) individuals showed more resources seeking and fewer demands reducing behaviors.

Organizational change has been studied as another situational factor that triggers job crafting. Job crafting seems to represent a useful strategy to deal with organizational change since it is viewed as a way to enhance an employee's sustainable ability to adapt to the demands of the dynamic post-industrial workplace (Kira, van Eijnatten, &

Balkin, 2010). A qualitative study during a merger (Kira, Balkin, & San, 2012) found that, among other activities, relational crafting (e.g., asking for supervisory support) and task crafting (e.g., prioritizing) were used as strategies to deal with the new situation at work. In a similar vein, job crafting episodes have been associated with readiness to change (Lyons, 2008). Petrou et al. (2012) found that changes involving new products were negatively associated with day-level seeking challenges, while confrontation with new clients was positively related to day-level seeking resources, and seeking challenges.

Finally, Berg et al. (2010) examined how employees at different ranks (which are closely related to decision authority and power of the employee) describe the execution of their job crafting behavior. While employee rank was unrelated to the prevalence of job crafting efforts, rank was related to how employees perceived the challenges to craft their jobs. Higher-ranking employees tended to see the challenges they faced in job crafting as located in their own expectations of how they and others should spend their time, while lower-ranking employees tended to see their challenges as located in their prescribed jobs and others' expectations of them. Moreover, higher-ranking employees adapted their own expectations and behaviors to make do with the perceived opportunities to job craft at work, while lower-ranking employees adapted others' expectations and behaviors to create opportunities to job craft.

Individual Predictors

Next to work-related predictors, job crafting has been linked to individual characteristics of employees. Specifically, Bakker, Tims, and Derks (2012) examined whether proactive personality of the person as rated by colleague-ratings was predictive of employee self-reported job crafting. Employees who were characterized by a proactive personality were most likely to craft their jobs, namely to increase their structural and social job resources, as well as their job challenges. This finding indicates that individuals with a proactive personality are also most inclined to change their work environment in a proactive way, by mobilizing their job resources and job demands.

Petrou (2013) suggested that employees' regulatory focus, promotion focus (i.e., driven by growth and challenges) or prevention focus (i.e., driven by obligations and security), may influence the degree to which they craft their jobs. Employees with a promotion focus were found to show more job crafting behavior and to be more open to changes irrespective of how the organization presented changes. However, employees with a prevention focus crafted their jobs more when organizational change was communicated in an inadequate way. Thus, insufficient information provided by the organization regarding the change triggered employees who are focused on security and obligations to craft their jobs in order to be able to fulfil their obligations. This study further shows that it is not only the situational or individuals characteristics that influence job crafting in isolation. Rather, the Person $\times$ Situation

interaction seems to explain job crafting behaviors as well. While Petrou et al. found evidence for the interplay between two specific personal and situational characteristics that is, regulatory focus and change communication, future studies should explore whether there are more possible interactions that can explain job crafting.

Thus, it can be concluded that job crafting occurs in demanding, resourceful and changing work environments by employees who are proactive, motivated by growth, or who experience misfit between their motivational style and the environmental cues.

Outcomes of Job Crafting

Although so far not much research has been conducted on the outcomes of job crafting, some interesting empirical findings can be reported. Wrzesniewski and Dutton (2001) proposed that job crafters are satisfied workers as job crafting represents a way to enhance one's experienced meaning at work. In support of this suggestion, Ghitulescu (2007) found a positive link between job crafting and organizational commitment.

More research has been conducted on the relationship between job crafting and work engagement. Bakker et al. (2012) found that employees' job crafting was predictive of work engagement and colleague-ratings of in-role performance. These findings suggest that to the extent that employees proactively adjust their work environment, they manage to stay engaged. In Tims et al.'s (2012) study, decreasing hindering job demands (e.g., role conflict, role ambiguity) was unrelated to work engagement. The reason for this is most probably that hindrance demands act like Herzberg's (1966) hygiene factors – they need to be taken care of in order to prevent exhaustion (Demerouti et al., 2001) – rather than as motivators.

Similarly, Petrou et al. (2012) found that daily fluctuations of job crafting were related to daily fluctuations of work engagement in such a way that the more employees sought resources and challenges on a specific day, the more engaged they were in their jobs. However, the more employees simplified their work on a specific day, the less engagement they experienced on that day. The authors suggested that reducing demands may have detrimental effects on the motivational process, for example, work engagement, but beneficial effects on the health impairment process, for example on exhaustion (Petrou et al., 2012). However, contrary to this expectation, Petrou (2013) found that decreasing demands was positively related to exhaustion, while seeking challenges was negatively related to exhaustion over time. In its turn, exhaustion was positively related to decreasing demands, which indicates that decreasing demands and exhaustion form a negative spiral that ultimately impairs the health of individuals as it seems to represent an ineffective strategy (cf. decreasing demands strengthens exhaustion over time).

Furthermore, job crafting has been found to influence performance at work, which represents a valuable outcome for organizations. On the basis of interview data among

employees of childcare centers, Leana et al. (2009) showed that collaborative crafting was positively related to performance, particularly for less experienced employees. Note that in this study, collaborative crafting was also associated with higher levels of job satisfaction and commitment. Similarly, Bakker et al. (2012) found that employees' job crafting was predictive of colleague-ratings of in-role performance. Also the longitudinal study by Petrou (2013) further showed that seeking resources predicted positively task performance one year later. Taken together, these findings suggest a favorable impact of seeking resources and seeking challenges and a negative impact of reducing demands for motivation and performance within and outside changing environments.

How to Benefit From Job Crafting

Although job crafting represents an activity that is initiated by the employee, organizations may also profit from it by recognizing its existence, managing it, and stimulating the favorable forms of crafting. In this way, job crafting can have favorable outcomes for both employees and the organization. Although organizations cannot instruct individuals how to craft their jobs (this would be against the definition of job crafting, which is self-initiated), they can create the conditions that facilitate job crafting behavior. In the following, several suggestions are presented on how organizational life could benefit from employee job crafting.

Complement Top-Down Job Redesign Approaches

Organizations use job (re)design approaches that represent a top-down process in which they create jobs and alter the conditions under which the job holders/incumbents execute their tasks (Tims & Bakker, 2010). Examples of such approaches are the increase of individual and team autonomy in the production process, and the introduction of project work or virtual offices. Although a lot of knowledge has been accumulated regarding the conditions that enhance the success of job redesign approaches (e.g., Morgeson & Humphrey, 2008), there are still mixed findings about their effectiveness. Fried (1991) suggested that the mixed results mainly have to do with the relative low relation between stimulating job characteristics and work outcomes such as job performance, turnover, and absenteeism. Moreover, traditional job redesign approaches have been criticized for no longer reflecting and integrating the dramatic changes in the nature of the jobs that have occurred during the past few decades (Bakker & Demerouti, 2007; Grant & Parker, 2009; Humphrey, Nahrgang, & Morgeson, 2007), like the shift from manufacturing to a service-oriented economy, the emergence of the knowledge-based industry, the globalized models of business management, and the use of innovative technologies and flexible work methods (Ten Brummelhuis, Bakker, Hetland, & Keulemans, 2012). The job design literature has gradually recognized

that the "one-size-fits-all approach" is no longer sufficient (Grant & Parker, 2009). Not surprisingly, modern job redesign approaches have come to recognize the role of individuals as proactive agents that form their jobs and change their job characteristics (Fried, Grant, Levi, Hadani, & Slowik, 2007; Grant & Parker, 2009; Nielsen, 2013; Oldham & Hackman, 2010). Such bottom-up approaches have come to complete the traditional job design literature. Because job crafting includes individual proactivity and the self-initiated changes in the job, it can be used to supplement these traditional top-down, job redesign approaches. In this way, not only job redesign approaches can become more successful as they are tailored to individual needs, but improvements of jobs can be a continuing process creating in this way sustainable changes.

Increase Employee Motivation

Several studies have confirmed that job resources and personal resources independently or in combination predict work engagement (e.g., Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Work engagement, in turn, has a positive impact on job performance (Demerouti & Cropanzano, 2010). Recently, it has been suggested that job crafting represents the way through which employees who are engaged and perform well are able to create their own resources, which then foster engagement over time and create a positive gain spiral (Bakker, 2011). As already indicated, job crafting is a specific form of proactive behavior in which employees initiate changes in their levels of job demands and job resources (Tims et al., 2012). Job crafting enables employees to fit their jobs to their personal knowledge, skills, and abilities on the one hand, and to their preferences and needs on the other. Because of job crafting, employees may be able to increase their person-job fit and to experience enhanced meaning in their work.

Taken together, job crafting represents a means that can be encouraged by organizations to keep their employees enthusiastic for and engaged in their work. Thus, job crafting can be implemented not only to complement top-down job redesign approaches but also to help organizations to obtain competitive advantage by attracting and retaining engaged employees.

Adjust Jobs for Specific Groups of Employees

Because job crafting is related to changing a job in order to create a better fit with the job characteristics and employee desires (Wrzesniewski & Dutton, 2001), it can become a valuable means to adjust jobs according to the needs of specific groups of employees, like older employees, employees with disabilities or health problems, as well as parents with young children, and female employees. These represent some employee groups that have difficulties in participating in employment (Phelps, 2007), are at risk in experiencing lower fit, or have higher difficulty in adapting their job. Some of these groups will be discussed below for illustrative reasons.

Starting with older employees, it is important to realize that job characteristics that are particularly attractive to them are security, health benefits, and opportunities for control over work assignments (Kanfer & Ackerman, 2007). Older employees prefer jobs that have meaning, they want to feel useful, respected and recognized (Bal, Jansen, Van der Velde, De Lange, & Rousseau, 2010; Stamov-Roßnagel, & Hertel, 2010). In addition, older employees focus more on their personal relationships with colleagues, family, and friends (Bal et al., 2010) and attach less value to their work goals, which does not mean that they put less effort in achieving their work goals (Kanfer & Ackerman, 2007). These characteristics make older employees a special group with high importance for the organization (due to their experience) but with specific individual preferences that need to be satisfied in order to be motivated. Therefore, introducing organizational policies that encourage job crafting may allow workers of different age groups to adapt their work to their particular skills and needs (Truxillo, Cadiz, Rineer, Zaniboni, & Fraccaroli, 2012).

A similar line of reasoning applies also to employees with health problems or disabled employees. Srivastava and Chamberlain (2005) found that one of the factors that organizations can use to increase job retention and return to work for employees with health problems and disabled employees is that employers need to be more responsive to the workplace needs of these people. Next to health care services and the regulations that are specified in the disability discrimination act, the study of Srivastava and Chamberlain (2005) among British organizations concluded that it is important to increase flexibility in the job in terms of duties and hours of work. In a similar vein, a meta-analysis of interventions to help employees with chronic diseases to stay at work concluded that interventions that stimulated empowerment and offered a combination of knowledge and skills, enabling individuals to define and achieve their own goals, were more successful than any other interventions (Varekamp, Verbeek, & Van Dijk, 2006). Again, it is important to emphasize that stimulating job crafting by such employees does not substitute the top-down adjustments of the job but can be used complementary.

Finally, women and employees with young children represent another category of employees who need special attention because they juggle work and family roles. They are suggested to profit from jobs that provide them flexibility and autonomy to deal with the enhanced demands from the family domain. Demerouti, Peeters, and van der Heijden (2012) suggested that individuals in early adulthood experience high inter-role conflict and low inter-role facilitation due to high demands and low resources in different life domains (work and family lives). Parents of young dependent children (especially mothers; Moen & Roehling, 2005) have higher family demands than those with older children (Hochschild, 1989). Moreover, these demands are often unpredictable (e.g., arrangement of childcare, day-care pick up and drop off, care of a sick child). Demerouti et al. (2012) concluded that individuals have different needs in different life stages and that this information enables organizations to more effectively target

the needs of each subgroup of workers (Grzywacz, Almeida, & McDonald, 2002). Moreover, Martinengo, Jacob, and Hill (2010) suggested that men and women may need different work and family options even when they are in the same family life stage. For example, when children are young, men may especially benefit from more job flexibility in when and where they work, whereas women may prefer more reduced hours or part-time options. These are all issues that organizations cannot easily respond to by implementing top-down policies that are meant to be applicable to all employees.

The reference to these employee groups does not mean that job crafting is only beneficial for those groups. Other groups might also profit from top-down and bottom-up adjustments at work, like minority groups or young employees. Put differently, while all employees may benefit from job crafting, job crafting represents a promising way to create healthy and motivating jobs for specific groups of employee, for whom it can be difficult or costly to develop top-down approaches. Such employees may need special attention and training in order to become effective crafters and organizations should be very careful in supporting such function job crafting as feelings of unfairness may arise.

Job Crafting Interventions

Although there are several job redesign interventions that use a top-down job redesign approach, hardly any studies present the effectiveness of bottom-up job redesign interventions. A critical difference between these two is that top-down approaches enhance the same job characteristics for all employees (even though not everybody attaches value to these characteristics), while a bottom-up job crafting intervention would result in each employee changing different job characteristics depending on the own needs.

A notable exception is the intervention developed by Van den Heuvel, Demerouti, and Peeters (2012) to increase the awareness of employees regarding the ways in which they can adapt their jobs to their own needs so that they experience more pleasure, engagement, and meaning in their work. This job crafting intervention consists of a number of phases: (1) a job crafting workshop; (2) a weekly job crafting logbook; and (3) a reflection meeting. During the workshop, employees get to know the JD-R model and the concept of job crafting as well as learn to set a so-called Personal Crafting Plan (PCP). The PCP consists of self-set crafting actions that the participants plan to undertake for a period of four weeks. In the second phase, the employees keep so-called "crafting logbooks" that is detailed reports of their crafting activities of each week. During the reflection meeting, they discuss successes, problems, and solutions. This training was tested (with pre- and post-measures) among police officers. The training had a positive effect on two job resources, namely on contact with the supervisor and work-related opportunities for development, one personal resource, that is self-efficacy, and on affect. The experimental group reported higher

job resources, higher self-efficacy, more positive and less negative emotions after the training, while no change was found in the control group. However, no change was found on the reported job crafting behavior.

According to Nielsen (2013), there is a need to increase the theoretical understanding of how and why organizational members influence intervention outcomes; to develop measures that capture the role of employees and line managers; and to integrate the knowledge about the role of employees and line managers proactively in future intervention designs. In her view crafting is a part of organizational interventions that needs to be part of the evaluation process. She argues that the way that employees and line managers shape the intervention process and content influences the ability of the intervention to improve employee health and well-being.

Taken together, it seems that interventions can stimulate proactive job crafting behavior, which can have tremendous implications for organizations. However, more research is necessary to uncover effective ways to stimulate favorable job crafting behaviors.

Conclusion

The main goals of this review (of which a summary is displayed in Figure 1) were to provide an overview of the literature on job crafting, its conceptualizations, predictors and outcomes as well as to provide suggestions on how job crafting can be used to improve the jobs of employees. Approaches that recognize the role of individuals as proactive agents that form their jobs and change their own job characteristics (bottom-up) have come to complete the traditional (top-down) job design literature. The review departed from the conceptualization of job crafting accord-

ing to Wrzesniewski and Dutton (2001) as the physical and cognitive changes individuals make in their task or relational boundaries. Next, job crafting was conceptualized as a proactive employee behavior consisting of resources seeking, challenges seeking, and demands reducing based on the JD-R model. Conditions like job autonomy, job challenges, and their combination were found to stimulate job crafting while task interdependency hindered job crafting. Job crafting seems to occur more often among employees with a proactive personality and promotion focus. Moreover, job crafting was found to have important ramifications for employee work engagement and performance. Motives for job crafting seem to be the achievement of goals, the enhancement of job-person fit, health, and motivation. Organizations can benefit from job crafting not only by complementing top-down job redesign approaches but also to achieving competitive advantage in attracting and retaining employees as well as by adjusting jobs for special groups of employees. Job crafting interventions can be effectively used to encourage employees to proactively modify their own work environment in order to stay engaged.

We saw in this review that job crafting is related to favorable outcomes. However, we still do not know why is the case. Do benefits of job crafting derive from substantive changes in the work itself or mainly from involvement in the process of making those changes? Is it because the job now fits better with employees' own preferences and needs, or because the newly crafted jobs stretch employees' skills, or because crafting allows them to eliminate inefficiencies and redundancies in work processes that had been frustrating to them and impeded their productivity (Oldham & Hackman, 2010)? Toward this end, Tims, Bakker, and Derks (2013) recently examined whether employees can impact their own well-being by crafting their job demands and resources. Their longitudinal study showed that employees who crafted their job resources in the first month of the study showed an increase in their structural and social resources over the course of the study (2 months). This increase in job resources was positively related to well-being (i.e., increased engagement and job satisfaction, and decreased burnout). Crafting job demands did not result in a change in job demands, but related directly to increases in well-being. This study seems to imply that employee job crafting has a positive impact on well-being partly because it changes specific job characteristics (i.e., job resources).

Moreover, it is still unclear whether job crafting may have dark sides for the organization. For instance, if employees adjust a product, service, or characteristic of their work, disruptions in the work processes may develop that affect not only the crafter but also other employees who may have to struggle to accommodate the newly modified product or service (Oldham & Hackman, 2010). Organizations are therefore challenged to find ways that lessen the likelihood of unanticipated problems that reduce the effectiveness of the work unit as a whole.

As research on job crafting is still in its infancy, there are several research questions that deserve attention in future research. For instance, it is relevant to examine whether job crafting can take other forms than those

Figure 1. Model integrating the findings on job crafting research.

presented in the current review. For instance, it is possible that individuals craft their working time or the location, and that these forms of crafting have also favorable effects on employee and organizational outcomes. Also, it is essential to expand the knowledge on the individual and situational determinants facilitating the favorable crafting behavior. For instance, it might be that the role of supervisors is essential in order to stimulate favorable job crafting behaviors. Finally, it is also relevant that future research examines the way in which an individual's job crafting influences his/her colleague's job characteristics. In this way, a more thorough insight into this phenomenon can be obtained.

Although job crafting is not the panacea for all organization problems, it is worth for organizations to recognize its existence and to manage it such that it has beneficial effects on the employees and the organizations. This review does not suggest that job crafting should replace the (top-down) attempts of organizations to improve the work of their employees. Since making jobs more motivating through top-down job redesign approaches helps most employees to become more motivated and satisfied in their jobs, it is necessary to continue improving and implementing such approaches. However, it is suggested that organizations should allow, stimulate, and train their employees to craft their jobs in a way that fits them and the organization better.

Although job crafting is bottom-up and individually driven, organizations can encourage employees to show this behavior. This can be done through the supervisors who motivate employees to craft their jobs, give them the freedom to do so, but also specify what "good" crafting looks like (i.e., the crafting that has positive effects for the employee and the organization). This can be done, for instance, by creating an open climate in which the individual needs are discussed, attention is paid to best practices of crafting behavior, and where the supervisor acts also as a role model with his/her own crafting behavior. In this way, job crafting can complement job design with an individual focus. To this end, it is important for organizations to recognize that an individual employee is the person who knows the job best, and who can recognize where there is room for improvement such that the job fits better to the person. Hopefully, this review will contribute to more utilization of job crafting by organizations in order to improve workplaces and employee motivation and performance.

References

- Ashford, S. J., Blatt, R., & VandeWalle, D. (2003). Reflections on the looking glass: A review of research on feedback-seeking behavior in organizations. *Journal of Management*, 29, 769–799.
- Aust, B., Rugulies, R., Finken, A., & Jensen, C. (2010). When workplace interventions lead to negative effects: Learning from failures. *Scandinavian Journal of Public Health*, 38, 106–119.
- Bakker, A. B. (2011). An evidence-based model of work engagement. *Current Directions in Psychological Science*, 20, 265–269.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, 22, 309–328.
- Bakker, A. B., & Demerouti, E. (2014). Job demands-resources theory. In C. Cooper & P. Chen (Eds.), *Wellbeing: A complete reference guide* (pp. 37–64). Chichester, UK: Wiley-Blackwell.
- Bakker, A. B., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, 65, 1359–1378.
- Bal, P. M., Jansen, P. G. W., Van der Velde, M. E. G., De Lange, A. H., & Rousseau, D. M. (2010). The role of future time perspective in psychological contracts: A study among older workers. *Journal of Vocational Behavior*, 76, 474–486.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50, 248–287.
- Berg, J. M., Wrzesniewski, A., & Dutton, J. E. (2010). Perceiving and responding to challenges in job crafting at different ranks: When proactivity requires adaptivity. *Journal of Organizational Behavior*, 31, 158–186.
- Bindl, U. K., & Parker, S. K. (2009). *Investigating self-regulatory elements of proactivity at work* [Working paper]. Sheffield, UK: University of Sheffield Institute of Work Psychology.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267–283.
- Chu, A. H. C., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of "active" procrastination behavior on attitudes and performance. *Journal of Social Psychology*, 145, 245–264.
- Crawford, E. R., LePine, J. A., & Rich, B. L. (2010). Linking job demands and resources to employee engagement and burnout: A theoretical extension and meta-analytic test. *Journal of Applied Psychology*, 95, 834.
- Csikszentmihalyi, M., & Nakamura, J. (1989). The dynamics of intrinsic motivation: A study of adolescents. In C. Ames & R. Ames (Eds.), *Research on motivation in education* (Vol. 3, pp. 45–71). New York, NY: Academic Press.
- 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.
- Demerouti, E., & Cropanzano, R. (2010). From thought to action: Employee work engagement and job performance. In A. B. Bakker & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 147–163). Hove, UK: Psychology Press.
- Demerouti, E., Peeters, M. C. W., & van der Heijden, B. I. J. M. (2012). Work-family interface from a life and career stage perspective: The role of demands and resources. *International Journal of Psychology*, 47, 241–258.
- Fried, Y. (1991). Meta-analytic comparison of the job diagnostic survey and job characteristics inventory as correlates of work satisfaction and performance. *Journal of Applied Psychology*, 76, 690–697.
- Fried, Y., Grant, A. M., Levi, A. S., Hadani, M., & Slowik, L. H. (2007). Job design in temporal context: A career dynamics perspective. *Journal of Organizational Behavior*, 28, 911–927.
- Ghitulescu, B. E. (2007). *Shaping tasks and relationships at work: Examining the antecedents and consequences of employee job crafting*. Unpublished doctoral dissertation, University of Pittsburgh, PA, USA.
- 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.
- Gruys, M. L. (1999). *The dimensionality of deviant employee performance in the workplace*. Unpublished doctoral dissertation, University of Minnesota, Minneapolis, MN, USA.

- Grzywacz, J. G., Almeida, D. M., & McDonald, D. A. (2002). Work-family spillover and daily reports of work and family stress in the adult labor force. *Family Relations*, 51, 28–36.
- Herzberg, F. (1966). *Work and the nature of man*. Cleveland, OH: World Publishing.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing conservation of resources theory. *Applied Psychology: An International Review*, 50, 337–370.
- Hochschild, A. (1989). *The second shift*. New York, NY: Viking.
- Hornung, S., Rousseau, D. M., Glaser, J., Angerer, P., & Weigl, M. (2010). Beyond top-down and bottom-up work redesign: Customizing job content through idiosyncratic deals. *Journal of Organizational Behavior*, 31, 187–215.
- Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social, and contextual work design features: A meta-analytic summary and theoretical extension of the work design literature. *Journal of Applied Psychology*, 92, 1332–1356.
- Kanfer, R., & Ackerman, P. L. (2007). Aging and work motivation. In C. Wankel (Ed.), *21st century management: A reference handbook* (Vol. 2, pp. 160–169). Thousand Oaks, CA: Sage.
- Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain – implications for job redesign. *Administrative Science Quarterly*, 24, 285–308.
- Karasek, R. A., & Theorell, T. (1990). *Healthy work*. New York, NY: Basic Books.
- Kira, M., Balkin, D. B., & San, E. (2012). Authentic work and organizational change: Longitudinal evidence from a merger. *Journal of Change Management*, 12, 31–51.
- Kira, M., van Eijnatten, F. M., & Balkin, D. B. (2010). Crafting sustainable work: Development of personal resources. *Journal of Organizational Change Management*, 23, 616–632.
- Klingsieck, K. B. (2013). Procrastination: When good things don't come to those who wait. *European Psychologist*, 18, 24–34.
- 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.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting and task performance*. Englewood Cliffs, NJ: Prentice Hall.
- Lyons, P. (2008). The crafting of jobs and individual differences. *Journal of Business Psychology*, 23, 25–36.
- Martinengo, G., Jacob, J. I., & Hill, E. J. (2010). Gender and the work-family interface: Exploring differences across the family life course. *Journal of Family Issues*, 31, 1363–1390.
- Mattarelli, E., & Tagliaventi, M. R. (2012). How offshore professionals' job dissatisfaction can promote further offshoring: Organizational outcomes of job crafting. *Journal of Management Studies*. Advanced online publication. doi: 10.1111/j.1467-6486.2012.01088.x
- Moen, P., & Roehling, P. (2005). *The career mystique: Cracks in the American dream*. New York, NY: Rowman & Littlefield.
- Morgeson, F. P., & Humphrey, S. E. (2008). Job and team design: Toward a more integrative conceptualization of work design. In J. Martocchio (Ed.), *Research in personnel and human resource management* (Vol. 27, pp. 39–92). Bingley, UK: Emerald Group.
- Nadin, S. J., Waterson, P. E., & Parker, S. K. (2001). Participation in job redesign: An evaluation of the use of a sociotechnical tool and its impact. *Human Factors and Ergonomics in Manufacturing*, 11, 53–69.
- Nielsen, K. (2013). How can we make organizational interventions work? Employees and line managers as actively crafting interventions. *Human Relations*, 66, 1029–1050.
- Oldham, G. R., & Hackman, J. R. (2010). Not what it was and not what it will be: The future of job design research. *Journal of Organizational Behavior*, 31, 463–479.
- Parker, J. D. A., & Endler, N. S. (1996). Coping and defense: A historical overview. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping-theory, research, applications* (pp. 3–23). New York, NY: Wiley.
- Parker, S. K., & Collins, C. G. (2010). Taking stock: Integrating and differentiating multiple proactive behaviors. *Journal of Management*, 36, 633–662.
- Parker, S. K., & Ohly, S. (2008). Designing motivating jobs: An expanded framework for linking work characteristics and motivation. In R. Kanfer, G. Chen, & R. D. Pritchard (Eds.), *Work motivation: Past, present and future* (pp. 233–284). New York, NY: LEA/Psychology Press.
- Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making things happen: A model of proactive motivation. *Journal of Management*, 36, 827–856.
- Petrou, P. (2013). Crafting the change: The role of job crafting and regulatory focus in adaptation to organizational change. Unpublished doctoral dissertation, Utrecht University, Utrecht, The Netherlands.
- Petrou, P., Demerouti, E., Peeters, M., Schaufeli, W. B., & Hetland, J. (2012). Crafting a job on a daily basis: Contextual antecedents and the link to work engagement. *Journal of Organizational Behavior*, 33, 1120–1141.
- Pelphs, E. S. (2007). *Rewarding work: How to restore participation and self-support to free enterprise*. Cambridge, MA: Harvard University Press.
- Srivastava, S., & Chamberlain, A. (2005). Factors determining job retention and return to work for disabled employees: A questionnaire study of opinions of disabled people's organizations in the UK. *Journal of Rehabilitation Medicine*, 37, 17–22.
- Stamov-Roßnagel, C., & Hertel, G. (2010). Older workers' motivation: Against the myth of general decline. *Management Decision*, 48, 894–906.
- Ten Brummelhuis, L. L., Bakker, A. B., Hetland, J., & Keulemans, L. (2012). Do new ways of working foster work engagement? *Psicothema*, 24, 113–120.
- 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.
- Tims, M., Bakker, A. B., & Derks, D. (2012). Development and validation of the job crafting scale. *Journal of Vocational Behavior*, 80, 173–186.
- 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, 234–245.
- Truxillo, D. M., Cadiz, D. M., Rineer, J. R., Zaniboni, S., & Fraccaroli, F. (2012). A lifespan perspective on job design: Fitting the job and the worker to promote job satisfaction, engagement, and performance. *Organizational Psychology Review*, 2, 340–360.
- Van den Heuvel, M., Demerouti, E., & Peeters, M. (2012). Succesvol job craften door middel van een groepstraining [Successful job crafting through group training]. In J. de Jonge, M. Peeters, S. Sjollem, & H. de Zeeuw (Eds.), *Scherp in werk: 5 routes naar optimale inzetbaarheid* (pp. 27–49). Assen, The Netherlands: Koninklijke van Gorcum BV.
- Varekamp, I., Verbeek, J. H. A. M., & Van Dijk, F. J. H. (2006). How can we help employees with chronic diseases to stay at work? A review of interventions at job retention and based on an empowerment perspective. *International Archives of Occupational and Environmental Health*, 80, 87–97.
- Vroom, V. H. (1964). *Work and motivation*. New York, NY: Wiley.

- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *Academy of Management Review*, 26, 179–201.
- Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2009). Work engagement and financial returns: A diary study on the role of job and personal resources. *Journal of Occupational and Organizational Psychology*, 82, 183–200.

Received December 12, 2012
Accepted October 2, 2013
Published online June 3, 2014

About the author

Evangelia Demerouti is a full professor at Eindhoven University of Technology, The Netherlands. Her research interests include topics from the field of work and health, including positive organizational behavior, the job demands-resources model, work-family interface, job crafting, and recovery from work.

Evangelia Demerouti

Department of Industrial Engineering & Innovation Sciences
Eindhoven University of Technology
Human Performance Management Group
P.O. Box 513
5600 MB Eindhoven
The Netherlands
Tel. +31 40 247-5669
Fax +31 40 243-7161
E-mail e.demerouti@tue.nl