Department of Human Sciences
PhD School of Arts and Humanities
PhD in Human Sciences
XXXII° Cycle

Make It Work:
How Cognitive & Behavioural Dynamics Shape Job Crafting

In *co-tutelle de thése* with the Technische Universiteit Eindhoven (TU/e), the Netherlands

S.S.D. (Disciplinary Sector) M-PSI/06 – Work and Organizational Psychology

Coordinator: Prof Dr Manuela Lavelli

Tutor: Prof Dr Riccardo Sartori

Tutor: Prof Dr Evangelia Demerouti

PhD Candidate: Arianna Costantini

Make It Work: How Cognitive & Behavioural Dynamics Shape Job Crafting

Arianna Costantini

PhD Dissertation

Verona

ISBN pending

Lloyd, mi sento fragile.

Per quale ragione, Sir?

Non lo so, ma ho l'impressione di poter andare in mille pezzi da un momento all'altro.

Sir, anche l'oceano, divenendo pioggia, si separa in mille gocce. Eppure nessuno pensa che sia fragile.

Questo cosa significa, Lloyd?

Che la fragilità, Sir, non è perdere la propria forma. Ma non accettare di averne altre.

Grazie mille, Lloyd.

Prego, Sir.

Lloyd, I feel fragile.

For what reason, Sir?

For I feel like I may break into a thousand pieces from one moment to the next.

Sir, also the ocean, becoming rain, divides into a thousand drops. Yet, nobody thinks it is fragile.

What does it mean, Lloyd?

That fragility, Sir, is not about losing one's own form. It is about not accepting having others.

Thank you, Lloyd.

You're welcome, Sir.

Vita con Lloyd, Simone Tempia

Contents

ABSTRACT

One of the most significant current discussions in work and organisational psychology centres on the ways in which employees can face and adapt to growing levels of uncertainty and complexity in the workplace. In this regard, the construct of job crafting has gain momentum, as it designates a set of employees' proactive behaviours balancing the job characteristics to allow optimal functioning in dynamic work environments.

Despite a common agreement on the nature of job crafting as a bottom-up, self-initiated work redesign behaviour, construct clarification is still needed to advance knowledge on its nomological network. This dissertation aimed at deepening knowledge on the structure and behavioural features of job crafting, in order to further investigate the role of employees' psychosocial beliefs in driving such proactive behaviours, and whether and how intervention initiatives can be used to support them. To reach these aims, we present one theoretical chapter and three empirical contributions, conducted with different research designs.

Chapter 2 presents a systematic literature review on the scales developed to measure job crafting and three empirical studies (i.e., cross-sectional, three-wave, and weekly diary) aimed at investigating the validity of a four-dimensional, hierarchical conceptualisation of behavioural job crafting. Our proposed conceptualisation integrates the dimension of optimising job demands as a constituting behavioural domain of job crafting and accounts for the hierarchical features that reflect or form an overall job crafting construct. We used cross-sectional data collected among 936 employees to investigate the factorial structure of our proposed conceptualisation. Moreover, weekly diaries collected among 199 employees during three consecutive working weeks were used to investigate the multilevel factorial structure (i.e., state and trait levels) of behavioural job crafting. Also, three-wave data with two-month time-lag between each measurement point were collected among 226 employees to investigate the stability of our conceptualisation over time. Finally, data from 591 employees were used to test the hierarchical structure of behavioural job crafting formed by a set of reflective (i.e., the behavioural facets of job crafting) and formative (i.e., expansion or contraction strategies and overall job crafting) indicators, and its relationships with work engagement and exhaustion. Our results partially supported the hypotheses. A four-factor solution fitted the data well both when exploring and confirming the structure of our conceptualisation.

Likewise, a factorial structure composed by four behavioural facets, that is, seeking resources and challenges, reducing and optimising demands, fitted the data well at both the within- and between-level of analysis, and these dimensions were relatively stable over time. However, our hierarchical model with formative and reflective indicators showed that job crafting is better characterised by distinct behavioural facets rather than by two broad classes of behavioural strategies (i.e., expansion and contraction) encompassing distinct behaviours. Moreover, decreasing hindering demands was the only behaviour negatively related to an overall, formative job crafting construct, suggesting that behaviours aiming at reducing hindering demands are not consistent with the other set of proactive behaviours that characterise job crafting.

In Chapter 3, we adopt a dynamic perspective to the theory of planned behaviour as an overarching theoretical framework allowing us to understand how personal and social beliefs drive behavioural job crafting over time. Assuming a bi-directional perspective, we further propose that previous engagement in job crafting serves to shape the drivers of job crafting behaviours. We then present a two-wave, cross-lagged panel study conducted among 346 employees. Results from a latent change score model showed that descriptive norms and perceptions of behavioural control significantly influenced the rate of change in intentions to engage in job crafting. At the same time, attitudes stabilised such intentions, meaning that more positive attitudes led to lower changes in intentions during the study period. In turn, intentions were a significant predictor of job crafting behaviours when assuming both a dynamic and a static perspective. Also, previous engagement in job crafting was a significant predictor of changings occurring in attitudes and perceptions of control to it referred. We conclude that modelling and initiatives that provide employees with the tools and techniques to craft their jobs are critical to stimulating virtuous cycles for job crafting to flourish in the work environment.

Chapter 4 presents a theoretical contribution on how the theory of planned behaviour can serve to design job crafting initiatives that are likely to be effective among participants from different cultural background because they rely on common psychosocial mechanisms. Based on the literature on the theory of planned behaviour and behaviour change, we provide a detailed description of how job crafting interventions can be designed to target different phases underlying behaviour formation, i.e., motivational and volitional processes. Further, we identify specific behaviour change techniques that

can serve during interventions to strengthen and support the drivers of behavioural intentions, and to translate such intentions into actual behaviours.

In Chapter 5, we present a quasi-experimental intervention study examining the effectiveness of a job crafting intervention based on the TPB. We collected pre- and post-measures and three weekly diaries among 115 participants assigned to two groups, i.e., an intervention and a control group. Our intervention was designed to enhance the motivational variables that drive job crafting intentions and to allow employees learning the techniques to translate their intentions into actual job crafting behaviours, also using implementation intentions. Accordingly, we propose that employees taking part to our workshops would be better able to craft their job in an expansion-oriented way and, by doing so, that they would also be better able to experience flow at work because of increased balance between their job challenges and their resources. Results showed that the intervention was effective in supporting participants' higher intentions to engage in job crafting compared to the control group, and in promoting weekly flow at work, which eventually prompted subsequent job crafting. Weekly initial and changing intentions were, in turn, both related to post-measures of job crafting. We conclude that our job crafting intervention based on the theory of planned behaviour can be used to enhance employees' proactive work redesign and their ability to be aware and modulate their intentions and subsequent behavioural responses in a manner that allows a positive redesign of the work environment.

This dissertation contributes to the literature on job crafting and behaviour formation. In our studies, we explored and provided evidence on the role of different behavioural strategies in defining an overall conceptualisation of employees' job crafting. Our findings show that through job crafting, employees make their work contexts more resourceful. Moreover, we investigated the psychosocial boundaries and processes that contribute to the formation of such a beneficial set of behaviours. The validity of such a framework to explain the roles of the antecedents of job crafting then served us to design and test an intervention initiative, which proved be effective to support employees' behavioural tendencies towards the development of work environments that are auto-generative of resources.

CHAPTER 1

General Introduction

Change and growing complexity that today characterise the nature of work emphasise the role of individuals in developing personalised approaches to face and manage uncertainty at work. Employees' self-initiated behaviours have become more critical to ensure competitiveness and innovation since organisational processes and forms are fluctuating in a changing context (Petrou, Demerouti, & Schaufeli, 2016). However, in the process of creating and revising tasks, ways of working, or (re)framing the elements of the work itself, employees not only face uncertainty but actually engage in job redesign actions that result in tailored versions of the job, of the work experience, or both. Within such a context, also the meaning of work comes to light as defined more by the individual ability in shaping work roles, rather than by fixed job descriptions (Grant & Parker, 2009; Griffin, Neal, & Parker, 2007; Martin, Liao, & Campbell, 2013). Thus, it becomes clear that the importance of employees' proactive behaviours has grown over time not only because it affects the way organisations are able to respond to fluctuating demands, but also because such behaviours shape the meaning of work and employees' motivation and energy from it deriving.

On one hand, deepening knowledge on the nature of such proactive behaviours and how they arise and are influenced by both personal factors and the organisational environment is of crucial importance to sustain employees' energy, as well as meaningful and enriching work experiences, which are a prerequisite to positive organisational outcomes. On the other hand, complementary to such an interest lies the need for understanding how proactive behaviours aiming to redesign work can be sustained to allow the channelling of naïve employees' efforts in a way that is beneficial for their psychological well-being at work. This means that while today work design becomes a concept strictly related to individual adaptations proactively initiated to shape work experiences, it is complementary to traditional top-down management approaches (Demerouti, 2014). Indeed, understanding the mechanisms underlying employees' bottom-up job redesign behaviours is critical to effectively stimulate and manage such proactive behaviours in a way that is helpful for both the individual at work and the organisation. By gaining enhanced awareness on how proactivity in the workplace is enacted to face constant changes, to preserve or improve one's own well-being, or to experience higher engagement in one's work, it is possible to identify effective approaches to stimulate positive employees' plasticity, in a way that aligns with the

organisational culture, eventually supporting individual agency and people development within the boundaries of organisations. Against this background, two main research domains can be identified and integrated to help to map proactive job redesign and allow gaining a more nuanced understanding of it, eventually supporting effective intervention initiatives.

The first research domain is the one that focuses on job crafting. Literature on job crafting has to date acknowledged the central role of employees in shaping their work characteristics, and several theoretical proposals have been developed to explain when and how employees craft their work. However, such abundant research risks being fragmented and leading to inclusive findings if different perspectives lack theoretical and empirical integration. How is behavioural job crafting characterised when accounting not only for specific behaviours but also for the role of overall behavioural strategies and in the light of different measurement operational choices? Also, while studies investigating the role of different antecedents in influencing job crafting are abundant, a perspective that accounts for the role of several concomitant factors and their temporal dynamics is still lacking. However, such an understanding is key to unpack the mechanisms behind employees' engagement in job crafting in a way that mirrors the complexity of organisational life.

The second research domain proposed to complement and advance the study of job crafting deals with the literature on behaviour formation and behaviour change and specifically refers to the theory of planned behaviour (TPB; Ajzen, 1991). Research in this area can significantly contribute to advance knowledge on the dynamics of proactive job redesign by offering a valid lens to identify, understand, and consider how several factors are involved in behaviour formation and change. Such literature informs us about how intentional behaviours are shaped by both personal beliefs and values and by the dynamics and situational aspects defining different organisational cultures (Morris, Hong, Chiu, & Liu, 2015), suggesting that these elements are key if one aims at supporting or limiting any intentional behaviour.

In view of the foregoing, we propose that by integrating theoretical knowledge on the TPB to the study of job crafting, it is possible to understand how individual beliefs and cultural patterns (i.e., social norms in the organisation) influence proactive adaptations to the work environment, including the role of the temporal features that

characterise such dynamics (Bagozzi, Wong, Abe, & Bergami, 2000; Henrich et al., 2005; O'Reilly, Caldwell, Chatman, & Doerr, 2014; Sturman, Shao, & Katz, 2012; Morris, Savani, Mor, & Cho, 2014). How are social norms related to employees' engagement in job crafting, and what is their role when accounting for individual beliefs regarding their agency? Is individual agency enough to allow employees' job crafting or such a perception has to be channelled via conscious intentions? How do individual attitudes toward proactivity at work drive actual behaviours? How do individual beliefs underlying engagement in job crafting behaviours change over time? Moreover, assuming job crafting as intentional behaviour (Bipp & Demerouti, 2015), is it possible to effectively stimulate employees' proactive job redesign by supporting the intention behind it and its drivers?

This dissertation aims at shedding light on such questions. In doing so, it aims to provide implications for advancing knowledge on the nature of proactive employees' job redesign behaviours in a way that is beneficial to both scholars and practitioners aiming at managing and supporting people development at work.

As follows, we will first introduce literature on job crafting and how such a construct has been developed and crafted over the years. Then, we will present the main features of the TPB and its value to advancing knowledge and filling research gaps in the job crafting literature. Finally, we will present the research questions that guided this dissertation and the design of the studies we conducted to answer such questions.

On Job Crafting

The construct of job crafting was first articulated to describe self-initiated change behaviours that employees engage in to align their jobs with their own preferences, motives, and passions (Wrzesniewski & Dutton, 2001). Specifically, when it was introduced in the literature, in 2001, such a construct was defined as a series of physical and cognitive changes enacted by the employee, shaping work tasks and relationships, which eventually served to determine the meaning of work and one's work identity.

While the features characterising such a construct have been refined and redefined and inscribed within different theoretical backgrounds over the years, (see the timeline in Figure 1) as it will be next elaborated, the centrality of the employee in actively shaping, redefining, constructing his/her work is common among the different proposals. Indeed, the distinctive characteristic of job crafting is that such a bottom-up work redesign

approach starts with the initiative of the employee, who has the opportunity to put into action his/her attitude toward proactive work behaviours (Tims, Bakker, & Derks, 2012). Such a characteristic differentiates job crafting from other bottom-up job redesign approaches, recognising the individual a significant role in reaching high levels of positive experiences at work. That is, in contrast to traditional job redesign approaches, job crafting builds on individual agency and on the extent to which discretionary behaviours are recognised as possible strategies to define the work environment. Within such a view, the individual at work becomes in charge of his/her job redesign strategy, rather than being only a receiver of top-down job redesign policies or programmes. Yet, organisational boundaries define enabling or restricting factors underlying job redesign individual efforts, which in turn can be supported through top-down approaches (Demerouti, 2014), suggesting that a complementary perspective is needed to account for the complexity of proactivity at work, especially when it comes to individual efforts aiming at adjusting the balance between job demands and resources.

Behavioural Job Crafting Research: An Overview

Since its inception in the field of work and organizational psychology and broadening its original framework, job crafting has been conceptualised within the Job Demands-Resources Model (from now on referred to as JD-R perspective to job crafting; Tims & Bakker, 2010) and defined as a proactive behaviour consisting of resources and challenges seeking (i.e., expansion job crafting), and demands reducing (i.e., contraction job crafting) (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012). Specifically, such a proposal was developed to account for a wider set of changes employees may engage in when crafting their work, broadening the focus of job crafting activities to the entire set of elements characterising the work environment (i.e., demands and resources), rather than limiting them to tasks, relationships, or positive (re)framing related to work (Tims et al., 2012).

Within the JD-R perspective to job crafting, crafting job resources could consist of increasing structural or social resources. Increasing challenging demands entails seeking new and challenging tasks at work (e.g., voluntarily taking on new responsibilities or extra tasks; Hakanen, Peeters, & Schaufeli, 2017), which enhance motivation, mastering and learning (Karasek & Theorell, 1990). Decreasing hindering job demands (e.g., making sure that one's job is mentally less demanding; Tims & Bakker,

2010) denotes a health-protecting coping mechanism adopted to reduce demands perceived as excessively high. Evidence from research supported such a multi-dimensional structure of job crafting (cf. Tims et al., 2012), which has been subsequently tested with mixed findings in several languages other than English and extensively used in quantitative job crafting research.

Moreover, assuming the JD-R perspective to job crafting, research has shown that the different behaviours characterising job crafting unfold daily, with substantial variance from day to day, differently influencing, in turn, daily work engagement (Petrou et al., 2012). Such findings shed light on the nature of proactive job redesign as episodic behaviours targeting the work environment (Fay & Sonnentag, 2010; Petrou et al., 2012), contributing to unpacking how the different dimensions of job crafting lead to functional and dysfunctional outcomes. Along such a research line, meta-analytic evidence showed that overall job crafting is associated with work engagement and, notably, that differential results emerge when considering specific job crafting dimensions, with seeking challenges being positively associated with work performance and reducing demands with turnover intentions (Rudolph et al., 2017).

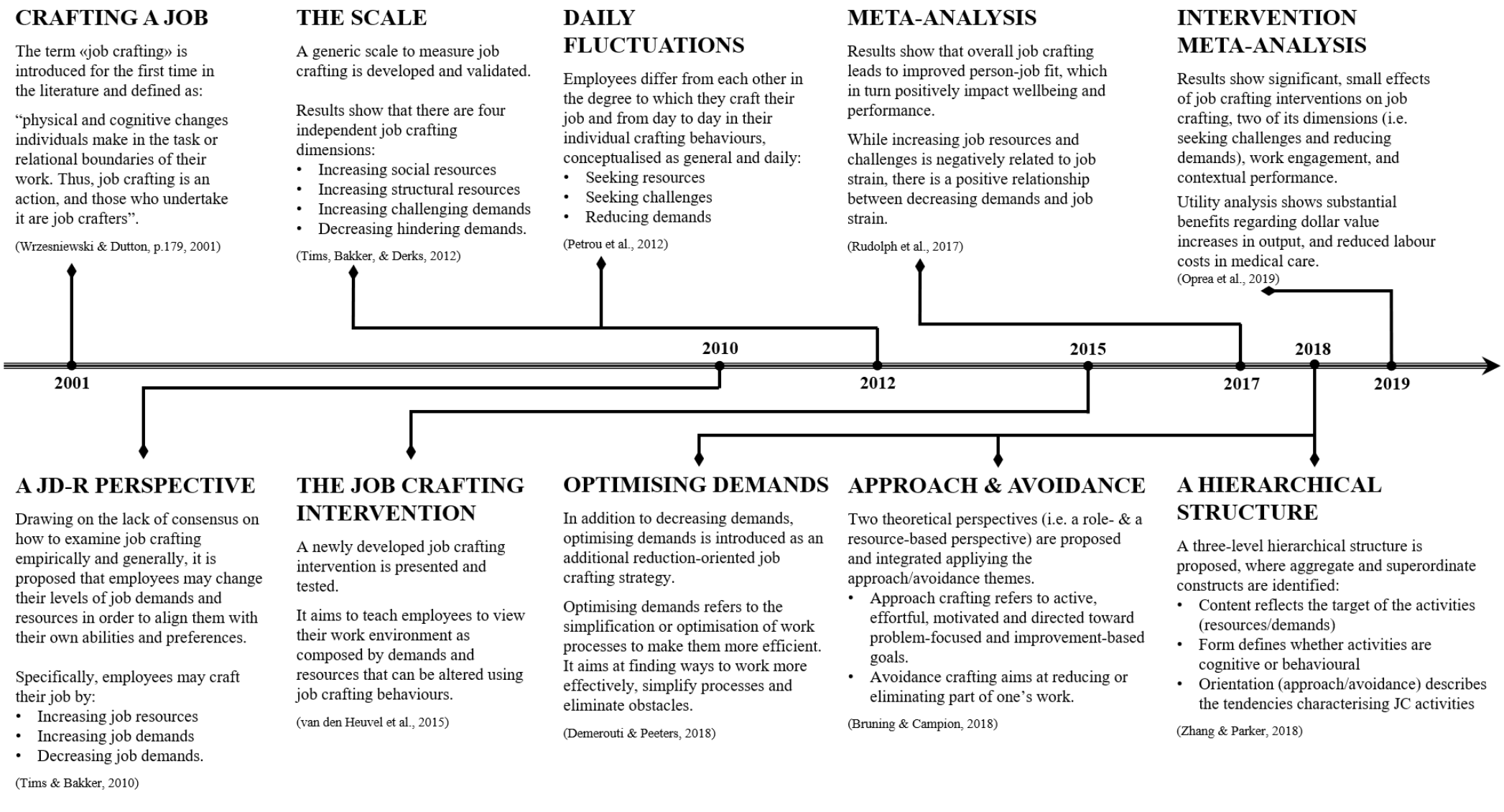
Also, the development of the JD-R perspective to job crafting contributed not only to explore the relationships between such behaviours and their antecedents and outcomes but also to develop interventions that focused on stimulating employees' awareness of their job characteristics and the job crafting strategies that can be used to alter them (cf. van den Heuvel et al., 2015). From the first proposal of the job crafting intervention in 2015, other studies have developed and tested different variations of participatory interventions (e.g., van Wingerden, Bakker, & Derks, 2017; Gordon et al., 2018) aiming at sustaining employees' efforts towards their own job redesign, eventually improving their well-being.

Overall, while theoretical conceptualisations on job crafting differ in the operationalisation of its constituting dimensions, literature seems to converge on the notion that job crafting behaviours can either be directed towards the expansion of the elements constituting the work environment, or towards their contraction (Zhang & Parker, 2018). Specifically, such a distinction has been referred to as building upon different theoretical frameworks (i.e., approach/avoidance, prevention- or promotion-focused; cf. Bruning & Campion, 2018; Lichtenthaler & Fischbach, 2019), which may

serve to account for the motivational patterns driving specific job crafting behaviours but not for their effects on the work characteristics. Also, recent research suggests that hindering demands can be crafted more efficiently compared to the strategy referred to as decreasing demands, i.e., by optimising them (Demerouti & Peeters, 2018). However, such an additional behavioural strategy has not received much attention yet, probably because of its recent introduction in the literature, and no studies have been conducted to understand how such a behavioural job crafting strategy maps into the established JD-R perspective to job crafting.

Figure 1

Timeline of Behavioural Job Crafting Research from 2001 to 2019.



Moreover, even though the JD-R perspective to job crafting offers a clear theoretical framework to identify the concrete behaviours through which job crafting manifests itself, an exhaustive perspective outlining the intertwined mechanisms of cognition and contextual cues that drive such behaviours is still lacking. This thesis aims at filling this gap by proposing the TPB (Ajzen, 1991, 2015) as a framework used to study how contextual and personal factors drive job crafting behaviours, eventually deepening knowledge on the role of different concomitant antecedents that shape employees' proactive job redesign behaviours within organisations.

In doing so, we build on the JD-R perspective to job crafting as a background that allows the identification of specific behaviours to be investigated to understand how both social cognition and individual beliefs influence each of them. Also, given that the TPB offers a framework for conducting behaviour change interventions (Steinmetz et al., 2016), it allows improving the design of job crafting interventions by acknowledging the different role of motivational and volitional drivers over intentional behavioural engagement and to targeting specific intervention techniques and tools accordingly.

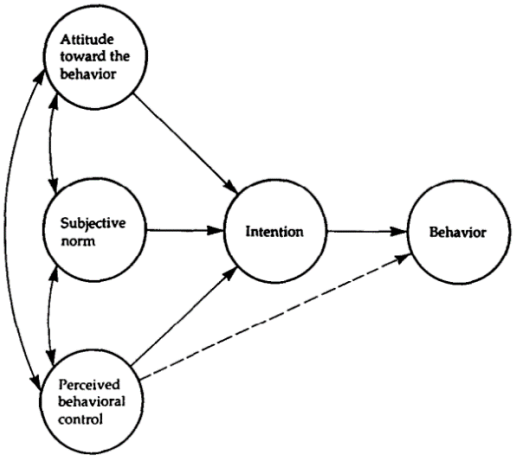
On Behaviour Formation and Change: The Theory of Planned Behaviour

The TPB is a social psychology theory that has been widely applied to understanding behaviour in a variety of organisational settings. It is a cognition-based theory that deals with the relations among beliefs, norms, control, intentions and behaviours, which has had a wide application due to its practical approach to changing behaviour by changing cognitive structures underlying those behaviours (Fox & Spector, 2010).

According to this theory, a person's intention drives her/his following behaviours. In turn, intention results from a set of motivational variables, i.e., attitudes, perceived social norms, and perceptions of behavioural control (PBC), which build intention and its strength. Precisely, within this theoretical framework, *intention* is defined as an indication of a person's readiness to perform a given behaviour and represents the immediate antecedent of it (Ajzen, 2011). However, according to the TPB, intention can be translated into actual behaviour only if it is under volitional control, from which the importance of PBC as a variable that can be used to either build intention or directly predict behaviour (Ajzen, 1991).

Attitudes refer to the general evaluation of the consequences of a particular behaviour, which can be regarded as generally positive or negative. Positive consequences believed to result from a behaviour are likely to fuel behavioural intention. *Perceived social norms* refer to the individual's perceptions of the social pressure to perform the target behaviour. When individuals believe that significant others in the organisation (e.g., co-workers, supervisor) engage in, or approve, a specific behaviour, they will be likely to strengthen their intention toward engaging in the target behaviour. Such assumptions are rooted in social cognition, which refers to the many ways in which group information processing, learning, emotional contagion, and norms frame the decision-making processes of individual members. Accordingly, if the social group (e.g., the work unit or the working group) to which the employee feels attached to encourages job crafting behaviours, the individual is more likely to engage in those behaviours (Fox & Spector, 2010). Likely, at the organisational level, the organisational culture, the leadership style of the supervisors, and specific organisational policies can shape perceived social norms and the resulting individual decision-making. Lastly, *PBC* refers to an individual's perceived degree of difficulty to perform a behaviour and whether an individual believes s/he has the ability to perform a behaviour. Individuals are more likely to perform a behaviour if there are limited perceived factors preventing goal accomplishment and if they believe they have the capability to do so. Figure 2 depicts the TPB. The dotted line refers to the assumption that the extent to which PBC is veridical, it can contribute to the prediction of the behaviour.

Figure 2. *The Theory of Planned Behaviour* (Ajzen, 1991).



Building on evidence from research investigating the validity of the TPB to predict proactive behaviours among different life domains, we argue that it offers valuable

insights to understand the role of social and individual factors contributing to job crafting. Indeed, such a framework allows for the investigation of job crafting as an intentional behaviour unfolding from concomitant different cognitive and social beliefs, providing an overarching approach to understand the role of competing predictors fuelling employees' volition towards their own job redesign strategies. Moreover, by adopting a dynamic perspective to the study of the cognition underlying different job crafting strategies, it is possible to understand whether and how cognitive factors change over time, and so do their predictive values. Gaining such an understanding is important not only from a theoretical perspective but also because, building on such an understanding, it is possible to design and develop intervention initiatives that are likely to be effective in that they target the direct antecedents of job crafting behaviours.

Even though we are unaware of studies supporting the usage of the TPB to investigate cognitive factors underlying crafting behaviours, previous findings supported its predictive value for different proactive behaviours. For example, evidence has been found for attitudes and social norms as key drivers of proactive environmental behaviour (Cordano & Frieze, 2000; Marshall, Cordano, & Silverman, 2005), and for the usefulness of all the variables included in the TPB for predicting students' intentions toward being physically active (Wing Kwan, Bray, & Martin Ginis, 2009). Accordingly, the TPB can be used as an explicative framework to understand the role that external factors have on individuals' decisions to perform crafting behaviours by assessing their intentions, perceived ability to act, and their perceptions of factors that may facilitate or hinder their behavioural goals. In doing so, we contribute to building an overarching framework that explains the dynamics underlying such a proactive strategy enacted at work, able to account for the role of both individual beliefs and the social context in defining individual volition.

From Research to Action: A Guide to Designing Behaviour Change Interventions

The TPB is a useful framework to designing behaviour change interventions and to explicating the mechanisms by which interventions are expected to exert their effects on behaviour (Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst, 2016). Empirical evidence has shown that intentions to behave are the best predictors of actual behaviours, accounting for 24% of the behavioural variance (Winkelnkemper, 2014; Armitage & Conner, 2001). Even though the relative importance of attitude, social norms, and PBC

in the prediction of intention is expected to vary across behaviour and situations (Ajzen, 1991), findings from a meta-analysis showed that the TPB accounts for 27% and 39% of the variance in behaviour and intention, respectively (Armitage & Conner, 2001).

Moreover, to date, research aiming at summarising previous findings of studies conducted within the TPB has focused on the role of PBC as a proximal or direct antecedent of behaviour (see Figure 2). Different meta-analyses showed that such a variable contributes to the variance in both intention and behaviour to varying extents. For example, van den Putte (1991) reported that PBC explained an additional 14% of the variance in intention and 4% in behaviour (over and above attitude and social norms), while Godin and Kok (1996) found that PBC contributed a mean additional 13% of the variance of prediction of intentions and 12% to the prediction of behaviour. Also, according to Armitage and Conner's results (2001), the averaging multiple correlations of attitude, social norms and PBC with intention accounts for 39% of the variance, and not only is the PBC-intention correlation strong, it independently accounts for 6% of the variance, controlling for attitude and subjective norms, while the social norm-intention correlation is significantly weaker than the other relationships with intention. Additionally, when considering the intention X perceived control interaction hypothesis, 47% of the studies considered in the cited meta-analysis reported a significant interaction effect, showing that higher levels of PBC were associated with stronger intention-behaviour relationships.

Overall, such comprehensive evidence and the theory's ability to predict behaviours across a variety of behavioural domains (Haus, Steinmetz, Isidor, & Kabst, 2013; Overstreet, Cegielski, & Hall, 2013) provides a robust theoretical foundation for the development of behaviour change intervention, including those aiming at fostering well-being through job crafting behaviours. Hence, job crafting interventions would benefit from the adoption of the TPB as a framework to explain the mechanisms that drive behavioural intention and behavioural engagement, upon which it is possible to identify the most effective techniques and tools to be used to drive behaviour change or effectively channel and support behavioural engagement. For example, based on whether individuals intend to craft their job without knowing how to do that, or whether they are not motivated to do so, different interventions should be devised.

To illustrate, when employees already intend to craft their jobs, interventions should be focused on supporting *implementation processes* aiming at translating intentions into behaviours. That is, in this case, interventions should be designed to enable employees to execute their intentions by increasing their actual and perceived behavioural control (Ajzen, 2015). Contrarily, when employees are not aware of the positive outcomes deriving from job crafting, interventions should be based on *motivational processes*. In this case, interventions should aim at supporting employees in the development of knowledge about the positive outcomes deriving from job crafting and perceptions of approval from significant others in the organisation. Such motivational interventions draw on the idea that changing beliefs allows changing the motivation driving a specific behaviour, therefore representing the first step to support intentions to behave (Steinmetz et al., 2016).

Open Issues and Research Gaps

Even though some of the most interesting research on job design to emerge in the early 2000s focused on the practice of job crafting, several new areas of research still warrant attention (Oldham & Fried, 2016). First, while the development of the JD-R perspective to job crafting advanced our knowledge on the effects of such behaviours on personal and organisational outcomes, conceptual clarification is still needed to move this area forward (Zhang & Parker, 2018). Specifically, research is needed to deepen knowledge on the nature and dimensionality of behavioural job crafting in a way that incorporates and accounts for several different strategies, formed by specific behaviours, eventually synthesizing recent developments on how employees may craft their job, and accounting for the complex, hierarchical structure of the construct of behavioural job crafting.

Second, compared to a large number of studies on the outcomes deriving from job crafting, less is known about the personal and situational factors leading employees to engage in such behaviours. Indeed, scholars have argued that while the centrality of employees' self-initiated behaviour has become critical to ensure organisational competitiveness and innovation, research should investigate the concomitant personal and situational conditions that encourage employees to engage in job crafting behaviours (Oldham & Fried, 2016). With these regards, to date researchers called for the development of a theoretical framework that describes the conditions underlying job

crafting behaviours and then examines their effects on individuals' responses to various crafting activities (Oldham & Fried, 2016). By integrating the JD-R perspective to job crafting and the TPB, it is possible to answer this call and explore how cognitive antecedents and social cognition developed within the work environment define the intention to craft one's job and the selection of the strategies to do so, i.e., through expansion or contraction strategies. In doing so, we shed light on if and how job crafting behaviours are likely to occur based on the intertwined relationships between individual beliefs and social norms that arise from the context. Investigating the role of cognitive factors and social cognition enabling individuals' agency and positive adaptations to the dynamic work environment is crucial if job crafting has to be effectively managed inside organisations.

Third, strictly linked to the previous point, while from the introduction of the job crafting intervention in 2015 (van den Heuvel et al., 2015) other intervention studies have been conducted to support employees in the redesign of their own work, intervention studies are needed that build on knowledge developed to explain behaviour formation. This is important because it allows to unpack the mechanisms underlying the conditions of intervention effectiveness and to account for the causal processes happening during the intervention, allowing to improve its evaluation (Donaldson, Lee, & Donaldson, 2019). Against this background, by framing job crafting behaviours within the TPB it is possible to design job crafting interventions that build and support the drivers underlying intentions and behaviours, eventually fostering job crafting by supporting and stimulating the processes underlying it. Besides, such an approach allows to shed light on the effectiveness of job crafting interventions as initiatives that lead to substantive changes occurring in employees' behaviours and increased awareness regarding their perceptions of the work environment, or because of the direct involvement of employees in participatory work redesign (Le Blanc, Demerouti, & Bakker, 2017).

Research Aims and Questions

The overall aim of this dissertation is to gain a deeper understanding of the dimensionality and nature of behavioural job crafting, conceptualised as an intentional, planned behaviour. Moreover, it aims to clarify the extent to which contextual (i.e., descriptive and injunctive social norms) and individual (i.e., attitudes and PBC) cognitive

factors as conceptualised in the TPB differently explain behavioural intention and job crafting behaviours.

The research gaps reported above open a series of research questions underlying the investigation of behavioural job crafting and its dynamics, and specifically concerning (1) the overarching structure of behavioural job crafting as a hierarchical construct composed of different strategies and behaviours, (2) the cognitive mechanisms (i.e., individual attitudes toward job crafting and personal beliefs referred to PBC over the actualisation of job crafting) and the role of social cognition (i.e., to what extent is job crafting approved in my organisation? Do other people here craft their jobs?) behind the actualisation of job crafting behaviours, and (3) the extent to which, and the conditions underlying (e.g., high vs low behavioural intention to craft one's job, assessed prior the intervention; previous knowledge about the strategies on how to craft; personal beliefs on whether the organisational social context approves job crafting) job crafting intervention effectiveness based on the TPB. Three main questions directed the studies reported in this dissertation.

Question 1: ***How do different job crafting strategies and behaviours map into an overarching, hierarchical conceptualisation of behavioural job crafting?***

Scholars have recently started proposing integrating frameworks to provide a conceptual synthesis of the different perspectives on job crafting (e.g., Bruning & Campion, 2018; Zhang & Parker, 2018; Lichtenthaler & Fischbach, 2019). Such research eventually led to the notion that employees can craft their work by expanding or limiting their job characteristics, i.e., through an orientation toward approaching or avoiding aspects of the job. However, we are unaware of an empirical investigation exploring the validity of such a theoretical proposal and accounting for the different levels of analysis involved in such a hierarchical conceptualisation.

Contributing to advance evidence-based knowledge on the dimensionality of behavioural job crafting is especially important in the light of mixed evidence (Zhang & Parker, 2018), including dysfunctional effects (Rudolph et al., 2017), on the role of employees' engagement in reduction-oriented strategies, which have been mainly investigated in terms of reducing hindering job demands. However, recent research (cf. Demerouti & Peeters, 2018) has also shown that hindering demands can be crafted in a more approached-oriented way, meaning that demanding work processes can be made

more efficient rather than simply avoided. Therefore, optimising demands reflects an additional job crafting behaviour that may serve to reduce elements of the work environment perceived as excessive (i.e., a reduction-oriented strategy) but driven by an approach orientation rather than an avoiding one. Nevertheless, evidence on how optimising demands maps into the established framework of the JD-R perspective to job crafting is still lacking. Accordingly, one main research question is: How does the behavioural dimension of optimising demands fit into the JD-R perspective to job crafting? Besides, on a more general level, how do the different job crafting behaviours contribute to the formation of higher-level strategies that together define an overarching job crafting behavioural construct? Answering these questions is important in order to allow construct clarification and subsequently improve knowledge on the nomological network of behavioural job crafting.

Question 2: ***To what extent is the TPB an adequate framework to predict and explain job crafting behaviours?***

Job crafting designates a proactive, self-initiated behaviour. As such, it is a function of compatible intentions and perceptions of behavioural control, and definable in terms of the manifest, observable response in a given situation to a specific target (Ajzen, 2011). Indeed, previous research has shown that job crafting is intentional (Bipp & Demerouti, 2015), but what drives such an intention remains a research gap. Although research has provided evidence that individual characteristics and personality influence job crafting behaviours, there is still a need for investigating the role of cognitive processes, in terms of attitudes, personal beliefs, and social cognition, driving the intention to put into action job crafting. While it has been documented that individuals with a proactive personality are inclined to change their work environment through job crafting (Bakker, Tims, & Derks, 2012), but also that the person x situation interaction plays a significant role within such a relationship (Petrou, 2013), a perspective that considers the concomitant role of contextual and individual beliefs in building employees' intentions to craft their job is lacking.

Moreover, of interest is that the TPB accounts for the role of different social norms that may inform job crafting. Indeed, according to social identity theory (Tajfel, 2010), belonging to a given group, such as the organisation or the work team, shapes people's understanding of their context (Haslam, Postmes, & Ellemers, 2003). Although job

crafting is an individual job redesign process, it takes place within physical and relational boundaries, i.e., those of the organisation. Such borders define the extent to which job crafting behaviours may be accepted or even stimulated, or, on the contrary, hindered. Employees' understanding and perceptions related to these aspects can influence the extent to which employees intend to craft their job, as well as the outcomes deriving from such behaviour. It is likely that behavioural observation, e.g. modelling or vicarious experience (Bandura, 1997), or the perceived social influence exerted on the individual by the social context, may drive behavioural intention and its strength.

Overall, we argue that the TPB represents a robust framework to investigate such aspects and deepen knowledge on the role of individual cognitive factors (i.e., attitudes and PBC) and contextual, social conditions (i.e., injunctive and descriptive social norms) toward the intention to craft, which in turn should predict actual behaviour. To what extent job crafting can be conceived as a planned behaviour, of which intentions are its main predictor? How do attitudes, PBC and social norms relate to job crafting behavioural intentions and actual behaviours? How do changes in attitudes and individual beliefs regarding behavioural control relate to the intention to be a job crafter? How fluctuations in the perceptions of the social context and its perceived influence on the individual relate to job crafting? Understanding the relations among beliefs, social norms, control, intentions, and behaviours is crucial if positive job crafting behaviours are to be spread in the organisation.

Question 3: ***Can the TPB be a valid framework to design job crafting interventions that are effective to sustain behavioural job crafting and employees' well-being?***

Rapid and constant changes in the work environment and the configuration of organisational processes require employees to be agile and able to proactively shape the characteristics of their job to sustain motivation, energy and high-performance levels (Grant & Parker, 2009). Traditionally, job redesign was mainly a top-down process, where the management of an organisation was in charge of defining the most suitable job description of a mansion. Today, such an approach is no more able to respond to the challenges of the work environment, and awareness has developed among scholars and practitioners about the importance of empowering individuals to let them autonomously adjust their job characteristics to be more functional and reach the organisational goals.

Against this background, recently, scholars have started investigating and reporting the impact of job crafting interventions in which employees are trained to positively and proactively adapt the characteristics of their work environment. Even though most of the job crafting intervention studies conducted reported an increase in individual well-being, findings are mixed, especially if performance indicators are considered. A more complete understanding than at present of the effectiveness of interventions and approaches to enable individuals' active adjustments to their work environment (Nielsen, 2013) is necessary. Research on this topic is fundamental to provide evidence to rely on when approaching the design of jobs and employees' involvement within such processes. Moreover, research is needed that builds upon behavioural formation and change literature to identify the processes underlying intervention effectiveness clearly.

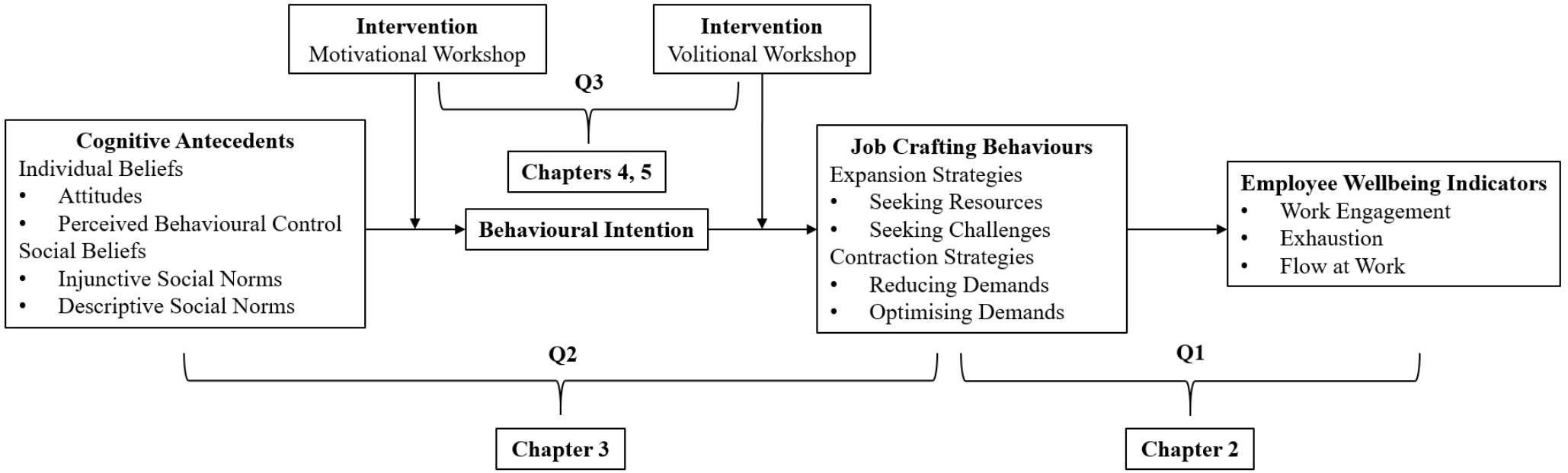
The TPB represents a useful theoretical framework to distinguish different processes to be implemented during interventions, based on whether employees have or not an intention to craft their jobs. Such a distinction permits to target the content and the tools to be used during the interventions based on participants' needs, allowing to target causal determinants of behaviour and behaviour change (Michie, Johnston, Francis, Hardeman, & Eccles, 2008). Hence, this research question aims at unveiling the effectiveness of job crafting interventions based on different processes implied in the TPB. Does the participation in a job crafting intervention based on the assumptions of the TPB and focusing on the motivational and volitional processes influence individual cognition related to job crafting? Does it relate to subsequent higher intentions to craft a job? Does the participation in a job crafting intervention based on the TPB help employees achieving their behavioural goals referred to job crafting and higher well-being?

Outline of the Research Model

These research questions will be addressed in the following chapters, where we will present our studies, conducted by making use of different research designs, i.e., cross-sectional, weekly diaries, longitudinal and an intervention study.

Figure 3

Overall Research Model of this Dissertation.



References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology and Health*, 26, 1113-1127.

Ajzen, I. (2015). The theory of planned behaviour is alive and well, and not ready to retire: a commentary on Sniehotta, Presseau, and Araújo-Soares. *Health Psychology Review*, 9, 131-137.

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40, 471-499.

Bagozzi, R. P., Wong, N., Abe, S., & Bergami, M. (2000). Cultural and situational contingencies and the theory of reasoned action: application to fast food restaurant consumption. *Journal of Consumer Psychology*, 9, 97–106.

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.

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

Bipp, T., & Demerouti, E. (2015). Which employees craft their jobs and how? Basic dimensions of personality and employees' job crafting behaviour. *Journal of Occupational and Organizational Psychology*, 88, 631-655.

Bruning, P. F., & Campion, M. A. (2018). A role–resource approach–avoidance model of job crafting: A multimethod integration and extension of job crafting theory. *Academy of Management Journal*, 61, 499-522.

Cordano, M., & Frieze, I. H. (2000). Pollution reduction preferences of U.S. environmental managers: applying Ajzen's theory of planned behavior. *Academy of Management Journal*, 43, 627–641.

Demerouti, E. (2014). Design your own job through job crafting. *European Psychologist*, 19, 237-247.

Demerouti, E., & Peeters, M. C. (2018). Transmission of reduction-oriented crafting among colleagues: A diary study on the moderating role of working conditions. *Journal of Occupational and Organizational Psychology*, 91, 209-234.

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

Fox, S., & Spector, P. (2010). Instrumental counterproductive work behavior and the theory of planned behavior. A "cold cognitive" approach to complement "hot affective" theories of

CWB. In L. L. Neider and C. A. Schriesheim (Eds.). *The "dark" side of management*. Charlotte, NC: IAP, pp. 93-114.

Gordon, H. J., Demerouti, E., Le Blanc, P. M., Bakker, A. B., Bipp, T., & Verhagen, M. A. (2018). Individual job redesign: job crafting interventions in healthcare. *Journal of Vocational Behavior*, 104, 98-114.

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

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

Hakanen, J. J., Peeters, M. C., & Schaufeli, W. B. (2017). Different types of employee well-being across time and their relationships with job crafting. *Journal of Occupational Health Psychology*. Advanced online publication. doi: http://dx.doi.org/10.1037/ocp0000081

Haslam, S. A., Postmes, T., & Ellemers, N. (2003). More than a metaphor: Organizational identity makes organizational life possible. *British Journal of Management*, 14, 357-369.

Haus, I., Steinmetz, H., Isidor, R., & Kabst, R. (2013). Gender effects on entrepreneurial intention: A meta-analytical structural equation model. *International Journal of Gender and Entrepreneurship*, 5, 130-156.

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., et al. (2005). ''Economic man'' in cross-cultural perspective: Behavioral experiments in 15 small-scale societies. *Behavioral and Brain Sciences*, 28, 795–815.

Karasek, R. & Theorell, T. (1990) *Healthy Work: Stress, Productivity, and the Reconstruction of Working Life*. New York: Basic Books.

Le Blanc, P. M., Demerouti, E., & Bakker, A. B. (2017). How can I shape my job to suit me better? Job crafting for sustainable employees and organizations. In…

Lichtenthaler, P. W., & Fischbach, A. (2019). A meta-analysis on promotion-and prevention-focused job crafting. *European Journal of Work and Organizational Psychology*, 28, 30-50.

Marshall, R. S., Cordano, M., & Silverman, M. (2005). Exploring individual and institutional drivers of proactive environmentalism in the US wine industry. *Business Strategy and the Environment*, 14, 92-109.

Martin, S. L., Liao, H., & Campbell, E. M. (2013). Directive versus empowering leadership: a field experiment comparing impacts on task proficiency and proactivity. *Academy of Management Journal*, 56, 1372-1395.

Michie, S., Johnston, M., Francis, J., Hardeman, W., & Eccles, M. (2008). From theory to intervention: mapping theoretically derived behavioural determinants to behaviour change techniques. *Applied Psychology*, 57, 660-680.

Morris, M. W., Hong, Y. Y., Chiu, C. Y., & Liu, Z. (2015). Normology: integrating insights about social norms to understand cultural dynamics. *Organizational Behavior and Human Decision Processes*, 129, 1-13.

Morris, W. M., Savani, K., Mor, S., & Cho, J. (2014). As the Romans do: Acquiring and using knowledge of other cultures. *Research in Organizational Behavior*, 34, 189–215.

Nielsen, K. (2013). How can we make organizational interventions work? Employees and line managers as actively crafting interventions. *Human Relation*s, 66, 1029-1050.

O'Reilly, C. A., Caldwell, D. F., Chatman, J. A., & Doerr, B. (2014). The promise and problems of organizational culture: CEO personality, culture, and firm performance. *Group & Organization Management, 39*, 595–625.

Oldham, G. R., & Fried, Y. (2016). Job design research and theory: Past, present and future. *Organizational Behavior and Human Decision Processes*, 136, 20-35.

Oprea, B. T., Barzin, L., Vîrgă, D., Iliescu, D., & Rusu, A. (2019). Effectiveness of job crafting interventions: a meta-analysis and utility analysis. *European Journal of Work and Organizational Psychology*, 28, 723-741.

Overstreet, R. E., Cegielski, C., & Hall, D. (2013). Predictors of the intent to adopt preventive innovations: a meta-analysis. *Journal of Applied Social Psychology*, 43, 936-946.

Petrou, P. (2013). *Crafting the change: The role of job crafting and regulatory focus in adaptation to organizational change*. Unpublished doctoral dissertation. Utrecht University.

Petrou, P., Demerouti, E., & Schaufeli, W. B. (2016). Crafting the change: the role of employee job crafting behaviors for successful organizational change. *Journal of Management*, doi: https://doi.org/10.1177/0149206315624961.

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

Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior*, 102, 112-138.

Steinmetz, H., Knappstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How Effective are Behavior Change Interventions Based on the Theory of Planned Behavior? *Zeitschrift für Psychologie*, 224, 216-233.

Sturman, M. C., Shao, L., & Katz, J. H. (2012). The effect of culture on the curvilinear relationship between performance and turnover. *Journal of Applied Psychology*, 97, 46–62.

Tajfel, H. (Ed.). (2010). *Social identity and intergroup relations*. Cambridge University Press.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA 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.

van den Heuvel, M., Demerouti, E., & Peeters, M. C. (2015). The job crafting intervention: Effects on job resources, self-efficacy, and affective well-being. *Journal of Occupational and Organizational Psychology*, 88, 511-532.

van Wingerden, J., Bakker, A. B., & Derks, D. (2017). Fostering employee well-being via a job crafting intervention. *Journal of Vocational Behavior*, 100, 164–174.

Wing Kwan, M. Y., Bray, S. R., & Martin Ginis, K. A. (2009). Predicting physical activity of first-year university students: An application of the theory of planned behavior. *Journal of American College Health*, 58, 45-55.

Winkelnkemper, P. (2014). *The theory of planned behavior. Meta-analysis and structural equation models*. (Unpublished diploma thesis). University of Giessen, Germany.

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

Zhang, F., & Parker, S. K. (2018). Reorienting job crafting research: A hierarchical structure of job crafting concepts and integrative review. *Journal of Organizational Behavior*, 40, 126-146.

CHAPTER 2

Evidence on the Hierarchical, Multidimensional Nature of Behavioural Job Crafting

This chapter is largely based on:

Costantini, A., Demerouti, E., Ceschi, A., & Sartori, R. (2019). Evidence on the hierarchical, multidimensional nature of behavioural job crafting. *Applied Psychology*. doi:10.1111/apps.12232

Abstract

While to date job crafting has been conceptualised as consisting of behaviours aiming at seeking more resources, decreasing hindering demands, and seeking more challenges, recent research suggests that individuals may restore the fit between their demands and preferences also by optimising their demands. Accordingly, optimising demands has been introduced in the resource-based perspective to job crafting as an additional strategy that aims at making the work processes more efficient, simplifying procedures and eliminating obstacles. In this paper, we explore and provide evidence for the validity of a four-factor, hierarchical structure of behavioural job crafting constituted by increasing resources, seeking challenges, decreasing demands, and optimising demands. Moreover, our results provide initial evidence suggesting that overall job crafting may be more strongly characterised by effortful actions to expand the work characteristics rather than to reduce them.

Introduction

Nowadays, agreement exists that even in the most stable work environments with detailed job descriptions and clear work procedures, employee-driven job redesign behaviours are quite common at work and complement management-driven job redesign efforts (Demerouti, Veldhuis, Coombes, & Hunter, 2019; Lichtenthaler & Fischbach, 2019). Job crafting refers to proactive behaviours whereby employees craft their job to align it better with their own abilities, needs and preferences (Wrzesniewski & Dutton, 2001; Lichtenthaler & Fischbach, 2019). From its inception in the academic literature with the pioneering work of Wrzesniewski and Dutton (2001), research on job crafting has blossomed in the last ten years (Oldham & Fried, 2016) and several theoretical conceptualisations have been developed to understand how different job crafting strategies relate to positive and negative work-related outcomes.

Job crafting quantitative research has mainly been conducted within the resource-based perspective, which explains job crafting as behaviours (from which, behavioural job crafting) aiming at restoring the fit between person and job through the management of work resources and demands (Bruning & Campion, 2018; Tims, Bakker, & Derks, 2012). Within such a conceptualisation, employees seek to increase their resources and their challenging job demands (i.e., expansion job crafting), or to decrease their hindering job demands (i.e., contraction job crafting) (Tims & Bakker, 2010). Crafting job resources could take the form of increasing structural (e.g. trying to learn new things) or social (e.g. asking for performance feedback) resources. Increasing challenging demands consists of seeking new and challenging tasks at work (e.g. voluntarily taking on new responsibilities or extra tasks; Hakanen, Peeters, & Schaufeli, 2018), which sustain motivation, mastering and learning (Karasek & Theorell, 1990). Decreasing hindering job demands (e.g. making sure that one's job is mentally less demanding; Tims & Bakker, 2010) refers to a health-protecting coping mechanism adopted to reduce demands perceived as excessively high.

Moreover, recent research suggests that individuals may restore the fit between their demands and preferences not only by minimising demands (i.e., make work less intense) but also by optimising them (i.e., make work more efficient) (Demerouti & Peeters, 2018). Accordingly, optimising demands has been introduced in the resource-based perspective to job crafting as an additional strategy that aims at making the work process more efficient, simplifying procedures and eliminating obstacles. While through

decreasing hindering demands employees aim at evading, reducing, or eliminating part of one's work, behaviours focusing on optimising demands are aimed at getting work done (Demerouti & Peeters, 2018). That is, optimising demands behaviours differ from reducing demands in that they focus on actively addressing hindering characteristics of the job in order to improve the work process to deal with workload, rather than simply stepping away from demanding or unfavourable conditions. Indeed, from an approach-avoidance distinction (Elliot, 2006), human behaviour can be guided or channelled to keep positive stimuli close and get something positive that is currently absent (i.e., optimising a demanding work process in order to allow a better resource allocation), or with that of pushing away, and getting away from, something negative that is currently present (i.e., excessive demands). While reducing demands reflects relatively simple withdrawal-oriented behaviours (Zhang & Parker, 2018), optimising demands refers to an active strategy, which may include the temporary elimination or reduction of specific work activities, in order to enable the allocation of the available resources into other more important demands or tasks, resulting in an improvement of the work process. Thus, while the dimension of optimising demands encompasses behaviours that aim at promoting new positive work situations, reducing demands behaviours focus on escaping from negative situations (Elliot, 2006). Evidence from research shows that optimising demands occurred more often than reducing demands and that such behaviours were positively related to daily work engagement (Demerouti & Peeters, 2018). However, given its recent introduction in the literature, studies conducted to investigate how optimising demands behaviours are related to work and organisational outcomes are still scarce.

Overall, despite the increasing interest in employee-initiated work redesign, construct clarification is still needed to move knowledge in this field forward (Zhang & Parker, 2018). Indeed, even though scholars developed integrating frameworks aiming to synthesize the burgeoning perspectives on job crafting (e.g. Lichtenthaler & Fischbach, 2016; Bruning & Campion, 2018; Zhang & Parker, 2018), some important methodological and conceptual aspects still remain underexplored, limiting the chances to describe and explain the mechanisms of job crafting meaningfully. In this research, we aim at advancing knowledge on the nature and structure of behavioural job crafting in several ways.

First, we review the literature on the current job crafting scales developed and/or adapted to measure job crafting within the resource-based perspective. Such a step is important to map how behavioural job crafting has been operationalised in the literature, allowing to clarify its constituting dimensions and structure, including raising awareness on possible methodological inconsistencies and/or discrepancies.

Second, we empirically test how strategies aiming at crafting hindering demands by differently organising, rather than decreasing, them, i.e., optimising demands, map into the conceptualisation of job crafting as changes employees make to balance their demands and resources (Tims & Bakker, 2010). In investigating such a new structure of job crafting, we also test whether it remains stable over time and whether it replicates at a weekly level. By doing so, we answer to the call for deepening knowledge on how proactivity in the workplace can be enacted to withdraw from processes that are costly and/or ineffective, in such a way that is part of a broader set of behavioural strategies, i.e., job crafting (Zhang & Parker, 2018). Such an investigation is crucial to unveil whether behavioural strategies focused on avoiding costly processes can theoretically be considered proactive.

Third, building on recent calls for research, we test behavioural job crafting as a hierarchical, aggregate, multidimensional construct composed of both reflective and formative components. In doing so, we answer to the need for considering the aggregate feature of different crafting strategies, contributing to refine knowledge on the measurement of behavioural job crafting (Zhang & Parker, 2018). Moreover, by testing the hierarchical structure of behavioural job crafting, we also investigate how such an aggregate, multidimensional construct relates to subsequent well-being, in terms of work engagement and emotional exhaustion.

Scales Developed to Measure Behavioural Job Crafting

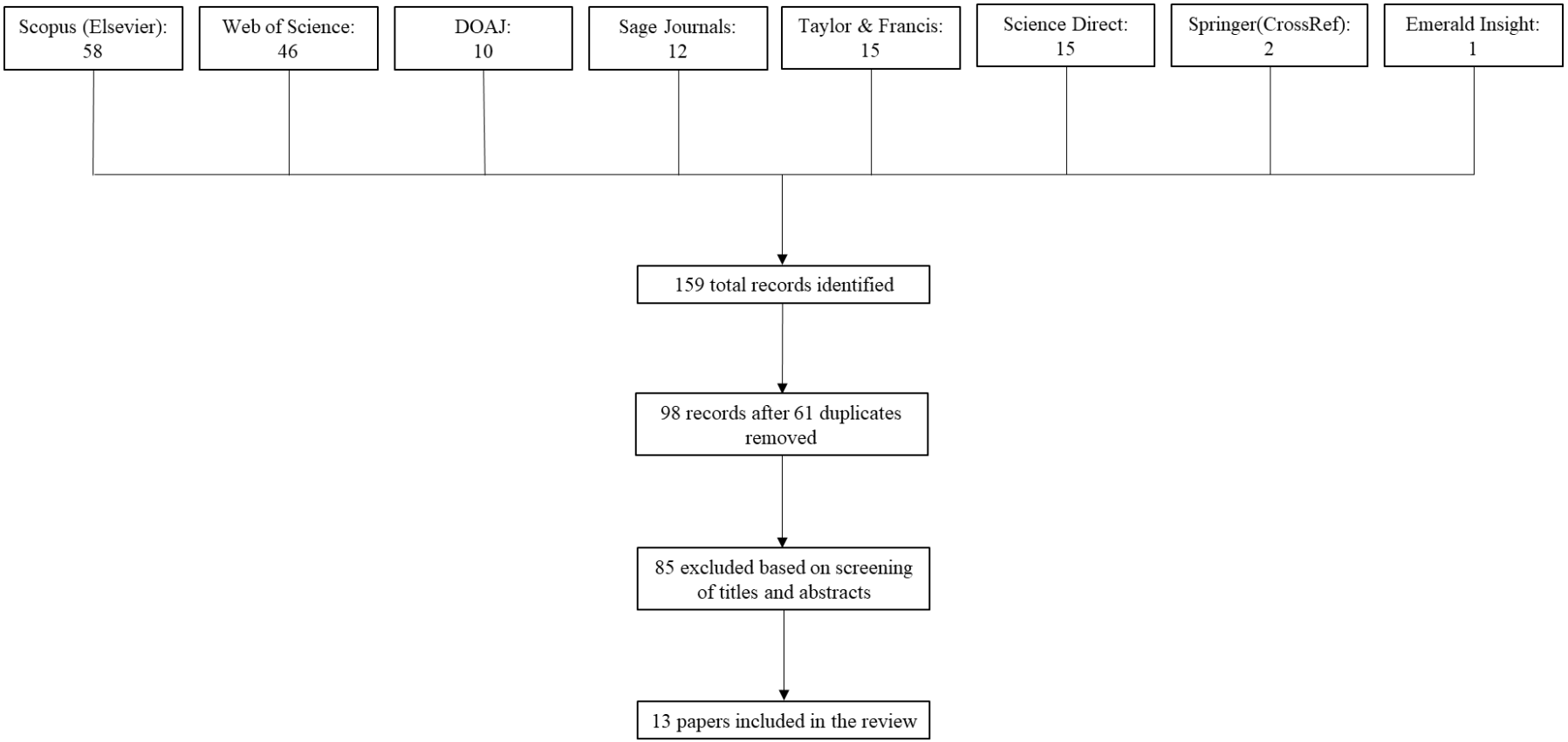
Along with the flourishing amount of studies on the antecedents and outcomes of job crafting, much attention has also been paid to scale development. Indeed, several measures have been developed to assess the frequency of job crafting behaviours. However, if on one side scale refinement and adaptation are needed to move knowledge forward, the use of many different measures and criteria to adapt them might also jeopardise the chances to gain a reliable understanding of the phenomena itself.

In order to contribute to such a research stream, we performed a literature search and identified peer-reviewed articles, published in English, referred to the development and/or validation of job crafting scales. The following electronic databases were used: SCOPUS (Elsevier), Web of Science, ScienceDirect, Directory of Open Access Journals (DOAJ), and others listed in Figure 1, searching for "job crafting scale" in titles, keywords, or abstracts. Overall, the search resulted in 159 records, including duplicates, which were subsequently removed. The remaining papers were screened for inclusion by investigating whether each of them was explicitly focused on scale development/validation or introduced a new dimension or structure of behavioural job crafting. As a result, 13 papers were considered for the review.

Figure 1 shows the flow chart of the systematic review, and Table 1 provides an overview of the main characteristics of the studies considered.

Figure 1

Flow Chart of the Systematic Search.



Notes: DOAJ = Directory of Open Access Journals

Table 1

Scales Developed and/or Adapted to Measure Behavioural Job Crafting.

Authors	Sample	Country	Factors and Number of Items	Explained Variance for Factor (EFA)	Cronbach's alpha	FA	Rotation Criteria	Factor Models & Estimation Methods	Min Factor Loading for Retaining (EFA)	Cross-Loading Cut-off (EFA)	Total Variance Explained (EFA)
Nielsen & Abildgaard (2012)	EFA: N = 362 CFA: N = 408	Denmark	Increasing challenging demands (4 items) Decreasing social job demands (3 items) Increasing social job resources (3 items) Increasing quantitative demands (3 items) Decreasing hindering demands (2 items)	25.70% 15.34% 8.97% 8.46% 7.98%	.85 .76 .75 .74 NR	EFA CFA	Oblimin, orthogonal	PCA (EFA) NR (CFA)	NR	NR[1]	66.44%
Petrou et al. (2012)	CFA: N = 95 MCFA: N = 475 occasions	NL	Seeking resources (6 items) Seeking challenges (3 items) Reducing demands (4 items)	/	.70[2] .76[2] .69[2]	CFA MCFA	/	ML	/	/	/
Tims et al. (2012)	EFA: N = 375 Multigroup CFA: N = 616	NL	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging demands (5 item) Decreasing hindering demands (6 items)	25.67% 8.01% 6.30% 14.6%	.82 .77 .75 .79	EFA CFA	Oblique[3]	ML (EFA) NR (CFA)	.35	<.35	54.24%
Chinelato et al. (2015)	N = 491	Brazil	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging demands (5 item)	/	.71 .78 .77	CFA	/	WLSMV	/	/	/
Cenciotti et al. (2016)	EFA: N = 311 CFA: N = 410	Italy	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging job demands (5 items)	38% 12% 5%	.81 .74 .78	EFA CFA	Promax	PAF (EFA) NR (CFA)	NR	NR	55%
Eguchi et al. (2016)	EFA: N = 486 CFA: N = 486	Japan	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging job demands (5 items) Decreasing emotional demands (3 items) Decreasing cognitive demands (3 items)	29.99 % 6.54% 12.57% 4.31% 2.69%	.90 .76 .84 NR NR	EFA CFA	Promax	Unweighted least squares (EFA) NR (CFA)	NR	NR	56.1%
Lichtenthaler & Fischbach (2016)	N = 243	Germany	Increasing structural job resources (5 items) Increasing social job resources (5 items) Increasing challenging job demands (5 items) Decreasing hindering job demands (6 items)	/	.77 .83 .88 .81	CFA	/	ML	/	/	/
Nielsen et al. (2017)	MCFA: N = 820 occasions	Spain, UK,	Increasing challenging demands (4 items) Decreasing social job demands (3 items)	/	.68/77[4] .68/78[4]	MCFA	/	MLR (MCFA)	/	/	/

	Multigroup CFAs: N = 608	China, Taiwan	Increasing social job resources (3 items) Increasing quantitative demands (3 items) Decreasing social job demands (2 items)		.73/.85[4] .68/80[4] .67/76[4]			NR (CFA)			
Bakker et al. (2018)	CFA1: N = 447 CFA2: N = 449	Spain	Increasing structural job resources (5 items) Decreasing hindering job demands (6 items) Increasing social job resources (5 items) Increasing challenging job demands (5 items)	/	.70/.75 .77/.79 .78/.77 .76/.75	CFA[5]	/	ML	/	/	/
Demerouti & Peeters (2018)	N = 382 occasions	NL	Day-level minimizing demands (3 items) Day-level optimizing demands (5 items)	/	.78/.82 .87/.92	MCFA	/	ML	/	/	/
Sora et al. (2018)	EFA: N = 828 CFA: N = 819	Spain	Increasing structural job resources (3 items) Decreasing hindering job demands (3 items) Increasing social job resources (3 items) Increasing challenging job demands (3 items)	23.74%[6] 8.16% 12.69%	.75 .64 .78 .77	EFA CFA	Promax	Unweighted least squares (EFA) NR (CFA)	/[7]	/	44.59%
Yen et al. (2018)	EFA: N = 268 CFA1: N = 268 CFA2: N = 253	Taiwan	Increasing structural job resources (9 items) Increasing social job resources (8 items) Increasing challenging job demands (7 items) Decreasing hindering job demands (6 items)	NR	.90/.94 .90/.90 .88/.95 .91/.94	EFA CFA	NR	NR	.50	"*if the item exhibited a high factor loading on another factor*" (p.56)	NR
Ghadi (2019)	N = 513	Jordan	Increasing challenging job demands (4 items) Decreasing social demands (3 items) Increasing social job resources (3 items) Increasing quantitative demands (3 items) Decreasing hindering job demands (2 items)	/	.92 .88 .79 .71 .75	CFA	/	ML	/	/	/

Notes.
[1]On page 374 is reported, "Early iterations of the factor analysis resulted in the removal of seven cross-loading job crafting items from any further analysis". No information is reported for the cut-off criteria adopted for cross-loadings.
[2]General level.
[3]Rotation method not reported.
[4]Range of reliabilities across the different samples are reported.
[5]On page 138, it is reported that "it is reasonable to continue doing an exploratory analysis" but no information is explicitly provided about factor model, estimation method, rotation criteria.
[6]In EFA, increasing structural job resources and challenging job demands loaded on the same factor.
[7]For scale construction, items with loading over .60 in previous validation studies were retained. No information is provided for minimum factor loading in the EFA.
NL = the Netherlands; FA = Factor Analysis; EFA = Exploratory Factor Analysis; CFA = Confirmatory Factor Analysis; MCFA = Multilevel Confirmatory Factor Analysis; ML = Maximum likelihood; WLSMV = Weighted Least Squares Mean and Variance Adjusted; MLR = Maximum Likelihood Estimation with Robust Standard Errors; PCA = Principal Component Analysis; PAF = Principal Axis Factoring; NR = not reported.

Tims and colleagues (2012) developed the first scale to measure behavioural job crafting based on the theoretical proposal of job crafting framed within the JD-R approach (Tims & Bakker, 2010). The Job Crafting Scale (JCS), originally developed in the Netherlands, comprehended four independent factors, i.e., increasing social job resources, increasing structural job resources, increasing challenging job demands, and decreasing hindering job demands. Subsequently, the validity of the JCS was investigated in different contexts, with mixed results. For example, in the Brazilian context (cf. Chinelato, Ferreira, & Valentini, 2015), results from a second-order CFA provided evidence of a three-factor solution where the factor of decreasing hindering demands was deleted. Similarly, building on evidence from research on the different nature of expansion and contraction strategies, a study conducted in the Italian context investigated the structure of job crafting by considering only the dimensions of increasing structural and social job resources, and challenging job demands, without any investigation of the hierarchical structure of job crafting, nor of how decreasing hindering demands maps with the other dimensions (Cenciotti et al., 2016).

Differently, in a study conducted in Japan, results revealed a five-factor structure in which the dimension of decreasing hindering demands loaded on two factors rather than on a single one, differentiating between behaviours aiming at lowering emotional demands, and behaviours aiming at decreasing cognitive demands (Eguchi et al., 2016). In Spain, an adapted version of the JCS replicated the original, four-factor structure (Bakker et al., 2018), while results from an EFA conducted on a shortened, 12-item version, showed a three-factor structure in which the items of increasing structural job resources and challenging job demands loaded on the same factor (Sora, Caballer, & Garcia-Buades, 2018). Recently, an adaptation of the JCS to measure tour leaders' job crafting behaviours in Taiwan was developed, and results provided support for the original four dimensions (Yen, Tsaur, & Tsai, 2018).

In the meantime, Nielsen and Abildgaard (2012) developed another alternative measure of behavioural job crafting, including the dimensions of decreasing social job demands and increasing quantitative demands. However, even though such a scale has been adapted to different cultural contexts (e.g., Ghadi, 2019; Nielsen et al., 2017), it has been less widely used compared to the original JCS (Rudolph, Katz, Lavigne, & Zacher, 2017). On the other side, in order to capture day-level fluctuations of job crafting

behaviours, a slightly modified version of the JCS was proposed, in which increasing structural and social job resources collapsed, and three different types of job crafting behaviours were identified, i.e., increasing resources, seeking challenges, and decreasing demands (Petrou et al., 2012). Such a scale represents a shortened version of the original JCS (Lichtenthaler & Fischbach, 2016) and allows to asses both the trait and state levels of job crafting. Finally, in an effort to capture behaviours aiming at optimising the work processes, Demerouti and Peeters (2018) introduced and tested the validity of optimising demands as another reduction-oriented job crafting strategy, which differs from behaviours aiming at making the job less strenuous in that it focuses on making work processes more efficient.

Overall, these findings seem to depict a rather complex nature of behavioural job crafting, with mixed evidence concerning its constituting dimensions. However, to make sense of this complexity, a closer examination of the factor analysis procedures used to investigate the structure of job crafting reveals inconsistent criteria, which may help explain such inconclusive findings. For example, among the studies considered, many different factor models are applied to conduct EFA, including both component (which assumes no measurement error, e.g. Principal Component Analysis, PCA) and factor (e.g. Principal Axis Factoring, PAF) models. Such methodological choices represent nonstatistical estimation methods, in that they do not require data distribution assumptions (Kaplan, 2009) and, consequently, do not provide standard errors to test model fit and other parameters, which limits the chances to statistically test hypotheses related to, for example, interfactor correlations and factor loadings (Schmitt, 2011). On the other side, many studies investigated the structure of behavioural job crafting by relying only on CFA, which has been recently recognised, however, as an approach oftentimes not appropriate to reflect the nature of the data, given that indicators are rarely if ever, perfectly and uniquely related to a single construct (Howard et al., 2018; Morin et al., 2016).

Moreover, even though response scales result in categories (e.g. 1 = never, 5 = often), which are not normally distributed, the majority of the studies that applied a statistical estimation method used maximum likelihood (ML). However, using ML with categorical variables is associated to several pitfalls, including leading to “pseudo factors” that are artefacts of item difficulty and producing incorrect parameter estimates and

standard errors (Brown, 2006). Finally, among the studies considered, several rotation criteria have been applied. Different rotation criteria, however, influence the factor structure and can have a sizeable impact on the inter-factor correlations and cross-loading magnitudes (Schmitt & Sass, 2011). For example, when applying orthogonal methods that do not allow factors to correlate, item loadings may become inflated if the factors are truly correlated. Rotation criteria become particularly important when considering that, based on the criterion choose, CFA solutions may be more or less comparable to the EFA solution (Schmitt & Sass, 2011).

Such considerations are aligned with previous calls for more precise scale development procedures (e.g. Zhang & Parker, 2018), both from a conceptual and a methodological standpoint. Accordingly, in the following section we propose, explore, and test a job crafting structure composed of four dimensions, i.e., increasing job resources, seeking job challenges, reducing job demands, and optimising job demands, trying to take stock of the methodological observations aforementioned.

Behavioural Job Crafting

Job crafting occurs when employees experience misfit between their motivational style and the work environment (Demerouti, 2014). Among the behavioural strategies that employees can proactively enact to reshape the characteristics of work, some behaviours have been found to be beneficial for positive work-related outcomes, while others, viz. decreasing demands, seem to be related to dysfunctional effects (Petrou et al., 2012; Lichtenthaler & Fischbach, 2016; Zhang & Parker, 2018). Accordingly, scholars called attention to the need for a complete unpacking of the implications of different contraction-oriented strategies (Rudolph et al., 2017), and for understanding how they map as part of a broader set of behaviours to intentionally reshape one's work (Zhang & Parker, 2018).

Partially contributing to such a research stream, Demerouti and Peeters (2018) suggested that employees may craft their work by optimising their demands, i.e., by actively trying to make work processes more efficient rather than completely avoiding them. Compared to decreasing demands, optimising demands is more constructive and refers to attempts to make work more efficient, bypassing inefficient processes (Demerouti et al., 2019). In introducing such a dimension, authors expressly referred to optimising demands as an "additional job crafting strategy" (Demerouti & Peeters, 2018,

p. 210). Nevertheless, even though evidence from research showed that decreasing and optimising demands can be discriminated (Demerouti & Peeters, 2018), we are unaware of studies providing support for a structure of job crafting comprising such a newly introduced behavioural dimension together with the original ones. Understanding whether and how the dimension of optimising demands captures an aspect of employees' job crafting strategies is crucial to deepen knowledge about the functioning of a complex set of proactive strategies that may spontaneously occur at work.

Drawing on the conceptualisation of behavioural job crafting as composed of the dimensions of seeking resources, seeking challenges, and reducing demands (Petrou et al., 2012), integrated with the dimension of optimising demands (Demerouti & Peeters, 2018), we expect that:

> ***Hypothesis 1:*** *When exploring (a) and confirming (b) the new structure of the revised JCS, a four-factor structure will provide a better fit to the data compared to a three-, two-, and one-factor solution.*

Evidence from research shows that proactive behaviours display both a trait and a state component, meaning that proactivity at work includes both a stable and a more contextual component (Petrou et al., 2012; Sonnentag, 2003). Moreover, previous research conducted through diary studies reported evidence of a similar factor structure at both the between- and the within- level of analysis (Petrou et al., 2012). Similarly, we expect that:

> ***Hypothesis 2***: *The revised JCS will show a four-factor structure at both the within- and between-levels.*

Differently from state conditions that change across time and may fluctuate on daily or weekly levels, general tendencies are rather stable (Xanthopoulou et al., 2009). That is, individuals who tend to engage in seeking resources and/or challenges, decreasing and/or optimising demands as for their general tendencies are likely to display such behaviours in a relatively stable fashion. Accordingly:

> ***Hypothesis 3***: *The four dimensions of the revised JCS will be highly correlated across three time points*.

Expansion and Contraction Strategies of Behavioural Job Crafting

Despite the differences in the existing perspectives on job crafting, scholars agree that employees can craft their job by engaging in two broad classes of behaviours, i.e.,

those aiming at expanding the elements of work (being resources, boundaries, or meaning), and those aiming at contracting, reducing or limiting them (Petrou et al., 2012; Zhang & Parker, 2018). Such a distinction has been referred to within different theoretical backgrounds, including regulatory focus theory (Higgins, 1997; see: Lichtenthaler & Fischbach, 2016), and approach-avoidance motivation theory (Elliot, 2006; see Bruning & Campion, 2018).

Even though such theoretical frameworks provide a guide to map, distinguish, and understand different crafting strategies, we argue that they are not overlapping with the original distinction between contraction and expansion job crafting strategies, and thus invite for avoiding the interchangeable usage of such terms for the following reasons. Approach crafting has been defined as effortful and directed actions to seek positive work aspects, while avoidance crafting has been referred to as directed actions to escape from, and avoid, negative work aspects (Zhang & Parker, 2018). Accordingly, in this perspective, the focus is on the motivation of the employee rather than on the characteristics of the job, which are expanded or contracted, depending on the strategy adopted. As long as one considers the dimensions of seeking more resources and challenges, or decreasing hindering job demands, approach/avoidance and expansion/contraction dimensions may overlap, in that an employee who aims at seeking positive aspects of the work is likely to expand its boundaries or characteristics. In contrast, when driven by avoidance motives s/he may be likely to withdraw from tasks, eventually contracting and limiting the (demanding) elements of the work environment. However, when considering behaviours intentionally enacted to optimise work processes, the convergence between approach/avoidance and expansion/contraction may not be so intuitive. Indeed, in this case, such behaviour should correspond to either a strategy to face (approach) the demands of the work environment (Zhang & Parker, 2018) or differently, when assuming a job characteristics perspective, to a contraction strategy aiming at eliminating the work characteristics or processes perceived as costly and inefficient (Demerouti & Peeters, 2018).

Against this background, we identify job crafting as either expansion- or contraction-oriented, where expansion job crafting behaviours are defined as those that increase the number or complexity of tasks, and contraction job crafting behaviours as those that reduce either the number of tasks or their complexity (Laurence, 2010). Within

this conceptualisation, seeking resources and challenges represent expansion-oriented behaviours while decreasing and optimising demands constitute two forms of contraction-oriented ones. Indeed, when employees seek more resources, they may ask for more feedback or advice, as well as engage in extra activities that build new resources in order to ensure that the quality of their deliverables is optimal or even beyond expectations. Likely, by seeking more challenges, employees may try to expand the scope of their responsibilities and look for new and appealing work tasks. These behaviours represent self-initiated strategies that enlarge one's work characteristics to include elements of work and related activities that were not originally prescribed (Bruning & Campion, 2019). Differently, employees who reduce their demands, for example through bypassing tasks that were originally part of their job description, or by actively trying to avoid co-workers, clients or supervisors to reduce possible additional job demands, engage in behaviours aiming at limiting the requirements of the work and related effort expenditures. On the other hand, employees may also decide to contract their efforts at work by establishing more efficient procedures that facilitate task completion, for example by planning and prioritisation, or by (re)organising their work processes according to their own strengths and competencies, which all reflect optimising demands behaviours.

Moreover, from a methodological point of view, scales developed to measure behavioural job crafting do not assess employees' motivation in terms of approach or avoidance drivers, while they "only" map different behaviours aiming at redesigning the characteristics of the job. Accordingly, defining the nature of job crafting behaviours as approach and/or avoidance tendencies means to infer employees' motivations that are not measured. For these reasons, in this paper, we refer to contraction and expansion strategies.

The Hierarchical Structure of Behavioural Job Crafting

As recently proposed by Zhang and Parker (2018), job crafting can be conceptualised as a hierarchical construct with different higher-order, aggregate and superordinate constructs. In their conceptualisation, authors argue that it is possible to distinguish between different levels of crafting dimensions based on (i) job crafting orientation (approach/avoidance), (ii) form (cognitive/behavioural), and (iii) content (resources/demands). Moreover, they argue that while job crafting content and form are

reflective constructs, orientation and overall job crafting represent formative constructs, being caused by job crafting form (the former) and, at a higher level, by orientation (the latter).

Drawing on such a proposal and building on our argument about the differences between approach/avoidance and expansion/contraction strategies, in this study we focus only on behavioural job crafting as a set of expansion and contraction strategies and test a hierarchical, multidimensional measurement model including both a reflective and a formative part. Specifically, we argue that every job crafting behaviour constitutes a single reflective construct, which in turn form different higher-order factors. Namely, we propose four reflective constructs (i.e., seeking resources, seeking challenges, decreasing demands, and optimising demands) as lower-order factors. In turn, increasing resources and seeking challenges form expansion strategies while reducing demands and optimising demands form contraction ones. Finally, contraction and expansion strategies contribute together to define a superordinate construct referred to as behavioural job crafting. Such a proposal is grounded in the theoretical conceptualisation of behavioural job crafting, where the indicators used to assess each employees' job crafting strategy constitute an imperfect reflection of the underlying latent construct (Bollen, 1989; Nunnally & Bernstein, 1994), meaning that such indicators are reflective of the specific job crafting behaviour they represent. Indeed, the indicators reflecting each job crafting behaviour have shown to exhibit high levels of internal consistency reliability, be highly correlated, and be interchangeable as for the dimensions they represent, which are all key features of models with reflective indicators (cf. Bollen & Lennox, 1991; MacKenzie et al., 2005). Differently, contraction and expansion strategies represent formative constructs in that their indicators (i.e., each specific job crafting behaviour) different tap facets of the conceptual domain of the crafting strategy adopted (i.e., oriented towards expansion or contraction). Moreover, each job crafting behaviour is not conceptually interchangeable with another and defines a distinct type of proactive behaviour which in turn contributes to defining a unique part of the strategy adopted (i.e., expansion- or contraction-oriented). In turn, such strategies are also capturing different facets of an overall, formative, higher-order construct, i.e., behavioural job crafting. Thereby, employees who craft their job can do it by either engaging in expansion-oriented strategies or contraction-oriented ones, which are constituted by two very different sets of actions, that are not interchangeable,

nor are likely to share the same antecedents and outcomes, which constitute decision rules for determining the nature of formative constructs (cf. Jarvis, MacKenzie, & Podsakoff, 2003). Accordingly, we propose the following:

> ***Hypothesis 4****: A hierarchical, multidimensional model composed of four first-order, reflective factors (i.e., seeking resources, seeking challenges, decreasing demands, and optimising demands), causing two second-order formative factors (i.e., expansion and contraction strategies), causing one third-order formative factor, i.e., behavioural job crafting, will provide a good fit to the data.*

Relationships with Employees' Well-being

Research has shown that employees' engagement in expansion-oriented job crafting positively relates to health, motivation, and performance, while behaviours aiming at decreasing demands are not or even negatively related to the same outcomes (Demerouti, Bakker, & Halbesleben, 2015; Lichtenthaler & Fischbach, 2019; Makikangas, 2018; Rudolph et al., 2017; Weseler & Niessen, 2016).

Specifically, previous studies suggest that job crafting leads to improvement in employee well-being and performance because of experienced balance between job demands and resources, which leads to enhanced person-job fit, eventually facilitating performance and occupational well-being. Indeed, evidence from research shows that job crafting is associated with higher work engagement and lower exhaustion (Demerouti, Bakker, & Gevers, 2015; Petrou, Demerouti, & Schaufeli, 2015; Tims, Bakker, & Derks, 2013; Petrou et al., 2012). Consistent with these findings, a recent meta-analysis reported that overall job crafting is positively related to work engagement and negatively associated with job strain (Rudolph et al., 2017). Accordingly:

> ***Hypothesis 5****: Behavioural job crafting will be positively associated with work engagement and negatively associated with exhaustion.*

Method

Participants and Procedure

Sample 1. A total of 936 participants (response rate = 86%; 54% females; M_{age} = 36.84, *SD* = 12.42) from various occupational contexts working for different organisations composed the first sample, used to test Hypotheses 1. Participants in this sample filled in a questionnaire measuring demographic information and job crafting. Among these, 630 participants were also asked to report their levels of work engagement

and exhaustion, which were used to test Hypotheses 4 and 5. These participants were recruited by masters' students who were asked to contact at least three employees willing to voluntary take part to the study as part of a course requirement and used the data for the course assignment. Such a recruitment procedure has been shown to secure the heterogeneity of the sample and the jobs among participants (Demerouti & Rispens, 2014). Participants were contacted via email or directly by the students, and asked to fill in a paper-and-pencil questionnaire or to complete the same survey available by clicking on a link. In both cases, participants received information about the purpose of the study and assurance about the anonymity of all responses, instructions about the completion of the questionnaire, and, for those who did not complete the questionnaire online, a return envelope.

Sample 2. To test Hypothesis 2, 199 Italian employees (51.5% females; M_{age} = 40, *SD* = 11.44) from various occupational contexts completed both a weekly diary for three weeks and a general questionnaire. Paper-and-pencil questionnaires were collected. The participants received the same information and materials described above with the addition of a dairy booklet to be completed in three weeks, each one at the end of a working week. Of the 240 survey packages distributed, excluding participants who did not fill in the questionnaire on all the weeks, 199 participants (N = 796 occasions) responded to the general and weekly questionnaires (83% response rate).

Sample 3. Hypothesis 3 was tested with data collected in eight Italian private companies operating in different sectors, i.e., personal care, local craft businesses, pharmaceutics, trading, and social services. Participants (55.3% females; M_{age} = 37, *SD* = 14.52) filled-in the same questionnaire over three waves with a two-month time-lag between each data collection. Questionnaires were distributed to 350 workers and 287 were returned at Time 1 (response rate = 82%), 238 were returned at Time 2 (response rate = 68%), and 226 completed questionnaires were returned at Time 3 (response rate = 64%). Participation was voluntary and anonymous. Each participant received information about how to generate a univocal code that permitted us to track across the three waves.

Measures

Job crafting. Job crafting was measured by the general level JCS developed by Petrou and colleagues (2012) integrated with the optimising demands scale developed by Demerouti and Peeters (2018). Since the original instrument was published in English,

we translated the survey into Italian using back-translation (Brislin, 1980). First, a bilingual speaker who was not familiar with the items translated the original JCS into Italian. Second, another bilingual speaker back-translated the same items into English. Given that this process gave not rise to significant changes to any of the items, the two bilingual speakers concluded that the Italian version of the JCS is consistent with the original one in meaning.

The JCS (Petrou et al., 2012) contains 13 items referred to three dimensions, i.e., 6 items measure the general level of seeking resources behaviours (Sample 1, α = .84), 3 items measure the general level of seeking challenges (Sample 1, α = .83), and 4 items measure the general level of reducing demands (Sample 1, α = .85). Demerouti and Peeters' optimising scale consists of 5 items (Sample 1, α = .90). In Sample 3, Cronbach's α for seeking resources was .85 at Time 1, and .88 at both Time 2 and Time 3. For seeking challenges, Cronbach's α was .87 at Time 1, and .90 at both Time 2 and Time 3. The dimension of reducing demands, considering the factor structure resulting from the EFA (reported below, 3 items), showed a Cronbach's α of .86 at every time point. Lastly, Cronbach's α for optimising demands (6 items) was .90 at every time point. Respondents indicated how often they engaged in every behaviour during the past three months using a scale ranging from 1 = *never* to 5 = *often.*

Weekly job crafting. Weekly job crafting was measured by the same job crafting scale described above. In the diary study, all items were rephrased to measure job crafting behaviours on a weekly basis, i.e., respondents indicated how often they engaged in every behaviour during the past week using a scale ranging from 1 = *never* to 5 = *often*. Sample items include "*In the past week I have…*" "*asked my colleagues for advice*" (weekly seeking resources) "*asked for more responsibilities*" (weekly seeking challenges), "*tried to ensure that my work is emotionally less intense*" (weekly decreasing demands), and "*tried to simplify the complexity of my tasks at work*" (weekly optimising demands).

Work engagement was assessed with three items from the Italian version of the Utrecht Work Engagement Scale capturing three sub-dimensions of work engagement, namely vigour, dedication, and absorption (Balducci, Fraccaroli, & Schaufeli, 2010). The items were "*At my work, I feel bursting with energy*" (vigour), "*I am enthusiastic about my job*" (dedication), and "*I am immersed in my job*" (absorption). Responses were given on a 7-point scale ranging from 0 = *never* to 6 = *always*. Based on results from Schaufeli,

Bakker, and Salanova (2006) showing that the three dimensions are closely related, we used one overall index for work engagement (Cronbach's α = .90).

Exhaustion was measured with three items from the Oldenburg Burnout Inventory (Demerouti & Nachreiner, 1996), which have been translated and back-translated into Italian. Items were scored on a five-point, Likert-type scale from 1 = *strongly disagree* to 5 = *strongly agree* such that higher scores indicated a higher level of the exhaustion. An example item is "*After my work, I regularly feel worn out and weary*". Cronbach's α was .79.

Statistical Analyses

Analyses were conducted using Mplus 8.0 (Muthén & Muthén, 2014). Assessment of model fit was based on the model chi-square (χ^2), the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardised root mean square residual (SRMR). CFI and TLI values close to .95 or higher in combination with RMSEA and SRMR ≤ .08 indicate a good fit (Hu and Bentler, 1999).

The amount of within-wave missingness in Sample 1 was trivial, ranging between 0.00% and 0.50%. As for samples 2 and 3, we compared participants with all data waves against those with only T1 data on job crafting dimensions. Participants who completed all data waves did not significantly differ from participants who completed them all on any job crafting dimension. Accordingly, the pairwise deletion was used to manage missing data (Asparouhov & Muthén, 2010).

Results

Exploratory and Confirmatory Factor Analyses

First, EFA and CFA analyses were run using two subsets of data from Sample 1, which was split. Exploratory Factor Analysis in the CFA framework (cf. Brown, 2006) was used to investigate the structure of behavioural job crafting, with oblique Goemin and Promax rotations, among 458 participants from Sample 1. Weighted Least Squares Mean and Variance adjusted (WLSMV) estimator was used, which assumes the categorical nature of the data. Fit statistics from the EFA and factor loadings from the two rotations explored, i.e., Geomin and Promax, are reported in Table 2 and 3. As it can be seen in

Table 2, a four-factor solution for the EFA fit the data better than the other models explored, supporting Hypothesis 1a.

Table 2

Fit Statistics of the Exploratory Factor Analyses (*N* = 458).

Model	Description	χ^2 (df)	CFI	TLI	RMSEA	SRMR
EFA	1-factor	3939.316 (135)	.735	.699	.248	.208
	2-factor	2330.285 (118)	.846	.800	.202	.133
	3-factor	1166.785 (102)	.926	.889	.151	.068
	4-factor	403.442 (87)	.978	.961	.089	.030

χ^2 = chi-squared; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root-mean-square error of approximation; SRMR = standardised root mean square error of approximation.

Results from the inspection of the rotation solutions (see Table 3) show a highly similar solution across the two different rotations. Loadings ranged between .57 and .86 for increasing resources, between .67 and .91 for seeking challenges, between .81 and .97 for reducing demands, and between .72 and .94 for optimising demands. Also, our results showed that the item coded RD4 "*I try to simplify the complexity of my tasks at work*", which was originally considered as part of the dimension of reducing demands, is instead part of the dimension of optimising demands. Based on these results, in the following analyses, we included this item among those referring to the dimension of optimising demands.

Confirmatory factor analysis (CFA) was run among 478 participants of Sample 1 to verify the solution obtained from the EFA. Accordingly, our model included four latent variables, i.e., seeking resources, seeking challenges, reducing demands, and optimising demands. Each latent construct was indicated by its items, and correlation coefficients were modelled between the study variables. Results revealed satisfactory model fit: $\chi^2_{(113)} = 331.86$, $p < 0.001$; CFI = .96; TLI =.94, SRMR = .05; RMSEA =.06, providing support for Hypothesis 1b. Factor loadings were all significant and ranged from .62 to .98. To confirm the unexpected finding that one item originally conceived as referring to reducing demands is instead part of the dimension of optimising demands, we also tested an alternative model in which reducing demands was indicated by all its four items. Results ($\chi^2_{(113)} = 587.23$, $p < 0.001$; CFI = .91; TLI =.87, SRMR = .09; RMSEA =.09) confirmed that the solution obtained from the EFA fitted the data better than the alternative one.

Table 3

Geomin and Promax Rotated Loadings from the EFA, 4-Factor Solution.

Item	Geomin				Promax			
	F1	**F2**	**F3**	**F4**	**F1**	**F2**	**F3**	**F4**
IR1	**.57**	-.07	.17	.04	**.58**	.16	-.13	.05
IR2	**.83**	.01	-.13	.01	**.86**	-.14	-.07	.02
IR3	**.70**	-.14	.15	.04	**.71**	.14	-.21	.04
IR4	**.57**	.36	.06	-.18	**.59**	.08	.29	-.18
IR5	**.62**	.12	.13	-.01	**.64**	.13	.06	-.00
IR6	**.66**	.18	-.07	-.02	**.69**	-.07	.16	-.01
SC1	.13	-.01	**.67**	-.02	.11	**.68**	-.04	-.01
SC2	.13	.19	**.72**	.03	.10	**.75**	.14	.04
SC3	.04	.03	**.89**	.06	.01	**.91**	-.01	.06
RD1	.03	.05	-.00	**.82**	.03	.02	.05	**.82**
RD2	-.03	-.01	.03	**.97**	-.04	.05	.00	**.97**
RD3	-.01	.03	.03	**.81**	-.01	.05	.03	**.81**
RD4	.15	**.74**	-.28	.19	.18	-.24	**.72**	.19
OD1	.08	**.90**	-.26	.08	.12	-.21	**.87**	.09
OD2	-.14	**.93**	-.01	.01	-.07	.04	**.91**	.02
OD3	-.15	**.94**	.06	-.02	-.13	.12	**.92**	-.01
OD4	-.00	**.86**	.11	-.12	.02	.16	**.83**	-.11
OD5	-.11	**.77**	.16	-.01	-.10	.21	**.75**	-.00

Multilevel Confirmatory Factor Analysis

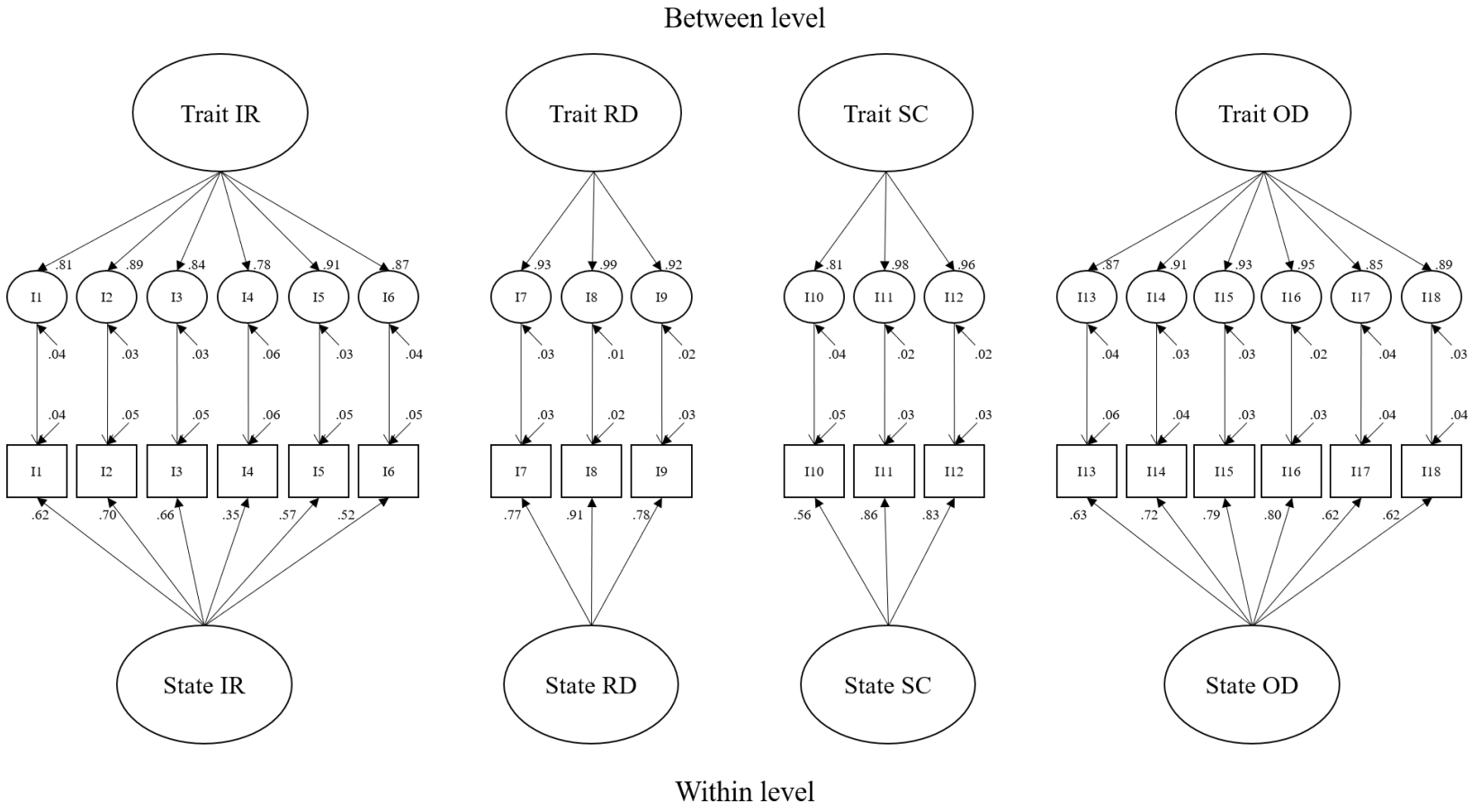
To test Hypothesis 2, multilevel confirmatory factor analysis (MCFA) was used (Muthen, 1994), adjusting for the nested data structure using robust standard errors (MLR). The weekly data we collected have a multilevel structure, with repeated measurements nested within persons. Before conducting the MCFA, we examined the intraclass correlations (ICC1; Bliese, 2000). The ICC1 reflects the amount of between-person variability compared to the amount of total variability and ranges from 0 to 1, with higher values indicating greater proportions of between-level variance (Dyer, Hanges, & Hall, 2005).

In our data, ICC1 values of the items ranged from .45 to .61 suggesting enough between-person variation to use multilevel analysis. Model 1 was proposed as the null hypothesis. Model 2 tested a two-factor model, in which the items of the expansion dimensions, i.e., seeking resources and challenges, and the items of the contraction dimensions, i.e., decreasing and optimising demands collapsed into two factors. Furthermore, we also tested a three-factor model, in which only reducing and optimising demands collapsed into one factor, while the dimensions of seeking challenges and increasing resources were kept as the original structure. Finally, the fourth model assumed the proposed four-factor structure. Results revealed that the four-factor solution fitted the data well ($\chi^2_{(304)}$ = 925.07, CFI = .89, TLI = .88, RMSEA = .05).

The SRMR at the two levels indicated that the fit of the between-level of the model was better than the within-level (SRMR-within = .07 vs SRMR-between = .06). All the alternative models resulted in a significant lack of fit. The one-factor model fit was $\chi^2_{(322)}$ = 2830.87, CFI = .57, TLI = .52, RMSEA = .10, SRMR-within = .15 and SRMR-between = .19. The fit of the two-factor model was $\chi^2_{(318)}$ = 2882.48, CFI = .56, TLI = .51, RMSEA = .10, SRMR-within = .10 and SRMR-between = .11. The three-factor model revealed a fit of $\chi^2_{(312)}$ = 1858.28, CFI = .74, TLI = .70, RMSEA = .08, SRMR-within = .08 and SRMR-between = .10. The Satorra–Bentler scaled chi-square difference test (Satorra & Bentler, 2001) showed that the four-factor model provided a much better fit to the data than (a) the one-factor model (SBS-$\Delta_{\chi 2}$ = 3457.55, Δ_{df} = 18; $p < .001$); (b) the two-factor model ($\Delta_{\chi 2}$ = 394.97, Δ_{df} = 14; $p < .001$); (c) the three-factor model (SBS-$\Delta_{\chi 2}$ = 11813.52, Δ_{df} = 8; $p < .001$). Thus, the four-factor model explained our data best, and therefore Hypothesis 2 was supported.

Figure 2

Path Diagram of the Final Four-Factor Model (Standardised Solution).



Notes. At the bottom of the figure, squares represent observed indicators. Each item is associated with a random error, represented by an oblique arrow. At the top of the figure, indicators in circles represent group means for each observed indicator. Group means load onto the aggregate latent variable and are associated with their respective error terms, represented by an oblique arrow. The full model connects the disaggregate and corresponding aggregate indicators. Thus, the observed values of the original indicators (in squares) are considered to be a function of both the within- and between-level latent constructs (state and trait variables, respectively) (cf. Muthen, 1994; Dyer et al., 2005).

Between level = between-person level. Within level = within-person level. IR = Increasing resources; RD = Reducing demands; SC = Seeking challenges; OD = Optimising demands.

Test-Retest Reliability

To investigate whether the dimensions of job crafting are stable over time, we inspected correlation coefficients of the data collected in Sample 3. Results (see Table 4) showed that Time 1 increasing resources was positively and significantly related to its measurement at Time 2 (r = .84, p < .01) and Time 3 (r = .82, p < .01), and the relationship between Time 2 and Time 3 was r = .87, p < .01. Time 1 seeking challenges was positively and significantly related to its measurement at Time 2 (r = .84, p < .01) and Time 3 (r = .79, p < .01), and the relationship between Time 2 and Time 3 was r = .82, p < .01. Reducing hindering demands measured at Time 1 was positively and significantly related to its measurement at Time 2 (r = .80, p < .01) and Time 3 (r = .76, p < .01), and the relationship between Time 2 and Time 3 was r = .76, p < .01. Time 1 optimising demands was positively and significantly related to its measurement at Time 2 (r = .74, p < .01) and Time 3 (r = .72, p < .01), and the relationship between Time 2 and Time 3 was r = .80, p < .01. Since all correlations exceeded the minimum correlation criterion of .40 between data collection points (Robinson, Shaver, & Wrightsman, 1991), our scale shows good test-retest reliability, supporting Hypothesis 3.

Table 4

Correlations among the Four Dimensions of Job Crafting across Three Waves. Cronbach's α are Reported on the Diagonal (N = 226).

		1	2	3	4	5	6	7	8	9	10	11	12
Time 1													
1.	IR1	(.85)											
2.	SC1	.60**	(.87)										
3.	RD1	.39**	.38**	(.86)									
4.	OD1	.59**	.52**	.51**	(.90)								
Time 2													
5.	IR2	.84**	.60**	.36**	.52**	(.88)							
6.	SC2	.58**	.84**	.31**	.47**	.64**	(.90)						
7.	RD2	.40**	.38**	.80**	.49**	.46**	.35**	(.86)					
8.	OD2	.60**	.58**	.51**	.74**	.63**	.63**	.60**	(.90)				
Time 3													
9.	IR3	.82**	.58**	.29**	.51**	.87**	.57**	.37**	.57**	(.88)			
10.	SC3	.59**	.79**	.29**	.44**	.60**	.82**	.35**	.59**	.62**	(.90)		
11.	RD3	.46**	.36**	.76**	.47**	.43**	.34**	.76**	.53**	.41**	.37**	(.86)	
12.	OD3	.57**	.56**	.41**	.72**	.59**	.56**	.47**	.80**	.59**	.62**	.58**	(.90)

Note. IR = Increasing resources; SC = Seeking challenges; RD = Reducing demands; OD = Optimising demands.

**p < .01

Hierarchical Model with Reflective and Formative Indicators

To test the hierarchical structure of job crafting, we used data from Sample 1, of participants who filled in also the measures on work engagement and exhaustion. Participants who completed the entire questionnaire, including job crafting measures, work engagement, and exhaustion were 591. The model we tested is a third-order model with both reflective and formative indicators. Specifically, building on the proposal of Zhang and Parker (2018), we hypothesised behavioural job crafting as a formative construct formed by expansion and contraction strategies that employees can proactively engage in. Such strategies are behavioural in nature, meaning that different behaviours contribute to their formation, i.e., increasing resources and challenges, reducing and optimising demands. These behavioural dimensions are, in turn, reflected by the items of the JCS.

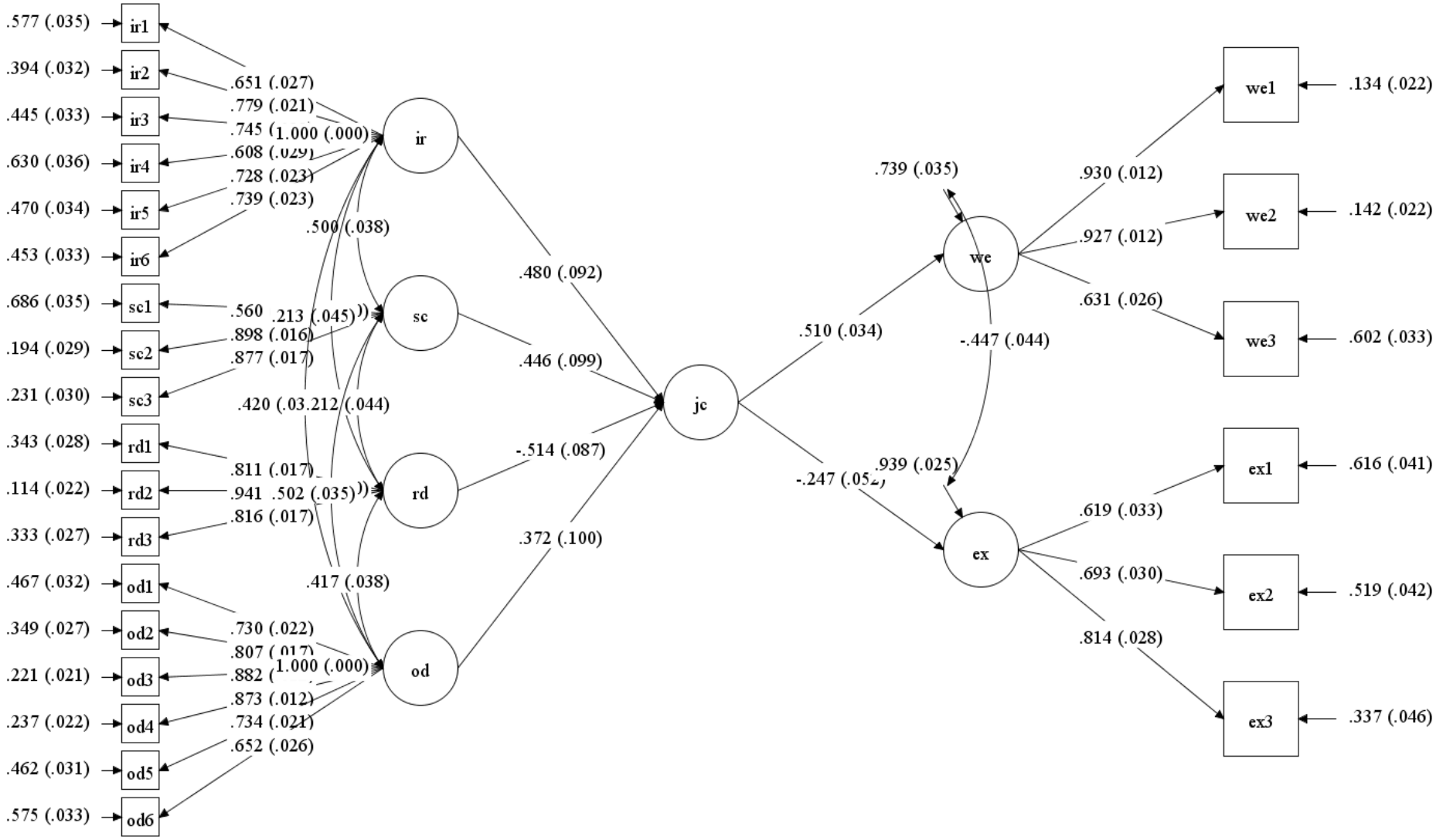
Given that identification problems are an issue in models with formative indicators (MacCallum & Browne, 1993), we added two reflective indicators predicted by job crafting, i.e., work engagement and exhaustion. Apart from a methodological consideration, such a choice can be justified based on previous research suggesting that job crafting leads to improvement in employee well-being because of enhanced person-job fit. Indeed, evidence from research shows that job crafting is associated with higher work engagement and lower exhaustion (Demerouti, Bakker, & Gevers, 2015; Petrou, Demerouti, & Schaufeli, 2015; Tims, Bakker, & Derks, 2013; Petrou et al., 2012).

We created our model by first defining its reflective parts, then by creating the two second-order factors, i.e., expansion and contraction tendencies, and regressing them on their respective behavioural strategies. For the model to be identified (cf. Brown, 2006), we also constrained the first path of each regression to a non-zero value (i.e., 1), and fixed the residual variance of the formative latent factor to zero. Finally, we created the third-order variable, job crafting, and regressed it on the two main strategies of expansion and contraction, again fixing one of the two paths to a non-zero value and the residual variance to zero. As a final step, we regressed work engagement and exhaustion on job crafting. Even though results revealed a satisfactory model fit: $\chi 2$ (240) = 835.822, $p < 0.001$; CFI = .93; TLI =.91, SRMR = .06; RMSEA =.065, a closer inspection revealed that reducing demands had a path with a value over 1 (i.e., $\beta = 1.043$) with the formative construct of contraction strategies (while optimising demands showed a standardised

coefficient of -.754 with contraction strategies), meaning that there may be collinearity problems. On the other side, it must be noticed that our model implies collinearity by design, given that the second-order constructs are part of the higher-order construct (i.e., behavioural job crafting is the combination of contraction and expansion strategies and is nearly perfectly predictable by them). Therefore, in order to solve such a problem, we decided to test an alternative model by including only two levels, i.e., a reflective part and one formative factor, i.e., behavioural job crafting, without differentiating between expansion- and contraction-oriented strategies, formed by its different behavioural facets. Results showed that such a model fitted the data better, in that no path resulted in being higher than 1. Overall, such results provided only partial support for Hypothesis 4. Standardised estimates and standard errors from the final model are displayed in Figure 3. Results from our final model show that reducing demands displays a significant negative weight on overall job crafting but otherwise have positive bivariate correlations with the other dimensions constituting it (see results from the correlations reported in Table 4). These results should be interpreted as reducing demands having a negative effect on overall job crafting when controlling for the effects of the other indicators (Cenfetelli & Bassellier, 2009).

Figure 3

Graphical Representation of the Standardised Results from the Final Model with Reflective and Formative Indicators.



Notes.

IR = Increasing resources. SC = Seeking challenges. RD = Reducing demands. OD = Optimising demands. JC = Job crafting. WE = Work engagement. EX = Exhaustion.

Results from the hierarchical model tested showed that job crafting was positively and significantly related to work engagement (β = .51; p <.001), while it was significantly and negatively related to exhaustion (β = -.25; p <.001), providing support for Hypothesis 5.

Discussion

This study contributed to further knowledge on the nature of behavioural job crafting by investigating the aspects underlying its operationalisation and measurement. By integrating the dimension of optimising demands in the general job crafting scale, we were able to assess how such a four-dimension conceptualisation of job crafting maps into the JD-R approach to job crafting (Tims & Bakker, 2010; Petrou et al., 2012) and whether it is a better solution to explain job crafting behaviours. Within the JD-R framework to job crafting, our results showed that four behavioural dimensions can capture different facets of employees' efforts to balance the characteristics of their job, both at the general and at the state level. Accordingly, the studies presented here suggest that four distinct dimensions, i.e., seeking resources, seeking challenges, reducing demands, and optimising demands, can be used to discriminate different behaviours employees may engage in to redesign their work on their own initiative.

Our findings also show that general job crafting behavioural tendencies are stable when measured across relatively distant time points. This means that, while job resources and demands may fluctuate on a daily and weekly basis, influencing daily and weekly employees' engagement in different job crafting strategies, on a general level individual differences in the extent to which employees tend to craft their jobs through specific strategies are quite stable over time. Even though these findings are consistent with previous ones (e.g. Nielsen, et al., 2017; Petrou et al., 2012), to the best of our knowledge this is the first study testing the stability of four different behavioural strategies referred to the management of job demands and resources over three time points in four months.

While much research has been conducted to investigate how the three main dimensions of job crafting (i.e., increasing resources, seeking challenges, and reducing demands) relate to well-being indicators, we are unaware of studies that investigated such a relationship by also considering the contribution of optimising demands and the hierarchical structure of behavioural job crafting. Our study sheds light on such a gap and unveils that conceptualising job crafting as a set of behaviours rather than as the result of

two broad classes of strategies is a more precise way to describe it. Within such a conceptualisation, results show that optimising demands, together with seeking resources and challenges, is positively related to behavioural job crafting, which may signal that employees who craft their work by optimising it, thus by avoiding inefficient processes, actually do not shrink their job but rather expand it by allowing a better resource allocation. On the contrary, results from the hierarchical model also show that decreasing demands is negatively related to job crafting, meaning that an increase in such a behaviour diminishes the extent to which employees overall craft their job in a way that is consistent with a complex set of proactive strategies. Such a finding adds to previous mixed evidence on the nature of avoidance job crafting as a proactive behaviour (e.g. Zhang & Parker, 2018; Rudolph et al., 2017). Specifically, it suggests that when employees engage in withdrawal-oriented behaviours in order to simply avoid hindering job demands they do not actively change their job in a self-initiated manner that is consistent with the other set of behavioural strategies characterising job crafting. Accordingly, this initial evidence may suggest job crafting is characterised more by effortful and directed actions to seek positive aspects of work (Zhang & Parker, 2018), rather than by withdraw-oriented behaviours concerning the negative ones.

Limitations and Future Research

Besides its merits, this research has some limitations that deserve attention in future research. In this paper, we explicitly focused on behavioural job crafting and not investigated cognitive job crafting. However, such a crafting strategy has been proven to be an important way to influence employees' positive outcomes (Berg at al., 2013; Wrzesniewski & Dutton, 2001) and research is needed to improve its measures and to understand how different job crafting forms are intertwined and influence each other.

Moreover, in this study, we focused on the validity of the job crafting scale developed by Petrou et al. (2012) integrated with items from the scale of optimising demands (Demerouti & Peeters, 2018). Accordingly, we were not able to investigate whether different scales of job crafting based on other theoretical frameworks can be used interchangeably, nor to provide an empirical comparison of them. Future research could try to investigate whether there are significant differences in reliability, criterion-related or construct-related validity between different job crafting measures. Besides, our study focused on the conceptualisation of behavioural job crafting as a higher-order formative

construct, eventually defined by four indicators. Given that the consequences of dropping a formative indicator from a measurement model are potentially much more damaging than the consequences of dropping a reflective indicator (MacKenzie et al., 2005), future research could try to improve the measurement of a formative job crafting construct by including additional strategies that may be key to tap into the facets of behavioural job crafting, here not considered (e.g. actions to avoid aspects of the job that lack positive resources, cf. Zhang & Parker, 2018), which may provide a more nuanced and complete understanding of the nature of behavioural job crafting.

Also, when we investigated fluctuations in the revised structure of job crafting that we proposed, we relied on three weekly diaries rather than on daily ones or more diaries. Future research could additionally investigate the properties of the proposed behavioural structure of job crafting in daily measures or during more weeks, which may be preferable to capture the within-participant variance.

Moreover, to keep our surveys as short as possible, we did not include measures of proactive personality or other individual dispositions that may significantly influence employees' engagement in job crafting behaviours. Future studies could try to replicate our findings controlling for such dispositional factors. Finally, the measures of work engagement and exhaustion that we collected to test our hypotheses were cross-sectional, not allowing to assume causality in the relationships observed between job crafting and well-being.

References

Asparouhov, T., & Muthén, B. (2010). *Weighted least squares estimation with missing data*. Mplus Technical Appendix, 2010, 1-10.

Bakker, A. B., Ficapal-Cusí, P., Torrent-Sellens, J., Boada-Grau, J., & Hontangas-Beltrán, P. M. (2018). The Spanish version of the Job Crafting Scale. *Psicothema*, 30, 136-142.

Balducci, C., Fraccaroli, F., & Schaufeli, W. B. (2010). Psychometric properties of the Italian version of the Utrecht Work Engagement Scale (UWES-9). *European Journal of Psychological Assessment*, 26, 143-149.

Berg, J. M., Dutton, J. E., & Wrzesniewski, A. (2013). Job crafting and meaningful work. In B. J. Dik, Z. S. Byrne, & M. F. Steger (Eds.), *Purpose and meaning in the workplace* (pp. 81–104). Washington, DC: American Psychological Association.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. K. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations* (pp.349-381). San Francisco, CA: Jossey-Bass.

Bollen, K. A. (1989). *Structural equations with latent variables*. New York: Wiley.

Bollen, K. A., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin*, 110, 305–314.

Brislin, R. W. (1980). Cross-cultural research methods. In I. Altman, A. Rapoport, & J. F. Wohlwill (Eds.), *Environment and culture* (pp. 47-82). Springer, Boston, MA.

Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford.

Bruning, P. F., & Campion, M. A. (2018). A Role–resource Approach–avoidance Model of Job Crafting: A Multimethod Integration and Extension of Job Crafting Theory. *Academy of Management Journal*, 61, 499-522.

Bruning, P. F., & Campion, M. A. (2019). Exploring job crafting: Diagnosing and responding to the ways employees adjust their jobs. *Business Horizons*, 62, 625-635.

Cenciotti, R., Borgogni, L., Callea, A., Colombo, L., Cortese, C. G., Ingusci, E., ... & Zito, M. (2016). The Italian version of the job crafting scale (JCS). *Applied Psychology Bulletin*, 277, 28-36.

Cenfetelli, R. T., & Bassellier, G. (2009). Interpretation of formative measurement in information systems research. *MIS Quarterly*, 33, 689-707.

Chinelato, R. S. D. C., Ferreira, M. C., & Valentini, F. (2015). Evidence of validity of the job crafting behaviors scale. *Paidéia*, 25, 325-332.

Demerouti, E. (2014). Design your own job through job crafting. *European Psychologist*, 19, 237-247.

Demerouti, E., & Nachreiner, F. (1996). Reliability and validity of the Maslach Burnout Inventory: A critical approach. *Zeitschrift für Arbeitswissenschaft*, 52, 82–89.

Demerouti, E., & Peeters, M. C. (2018). Transmission of reduction-oriented crafting among colleagues: A diary study on the moderating role of working conditions. *Journal of Occupational and Organizational Psychology*, 91, 209-234.

Demerouti, E., & Rispens, S. (2014). Improving the image of student-recruited samples: A commentary. *Journal of Occupational and Organizational Psychology*, 87, 34-41.

Demerouti, E., Bakker, A. B., & Gevers, J. M. (2015). Job crafting and extra-role behavior: The role of work engagement and flourishing. *Journal of Vocational Behavior*, 91, 87-96.

Demerouti, E., Bakker, A. B., & Halbesleben, J. R. (2015). Productive and counterproductive job crafting: A daily diary study. *Journal of Occupational Health Psychology*, 20, 457-469.

Demerouti, E., Veldhuis, W., Coombes, C., & Hunter, R. (2019). Burnout among pilots: Psychosocial factors related to happiness and score on simulator training. *Ergonomics*, 62, 233-245.

Dyer, N. G., Hanges, P. J., & Hall, R. J. (2005). Applying multilevel confirmatory factor analysis techniques to the study of leadership. *The Leadership Quarterly*, 16, 149–167.

Eguchi, H., Shimazu, A., Bakker, A. B., Tims, M., Kamiyama, K., Hara, Y., ... & Kawakami, N. (2016). Validation of the Japanese version of the job crafting scale. *Journal of Occupational Health*, 58, 231-240.

Elliot, A. J. (2006). The hierarchical model of approach-avoidance motivation. *Motivation and Emotion*, 30, 111-116.

Ghadi, M. Y. (2019). A psychometric evaluation of the job crafting questionnaire (JCRQ) among employees working in Jordanian universities. *International Journal of Organizational Analysis*, 27, 36-50.

Hakanen, J. J., Peeters, M. C., & Schaufeli, W. B. (2018). Different types of employee well-being across time and their relationships with job crafting. *Journal of Occupational Health Psychology*, 23, 289-301.

Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, 52, 1280–1300.

Howard, J. L., Gagné, M., Morin, A. J., & Forest, J. (2018). Using bifactor exploratory structural equation modeling to test for a continuum structure of motivation. *Journal of Management*, 44, 2638-2664.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1–55.

Jarvis, C. B., Mackenzie, S. B., & Podsakoff, P. M. (2003). A critical review of construct indicators and measurement model misspecification in marketing and consumer research, *Journal of Consumer Research*, 30, 199-218.

Kaplan, D. (2009). *Structural equation modeling: Foundations and extensions* (2nd ed.). Thousand Oaks, CA: SAGE.

Karasek, R. A., & Theorell, T. (1990). *Health work*. New York: Basic Book.

Laurence, G. A. (2010). *Workaholism and expansion and contraction oriented job crafting: The moderating effects of individual and contextual factors*. Unpublished doctoral dissertation, The Graduate School Syracuse University, Syracuse: NY.

Lichtenthaler, P. W., & Fischbach, A. (2016). The Conceptualization and Measurement of Job Crafting: Validation of a German Version of the Job Crafting Scale. *Zeitschrift für Arbeits-und Organisationspsychologie*, 60, 173-186.

Lichtenthaler, P. W., & Fischbach, A. (2019). A meta-analysis on promotion-and prevention-focused job crafting. *European Journal of Work and Organizational Psychology*, 28, 30-50.

MacCallum, R. C., & Browne, M. W. (1993). The use of causal indicators in covariance structure models: Some practical issues. *Psychological Bulletin*, 114, 533-541.

MacKenzie, S. B., Podsakoff, P. M., & Jarvis, C. B. (2005). The problem of measurement model misspecification in behavioral and organizational research and some recommended solutions. *Journal of Applied Psychology*, 90, 710–730.

Mäkikangas, A. (2018). Job crafting profiles and work engagement: A person-centered approach. *Journal of Vocational Behavior*, 106, 101-111.

Morin, A. J. S., Arens, A., & Marsh, H. (2016). A bifactor exploratory structural equation modeling framework for the identification of distinct sources of construct-relevant psychometric multidimensionality. *Structural Equation Modeling*, 23, 116-139.

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

Muthén, L., & Muthén, B. (2010). *Mplus user's guide* (8th ed.). Los Angeles, CA: Muthén and Muthén.

Nielsen, K., & Abildgaard, J. S. (2012). The development and validation of a job crafting measure for use with blue-collar workers. *Work & Stress*, 26, 365-384.

Nielsen, K., Antino, M., Sanz-Vergel, A., & Rodríguez-Muñoz, A. (2017). Validating the Job Crafting Questionnaire (JCRQ): A multi-method and multi-sample study. *Work & Stress*, 31, 82-99.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Oldham, G. R., & Fried, Y. (2016). Job design research and theory: Past, present and future. *Organizational Behavior and Human Decision Processes*, 136, 20-35.

Petrou, P., Demerouti, E., & Schaufeli, W. B. (2015). Job crafting in changing organizations: Antecedents and implications for exhaustion and performance. *Journal of Occupational Health Psychology*, 20, 470-480.

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

Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). *Measures of personality and social psychological attitudes*. San Diego, CA: Academic Press.

Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior*, 102, 112-138.

Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, 66, 507–514.

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

Schmitt, T. A. (2011). Current Methodological Considerations in Exploratory and Confirmatory Factor Analysis. *Journal of Psychoeducational Assessment*, 29, 304-321.

Schmitt, T. A., & Sass, D. A. (2011). Rotation criteria and hypothesis testing for exploratory factor analysis: Implications for factor pattern loadings and interfactor correlations. *Educational and Psychological Measurement*, 71, 95-113.

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

Sora, B., Caballer, A., & Garcia-Buades, E. (2018). Validation of a Short Form of Job Crafting Scale in a Spanish Sample. *The Spanish Journal of Psychology*, 21, 1-13.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA 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, 230-240.

Weseler, D., & Niessen, C. (2016). How job crafting relates to task performance. *Journal of Managerial Psychology*, 31, 672-685.

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.

Yen, C. H., Tsaur, S. H., & Tsai, C. H. (2018). Tour leaders' job crafting: scale development. *Tourism Management*, 69, 52-61.

Zhang, F., & Parker, S. K. (2018). Reorienting job crafting research: A hierarchical structure of job crafting concepts and integrative review. *Journal of Organizational Behavior*, 40, 126-146.

CHAPTER 3

Towards an Integrative Framework of the Processes Underlying Job Crafting. Testing the Theory of Planned Behaviour through a Latent Change Score Approach

Part of this chapter was presented at the 13th European Academy of Occupational Health Psychology Conference (September, 2018), Lisbon, Portugal.

Abstract

Although much research has been conducted to investigate the antecedents of job crafting and how it impacts work-related outcomes, an integrative theory about the dynamics underlying job crafting behaviour and a model that can explain its predictors are still missing. Based on the Theory of Planned Behaviour and the Job Demands-Resources approach to job crafting, we hypothesised that social norms, attitudes and perceived behavioural control build intention to craft over time, which in turn fosters actual job crafting behaviours. Also, we hypothesised that employees' past behaviours shape their personal and contextual beliefs regarding job crafting. We conducted a two-wave study with a twelve-week time interval among a sample of employees (N = 346). Results of a latent change score analysis showed that holding more favourable attitudes led to lower changes in employees' behavioural intentions. Differently, descriptive norms and perceived behavioural control predicted fluctuations in intentions to craft over time. Changes in intentions were positively related to actual behaviour during the study period. Finally, employees' behaviours were positively related to fluctuations in attitudes and perceived behavioural control. Findings suggest that job crafting is an intentional proactive-preventive strategy that results from both contextual and personal beliefs. Moreover, such beliefs fluctuate over time as a result of previously enacted behaviours.

Keywords: *JD-R Theory; Job Crafting; Perceived Behavioural Control; Proactive Behaviours; Social Norms; Theory of Planned Behaviour*.

Introduction

Job crafting refers to the proactive changes employees make in their work to increase their job resources and challenges and reduce their hindering job demands (Tims, Bakker, & Derks, 2012). Such a dynamic, self-directed process reflects employees' efforts to shape the person-environment transaction in a way that reduces threats to their well-being (Lazarus & Folkman, 1984) and allows for a balance between job demands and resources (Demerouti, 2015). That is, by engaging in job crafting behaviours, employees proactively manage their job conditions in order to become or stay engaged in their work and manage demands perceived as potentially harmful. Given that individual strategies and coping choices are selected based on an evaluative process that is influenced by both personal and contextual factors (Folkman & Lazarus, 1985), furthering knowledge on the psychosocial and behavioural mechanisms involved in such a proactive strategy is crucial to protect occupational health and sustain work-related well-being.

While many studies have been conducted to investigate the factors driving employees' job crafting, some gaps still warrant attention to disentangle the role of personal and contextual factors underlying such a behavioural strategy that allows optimal functioning in the workplace (Bakker & Derks, 2010). First, research is needed to gain an overarching understanding of how job crafting behaviours are influenced and change based on both contextual and personal drivers. Indeed, even though existing research has provided evidence of the role of different factors as antecedents of job crafting, including proactive personality (Bakker et al., 2012), approach and avoidance temperament (Bipp & Demerouti, 2015), self-efficacy (Tims, Bakker & Derks, 2014), and job demands and resources (Petrou, Demerouti, Peeters, Schaufeli & Hetland, 2012), a theoretical perspective investigating how such a proactive-preventive strategy unleashes from *both* personal and contextual perceptions is still missing. Second, while job crafting has been defined as a broad class of conscious and intentional changes to one's work (Bruning & Campion, 2018; Tims et al., 2012; Wrzesniewski & Dutton, 2001), empirical evidence on the extent to which behavioural intention relates to job crafting is still scarce, with only one study having measured behavioural intention to craft as an antecedent of job crafting (see: Bipp & Demerouti, 2015). Deepening knowledge on the nature of job crafting as an intentional and discretionary class of behaviours is important to yield

theoretical clarity and advance the understanding of its motivational impetus in a manner consistent across the proactive behavioural and coping literature. Third, it is not yet clear how the dynamics between the personal and contextual predictors of employees' intentions to craft their job unfold over time and whether employees' engagement in job crafting shapes the information that constructs the personal and contextual drivers of such behaviours. Gaining such an understanding is crucial given that employees' behaviours are influenced by the information they gather from their immediate social environments, which in turn also shapes their understanding of expectations regarding their behaviours (Salancik & Pfeffer, 1978).

The present study aims to broaden this knowledge by combining the Theory of Planned Behaviour (TPB) (Ajzen, 1991) and the JD-R approach to job crafting (Tims & Bakker, 2010; concerning the JD-R model see: Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner & Schaufeli, 2001), aiming at investigating whether attitudes, social norms, and perceived behavioural control drive employees' intentions to craft their job, as well as how such intentions relate to actual job crafting behaviours. Besides, by conducting a two-wave, cross-lagged panel study, this contribution aims to shed light on how contextual and personal drivers may affect job crafting behaviours over time and whether engagement in such behaviours shapes the motivational drivers' underlying intentions. That is, assuming that job crafting is a proactive and dynamic process occurring at work (Salanova, Schaufeli, Xanthopoulou, & Bakker, 2010; Grant & Ashford, 2008), we adopt both an inter-individual and intra-individual perspective (Molenaar, 2004; Molenaar & Campbell, 2009) to the study of (i) how psychological antecedents impact the magnitude of intra-individual change at the level of behavioural intention and (ii) whether employees' engagement in job crafting behaviours relates to intra-individual changes in such psychological antecedents over time.

In doing so, this study contributes to the literature on job crafting by investigating how the development and fluctuations of both contextual and personal drivers jointly relate to such behaviours, providing an integrative framework about their general dynamics. Such a contribution regarding the concomitant role of different factors enabling individuals' agency and positive adaptations to the work environment is crucial if job crafting is to be effectively managed inside organisations to protect against occupational risks and promote well-being. Moreover, by investigating the significance

of intra-individual changes in the cognition referred to as the constructs of the TPB, i.e., attitudes, social norms, perceived behavioural control, and behavioural intention, this study advances theoretical knowledge on the dynamics underlying job crafting. Indeed, by addressing the role of time as a backdrop against which contextual and personal factors are experienced, we shift from a static examination of the TPB to dynamic processes that are likely to change and evolve, within real organisational settings. Finally, by testing whether and how the behavioural antecedents of the TPB influence intra-individual changes in behavioural intentions as well as whether previous behaviours influence intra-individual changes in such antecedents, we contribute to furthering knowledge on the theoretical mechanisms of behaviour formation within the TPB framework, shedding light on whether and how behaviours contribute to reality construction by changing theoretical behavioural drivers.

Theoretical Background

Theory of Planned Behaviour

Even though evidence from research provides insights on the conditions for job crafting to arise in the workplace, a model that can explain the predictors of job crafting considering both personal and contextual factors upon which most behaviours are dependent (Ohly, Sonnentag, Niessen, & Zapf, 2010) is still missing. To fill this gap, we rely on the TPB (Ajzen, 1991, 2015), a social psychological theory that has been widely applied to understanding behaviour in a variety of organisational settings. It is a cognition-based theory that deals with the relations among beliefs, norms, behavioural control, intentions and behaviours, which has had a wide application due to its practical approach to changing behaviour by changing cognitive structures underlying those behaviours (Fox & Spector, 2010).

According to this theory, the main driver for behaviour is the intention to perform a behaviour, which in turn is a function of underlying motivational variables, i.e., attitudes, social norms, and perceptions of behavioural control (PBC). *Attitudes* refer to people's overall assessment of the advantages and disadvantages of their performing the behaviour (e.g., "For me, asking my supervisor for advice would be worthwhile/not worthwhile"). Subjective norms refer to people's perceptions of social pressure to perform the behaviour and include conceptions of what significant others approve, i.e., *injunctive social norms* (e.g., "Most people in my work environment who are important

to me think that I should ask for advice when uncertain"), and what significant others themselves do, i.e., *descriptive norms* (e.g., "Most people in my work environment who are important to me ask for advice when uncertain") (White, Smith, Terry, Greenslade, & McKimmie, 2009; Cialdini, Kallgren, & Reno, 1991; Turner, 1991; Brown, 1988). *Perceived behavioural control* refers to the perceived degree of difficulty in performing a behaviour and whether an individual believes he/she has the ability to perform it (e.g., "For me obtaining feedback from my supervisor would be easy/difficult"). The more positive people's attitudes, subjective norms, and PBC, the stronger their intentions to perform the behaviour. *Intention* in the TPB is an indication of a person's readiness to perform a given behaviour and is assumed to be the immediate antecedent of behaviour (e.g. "I intend to ask my supervisor for advice on the new project") (Ajzen, 2011). Intention combines aspects of a person's choice to engage in a behaviour, his/her desire to expend effort at doing it and drive to persist (Ajzen, 1991). The stronger people's intentions, the higher the likelihood of their performing the behaviour (Sheeran & Silverman, 2003).

Building on results from research investigating the validity of the TPB to predict behaviours among different life domains (e.g. health behaviours: Hagger, Lonsdale, & Chatzisarantis, 2012; physical activity: Brooks et al., 2017; school behaviour: Millar, & Shevlin, 2003; eating behaviours: McDermott, et al., 2015; safety behaviours: Bazargan-Hejazi et al., 2017), we argue that such a framework provides an overarching background for investigating how both personal and contextual predictors influence job crafting. Indeed, even though we are unaware of studies applying the TPB to investigate job crafting behaviours, previous findings supported its predictive value for different proactive behaviours. For example, evidence has been found for attitudes and social norms as crucial drivers of proactive environmental behaviour (Cordano & Frieze, 2000; Marshall, Cordano, & Silverman, 2005), and for the usefulness of all the variables included in the TPB for predicting students' intentions towards being physically active (Wing Kwan, Bray, & Martin Ginis, 2009). Accordingly, by assessing employees' intentions, perceived ability to act, and perceptions of facilitating/hindering conditions towards job crafting, the TPB allows to further our understanding of the different factors influencing employees' decision to craft their work.

Job Crafting Behaviours

Job crafting has been defined as self-initiated change behaviours that employees engage in to align their jobs with their preferences, motives, and passions (Wrzesniewski & Dutton, 2001). Such a bottom-up redesign approach starts with the initiative of the employee, who can put into action his/her attitude towards proactive work behaviours (Tims et al., 2012). Lately, the construct of job crafting has been conceptualised within the JD-R Model (Tims & Bakker, 2010) and defined as a proactive employee behaviour consisting of seeking resources and challenges, and reducing demands (Petrou et al., 2012). Based on this framework, crafting job resources could take the form of increasing structural (e.g. trying to learn new things) or social (e.g. asking for performance feedback) resources. Increasing challenging demands consists of seeking challenging tasks at work or voluntarily taking on new responsibilities (Hakanen, Peeters, & Schaufeli, 2018) to sustain motivation, mastering and learning (Karasek & Theorell, 1990). Finally, when hindering job demands are perceived as overly high, they can be crafted to avoid excessive losses of resources (e.g. making sure that one's job is mentally less demanding; Tims & Bakker, 2010).

In light of the positive work-related outcomes associated to job crafting behaviours (e.g. work engagement, Vogt, Hakanen, Brauchli, Jenny, & Bauer, 2016; job performance, Demerouti, Bakker, & Gevers, 2015; Tims, Bakker, & Derks, 2015; and person-job fit, Lu, Wang, Lu, Du, & Bakker, 2014; Tims et al., 2016), scholars have started to investigate the role of dispositional and contextual factors to them associated. Findings have shown that employees scoring high on approach temperament, i.e., general sensitivity to positive stimuli accompanied by perceptual vigilance, affective reactivity and behavioural predisposition towards such stimuli (Elliot & Thrash, 2010), tend to enact expansion job crafting behaviours, i.e., look for resources and challenges. On the contrary, employees scoring high on avoidance temperament, i.e., highly sensitive towards negative or undesirable stimuli and willing to stay away from such stimuli, try to reduce their perceived demands (Bipp & Demerouti, 2015). In another study, Tims and colleagues (2014) found that those who felt more self-efficacious on a given day were more likely to mobilise their job resources on that day. Similarly, findings from a study conducted among 95 dyads of employees showed that employees characterised by a

proactive personality were more likely to increase their resources and job challenges (Bakker et al., 2012).

Studies focusing on the role of contextual factors as drivers of job crafting showed that task complexity is positively related to job crafting behaviours (Githulescu, 2007) and that work environments characterised by both high autonomy and high work pressure facilitate learning and development, which in turn make employees prone to keep their job stimulating by crafting it (Petrou et al., 2012). Assuming an interpersonal perspective and acknowledging that employees working in an organisation share their work environment with other people, Tims and colleagues (2015) showed that contraction job crafting behaviours, i.e., decreasing hindering job demands, were positively related to colleagues' workload and conflict. Moreover, results from a study conducted among 103 dyads of employees showed that each of the actor's job crafting behaviours was positively related to the partner's job crafting behaviours (Bakker, Rodríguez-Muñoz, & Sanz Vergel, 2016). Similarly, arguing that employees are more likely to engage in job crafting behaviours when they observe colleagues crafting their job, Peeters, Arts and Demerouti (2016) found that seeking challenges behaviours are transferred between two colleagues who observe each other and work closely together.

An Integrative Model to Explain the Dynamics of Job Crafting

Given that job crafting designates a proactive, self-initiated behaviour, it may be a function of compatible intentions and perceptions of behavioural control, attitudes, and social norms (Ajzen, 2011). First, employees will likely develop an intention to engage in job crafting if they believe that such behaviours will lead them to experience positive consequences. Previous research has consistently shown that pro-environmental attitude is positively related to pro-environmental behaviour (e.g. Bamberg & Möser, 2007; Hinds & Sparks, 2008; Kaiser, Wölfing, & Fuhrer, 1999), also in the workplace (Cordano & Frieze, 2000), and including proactive pro-environmental behaviour (Bissing-Olson, Iyer, Fielding, & Zacher, 2013). Similarly, research focusing on entrepreneurship as a proactive behaviour found a positive relationship between entrepreneurial attitudes and intentions (Harris & Gibson, 2008).

Social frames of reference, i.e., social norms, not only boost but also guide action in meaningful ways (Schultz et al., 2007). However, the role of normative factors informing job crafting has received only limited attention. Normative influences have

been discussed in terms of a possible driver of team crafting (Tims et al. 2013), or as a factor influencing modelling behaviours (Bakker et al., 2016; Peeters et al., 2016), without any specific empirical measure of social norms used to test such assumptions. In this study, we propose that injunctive and descriptive social norms affect job crafting behavioural intention, in that they inform the individual about the extent to which such behaviours are enacted, expected and may be rewarded in the workplace. While injunctive norms prescribe the valued social behaviour in a given context (i.e., approval vs disapproval of engaging in job crafting behaviours), descriptive norms inform the individual about how others act in a similar situation (Cialdini & Trost, 1998).

Lastly, individuals are more likely to perform a behaviour if there are limited perceived factors that prevent them from accomplishing a goal and if they believe they have the capability to do so. Previous findings identified individuals' sense of control as a primary antecedent of proactive behaviour (Ohly & Fritz, 2010; Parker et al., 2006; Sonnentag & Spychala, 2012) and attested the mediating role of PBC in the relationship between job autonomy and intention towards proactive behaviours at work (Shin & Kim, 2015).

Against this background, we argue that holding positive attitudes toward job crafting will lead to higher intention to craft one's job. Likely, perceived positive social norms will strength employees' intentions toward job crafting because they provide a contextual cue informing employees' perceptions regarding the appropriateness of job crafting. Lastly, employees experiencing a sense of control over their resources needed to engage in job crafting will be likely to develop behavioural intention towards it.

Hypothesis 1: *(a) Attitudes, (b) descriptive and (c) injunctive norms, and (d) PBC relate positively to job crafting behavioural intention.*

To date, research has shown that intentions are the best predictors of actual behaviours (Winkelnkemper, 2014; Sheeran, 2002; Armitage & Conner, 2001). Furthermore, a meta-analysis showed that experimentally induced changes in behavioural intentions engender behaviour changes, which suggests that intention has a causal impact on behaviour (Webb & Sheeran, 2006). Drawing on the large body of literature showing that intention is the most immediate and important predictor of a person's behaviour (Sheeran, 2002), and on results showing that it is possible to influence job crafting indirectly via stimulating behavioural intentions (Bipp & Demerouti, 2015), we propose

that behavioural intention will drive employees' choices to engage in job crafting behaviours, combining their volition (engaging or not in job crafting behaviours), and the intensity of their decisions (Sheeran, 2002). Besides, acknowledging the theoretical assumption that PBC can be used to predict behavioural achievement (Ajzen, 1991) directly, we expect that PBC will also be directly associated with employees' job crafting behaviours. Indeed, previous findings showed that self-efficacy, a component of PBC (Ajzen, 2002), is a significant predictor of job crafting (Niessen, Weseler, & Kostova, 2016; Tims et al., 2014). Accordingly, we hypothesise the following:

Hypothesis 2*: (a) Job crafting behavioural intention, and (b) PBC relate positively to job crafting behaviours.*

A Dynamic View of the Personal and Contextual Predictors of Job Crafting

Despite its extensive validation as a framework to understand how behaviours unfold within different domains (Parker, Stradling, & Manstead, 1996), we are unaware of studies assuming a dynamic view to the investigation of the TPB. To the best of our knowledge, a perspective that considers the fluctuations of employees' on-going cognitive, energetic, and social processes (Navarro, Roe, & Artiles, 2015) and their role in shaping behaviour outputs and their drivers remains an unexplored area deserving attention. Investigating whether and how the constructs of the TPB referred to job crafting fluctuate over time is crucial to design and develop organisational initiatives that are effective in supporting such a behavioural proactive-preventive strategy by targeting its antecedents.

Individuals' intentions can change before the performance of the behaviour, for example, as a result of new information that may shape their drivers (Ajzen, 1991). Though, currently, it is unknown if and which, among such drivers, is more likely to impact the magnitude of changes in employees' job crafting behavioural intentions. Accordingly, organisations lack knowledge on whether it may be more effective to stimulate changes in job crafting behavioural intentions by targeting policies/interventions on attitudes, perceptions of behavioural approval, or individual perceptions of control. Based on the TPB, we argue that:

Hypothesis 3*: (a) Attitudes, (b) descriptive and (c) injunctive norms, and (d) PBC significantly relate to changes in behavioural intention.*

Moreover, based on evidence showing that temporal stability of intention is a key index of its strength because stable intentions can withstand contextual threats (Cooke & Sheeran, 2004) and have a significant impact on intention-behaviour consistency (Cooke & Sheeran, 2013; Webb & Sheeran, 2006), we propose the following:

Hypothesis 4*: Changes in behavioural intention significantly relate to behaviour.*

While cognition referred to contextual and personal factors related to job crafting may influence changes in behavioural intentions, eventually affecting behavioural outcomes, employees may also use their own behaviours to construct perceptions of their work attitudes and organisational environments. That is, based on an enactment process, employee's job crafting behaviours may participate in creating the environment the person perceives, eventually resulting in constructing or changing interpretations of the factors underlying such behaviours (Salancik & Pfeffer, 1978). Within the framework of the TPB, this means adopting a dynamic and bidirectional perspective to the study of intentional behaviour as a function of underlying motivational variables (Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst, 2016) that may influence intra-individual changes in behavioural intention and be influenced by employees' previous behaviours. Accordingly, we argue that, in addition to being the result of cognitive processing of personal beliefs and contextual cues, employees' own engagement in job crafting behaviours could serve as a source of information for constructing or changing their own attitudes, perceptions of control, and social norms (Bem, 1972). This is because individuals make sense and behave in response to workplace events as they occur across time (Shipp & Jansen, 2011), meaning that cognition referred to both personal and contextual beliefs changes across time periods or episodes, also as a result of enacted behaviours. Moreover, such an argument is supported by the consideration that job crafting is a proactive behaviour enacted under conditions of choice, meaning that employees are prone to develop a sense of commitment to their own behaviours, likely to influence the development of attitudes and social information processing in a way that is consistent with their commitment and their committing behaviour (Kiesler, 1971; Salancik, 1977).

Against this background, in this study, we adopt a bidirectional perspective to the study of job crafting behaviour and its antecedents as conceived in the TPB, and propose the following:

Hypothesis 5*: Job crafting behaviours relate positively to changes in (a) attitudes, (b) descriptive and (c) injunctive norms, and (d) PBC.*

Materials and Methods

Participants and Procedure

Participants were employees from a variety of occupations working for different organisations in Italy. Participants filled in the same paper-and-pencil questionnaire over two waves with a three-week time-lag between the two data points. Evidence from a meta-analysis investigating the relationship between changes in behavioural intention and behaviour change shows that the former had a greater impact on behaviours when the time interval between intention and behaviour measures was less than or equal to the median value of 11.5 weeks (Webb & Sheeran, 2006). Accordingly, we adopted a time interval of 12 weeks between the first and second measurement point to obtain an accurate prediction of behaviour such that the original measures of the predictors of job crafting may not be affected by intervening events (Ajzen & Madden, 1986).

Survey packages were delivered to the HR functions of the organisations that participated in the study, which then distributed the packages to the employees. The anonymity of all responses was assured by a statement included in the survey package, which also contained a letter describing the purpose of the study. Also, together with the questionnaire, each survey package included a personal card where to report a five-letter identification code formed by different letters of participants' relatives, used to match the first and second-wave respondents' questionnaires and a return envelope.

Seven-hundred and sixty survey packages were distributed in both the first and the second waves, with a time lag of twelve weeks. For the first wave, 540 were returned (response rate = 71%). After the second wave, 346 participants had fully completed both the first and the second questionnaires (total response rate of 46%) and constituted our final sample. A non-response analysis showed that employees who did not complete the second questionnaire did not score significantly different on the control variables (i.e., age, gender, education), nor on our study variables as compared to employees in the final sample.

The participants (53.2% females; M_{age} = 41, *SD* = 10.8) worked in a broad range of functions, including Operational Management 27.5%, Human Resources 13.1%, Sales Management 15.6%, Education 17.4% Care and Assistance 20.1%, and Other 6.3%.

Seventy-three per cent of the participants had a permanent contract. Tenure in the current organisation was on average 14 years (SD = 10.9). Finally, 85% of the participants held a high-school degree or higher.

Measures

Measures were administered in Italian. Scales that were not available in Italian were translated, using the forward-backwards translation method (Behling & Law, 2000).

Theory of Planned Behaviour constructs. Three sub-dimensions of job crafting were considered, i.e., seeking resources, seeking challenges, and reducing demands. We used one behaviour for each of these dimensions to create the TPB questionnaire based on Ajzen's instructions (2006) and previously developed job crafting scales, i.e., "I ask my supervisor for advice" for seeking resources; "I ask for more odd jobs" for seeking challenges, and "I try to make sure that my work is mentally less intense" for reducing demands.

Attitudes were measured by asking participants to evaluate each behaviour on a 7-point semantic differential (1 = *exhausting*; 7 = *motivating*). Higher scores indicated employees' more positive attitudes towards job crafting behaviours. Cronbach's alphas were .78 at T1 and .84 at T2.

Descriptive norms were measured by asking participants to indicate whether other employees in the organisation perform each job crafting behaviour on a scale ranging from *completely false* (1) to *completely true* (7). Cronbach's alphas were .81 at T1 and .91 at T2.

To measure *injunctive norms,* we asked participants to indicate whether other employees whose opinion was valued to the respondent thought each behaviour to be appropriate (1 = *not appropriate*; 7 = *appropriate*). Cronbach's alphas were .83 at T1 and .87 at T2. Higher scores indicated desirable and approved behaviours.

To assess *perceived behavioural control,* we asked participants to indicate the extent to which they thought it possible for them to engage in the indicated behaviours (1 = *impossible*; 7 = *possible*). Cronbach's alphas were .88 at T1 and .88 at T2.

Participants were asked to report their *behavioural intention* by indicating how likely they were to engage in each reported job crafting behaviour in the forthcoming month (1 = *extremely unlikely*; 7 = *extremely likely*). Cronbach's alphas were .80 at T1 and .84 at T2.

Finally, participants reported their *job crafting behaviour* by indicating the extent to which they engaged in each listed behaviour in the past week (1 = *never*; 7 = *every day*). Cronbach's alphas were .75 at T1 and .76 at T2.

Data Analysis Strategy

Hypotheses were tested through a latent change score (LCS) approach (McArdle, 2009), which allows considering both dynamic differences between individuals and intra-individual changes within a two-wave time series (Ferrer & McArdle, 2003; Gawke, Gorgievski, & Bakker, 2017). Assessment of model fit was based on the model chi-square (χ^2), the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardised root mean square residual (SRMR), and the ratio Chi-square/df, with values < 3.00 accepted as indicating a reasonable fit. CFI and TLI values close to .95 or higher (Kline, 2005) in combination with RMSEA and SRMR ≤ .08 indicate a good fit (Hu & Bentler, 1999).

Results

Measurement Model and Descriptive Statistics

Before testing our hypotheses, we tested a measurement model including twelve latent variables, i.e., attitudes, descriptive and injunctive norms, PBC, behavioural intention, and behaviour at respectively Time 1 and Time 2 (cf. the two-step approach; Anderson & Gerbing, 1988). Each item indicated its latent construct and correlation coefficients were modelled between all study variables (Gawke et al., 2017). Table 1 shows that the correlations between latent variables were all in the expected direction.

Moreover, our measurement model fit the data well at both time points, i.e., at T1: $\chi^2_{(104)} = 329.55$, $p < 0.001$; CFI = .94; TLI =.91, RMSEA =.07, at T2: $\chi^2_{(104)} = 485.94$, $p < 0.001$; CFI = .92; TLI =.90, RMSEA =.08. Factor loadings were all significant and ranged from .65 to .90.

Table 1

Latent Correlations Between the Study Variables and Change Score Variables (*N* = 346).

Construct	Study variables											
Study variables	1	2	3	4	5	6	7	8	9	10	11	12
Time 1												
1. Attitudes	-											
2. Descriptive norms	.48**	-										
3. Injunctive norms	.55**	.48**	-									
4. Perceived behavioural control	.52**	.37**	.44**	-								
5. Behavioural intention	.71**	.39**	.47**	.29**	-							
6. Behaviour	.57**	.26**	.37**	.24**	.79**	-						
Time 2												
7. Attitudes	.70**	.44**	.43**	.29*	.58**	.44**	-					
8. Descriptive norms	.44**	.59**	.42**	.26**	.29**	.20*	.62**	-				
9. Injunctive norms	.43**	.39**	.52**	.31**	.31**	.21**	.60**	.63**	-			
10. Perceived behavioural control	.51**	.26**	.44**	.43**	.37**	.30*	.67**	.51**	.64**	-		
11. Behavioural intention	.52**	.33**	.37**	.24**	.61**	.50**	.71**	.46**	.50**	.50**	-	
12. Behaviour	.57**	.36**	.35**	.27**	.61**	.59**	.67**	.48**	.52**	.53**	.78**	-

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

Latent Change Score Model for Hypotheses Testing

To test our hypotheses, we build our "Latent Change Score (LCS) Base Model" by creating six additional latent variables that measured the intra-individual change scores, namely changes (Δ) in attitudes, in descriptive and injunctive norms, in PBC, in behavioural intention, and behaviour. Such latent variables were created following the procedure described in Gawke et al., 2017 (p. 94). Specifically, we constrained the autoregression paths of the latent study variables to 1, and set the variance of the latent study variable at T2 to zero, so as to have T1 and T2 measures identical. Then, we constrained the regression path from the latent change variable to the respective variable at T2 to the value 1, in order for the latent change score factor to account for the residual variance in the T2 measure (Gawke et al., 2017). The latent change variables were allowed to covariate. Fit statistics for the study models are reported in Table 2.

Table 2

Fit Statistics for the Study Method (*N* = 346).

Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA
Structural Equation Models						
LCS Base Model	55.34	29	1.91	.98	.96	.05
LCS Model 1	47.28	19	2.48	.98	.94	.06

χ^2 = chi-squared; χ^2/df = normed chi-squared; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root-mean-square error of approximation.

To test our hypotheses, we added cross-lagged paths from T1 *attitudes*, T1 *descriptive* and T1 *injunctive* norms, and T1 *PBC* to Δ*behavioural intention*; and from Δ*behavioural intention* to T2 *behaviour* ("LCS Model 1"; Figure 2). Moreover, we added cross-lagged paths from T1 *behaviour* to Δ*attitudes*, Δ*descriptive* and Δ*injunctive* norms, and Δ*PBC*. We used this model to examine whether and how intra-individual changes in behavioural intentions are the result of psychosocial antecedents and whether previously enacted behaviours relate to intra-individual changes in such antecedents.

Hypotheses 1 focused on investigating the relationships between the personal and contextual variables entailed in the TPB and behavioural intention to craft one's work. In line with Hypothesis 1a, we found that employees with more positive *attitudes* at T1 reported higher *intention* to craft their job (at T1 $r = .71$, $p < .01$; at T2 $r = .52$, $p < .01$). Likely, employees reporting higher scores of *descriptive* and *injunctive norms* at T1 showed higher *behavioural intention* (respectively at T1 $r = .39$, $p < .01$; $r = .47$, $p < .01$. At T2 $r = .33$, $p < .01$; $r = .37$, $p < .01$), which provides support for Hypotheses 1b and 1c. In addition, *PBC* at T1 showed as well to positively relate to *behavioural intention* (at T1 $r = .29$, $p < .01$; at T2 $r = .24$, $p < .01$), confirming Hypothesis 1d.

In support of Hypotheses 2, employees reporting high *behavioural intention* and *PBC* at T1 also reported highly frequent *job crafting behaviours* at T2 (for behavioural intention $r = .61$, $p < .01$; for PBC $r = .27$, $p < .01$). These results indicate that, as predicted in Hypothesis 2a and 2b, PBC and behavioural intention to craft significantly relate to subsequent employees' engagement in job crafting behaviours.

Hypotheses 3 focused on whether attitudes, descriptive and injunctive norms, and PBC at T1 lead to fluctuations in behavioural intention over time. Results from LCS Model 1 (see Figure 1) show that, while T1 *attitudes* showed a negative relationship with changes in *behavioural intention* ($\beta = -.54$, $p = .02$; Hypothesis 3a), T1 *descriptive norms*

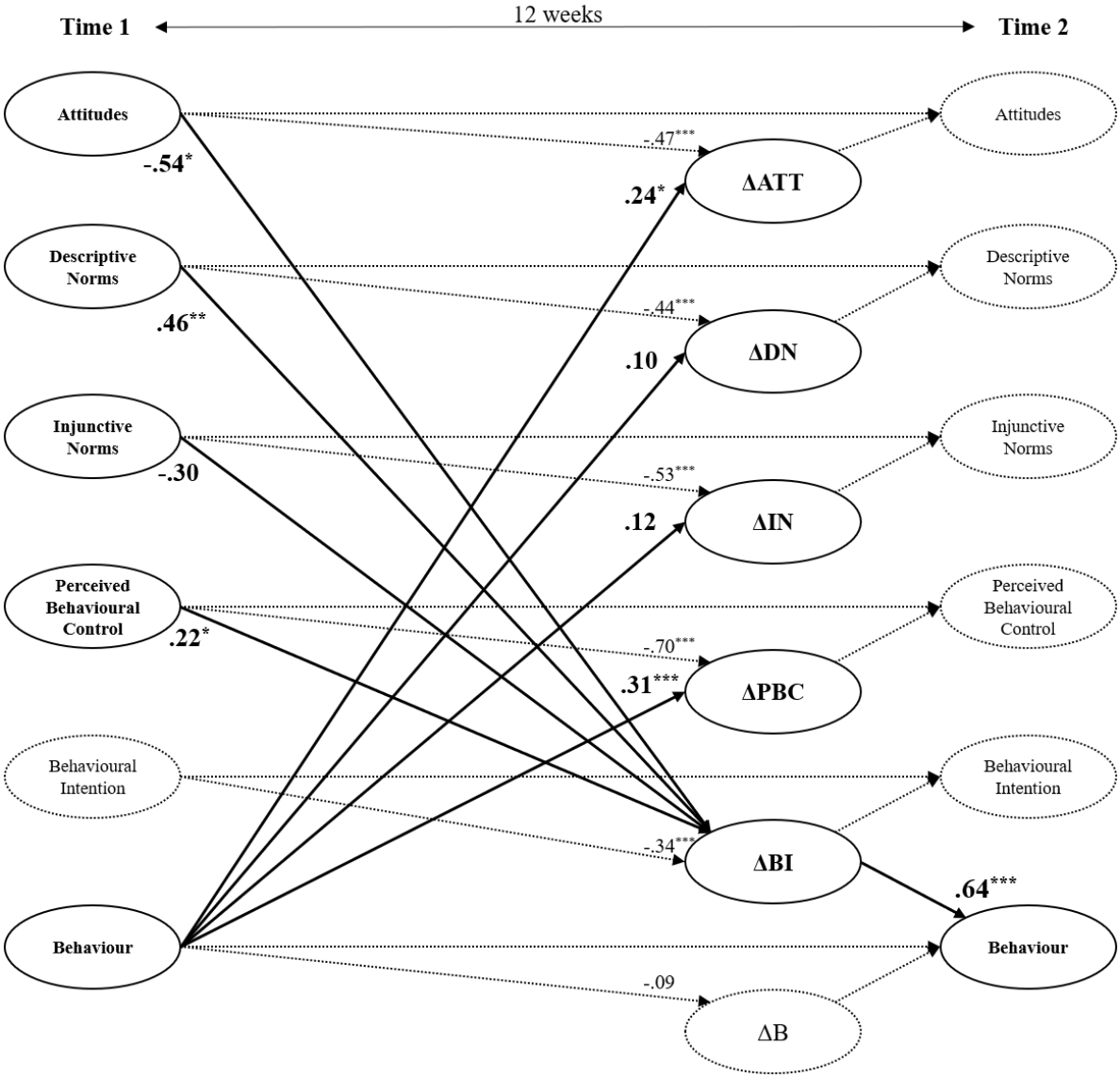
and T1 *PBC* were positively related to such intra-individual *changes in behavioural intentions* (respectively β = .46, p = .01; Hypothesis 3b; β = .22, p = .03; Hypothesis 3d). The path from T1 *injunctive norms* to *Δbehavioural intention* was also negative, but not significant (β = -.30, p = .07; Hypothesis 3c).

Hypotheses 4 investigated whether changes in behavioural intention relate to behaviour. Results show that the regression path from Δ*behavioural intention* to T2 *behaviour* was positive and significant (β = .64, p < .001).

Finally, our results show that, in LCS Model 1, the paths from T1 *behaviour* to Δ*attitudes* and Δ*PBC* were positive and significant (respectively β = .24, p = .04, Hypothesis 5a; β = .31, p < .001, Hypothesis 5d). The paths from T1 *behaviour* to Δ*descriptive* and Δ*injunctive norms* were also positive, but they were not significant (respectively β = .10, p = .13, Hypothesis 5b; β = .12, p = .08, Hypothesis 5c).

Figure 1

Graphical Representation of the Latent Change Score Model 1.



Notes.

Bold lines depict the study model. Δ = Latent change score; ATT = Attitudes; DN = Descriptive Norms; IN = Injunctive Norms; PBC = Perceived Behavioural Control; BI = Behavioural Intention; B = Behaviour.

The standardised regression weights are displayed on the paths.

The non-significant path between T1 PBC and T2 Behaviour (B=.08; p=.26) was estimated but not reported for the sake of clarity.

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

Discussion

Job crafting behaviours aim at managing job conditions to improve one's job or to protect one's health and motivation. Accordingly, understanding the psychosocial mechanisms of such a proactive strategy is vitally important to sustain employees' occupational health and well-being. This study centred on the investigation of the antecedents of job crafting (Tims & Bakker, 2010; Demerouti, 2014) through the adoption of an inclusive theoretical framework entailing both personal and contextual factors, i.e., the theory of planned behaviour (Ajzen, 1991). Moreover, this research aimed to deepen knowledge on the longitudinal interrelatedness of between-person differences in attitudes, social norms, PBC, behavioural intention, and job crafting behaviour, as well as within-persons relationships between such variables. Based on our results, we may conclude that the TPB represents a solid theoretical framework to understand how job crafting behaviours emerge in the work environment over time. Specifically, our results shed light on the dynamics of how attitudes, social norms, and perceptions of behavioural control foster changes in behavioural intention to craft, which in turn were positively related to job crafting behaviours. Also, we provide empirical evidence of the role of previously enacted job crafting behaviour to shape the drivers underlying its formation. Accordingly, this study contributes to our knowledge on the general dynamics of proactivity at work in several ways, yielding implications for advancements in both the TPB and the resource perspective to job crafting (Bruning & Campion, 2018).

First, by investigating the concomitant role of different antecedents of job crafting through the adoption of the TPB, this study contributes to advancing knowledge on proactivity in the workplace by answering the call for integrative frameworks that specify the relevant contextual and personal factors that promote proactive behaviours in organisations (Grant & Ashford, 2008). Based on our findings, job crafting is an intentional behaviour rooted in both social cognition, personal attitudes, and perceptions of behavioural control. Individuals who craft their jobs do so not only as a reflection of their personality (Bipp & Demerouti, 2015), rather their engagement in such behaviours depends as well on their personal, global positive evaluations towards it (i.e., attitudes), on their perceptions of general social pressure to perform and endorse (or not) job crafting (i.e., descriptive and injunctive norms), as well as on the extent to which they believe job crafting an achievable proactive-preventive strategy within the workplace (i.e., PBC).

Moreover, our results also show that attitudes, descriptive norms, and PBC differently influence the extent to which employees' intentions are stable or not. While positive attitudes referred to job crafting lead to lower changes in employees' intentions, descriptive norms and PBC significantly and positively influence the magnitude in which intention fluctuates over 12 weeks. Descriptive norms reflect perceptions of whether other people engage in job crafting themselves and motivate action by informing employees about what is likely to be effective, or adaptive, to successfully cope with the demands of a particular organisational context (Smith et al., 2012). Accordingly, our results show that co-workers' observed behaviours and working situations provide employees with the contextual cues able to influence one's own intention to engage or not in job crafting. Our findings show that PBC (i.e., the degree of difficulty and ability to perform job crafting behaviour) positively relates to fluctuations in employees' intentions to craft their work, meaning that by sustaining employees' sense of control and efficacy regarding how to craft their job resources and demands, organisations can support their employees' intentional coping and proactive strategies. Overall, these findings provide empirical evidence of the interrelatedness between personal factors and social circumstances under which employees are most likely to display job crafting (Grant & Ashford, 2008). While to date research on the antecedents of job crafting has mainly been conducted with a specific focus on contextual *or* personal influences motivating job crafting, the integrative framework here adopted shows that employees' engagement in job crafting is influenced by a more complex set of motivational drivers which are likely to change and fluctuate over time.

By providing new evidence on the critical role of intention to trigger employees' job crafting behaviours, we argue that individuals who engage in such a proactive strategy display actions including volition and rational decision-making that unfold from a complex set of cognitive processes (Parker, Williams, & Turner, 2006; Shin, & Kim, 2015). Indeed, in line with previous findings on the role of intention as the main predictor of behaviour (Winkelnkemper, 2014; Armitage & Conner, 2001), our results confirm that behavioural intention is the best predictor of job crafting, over and above PBC, which has been argued to serve as a proxy for actual control and likely to directly contribute to the prediction of the behaviour (Ajzen, 1991; Armitage & Conner, 2001). Accordingly, job

crafting represents a proactive-preventive strategy informed by cognitive processes rather than by a reactive response to affective states or experiences only.

Beyond examining the validity of the TPB to explain job crafting behaviours, we also investigated whether and how employees' engagement in job crafting contributes to shaping the social and personal factors underlying intentions. In doing so, we provided a first empirical test of a bidirectional perspective to the study of job crafting within the TPB, advancing theoretical knowledge on the mechanisms behind behaviour formation. Employees' engagement in job crafting was significantly related to fluctuations in both their attitudes and PBC, suggesting that such cognitions are relevant to shape behavioural intention *and* are shaped by previously enacted behaviours. This suggests that employees' behaviours represent a source of information for constructing their attitudes (Bem, 1972) and for refining their beliefs about the control they can exert over their behaviours aiming to self-manage and balance perceived demands and resources. Accordingly, these findings suggest that job crafting does not only represent a result of the social context, personal attitudes, and beliefs but rather is a factor constructing such interpretations which employees then process (Salancik & Pfeffer, 1978) when developing their intentions.

Practical Implications

The fact that job crafting is intentional behaviour that unfolds from a complex set of cognitive and contextual factors has important practical consequences for designing effective interventions that target the main determinants of behaviours. First, given the role of (more positive) attitudes in lowering the rate of change in intentions, interventions should be designed to strengthening beliefs on how job crafting behavioural strategies are likely to lead to desirable consequences, for example by raising awareness on the pros of job crafting, which provides the basis to reframe and evaluate how behaviours can be linked to specific positive consequences at work. Moreover, the finding that social information processing resulting in descriptive norms relates to changes in intention suggests that interventions should focus on raising awareness on others' performance or best practices about situations in which engagement in job crafting resulted to be successful for performance and well-being. Also, the significant role of the social context in informing employees' intentions suggests that co-workers and supervisors play a key role in shaping the expectations regarding their behaviours (Salancik & Pfeffer, 1978; Fox & Spector, 2010). Accordingly, interventions should be designed to address not only

(group of) employees, but also their extended work environments to sustain and strength positive existing norms.

Second, the fact that intention is the main predictor of job crafting suggests that to be effective, interventions should ensure that employees have sufficient knowledge on the strategies to translate their intentions into behaviours, for example by training employees behavioural skills that will help them initiate and maintain activity planning (Steinmetz et al., 2016), also through implementation intentions (Gollwitzer, 1999). Besides, goal setting and action planning represent effective techniques to support not only intentions but also employees' PBC, which, based on our findings, play a role in the extent to which employees' job crafting behavioural intentions change over time.

Limitations and Future Research

Despite its theoretical and practical contributions, this research has some limitations. First, even though our study was developed based on a solid theoretical foundation, all measures were self-reports, which may lead to common method bias. Thus, even though the two-wave study design decreases the risk of common method bias (Conway & Lance, 2010), to decrease it further future research should aim to combine self-report measures with a measure of social desirability and other indicators of employees' actual behaviour. Even though this is the first study that deepens our understanding of the underlying dynamics linking personal and contextual factors to job crafting behaviours, it should be noted that the conclusions we draw from the present research are based on a homogenous sample of Italian employees, which might affect the transcultural validity of our results.

Conclusions

Both theoretical and practical interests drove this study. From a theoretical perspective, while previous research showed that several contextual and personal factors are crucial antecedents of job crafting, an integrative model of the concomitant dynamics boosting such a proactive work behaviour was missing. From a practical point of view, a broader understanding of the intertwined relationship between personal and contextual factors behind job crafting was needed to provide insights into how to manage such a proactive work behaviour in organisations effectively. Through the adoption of the TPB to the study of job crafting within the JD-R framework, we could show that job crafting is an intentional behaviour resulting from a complex set of cognitive processes involving

both personal and contextual perceptions. Moreover, job crafting behaviours shape employees' attitudes and PBC. Organisations willing to boost employees' coping and proactive strategies in terms of job crafting should design initiatives that support the translation of their intentions into actual behaviours, encourage the development of positive attitudes related to job crafting, and support employees' development of action planning.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32, 665-683.

Ajzen, I. (2006). Constructing a TPB questionnaire: Conceptual and methodological considerations. Retrieved from http://www.people.umass.edu/aizen/pdf/tpb.measurement.pdf

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology and Health, 26*, 1113-1127.

Ajzen, I. (2015). The theory of planned behaviour is alive and well, and not ready to retire: a commentary on Sniehotta, Presseau, and Araújo-Soares. *Health Psychology Review*, 9, 131-137.

Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral control. Journal of Experimental Social Psychology, 22, 453-474.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 3, 411–423.

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40, 471-499.

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., & Derks, D. (2010). Positive occupational health psychology. In S. Leka & J. Houdmont (Eds.), *Occupational health psychology: A key text* (pp. 194 –224). Oxford, UK: Wiley-Blackwell.

Bakker, A. B., Rodríguez-Muñoz, A., & Sanz Vergel, A. I. (2016). Modelling job crafting behaviours: Implications for work engagement. *Human Relations*, 69, 169-189.

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.

Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, 27, 14-25. doi: 10.1016/j.jenvp.2006.12.002

Bazargan-Hejazi, S., Teruya, S., Pan, D., Lin, J., Gordon, D., Krochalk, P. C., & Bazargan, M. (2017). The theory of planned behavior (TPB) and texting while driving behavior in college students. *Traffic Injury Prevention*, 18, 56-62.

Behling, O., & Law, K. S. (2000). *Translating questionnaires and other research instruments: Problems and solutions*. Thousand Oaks, CA: Sage.

Bem, D. J. (1972). Self-perception theory. In *Advances in experimental social psychology* (Vol. 6, pp. 1-62). Academic Press.

Bipp, T., & Demerouti, E. (2015). Which employees craft their jobs and how? Basic dimensions of personality and employees' job crafting behaviour. *Journal of Occupational and Organizational Psychology*, 88, 631-655.

Bissing-Olson, M. J., Iyer, A., Fielding, K. S., & Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *Journal of Organizational Behavior*, 34, 156-175.

Brooks, J. M., Iwanaga, K., Chiu, C. Y., Cotton, B. P., Deiches, J., Morrison, B., ... & Chan, F. (2017). Relationships between self-determination theory and theory of planned behavior applied to physical activity and exercise behavior in chronic pain. *Psychology, Health & Medicine*, 22, 814-822.

Brown, R. J. (1988). *Group processes: Dynamics within and between groups*. Oxford: Blackwell.

Bruning, P. F., & Campion, M. A. (2018). A role–resource approach–avoidance model of job crafting: a multimethod integration and extension of job crafting theory. *Academy of Management Journal*, 61, 499-522.

Cialdini, R. B., & Trost, M. R. (1998). Social influence: Social norms, conformity and compliance. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The Handbook of Social Psychology* (pp. 151-192). New York, NY, US: McGraw-Hill.

Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct. *Advances in Experimental Social Psychology*, 24, 201–234.

Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology*, 25, 325-334.

Cooke, R., & Sheeran, P. (2004). Accessibility and temporal stability as moderators of cognition-behaviour relations in the theory of planned behaviour. *The Irish Journal of Psychology*, 25, 44-64.

Cooke, R., & Sheeran, P. (2013). Properties of intention: Component structure and consequences for behavior, information processing, and resistance. *Journal of Applied Social Psychology*, 43, 749-760.

Cordano, M., & Frieze, I. H. (2000). Pollution reduction preferences of U.S. environmental managers: applying Ajzen's theory of planned behavior. *Academy of Management Journal*, 43, 627–641.

Demerouti, E. (2015). Strategies used by individuals to prevent burnout. *European Journal of Clinical Investigation*, 45, 1106-1112.

Demerouti, E., Bakker, A. B., & Gevers, J. M. (2015). Job crafting and extra-role behavior: The role of work engagement and flourishing. *Journal of Vocational Behavior*, 91, 87-96.

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.

Elliot, A. J., & Thrash, T. M. (2010). Approach and avoidance temperament as basic dimensions of personality. *Journal of Personality*, 78, 865–906. doi:10.1111/j.1467-6494.2010.00636.x

Ferrer, E., & McArdle, J. (2003). Alternative structural models for multivariate longitudinal data analysis. *Structural Equation Modeling: A Multidisciplinary Journal*, 10, 622–647.

Folkman, S., & Lazarus, R. S. (1985). If it changes it must be a process: A study of emotion and coping during three stages of a college examination. *Journal of Personality and Social Psychology*, 48, 150-170.

Fox, S., & Spector, P. (2010). Instrumental counterproductive work behavior and the theory of planned behavior. A "cold cognitive" approach to complement "hot affective" theories of CWB. In L. L. Neider and C. A. Schriesheim (Eds.). *The "dark" side of management*. Charlotte, NC: IAP, pp. 93-114.

Gawke, J. C., Gorgievski, M. J., & Bakker, A. B. (2017). Employee intrapreneurship and work engagement: A latent change score approach. *Journal of Vocational Behavior*, 100, 88-100.

Githulescu, B. E. (2007). *Shaping tasks and relationships at work: Examining the antecedents and consequences of employee job crafting*. Unpublished doctoral dissertation, University of Pittsburgh.

Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493–503.

Grant, A. M., & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior*, 28, 3-34.

Hagger, M. S., Lonsdale, A., & Chatzisarantis, N. L. (2012). A theory-based intervention to reduce alcohol drinking in excess of guideline limits among undergraduate students. *British Journal of Health Psychology*, 17, 18-43.

Hakanen, J. J., Peeters, M. C., & Schaufeli, W. B. (2018). Different types of employee well-being across time and their relationships with job crafting. *Journal of Occupational Health Psychology*, 23, 289-301.

Harris, M., & Gibson, S. (2008). Examining the entrepreneurial attitudes of US business students. *Education and Training*, 50, 568–581.

Hinds, J., & Sparks, P. (2008). Engaging with the natural environment: The role of affective connection and identity. *Journal of Environmental Psychology*, 28, 109-120.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1–55.

Kaiser, F. G., Wölfing, S., & Fuhrer, U. (1999). Environmental attitude and ecological behaviour. *Journal of Environmental Psychology*, 19, 1-19.

Karasek, R. A., & Theorell, T. (1990). *Health work*. New York: Basic Book.

Kiesler, C. (1971). *The Psychology of Commitment: Experiments Linking Behavior to Belief*. New York: Academic Press.

Kline, R. B. (2005). *Principles and practice of structural equation modeling (2nd ed.)*. New York, NY: The Guilford Press.

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

Lu, C. Q., Wang, H. J., Lu, J. J., Du, D. Y., & Bakker, A. B. (2014). Does work engagement increase person–job fit? The role of job crafting and job insecurity. *Journal of Vocational Behavior*, 84, 142-152.

Marshall, R. S., Cordano, M., & Silverman, M. (2005). Exploring individual and institutional drivers of proactive environmentalism in the US wine industry. *Business Strategy and the Environment*, 14, 92-109.

McArdle (2009). Latent variable modeling of differences and changes with longitudinal data. *Annual Review of Psychology*, 60, 577–605.

McDermott, M. S., Oliver, M., Simnadis, T., Beck, E. J., Coltman, T., Iverson, D., ... & Sharma, R. (2015). The Theory of Planned Behaviour and dietary patterns: A systematic review and meta-analysis. *Preventive Medicine*, 81, 150-156.

Millar, R., & Shevlin, M. (2003). Predicting career information-seeking behavior of school pupils using the theory of planned behavior. *Journal of Vocational Behavior*, 62, 26-42.

Molenaar, P. C. M. (2004). A manifesto on Psychology as idiographic science: bringing the person back into scientific Psychology, this time forever. *Measurement*, 2, 201–218.

Molenaar, P. C. M., & Campbell, C. C. (2009). The new person-specific paradigm in Psychology. *Current Directions in Psychological Science*, 18, 112–117.

Navarro, J., Roe, R. A., & Artiles, M. I. (2015). Taking time seriously: Changing practices and perspectives in Work/Organizational Psychology. *Revista de Psicología del Trabajo y de las Organizaciones*, 31, 135-145.

Niessen, C., Weseler, D., & Kostova, P. (2016). When and why do individuals craft their jobs? The role of individual motivation and work characteristics for job crafting. *Human Relations*, 69, 1287-1313.

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

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research: an introduction and some practical recommendations. *Journal of Personnel Psychology*, 9, 79-93.

Parker, D., Stradling, S. G., & Manstead, A. S. (1996). Modifying beliefs and attitudes to exceeding the speed limit: An intervention study based on the theory of planned behavior. *Journal of Applied Social Psychology*, 26, 1-19.

Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology*, 91, 636–652.

Peeters, M. C., Arts, R., & Demerouti, E. (2016). The crossover of job crafting between coworkers and its relationship with adaptivity. *European Journal of Work and Organizational Psychology*, 25, 819-832.

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

Salancik, G. R. (1977). Commitment and the control of organizational behavior and belief." In Barry M. Staw and Gerald R. Salancik (Eds.), *New Directions in Organizational Behavior*: 1-54. Chicago: St. Clair Press.

Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*, 224-253.

Salanova, M., Schaufeli, W. B., Xanthopoulou, D., & Bakker, A. B. (2010). The gain spiral of resources and work engagement: Sustaining a positive worklife. In A. B. Bakker, & M. P. Leiter (Eds.), *Work engagement: A handbook of essential theory and research* (pp. 118–131). New York: Psychology Press.

Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological Science*, 18, 429-434.

Sheeran, P. (2002). Intention—behavior relations: a conceptual and empirical review. *European Review of Social Psychology*, 12, 1-36.

Sheeran, P., & Silverman, M. (2003). Evaluation of three interventions to promote workplace health and safety: evidence for the utility of implementation intentions. *Social Science & Medicine*, 56, 2153-2163.

Shin, Y., & Kim, M. J. (2015). Antecedents and mediating mechanisms of proactive behavior: Application of the theory of planned behavior. *Asia Pacific Journal of Management*, 32, 289-310.

Shipp, A. J., & Jansen, K. J. (2011). Reinterpreting time in fit theory: Crafting and recrafting narratives of fit in medias res. *Academy of Management Review*, 36, 76-101.

Smith, J. R., Louis, W. R., Terry, D. J., Greenaway, K. H., Clarke, M. R., & Cheng, X. (2012). Congruent or conflicted? The impact of injunctive and descriptive norms on environmental intentions. *Journal of Environmental Psychology*, 32, 353-361.

Sonnentag, S., & Spychala, A. (2012). Job control and job stressors as predictors of proactive work behavior: Is role breadth self-efficacy the link?. *Human Performance*, 25, 412–431.

Steinmetz, H., Knappstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How effective are behavior change interventions based on the theory of planned behavior? A three-level meta-analysis. *Zeitschrift für Psychologie*, 224, 216-233.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA Journal of Industrial Psychology*, 36, 1-9.

Tims, M., B. Bakker, A., & Derks, D. (2014). Daily job crafting and the self-efficacy–performance relationship. *Journal of Managerial Psychology*, 29, 490-507.

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. (2015). Job crafting and job performance: A longitudinal study. *European Journal of Work and Organizational Psychology*, 24, 914-928.

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

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., Derks, D., & Bakker, A. B. (2016). Job crafting and its relationships with person–job fit and meaningfulness: A three-wave study. *Journal of Vocational Behavior*, 92, 44-53.

Turner, J. C. (1991). *Social influence*. Milton Keynes: Open University Press.

Vogt, K., Hakanen, J. J., Brauchli, R., Jenny, G. J., & Bauer, G. F. (2016). The consequences of job crafting: a three-wave study. *European Journal of Work and Organizational Psychology*, 25, 353-362.

Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 132, 249-268.

White, K. M., Smith, J. R., Terry, D. J., Greenslade, J. H., & McKimmie, B. M. (2009). Social influence in the theory of planned behaviour: The role of descriptive, injunctive, and in-group norms. *British Journal of Social Psychology*, 48, 135-158.

Wing Kwan, M. Y., Bray, S. R., & Martin Ginis, K. A. (2009). Predicting physical activity of first-year university students: An application of the theory of planned behavior. *Journal of American College Health*, 58, 45-55.

Winkelnkemper, P. (2014). *The theory of planned behavior. Meta-analysis and structural equation models*. (Unpublished diploma thesis). University of Giessen, Germany.

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

CHAPTER 4

The Theory of Planned Behaviour as a Frame for Job Crafting: Explaining and Enhancing Proactive Adjustment at Work

This chapter is largely based on:

Costantini, A., Ceschi, A., & Sartori, R. (2019). The theory of planned behaviour as a frame for job crafting: Explaining and enhancing proactive adjustment at work. In L.E. van Zyl & S. Rothmann (Eds.), *Theoretical Approaches to Multi-cultural Positive Psychological Interventions*. Cham, Switzerland: Springer.

Abstract

Rapid changes in the work environment require employees to proactively shape their job characteristics to sustain motivation, energy, and performance. Traditionally, job redesign was mainly a top-down process, where the management of an organisation was in charge of defining the most appropriate job description of a mansion. Today, such an approach does not respond anymore to the challenges of the work environment, and awareness has developed among scholars and practitioners about the importance of empowering individuals to let them adjust their job characteristics to reach organisation goals, i.e., through job crafting interventions. In this theoretical contribution, we propose the theory of planned behaviour (TPB) as a framework to design positive psychology interventions aiming to enhance adaptive job crafting behaviours. We argue that the TPB provides a solid foundation to explicate the mechanisms by which job crafting positive interventions are expected to exert their effects on behaviour. Such an approach allows targeting the content and the tools of the interventions based on participants' needs, effectively addressing the causal determinants of behaviour and behaviour change in multicultural organisational contexts.

Keywords: *Behaviour Change Interventions; Job Crafting; Job Crafting Intervention; Positive Interventions; Theory of Planned Behaviour*.

Introduction

Nowadays, change and growing complexity characterise the nature of work and call into question workers' career identity, emphasising individual responsibility in the design of unique, professional paths. Such a framework poses essential challenges for people at work, who may find in it the chance to realise unique, personalised and self-managed career stories, but also, on the other hand, who could feel threatened as for the awareness of unpredictable working life. Organisational careers that traditionally occurred within a single work context are nowadays replaced by boundaryless, self-managed work stories, where people are regularly asked to shift roles, enhance capabilities and re-adapt to new work environments (Arthur & Rousseau, 2001; Fugate, Kinicki, & Ashforth, 2004; Hall, 2002; Leana & Rousseau, 2000). That is, employees are called to be not only role-takers but also role-makers (Moyson, Raaphorst, Groeneveld, & van de Walle, 2018).

Against this background, employees' self-initiated behaviours become critical to ensure competitiveness and innovation, since organisational processes and forms are fluctuating in a changing context (Petrou, Demerouti & Schaufeli, 2016). To benefit from such challenges, organisations need to identify effective approaches to stimulate and support employees' self-management skills in a culturally sensitive way. Specifically, there is a need for acknowledging the common and distinct psychological processes underlying individual proactive strategies across different organisational and cultural contexts. Knowing the mechanisms underlying individual judgement and employees' behaviours is key if employees' proactivity has to be sustained and supported in the work environment. Understanding the link between individual cognitive antecedents and cultural patterns and how they influence proactive adaptation to the work environment is critical to implement psychological interventions aiming at supporting such behaviours (Bagozzi, Wong, Abe, & Bergami, 2000; Henrich et al., 2005; O'Reilly, Caldwell, Chatman, & Doerr, 2014; Sturman, Shao, & Katz, 2012; Morris, Savani, Mor, & Cho, 2014).

The main goal of this theoretical chapter is to propose a framework, i.e., the theory of planned behaviour (TPB), to design psychological interventions supporting employees' proactive adjustment to the work environment, i.e., job crafting, based on common psycho-social mechanisms that span different cultures. We argue that such an

approach can provide important insights to develop behaviour change interventions focused on enhancing employees' self-management of their job demands and resources in a culturally sensitive way, eventually promoting higher well-being at work. By leveraging on subjective beliefs, social norms, and perceptions of control as determinants of individual intention to engage in job crafting, interventions aiming to support job crafting can be successful among different cultural backgrounds in that they rely on common psychosocial mechanisms driving behaviours (Wiethoff, 2004).

By proposing the TPB as a guide to design and implement job crafting interventions in organisations, we seek to encourage future scholarship and practice that examines and scrutinises the context, mechanisms, and outcomes for intervention effectiveness in a systematic way. Before exploring how the TPB can be used to promote employees' job crafting behaviours within a diversified work environment, we will present an overview of the TPB and of how job crafting has been conceptualised within the job demands-resources theory. We will then propose practical recommendations to (1) design job crafting interventions drawing on the principles of the TPB and (2) select the proper intervention techniques to sustain the drivers of behavioural intention and the translation of intention into behaviours. We then conclude with a discussion on future research about the potential of the TPB to design job crafting intervention and enhance proactive adjustment in multi-cultural settings.

A Conceptual Framework to Study Job Crafting

Within the current work environment, employees are required to adjust the mobilisation of their resources to remain competitive or as a means to face fluid job demands. The term "job crafting" has been coined to describe changes employees make in their jobs and relationships with others to experience enhanced meaning in work and attain a positive work identity (Wrzesniewski & Dutton, 2001). While previous studies provided valuable insights into the predictors of job crafting (e.g. Bakker, Tims & Derks, 2012; Bipp & Demerouti, 2015; Tims, Bakker & Derks, 2014; Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012), shedding light on the dispositional factors underlying employees' choice to craft their job, they fail to consider the complex web of concomitant factors that may influence job crafting behaviours within organizational boundaries.

To fill this gap and further our understanding of the factors that jointly drive employees' engagement in job crafting, we propose to rely on the TPB (Ajzen, 1991, 2015). Such a theoretical framework permits to integrate contextual and cognitive factors underlying job crafting behaviours. Indeed, while job crafting refers to a broad class of conscious and intentional changes made to one's work (Bruning & Campion, 2018), few studies have explicitly investigated the theoretical mechanisms underpinning the volitional processes driving job crafting behaviours. Examining the role of beliefs that a given behaviour, such as job crafting, will result in the desired outcome (Pinder, 2014), is critical to understand how such a behaviour unfolds as a dynamic, proactive process at work. Both the TPB and literature on job crafting build on the assumption that the target behaviour concerns a domain in which employees are agentic and anticipatory in their actions (Grant & Ashford, 2008). Accordingly, beliefs and behavioural intentions serve as a linking pin between individual dispositions or situational perceptions and subsequent engagement in job crafting. As such, investigating the role of such beliefs for job crafting may yield theoretical clarity (Shoss, Jundt, Kobler & Reynolds, 2016), thus advancing the understanding of their motivational impetus in a manner consistent across the proactive, behavioural, and motivational pieces of literature. Moreover, the TPB provides a solid background for conducting behaviour change interventions in a culturally sensitive way in that it relies on psychosocial mechanisms that are central when trying to understand when and why employees decide to change their job to improve it proactively.

The Theory of Planned Behaviour

The TPB is a social psychology theory that has been widely applied to understanding behaviour in a variety of organisational settings. It is a cognition-based theory that deals with the relations among beliefs, norms, control, intentions, and behaviours, which has had a wide application due to its practical approach to change behaviours by changing the cognitive structures underlying those behaviours (Fox & Spector, 2010).

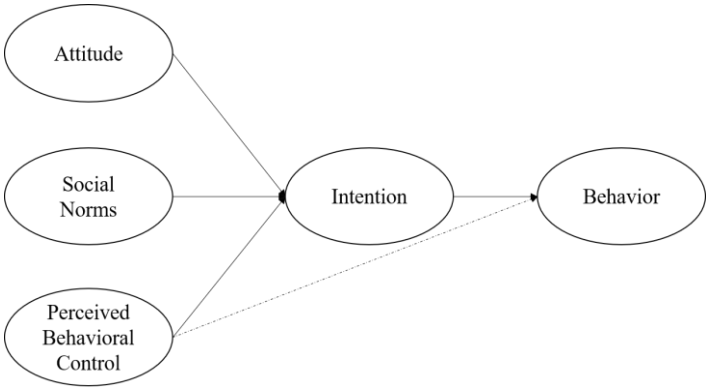
According to this theory, the primary driver of behaviour is individuals' willingness to perform behaviour. In turn, such a willingness (or intention) is preceded by individuals' perceptions of efficacy regarding their ability to engage in the target behaviour, by attitudes toward the outcomes resulting from performing the behaviour,

and by beliefs related to how the behaviour is evaluated in the social structure in which it occurs.

Specifically, *intention* in the TPB is an indication of a person's readiness to perform a given behaviour and is assumed to be the immediate antecedent of behaviour (Ajzen, 2011). It captures the motivational factors that influence behaviour, which indicates how hard people are willing to try, and how much of an effort they are planning to exert to perform the behaviour (Ajzen, 1991). When behaviours pose no serious problems of control, they can be predicted from intentions with considerable accuracy (Ajzen, 1991). Accordingly, employees will engage in job crafting behaviours based on the strength of their intentions. *Attitudes* represent the overall evaluation of the consequences of a particular behaviour. If the behaviour in question is believed to have positive consequences, then it is more likely that the individual will engage in such behaviour. If employees believe that engaging in job crafting will reflect in higher well-being at work, then they will be likely to develop behavioural intentions towards job crafting. *Perceived norms* concern perceptions of the social pressure to perform (or not) a behaviour. If individuals believe that significant others (e.g., co-workers, supervisors) approve of job crafting, then it is likely that they will engage in such behaviours. Accordingly, the social structure in which individuals are embedded is key when trying to understand the factors underlying employees' engagement in proactive behaviours. Indeed, social structures shape individuals' experiences and ultimately, their values, beliefs, and behaviours (Stern, Dietz, Kalof, & Guagnano, 1995). It is important to note that in the organisational context social norms are likely to be highly influenced by the organisational culture, in that it constitutes the meaningful context for the creation of the attitudes and beliefs that ultimately guide employees' behaviours (Oreg & Katz-Gerro, 2006). Lastly, *perceived behavioural control* refers to the extent to which employees perceive job crafting behaviour to be under their control. Namely, it reflects an individual's perceived degree of difficulty to perform a behaviour and to whether he/she believes to have the ability to engage in the target behaviour. That is, individuals will be more likely to engage in job crafting if there are limited perceived factors that prevent them from accomplishing their goals and if they believe they can do so. Figure 1 provides a graphical representation of the TPB.

Figure 1

The Theory of Planned Behaviour (TPB; Ajzen, 1991).



The TPB is a useful framework to design behaviour change interventions and to explicate the mechanisms by which interventions are expected to exert their effects on behaviour (Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst, 2016). Empirical evidence has shown that intentions to behave are the best predictors of actual behaviours, accounting for 24% of the behavioural variance (Winkelnkemper, 2014; Armitage & Conner, 2001). Even though the relative importance of attitude, social norms, and perceived behavioural control in the prediction of intention is expected to vary across behaviours and situations (Ajzen, 1991), meta-analytic findings showed that the TPB accounts for 27% and 39% of the variance in behaviour and intention, respectively (Armitage & Conner, 2001). The theory's ability to predict behaviours across a variety of behavioural domains (e.g. Haus, Steinmetz, Isidor, & Kabst, 2013; Overstreet, Cegielski, & Hall, 2013, Scalco, Noventa, Sartori, & Ceschi, 2017) provides a strong theoretical foundation for the development of behaviour change interventions, including those aiming at fostering higher well-being in the workplace through the empowerment of employees' engagement in job crafting strategies.

The JD-R Approach to Job Crafting

Job crafting has been defined as self-initiated change behaviours that employees engage in to align their jobs with their preferences, motives, and passions (Wrzesniewski & Dutton, 2001). The distinctive characteristic of job crafting is that such a bottom-up redesign approach starts with the initiative of the employee, who has the opportunity to put into action his/her attitude toward proactive work behaviours (Tims et al., 2012). Such a characteristic differentiates job crafting from other bottom-up job redesign approaches, recognising the individual a significant role in reaching higher levels of positive

experiences at work. That is, job crafting builds on individual agency and on the extent to which discretionary behaviours are recognised as possible strategies to define the work environment. Within such a view, the individual at work becomes in charge of his/her job redesign strategy, rather than being only a receiver of top-down policies. Moreover, organisational boundaries define enabling or restricting factors referred to employees' engagement in job crafting behaviours. Accordingly, a complementary perspective involving the management of both individual psychosocial factors motivating bottom-up job redesign *and* top-down practices or support is needed if job crafting is to be supported (Demerouti, 2014).

Since its inception in the field of work and organisational psychology and broadening its original framework, job crafting has been conceptualised within the Job Demands-Resources Model (Tims & Bakker, 2010; concerning the JD-R model see: Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and defined as a proactive employee behaviour consisting of resources and challenges seeking, and demands reducing (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012). Employees crafting job resources increase their structural (e.g. they try to learn new things) or social (e.g. they ask for performance feedback) resources. When they increase challenging demands, they seek new and challenging tasks at work (e.g. they take on new responsibilities or additional tasks; Hakanen, Peeters, & Schaufeli, 2017), which serve to sustain their motivation, mastering, and learning (Karasek & Theorell, 1990). Finally, when they decrease their hindering job demands (e.g. they make sure that their job is mentally less demanding; Tims & Bakker, 2010) they engage in health-protecting coping mechanisms to reduce demands perceived as excessively high.

Building on the JD-R perspective, several studies have been conducted to understand how job crafting is related to employees' well-being and work-related outcomes. Findings have shown that *expansion job crafting strategies* aiming at making the work environment more resourceful and challenging are positively related to several work-related outcomes, such as work engagement (Vogt, Hakanen, Brauchli, Jenny, & Bauer, 2016), job performance (Demerouti, Bakker, & Gevers, 2015; Tims, Bakker, & Derks, 2015), and person-job fit (Lu, Wang, Lu, Du, & Bakker, 2014; Tims et al., 2016). On the contrarily, employees' engagement in *job crafting contraction strategies*, i.e., those focused on decreasing the demanding aspects of the job, are not or even negatively

related to employees' health, motivation, and performance (Demerouti, Bakker & Halbesleben, 2015; Lichtenthaler & Fischbach, 2018; Mäkikangas, 2018; Rudolph et al., 2017; Weseler & Niessen, 2016).

These findings suggest that organisations aiming to sustain well-being at work may invest in job crafting bottom-up interventions that help individuals to understand how to proactively engage in the self-management of their demands and resources constructively. That is, such interventions should raise awareness of the implications of different types of job crafting and sustain proactive behaviours leading to increases in resources and in the pursuit of challenging tasks. On the other side, job crafting interventions should also try to change employees' behaviours positively, meaning that they should try to lower employees' engagement in contraction-oriented strategies that may be harmful to their work-related well-being.

Practical Implications to Design Job Crafting Interventions Based on the Theory of Planned Behaviour

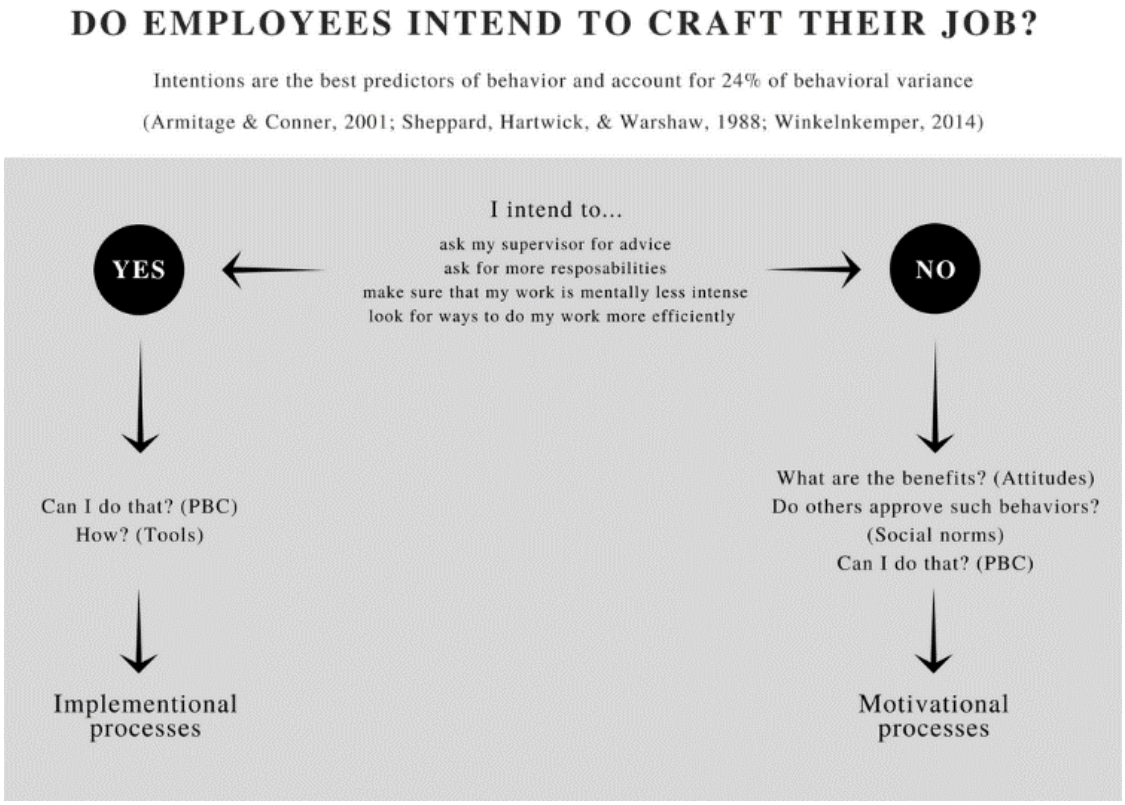
Besides providing a theoretical framework to broaden our understating of the sources of job crafting behaviour in the workplace, the TPB also offers essential insights to design job crafting interventions aiming at motivating or supporting the implementation of positive job crafting behaviours in different ways. Also, building on evidence from research supporting the cross-cultural generalisability of the measures and pattern of effects for the TPB (Nigg, Lippke, & Maddock, 2009; Hagger et al., 2007; Oreg & Katz-Gerro, 2006; van Hooft, Born, Taris, & van der Flier, 2006; Pavlou & Chai, 2002), the following practical recommendations are likely to be useful for designing effective positive job crafting behaviours in multi-cultural contexts.

Depending on whether employees intend to craft their jobs without knowing how to do it best, or whether they are not motivated to do so, different interventions should be designed to be effective. For example, if employees are already willing to engage in job crafting, interventions should be targeted to support *implementation processes* aiming at translating intentions into behaviours. That is, when employees already intend to perform job crafting, interventions should be designed to enable them to carry out their intentions, increasing their actual and perceived behavioural control (Ajzen, 2015), for example through behaviour change methods based on goal-setting, self-monitoring, planning, or increasing skills (Steinmetz et al., 2016).

Figure 2 provides a visual representation of the different processes involved in the design of implementation and motivation interventions to support job crafting behaviours based on the principles of the TPB.

Figure 2

Representation of the Processes Implied in Different Job Crafting Interventions Based on the Theory of Planned Behaviour (Based on Steinmetz et al., 2016).



Differently, interventions based on *motivational processes* should be implemented when employees are not aware of the positive outcomes deriving from expansion job crafting strategies. In this case, interventions should be focused on raising awareness about the positive outcomes deriving from seeking more resources and challenges (i.e., attitudes), raising perceptions that the organisation approves such behaviours (i.e., social norms) and eventually providing ideas or tools to decrease actual barriers or generate facilitators to craft one's job (i.e., perceived behavioural control). Such motivational interventions build on the assumption that changing beliefs is the main route to change motivation to perform a particular behaviour, representing the first step to support the intention to behave and then, afterwards, implementation interventions (Steinmetz et al.,

2016). That is, a structured application of the TPB permits to explain how each of its components differently informs job crafting strategies, providing indications for intervention design and structure.

For example, interventions may be focused on enhancing favourable evaluations towards expansion job crafting by exploring and strengthening beliefs on how such behavioural strategies are likely to lead to desirable consequences, eventually resulting in positive attitudes towards job crafting behaviours. Given that behavioural beliefs are formed in association with specific contextual attributes, the intervention provides a trustful context to gain insights on the possible social and environmental consequences stemming from the engagement in such behaviours. That is, specific behaviour change techniques may provide information about what people and their social environment think about the behaviour *before* actually engaging in it during the daily working routine, eventually clarifying whether other colleagues will like, approve, or disapprove what a person will be doing. Likely, the intervention can provide a space to focus on raising individual awareness on the pros and cons of job crafting behaviours, which provides the basis to reframe and evaluate how such behaviours can be linked to specific positive or negative consequences at work.

When employees craft their jobs, they do so also to make it more meaningful. However, such a sense-making process does not occur in isolation and is instead informed by the social context or the work environment, i.e., the organisation. Accordingly, social information processing and social identity play a role in informing how individuals' behaviour is influenced by the information they gather from their immediate social environments, i.e., co-workers and supervisors, which also shapes their understanding of expectations regarding their behaviours (Salancik & Pfeffer, 1978; Fox & Spector, 2010). Moreover, within the current unpredictable work environment, informational social influence becomes crucial to reduce uncertainty about the interpretation of events and their meaning (Festinger, 1954). That is, the more ambiguous the job aspects, the more employees will rely on social comparison to assess them (Salancik & Pfeffer, 1978). Indeed, knowledge of others' evaluation gives employees ideas as to how to manage job demands and resources better, and others' behaviours provide a guide to model one own's behavioural tendencies. Different behavioural change techniques may be used along with information about social consequences and others' approvals of engaging in different job

crafting strategies. These may include social support, i.e., advising on, arranging or providing practical help and support for the performance of specific, self-settled job crafting behaviours, and social comparison, i.e., drawing attention to others' performance or best practices about situations in which engagement in job crafting resulted to be successful for performance and well-being. Also, social incentive, i.e., communicating that verbal or non-verbal rewards will be delivered when there has been effort or progresses to make the work environment more resourceful and challenging (Michie et al., 2013), are likely to be useful to sustain positive social norms informing job crafting behaviours.

To define job crafting activities as volitional, conscious, and intentional changes made to one's work (Bruning & Campion, 2018) implies referring to behaviours over which the employee experiences some extent of control (Webb & Sheeran, 2006). Indeed, an agreement exists that experienced efficacy or individual's sense of confidence that one can act effectively to orchestrate behavioural outcomes (Bandura, 1977) is a key psychological mechanism explaining proactive behaviours in the workplace (Grant & Ashford, 2008). In the TPB, perceived behavioural control refers to the perceived ability to perform the target behaviour (Ajzen, 2002) and, importantly, can serve as a direct determinant of behaviour when perceptions of control reflect the amount of actual control over the performance (Ajzen & Madden, 1986). Behaviour change techniques can be used to support employee's beliefs in one's capabilities to organise and execute the courses of actions to make the work environment more aligned to his/her needs through expansion job crafting. These may include strategies to restructure the physical or social work environment, for example, to facilitate the performance of behaviours aiming at increasing social and structural resources, and problem-solving approaches, which aim at supporting the employee to analyse factors influencing expansion behaviours and generate strategies to overcome barriers and increase facilitators. Moreover, goal setting and action planning seem particularly useful techniques to facilitate and support employees in the pursuit of new challenges at work. By setting behavioural goals and detailed planning of performance of behaviours regarding context, frequency, duration, and intensity, employees can be supported not only to identify clear goal intention but also specific strategies to deal effectively with self-regulatory issues during goal-striving (Gollwitzer & Sheeran, 2006).

Table 1 links the TPB components to expansion job crafting strategies and provides examples of behavioural change techniques to be used during interventions to support the positive, proactive self-management of the characteristics of the work environment.

Table 1

Components of the TPB Linked to Expansion Job Crafting and Behaviour Change Techniques.

TPB Component	TPB Definition	Application to expansion job crafting		Behaviour Change Techniques
		Seeking Resources	Seeking Challenges	
Attitudes	The person's evaluation of the target behaviour and the likely outcomes.	Asking my supervisor for advice makes my work better. It gives me insight into aspects I did not consider before, enriching the quality of my output.	Joining new projects makes my work experience more engaging. I have the chance to unfold competencies that otherwise would be dormant.	• Information about the consequences of the behaviour • Social and emotional reactions of the behaviour • Pros and cons
Social Norms	The person's normative beliefs about social pressure to engage (or not) in the behaviour.	I noticed that in my work environment, my colleagues tend to ask for advice when uncertain.	In my work unit, it is valued when one has the initiative to ask for more tasks when work is finished.	• Information about others' approval • Practical and emotional social support • Social incentives • Modelling
Perceived Behavioural Control	The person's perceived ability to perform the behaviour.	I know how to make sure to obtain the feedback I need on my tasks.	I feel like I have the information needed to learn about new developments and opportunities in my work.	• Analyse barriers and facilitators • Goal setting • Action planning

Note. Behaviour change techniques are described according to Michie's et al. (2013) taxonomy.

Overall, job crafting interventions based on the TPB can be effective to sustain expansion-oriented job crafting *and* to limit employees' engagement in contraction-oriented job crafting. To reach these aims, research suggests that *positive* behaviour change interventions should be implemented, meaning that interventions should be designed to support the individual tendency to change beliefs toward more positive information rather than focusing on negative outcomes likely to happen in the future

(Sharot, Korn, & Dolan, 2011). Indeed, research shows that warnings about adverse, future consequences have minimal impact on changing behaviours because they are associated with negative feelings that make people feel bad (Ruiter & Kok, 2005; Ben-Ari, Florian, & Mikulincer, 1999; Ennett, Tobler, Ringwalt & Flewelling, 1994). As a result, people tend to avoid such negative information, for example, by strengthening individual beliefs about the low likelihood that negative outcomes may result from engaging in potentially harmful behaviour. Accordingly, interventions focused on communicating the negative effects of decreasing hindering job demands on work-related well-being may be ineffective or even counterproductive. On the contrarily, positive information makes people feel good, so people tend to seek it out. Moreover, research shows that cognitive functions are more efficient when positive information has to be processed (Sharot, Korn, & Dolan, 2011; Estrada, Isen, & Young, 1997). It follows that job crafting interventions aimed at supporting expansion job crafting and lowering contraction tendencies should focus on (a) reward employees for engaging in behaviours aiming at making the work environment more resourceful and challenging, so as to strengthen positive attitudes associated to the outcomes of expansion-oriented behaviours; (b) highlight that people in the organisation value employees' proactive behaviours aiming to realize gains in motivation and health, so as to communicate that the cultural and social context supports such positive behaviours; (c) provide employees with the tools to monitor and be aware of their progress related to their engagement in expansion job crafting compared to contraction behaviours.

Future Directions

In this chapter, we provided an integration of the TPB and job crafting research to (a) broader knowledge on how job crafting arises in the workplace and (b) design and implement positive behaviour change interventions aiming to support expansion-oriented job crafting and lower contraction behaviours.

Even though the predictive value of the TPB to explain behaviours has been supported in a wide range of life domains (e.g., proactive environmental behaviours, Cordano & Frieze, 2000; Marshall, Cordano, & Silverman, 2005; students' physical proactivity, Wing Kwan, Bray, & Martin Ginis, 2009; proactive work behaviour, Shin, & Kim, 2015), to the best of our knowledge no studies investigated whether such a theoretical framework may be useful to disentangle factors influencing a specific form of proactive organisational behaviour, i.e., job crafting. Moreover, despite much research has provided insights on the conditions for job crafting to arise in the workplace, a model that can explain the predictors of job crafting considering both personal and situational conditions upon which most behaviours are dependent (Ohly, Sonnentag, Niessen, & Zapf, 2010) is still missing. Accordingly, future research could try to validate our model proposing the integration of the TPB and job crafting, to shed light on whether job crafting is a planned, intentional behaviour, and on how beliefs influence job crafting behaviours, social norms, and perceptions of behavioural control.

Previous research shows that depending on the targeted behaviour, significant differences in the relationships among attitudes, social norms, and perceived behavioural control predicting intentions can be observed across different cultures (Hagger et al., 2007). That is, even though the pattern of influence of the constructs of the TPB is consistent across different cultural groups in predicting intentions and behaviours, there may be some differences in the relative contribution of the constructs leading to intentions across cultures. Such differences may be explained since employees with the different cultural background are likely to differ in their attitudes, values, and norms, because of their different cultural roots (van Hooft, Born, Taris, & van der Flier, 2004). For example, the extent to which a culture is characterised as individualistic or collectivistic may influence the subjective weight of attitudes and social norms informing behavioural intention and behaviour. Whereas people in individualistic cultures tend to perceive themselves as autonomous individuals who are independent of the group, people who are

part of collectivistic cultures perceive themselves as interdependent with their group (Hofstede, 1991). Accordingly, research has shown that in collectivistic cultures behaviour is guided more by social norms than by personal attitudes, whereas the opposite is true in individualistic cultures, in which people tend to give priority to personal goals over collective ones (Markus & Kitayama, 1991). Future research could investigate whether the importance of the drivers of intention to engage in job crafting varies based on cultural backgrounds, and specifically based on cultures that differ in the extent to which they are characterised as individualistic or collectivistic. Such research is important especially when *motivational* interventions to foster expansion-oriented job crafting are to be designed, given that employees from different countries may differ in the relative importance of the drivers of their intentions to engage in job crafting. Against this background, the TPB helps to understand the dynamics of positive job crafting interventions among different cultural contexts, allowing to designing and weighing the relative importance and centrality of social norms, attitudes and individual perceptions of control based on the specific characteristics of a given cultural context. On the other side, given that no variation in the relative contribution of intentions to behaviours is observed (Winkelnkemper, 2014; Armitage, & Conner, 2001), even in cross-cultural studies (Walker, Courneya, & Deng, 2006; Chatzisarantis & Hagger, 2005; Bagozzi, Lee, & van Loo, 2001), *implementation* interventions based on the TPB are likely to be effective among employees regardless of their cultural background (Hagger et al., 2007).

Given the importance of organisational culture to promote proactivity at work (Crant, 2000), an interesting avenue for future research is to investigate how organisational *and* individual cultural background may interact in influencing the beliefs constituting the motivational drivers of intentions. That is, the relative importance of personal values and beliefs influencing employees' willingness to engage in job crafting may vary not just because of cultural differences but also based on a broader range of other contextual, organisational variables. Research is needed to unpack the mechanisms and boundary conditions interacting with the social-psychological pattern of meanings, beliefs, and norms linked to job crafting intentions and behaviours.

Conclusion

Proactivity in work life is perhaps more critical than ever before, given that today in organisational contexts the ends, but not the means, are typically specified (Grant & Ashford, 2008). In this chapter, we proposed the theory of planned behaviour as a useful framework to disentangle the motivational and contextual drivers underlying job crafting behaviours. Besides, such a background suggests relevant practical insights to design positive behaviour change interventions supporting employees' adaptive job crafting behaviours. It is hoped that this proposal will further stimulate research on the nature of job crafting and on how to support it.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of Applied Social Psychology*, 32, 665-683.

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology and Health*, 26, 1113-1127.

Ajzen, I. (2015). The theory of planned behaviour is alive and well, and not ready to retire: a commentary on Sniehotta, Presseau, and Araújo-Soares. *Health Psychology Review*, 9, 131-137.

Ajzen, I., & Madden, T. J. (1986). Prediction of goal-directed behavior: Attitudes, intentions and perceived behavioral control. *Journal of Personality and Social Psychology*, 22, 453–474.

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40, 471-499.

Arthur, M. B., & Rousseau, D. M. (2001). *The boundaryless career: a new employment principle for a new organizational era*. New York, NY: Oxford University Press.

Bagozzi, R. P., Lee, H.-M., & van Loo, M. F. (2001). Decisions to donate bone marrow: The role of attitudes and subjective norms across cultures. *Psychology and Health*, 16, 29-56.

Bagozzi, R. P., Wong, N., Abe, S., & Bergami, M. (2000). Cultural and situational contingencies and the theory of reasoned action: application to fast food restaurant consumption. *Journal of Consumer Psychology*, 9, 97–106.

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., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations*, 65, 1359-1378.

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215.

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

Ben-Ari, O. T., Florian, V., & Mikulincer, M. (1999). The impact of mortality salience on reckless driving: a test of terror management mechanisms. *Journal of Personality and Social Psychology*, 76, 35-45.

Chatzisarantis, N.L.D., & Hagger, M.S. (2005). Effects of a brief intervention based on the theory of planned behavior on leisure time physical activity participation. *Journal of Sport and Exercise Psychology*, 27, 470-487.

Cordano, M., & Frieze, I. H. (2000). Pollution reduction preferences of U.S. environmental managers: applying Ajzen's theory of planned behavior. *Academy of Management Journal*, 43, 627–641.

Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management*, 26, 435–462.

Demerouti, E. (2014). Design your own job through job crafting. *European Psychologist*, 19, 237-247.

Demerouti, E., Bakker, A. B., & Gevers, J. M. (2015). Job crafting and extra-role behavior: The role of work engagement and flourishing. *Journal of Vocational Behavior*, 91, 87-96.

Demerouti, E., Bakker, A. B., & Halbesleben, J. R. (2015). Productive and counterproductive job crafting: A daily diary study. *Journal of Occupational Health Psychology*, 20, 457-469.

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.

Ennett, S. T., Tobler, N. S., Ringwalt, C. L., & Flewelling, R. L. (1994). How effective is drug abuse resistance education? A meta-analysis of Project DARE outcome evaluations. *American Journal of Public Health*, 84, 1394-1401.

Estrada, C. A., Isen, A. M., & Young, M. J. (1997). Positive affect facilitates integration of information and decreases anchoring in reasoning among physicians. *Organizational Behavior and Human Decision Processes*, 72, 117-135.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 114-140.

Fox, S., & Spector, P. (2010). Instrumental counterproductive work behavior and the theory of planned behavior. A "cold cognitive" approach to complement "hot affective" theories of CWB. In L. L. Neider and C. A. Schriesheim (Eds.). *The "dark" side of management*. Charlotte, NC: IAP, pp. 93-114.

Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability: a psycho-social construct, its dimensions, and applications. *Journal of Vocational Behavior*, 65, 14-38.

Grant, A. M., & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior*, 28, 3-34.

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology*, 38, 69-119.

Hagger, M. S., Chatzisarantis, N. L., Barkoukis, V., Wang, J. C., Hein, V., Pihu, M., ... & Karsai, I. (2007). Cross-cultural generalizability of the theory of planned behavior among young people in a physical activity context. *Journal of Sport and Exercise Psychology*, 29, 1-19.

Hakanen, J. J., Peeters, M. C., & Schaufeli, W. B. (2017). Different types of employee well-being across time and their relationships with job crafting. *Journal of Occupational Health Psychology*. Advanced online publication. doi: http://dx.doi.org/10.1037/ocp0000081

Hall, D. T. (2002). *Careers in and out of organizations*. Thousand Oaks, CA: Sage Publications Inc.

Haus, I., Steinmetz, H., Isidor, R., & Kabst, R. (2013). Gender effects on entrepreneurial intention: A meta-analytical structural equation model. *International Journal of Gender and Entrepreneurship*, 5, 130-156.

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., et al. (2005). ‘‘Economic man’’ in cross-cultural perspective: Behavioral experiments in 15 small-scale societies. *Behavioral and Brain Sciences*, 28, 795–815.

Hofstede, G. (1991). *Cultures and organizations: Software of the mind*. London: McGrawHill.

Karasek, R. & Theorell, T. (1990) *Healthy Work: Stress, Productivity, and the Reconstruction of Working Life*. New York: Basic Books.

Leana, C. R., & Rousseau, D. M. (2000). *Relational wealth: the advantages of stability in a changing economy*. New York, NY: Oxford University Press.

Lichtenthaler, P. W., & Fischbach, A. (2018). A meta-analysis on promotion-and prevention-focused job crafting. *European Journal of Work and Organizational Psychology*, 1-21.

Lu, C. Q., Wang, H. J., Lu, J. J., Du, D. Y., & Bakker, A. B. (2014). Does work engagement increase person–job fit? The role of job crafting and job insecurity. *Journal of Vocational Behavior*, 84, 142-152.

Mäkikangas, A. (2018). Job crafting profiles and work engagement: A person-centered approach. *Journal of Vocational Behavior*, 106, 101-111.

Marshall, R. S., Cordano, M., & Silverman, M. (2005). Exploring individual and institutional drivers of proactive environmentalism in the US wine industry. *Business Strategy and the Environment*, 14, 92-109.

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., ... & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine*, *46*, 81-95.

Morris, W. M., Savani, K., Mor, S., & Cho, J. (2014). As the Romans do: Acquiring and using knowledge of other cultures. *Research in Organizational Behavior*, 34, 189–215.

Moyson, S., Raaphorst, N., Groeneveld, S., & Van de Walle, S. (2018). Organizational socialization in public administration research: A systematic review and directions for future research. *The American Review of Public Administration*, 48, 610-627.

Nigg, C. R., Lippke, S., & Maddock, J. E. (2009). Factorial invariance of the theory of planned behavior applied to physical activity across gender, age, and ethnic groups. *Psychology of Sport and Exercis*e, 10, 219-225.

O'Reilly, C. A., Caldwell, D. F., Chatman, J. A., & Doerr, B. (2014). The promise and problems of organizational culture: CEO personality, culture, and firm performance. *Group & Organization Management,* 39, 595–625.

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research: an introduction and some practical recommendations. *Journal of Personnel Psychology*, 9, 79-93.

Oldham, G. R., & Fried, Y. (2016). Job design research and theory: Past, present and future. *Organizational Behavior and Human Decision Processes*, 136, 20-35.

Oreg, S., & Katz-Gerro, T. (2006). Predicting proenvironmental behavior cross-nationally: Values, the theory of planned behavior, and value-belief-norm theory. *Environment and Behavior*, 38, 462-483.

Overstreet, R. E., Cegielski, C., & Hall, D. (2013). Predictors of the intent to adopt preventive innovations: a meta-analysis. *Journal of Applied Social Psychology*, 43, 936-946.

Pavlou, P. A., & Chai, L. (2002). What drives electronic commerce across cultures? Across-cultural empirical investigation of the theory of planned behavior. *Journal of Electronic Commerce Research*, 3, 240-253.

Petrou, P., Demerouti, E., & Schaufeli, W. B. (2016). Crafting the change: the role of employee job crafting behaviors for successful organizational change. *Journal of Management*.

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

Pinder, C. C. (2014). *Work motivation in organizational behavior*. Psychology Press.

Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior*, 102, 112-138.

Ruiter, R. A. C., & Kok, G. (2005). Saying is not always doing: Cigarette warning labels are useless. *European Journal of Public Health*, 15, 329-330.

Salancik, G. R., & Pfeffer, J. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly*, 224-253.

Scalco, A., Noventa, S., Sartori, R., & Ceschi, A. (2017). Predicting organic food consumption: a meta-analytic structural equation model based on the theory of planned behavior. *Appetite*, 112, 235-248.

Sharot, T., Korn, C. W., & Dolan, R. J. (2011). How unrealistic optimism is maintained in the face of reality. *Nature Neuroscience*, 14, 1475-1482.

Shin, Y., & Kim, M. J. (2015). Antecedents and mediating mechanisms of proactive behavior: Application of the theory of planned behavior. *Asia Pacific Journal of Management*, 32, 289-310.

Shoss, M. K., Jundt, D. K., Kobler, A., & Reynolds, C. (2016). Doing bad to feel better? An investigation of within-and between-person perceptions of counterproductive work behavior as a coping tactic. *Journal of Business Ethics*, 137, 571-587.

Steinmetz, H., Knappstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How Effective are Behavior Change Interventions Based on the Theory of Planned Behavior? *Zeitschrift für Psychologie*, 224, 216-233.

Stern, P. C., Dietz, T., Kalof, L., & Guagnano, G. A. (1995). Values, beliefs, and proenvironmental action: Attitude formation toward emergent attitude objects. *Journal of Applied Social Psychology*, 26, 1611-1636.

Sturman, M. C., Shao, L., & Katz, J. H. (2012). The effect of culture on the curvilinear relationship between performance and turnover. *Journal of Applied Psychology*, 97, 46–62.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA 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. (2015). Job crafting and job performance: A longitudinal study. *European Journal of Work and Organizational Psychology*, 24, 914-928.

Tims, M., Derks, D., & Bakker, A. B. (2016). Job crafting and its relationships with person–job fit and meaningfulness: A three-wave study. *Journal of Vocational Behavior*, 92, 44-53.

van Hooft, E. A., Born, M. P., Taris, T. W., & van der Flier, H. (2004). Job search and the theory of planned behavior: Minority–majority group differences in The Netherlands. *Journal of Vocational Behavior*, 65, 366-390.

van Hooft, E. A., Born, M. P., Taris, T. W., & van der Flier, H. (2006). The cross-cultural generalizability of the theory of planned behavior: A study on job seeking in the Netherlands. *Journal of Cross-Cultural Psychology*, 37, 127-135.

Vogt, K., Hakanen, J. J., Brauchli, R., Jenny, G. J., & Bauer, G. F. (2016). The consequences of job crafting: a three-wave study. *European Journal of Work and Organizational Psychology*, 25, 353-362.

Walker, G.J., Courneya, K.S., & Deng, J. (2006). Ethnicity, gender, and the theory of planned behavior: The case of playing the lottery. *Journal of Leisure Research*, 38, 224-248.

Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 132, 249-268.

Weseler, D., & Niessen, C. (2016). How job crafting relates to task performance. *Journal of Managerial Psychology*, 31, 672-685.

Wiethoff, C. (2004). Motivation to learn and diversity training: Application of the theory of planned behavior. *Human Resource Development Quarterly*, 15, 263-278.

Wing Kwan, M. Y., Bray, S. R., & Martin Ginis, K. A. (2009). Predicting physical activity of first-year university students: An application of the theory of planned behavior. *Journal of American College Health*, 58, 45-55.

Winkelnkemper, P. (2014). *The theory of planned behavior. Meta-analysis and structural equation models*. (Unpublished diploma thesis). University of Giessen, Germany.

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

CHAPTER 5

Implementing Job Crafting Behaviours: An Intervention Study Based on the Theory of Planned Behaviour

Part of this chapter was presented at the 13th European Academy of Occupational Health Psychology Conference (September, 2018), Lisbon, Portugal.

Abstract

This study evaluates a combined motivational and volitional intervention based on the theory of planned behaviour in promoting expansion-oriented job crafting behaviours. Participants were employees working in different companies and sectors, who were assigned to either an intervention (N = 54) or a control group (N = 61). Results of a field study (including pre- and post-measures and weekly diaries) indicated that the intervention led to effectively translate participants' initial intentions into job crafting behaviours measured eight weeks after the first time point. Latent change growth modelling showed that participation in the intervention supported employees' weekly intentions to craft their work, over and above baseline attitudes, social norms, and perceptions of control. In turn, weekly intentions were positive predictors of post-measures of expansion-oriented job crafting. Besides, participants in the intervention group reported higher levels of weekly flow in terms of absorption compared to the control group. Overall, these findings provide evidence for the effectiveness of the proposed intervention to support expansion-oriented job crafting and flow at work.

Keywords: *Flow at Work; Implementation Intention; Intervention*; *Job Crafting; Latent Growth Modeling; Theory of Planned Behaviour.*

Introduction

When employees proactively engage in behaviours aimed at improving their job, such as purposely seeking more job resources or avoiding demanding aspects of the job, they are said to engage in job crafting (JC). JC refers to a broad class of conscious and intentional changes made to one's work (Bruning & Campion, 2018), which help employees improve or maintain work engagement, eventually leading to employees' willingness and capability of increasing their job resources and taking on new challenges (Hakanen, Peeters, & Schaufeli, 2018; Demerouti, 2014). Just as important is the use of JC as a coping mechanism to protect health when job conditions are perceived as potentially harmful (Demerouti, 2014).

Sparked by such encouraging findings, scholars have started investigating if and how employees' engagement in JC can be supported through specific workplace interventions. Specifically, building on the JD-R theory as a framework to understand the motivating and inhibiting factors driving employees at work (Demerouti, 2014), such studies focused on the effectiveness of training employees to enable individual fit to the job through self-settled goals directed at changing job demands and resources (e.g. Gordon et al., 2018; van den Heuvel, Demerouti, & Peeters, 2015).

Such interventions share a common focus on improving employee engagement in JC behaviours, yet they build on varying theoretical backgrounds, contents, and delivery. That is, while most of the interventions conducted to sustain JC as conceptualised within the JD-R perspective build on the principles of the JD-R theory (Bakker & Demerouti, 2014), they rely on different theoretical backgrounds to explain the mechanisms through which the interventions are supposed to exert their effects on JC. For example, when they introduced their newly developed JC intervention, van den Heuvel and colleagues (2015) built on social cognitive theory (Bandura, 1991) to design the proposed learning methods and explain the mechanisms through which the learning process was expected to be effective. Likewise, the intervention proposed by Demerouti, Xanthopoulou, Petrou, and Karagkounis (2017) aimed at achieving changes at both the cognitive and the behavioural level. To reach these goals, it comprised elements based on social cognitive theory suggesting that the interaction between the person, the behaviour, and the environment is critical for planning behaviour change interventions. Also, van Wingerden, Bakker and Derks (2017) followed the principles of proactive goal-setting (Parker, Bindl, & Strauss,

2010) and draw on self-determination theory (Deci & Ryan, 2000) to explain how and why participants were stimulated to optimise their work environment in line with their personal needs.

However, the mechanisms suggested in explaining the effectiveness of these interventions to increase JC behaviours were not tested in any of these intervention studies. Indeed, despite encouraging initial evidence, definitive conclusions about the mechanisms of action through which interventions exert their effects on employees' behaviours are still unclear, given that the available evidence does not provide any direct empirical and causal test of the assumed theoretical processes leading to sustain JC or to change employees' behaviours to encompass new behavioural crafting repertoires. That is, while the available JC intervention studies are certainly developed based on different theoretical backgrounds (for an overview of the theoretical underpinnings of the existing JC intervention studies see Table 1), we are unaware of research testing whether and how the elements constituting such backgrounds contribute to defining the effectiveness of JC interventions. Shedding light on the processes occurring during JC interventions is important because it allows testing if the design of the intervention is effective and why, contributing to unpack the mechanisms of intervention effectiveness, including its relationships with positive psychological states at work, i.e., flow.

Table 1
Job Crafting Intervention Studies.

Authors	Country	Sample	Control Group	Measurement Points	Theoretical Background	Intervention	Job Crafting Scale
Dubbelt et al. (2015)	NL	$N_{experimental}$=40 $N_{control}$ = 38	Y	1. Pre-test 2. Post-test (6-week after the intervention)	– Job crafting theory – Experimental learning theory	4-hour workshop	Petrou et al. (2012)
van den Heuvel et al. (2015)	NL	$N_{experimental}$=39 $N_{control}$ = 47	Y	1. Pre-test 2. 4 weekly diaries 3. Post-measure 1 or 2 weeks after the intervention	– Job crafting theory – JD-R theory – Social cognitive theory	– 1 training day – Development of a personal crafting plan (PCP) – Half-day reflection session	Petrou et al. (2012)
Sakuraya et al. (2016)	JA	$N_{experimental}$=50	N	1. Pre-test 2. Post-test 3. Follow-up (1 month after the intervention)	– Job crafting theory	– 2-hour workshop with development of PCP – 2-week interval – 2-hour workshop	Sekiguchi et al. (2014)
van Wingerden et al. (2016)	NL	$N_{experimental}$=43 $N_{control}$ = 24	Y	1. Pre-test (2 weeks before the intervention) 2. Post-test (1 week after the intervention)	– JD-R theory – Job crafting theory	3 training sessions over 5 weeks	Tims et al. (2012)
Demerouti et al. (2017)	GR	*Study 2:* $N_{experimental}$=30 $N_{control}$ = 42	Y	*Study 2:* 1. Pre-test 2. Post-test (4-week after the intervention)	– Social learning theory – Social cognitive theory – JD-R theory	*Study 2:* 3-hour workshop	Petrou et al. (2012)
Kooij et al. (2017)	NL	$N_{experimental}$=31 $N_{control}$ = 55	Y	1. Pre-test (2 weeks before the intervention) 2. Post-test (2 weeks after the intervention)	– Job crafting theory – JD-R theory – Self-determination theory	4-hour workshop	Self-developed scale
van Wingerden et al. (2017)	NL	$N_{experimental}$=41 $N_{control}$ = 30	Y	1. Pre-test (2 weeks before the intervention) 2. Post-test (2 weeks after the intervention)	– Job crafting theory – JD-R theory – Self-determination theory	3 training sessions	Tims et al. (2012)
van Wingerden et al. (2017)	NL	$N_{experimental}$=84 $N_{control}$ = 18	Y	1. Pre-test (2 weeks before the intervention) 2. Post-test (1 week after the intervention)	– JD-R theory – Job crafting theory	– Personal Resources: 3 sessions – Job Crafting Intervention: 3 sessions	Tims et al. (2012)
Costantini & Sartori (2018)	IT	$N_{experimental}$=43	N	1. Pre-test 2. Post-test (2 weeks after the intervention)	– Broaden and build theory – JD-R theory – Job crafting theory	3-day training session	Tims et al. (2012)
Gordon et al. (2018)	NL	*Study 1*: $N_{experimental}$=48 $N_{control}$ = 71 *Study 2*: $N_{experimental}$=32 $N_{control}$ = 26	Y	1. Pre-test (1 month before the intervention) 2. Post-test (1 month after the intervention)	– Job crafting theory – JD-R theory	– 3-hour workshop – Development of a PCP	Petrou et al. (2012)

Notes.
NL = the Netherlands; GR = Greece; JA = Japan; IT = Italy. Y = Yes, N = No.

Overall, JC intervention studies provide initial evidence that JC can be facilitated and supported by the management (Demerouti, 2014; van Wingerden et al., 2017). However, even though such interventions aim to sustain JC by stimulating cognitive changes of the mechanisms underlying such behaviours, to the best of our knowledge no JC intervention study has targeted the main determinant of behaviour: behavioural intention (Webb & Sheeran, 2006). Given that interventions are likely to be more effective if they target determinants of behaviour and behaviour change (Lin et al., 2017), and the established agreement that intention is the critical determinant of behaviour (Sheeran, 2002), such a gap deserves closer attention. A vast amount of literature supports that the best predictor of a given, volitional behaviour is an intention to perform that behaviour, and findings from a meta-analysis provide evidence of the causal impact of intention on behaviour since changes in behavioural intentions engender behaviour change (Webb & Sheeran, 2006). Accordingly, it is surprising that no previous interventions explicitly focused on intention and implementation intention techniques in order to support JC among employees.

In order to shed light on this research gap, in this intervention study, we aim to contribute to the literature on JC in several ways. First, drawing on existing initial evidence suggesting that it is possible to influence JC via stimulating behavioural intentions (Bipp & Demerouti, 2015), we provide the first experimental test of the causal impact of intention on JC behaviours. Second, theories of behaviour change can provide valuable insights into the causal factors of behaviour. That is, they permit to point toward potential targets for interventions, helping to understand which specific techniques and approaches are effective and why (Lin et al., 2017). Thus, we contribute to developing JC theory by testing the effectiveness of a JC intervention based on the theory of planned behaviour (TPB; Ajzen, 1991) on both JC behavioural outcomes and flow at work. Moreover, whereas previous JC intervention studies followed the principles of proactive goal setting (e.g. van Wingerden et al., 2017), we aim to experimentally test the effects of weekly implementation intentions (Gollwitzer & Sheeran, 2006) on goal attainments regarding JC behaviours. Finally, we provide initial evidence on the relationship between our JC intervention and flow at work. In doing so, we shed light on how such a theory-driven intervention design can be used to support not only JC but also employees' positive

psychological states at work through awareness about employees' increased match with their work environment.

Theoretical Background

Behavioural Job Crafting

Job crafting refers to employee-driven job redesign behaviours through which employees "craft" their jobs to better align it with their abilities, needs and preferences (Lichtenthaler & Fischbach, 2018; Wrzesniewski & Dutton, 2001). It describes a bottom-up strategy through which the employees proactively engage in self-management processes to adjust the levels of their perceived job demands and resources (Bruning & Campion, 2018). From its inception in the academic literature with the work of Wrzesniewski and Dutton (2001), the construct of JC has known various definitions and theoretical conceptualisations in trying to understand how different JC strategies relate to positive and negative work-related outcomes. A recent meta-analysis aimed to clarify this ambiguity and identify common elements among different proposals. It found that in all current conceptualisations of JC employees seek to change the structure and content of their work through expansion- or contraction-oriented strategies (Lichtenthaler & Fischbach, 2018). *Expansion strategies* aim at making the work environment more resourceful and challenging, whereas *contraction* ones are focused on decreasing the demanding aspects of the job. Evidence from research shows that employees' engagement in expansion-oriented JC positively relates to health, motivation, and performance, while contraction JC behaviours are negatively or not related to the same outcomes (Demerouti, Bakker, & Halbesleben, 2015; Lichtenthaler & Fischbach, 2018; Rudolph, Katz, Lavigne, & Zacher, 2017).

Against this background and adopting the JD-R perspective to JC (Tims & Bakker, 2010), in this intervention study, we focus on sustaining proactive employee behaviour consisting of seeking resources and challenges, i.e., expansion JC (Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012) as these have favourable effects on work outcomes. Specifically, crafting job resources could take the form of increasing structural (e.g. trying to learn new things) or social (e.g. asking for performance feedback) resources. Increasing challenging demands consists of seeking new and challenging tasks at work (e.g. voluntarily taking on new responsibilities or tasks; Hakanen, Peeters, &

Schaufeli, 2018), which sustain motivation, mastering and learning (Karasek & Theorell, 1990).

Job Crafting Interventions

While JC behaviours are characterised by arising spontaneously among employees who proactively adjust and shape the characteristics of their work environment, interventions can be used to support employees' effective management of their JC strategies and raise awareness for their importance in sustaining work-related well-being. Indeed, meta-analytic evidence shows that JC interventions can be effective to sustain JC and work engagement (Oprea et al., 2019).

The first published intervention designed and tested to increase employees' awareness of JC (van den Heuvel et al., 2015) consisted of several phases, which subsequently served as a blueprint for the conceptualisation of other intervention studies focused on behavioural JC (Demerouti, Peeters, & van den Heuvel, 2019). Specifically, the first phase of the intervention aims at exploring and mapping the key work characteristics of the employees that subsequently will take part in the workshop. The second phase of the intervention consists of a workshop during which employees are introduced to the JD-R model, its constituting elements and processes, as well as behavioural JC. Moreover, participants are led in the identification of work situations they would like to change by engaging in JC and are supported in the creation of a personal plan regarding specific crafting actions and goals to be undertaken in the following weeks. Then, in the third phase, participants are asked to perform their self-settled crafting actions during the following weeks, in order to reach their own behavioural goals referred to the different dimensions of JC (i.e., seeking resources, decreasing demands, and seeking challenges). Finally, in the fourth phase, participants are involved in a reflection session aiming at exploring their experiences with JC during the intervention period.

Based on this design, other JC interventions have been developed and tested, sometimes with minor adjustments compared to the original intervention model. Also, the number, focus, and order of JC behavioural goals assigned to participants vary across different intervention studies, depending on their context (e.g. Demerouti et al., 2017), or the needs of the organisations involved. For example, Gordon et al. (2018) developed and tested a shorter workshop (3-hour VS the original 8-hour) and included specific exercises developed to stimulate reflection aiming at bridging the gap between past behaviours and

future goals (Demerouti et al., 2019). Slightly differently, Kooij et al. (2017) adopted an online application during their four-hour workshop to standardise the process of visualising concrete person-job fit and to direct participants in the formulation of their action plans to craft their work. Moreover, the content of the intervention seemed to be aligned with the one proposed in the Michigan JC Exercise (Berg, Dutton, Wrzesniewski & Baker, 2008), where the focus is on tasks which are to be sorted according to time investment and matching with one's strengths, interests and needs. Besides, in this study, behavioural goals did not correspond to the original dimensions conceptualised in the JD-R approach to JC and were instead focused on improving alignment between tasks and personal strengths and interests. Other examples of JC interventions (e.g. van Wingerden et al., 2016; van Wingerden et al., 2017) were based on combining elements from the Michigan JC Exercise (Berg et al., 2008), to identify strengths, motives, and mapping tasks, with the JD-R theory (Bakker & Demerouti, 2014) and included principles of proactive goal settings.

From a theoretical perspective, the original JC intervention was based on elements from social cognitive theory (Bandura, 1989), and subsequently integrated with elements from experiential learning theory (Kolb et al., 2001) and situated experiential learning narratives (Benner, 1984). Specifically, while in the first interventions the focus was on building upon participants' past experiences to facilitate the learning process via reflection and subsequent energy investment, in the intervention proposed by Gordon and colleagues (2018) an exercise was added that built on the use of experiential narratives as a tool to increase participants' understanding of how their behaviours at work represent forms of JC. Other intervention models draw on self-determination theory (Deci & Ryan, 2000) (e.g. van Wingerden et al., 2017), psychological capital theory (Luthans et al., 2006), and the conservation of resources (Hobfoll, 2002) (e.g. van Wingerden et al., 2016). However, no empirical evidence was provided for how the theoretical mechanisms of such backgrounds worked during the intervention, eventually influencing subsequent JC behaviours.

The Theory of Planned Behaviour

In this intervention study, in order to deepen knowledge on the mechanisms influencing JC intervention effectiveness, we adopt the TPB, a widely applied theory recognised for its practical approach to changing behaviour by changing cognitive

structures underlying those behaviours (Fox & Spector, 2010). We suggest that this theory can be used to explain and improve the effectiveness of the JC interventions, given that it explicates the mechanisms by which interventions are expected to exert their effects on behaviour change and that it represents a useful framework to design behaviour change interventions (Steinmetz, Knappstein, Ajzen, Schmidt, & Kabst, 2016). Building on the different role of the motivational drivers and of intention on behaviour, research suggests that the contents and the techniques used during interventions should focus on the specific phases underlying behaviours. That is, when designing behavioural change interventions, one should consider the different processes implied in the execution of volitional behaviour, which consists of a motivational and a volitional phase (Gollwitzer, 1999). While the motivational phase refers to the formation of the intention to engage in the target behaviour, the volitional one concerns the implantation of the formed intention and deals with the specification of how such a decision is pragmatically implemented within a person's course of actions.

According to the TPB, the primary driver for behaviour is the person's decision to act, or behavioural intention (e.g. "*I intend to ask my supervisor for advice on the new project*"), which in turn is a function of underlying motivational variables, i.e., attitudes, social norms, and perceptions of behavioural control (PBC). Attitudes refer to people's overall assessment of the advantages and disadvantages of their performing the behaviour (e.g., "*For me, asking my supervisor for advice would be worthwhile/not worthwhile*"). Subjective norms refer to people's perceptions of social pressure from significant others to perform the behaviour (e.g., "*Most people in my work environment who are important to me think that I should ask for advice when uncertain*"). Perceived behavioural control refers to an individual's perceived degree of difficulty to perform a behaviour and whether s/he perceives of having the ability to perform it (e.g., "*For me obtaining feedback from my supervisor would be easy/difficult*"). The more positive people's attitudes, subjective norms, and PBC, the stronger their intentions to perform the behaviour. Furthermore, the stronger people's intentions, the higher the likelihood of their performing the behaviour (Sheeran & Silverman, 2003).

Interventions to Support Job Crafting: Motivational and Volitional Phases

By adopting the TPB to the design of a JC intervention, we propose that it is possible to enhance the motivational variables that drive employees' intentions to engage

in JC and, subsequently, the strength and feasibility of employees' intentions, allowing their translation into actual behaviours. Drawing on the TPB, intentions are determined by individual attitudes, social norms, and PBC. In turn, behavioural intentions index employees' motivations to engage in proactive behaviours, such as JC, defining both the direction (i.e., engaging or not in the self-management of the perceived job demands and resources) and intensity (Sheeran, 2002) of their decisions. Accordingly, interventions aiming at forming or strengthening pre-existing intentions should target the behavioural, normative, and control beliefs that shape intentions. Indeed, while behavioural intention formation is key to behavioural performance, its strength plays a significant role in the performance of distant behaviours (Fishbein & Ajzen, 2012). By improving employees' positive attitudes towards the self-management of job demands and resources, along with perceptions about the expectations of significant others in the organisations and enhancing a sense of personal control over one's engagement in JC behaviours, motivational interventions are likely to be effective in improving intention formation and stability.

Once an intention to perform the behaviour has been formed and strengthened, participants must have the means to translate their intentions into actions (Steinmetz et al., 2016). Accordingly, behavioural interventions aiming to support JC should teach employees behavioural skills that will help them initiate and maintain activity planning. While developing action plans is critical to help people follow through with their intentions and achieve their behavioural goals, research suggests that a key feature of the volitional phase is the formation of an implementation intention, or a plan to perform the behaviour at a particular time and in a particular place (Gollwitzer, 1999). Indeed, holding a firm goal intention does not guarantee goal achievement, as people may fail to deal effectively with self-regulatory problems during goal-striving (Gollwitzer & Sheeran, 2006). Implementation intentions involve developing a strong mental association between a situational cue and specific behaviour, which allows people to pass on control of goal-directed activities from the self to the environment (Gollwitzer, 1999). Research shows that forming implementation intentions is effective in promoting the initiation of goal striving, shielding of ongoing goal pursuit from unwanted influences, disengaging from failing courses of action, and conserving capability for future goal striving (Gollwitzer & Sheeran, 2006). Accumulated evidence shows that participants who form implementation

intentions are more likely to perform their targeted behaviours compared to participants with similar beliefs and intentions not characterised as implementation ones (Sheeran, & Silverman, 2003; Sheeran, 2002).

Contribution of the Present Study and Hypotheses

Against this background, we designed our JC intervention based on the phases of the original proposal by van den Heuvel and colleagues (2015) and integrating the TPB with research on implementation intentions, which eventually resulted in a combined motivational and volitional intervention to support expansion JC strategies in everyday working life. Specifically, consistent with the original JC intervention, we designed our intervention study design to comprise a phase including workshops (intervention group only), another including weekly self-set assignments (intervention group only) and weekly diaries (both groups), and a final one including a reflection session (intervention group only). Tables 2 and 3 provide an overview of the contents and structure of our workshops, with the indication of the theoretical constructs on which participants were guided to focus on, behavioural change techniques (cf. Michie et al., 2013) implemented to work on the specific construct, and the individual, couple, or small group dimension of each phase.

Table 2
Overview of the Intervention (4-hour Motivational Workshop).

Theoretical constructs	Behaviour Change Techniques	Exercise Dimension
1. JD-R	• Mapping and identifying resources, demands, and behaviours referred to expansion-oriented job crafting behaviours	Individual
2. Attitudes	• Reflection on the consequences, in terms of levels of energy at work, of engaging in expansion-oriented job crafting behaviours • Reflection on individual reactions related to engaging in expansion-oriented job crafting behaviours • Listing the pros and cons of expansion-oriented job crafting behaviours	Individual
3. Social Norms	After participants' random assignment to groups of up to 5 people, they shared their job crafting previous experiences and: • Discussed others' perceived approval regarding their expansion-oriented job crafting behaviours • Discussed practical and emotional support experienced when engaging in expansion-oriented job crafting behaviours • Took notes of insights from others' behavioural strategies that they found valuable to increase well-being	Small groups (<5 participants)

Note: Behaviour change techniques are described according to Michie's et al. (2013) taxonomy.

Table 3
Overview of the Intervention (3-hour Volitional Planning Session).

Theoretical constructs	Behaviour Change Techniques	Exercise Dimension
1. Perceived Behavioural Control	Action Planning: • Creation of three plans (one for each crafting behaviours) specifying: o what behaviour (referring to seeking resources and challenges) o when (day of the week) o during which working task o with whom and where (place) behavioural engagement would have happened	Individual
2. Implementation Intentions	Coping Planning: • Identifying barriers that might be encountered when trying to engage in job crafting • Generating strategies to overcome identified barriers • Writing down implementation intentions referred to job crafting expansion behaviours	Individual and final discussion in small groups
3. Self-Monitoring and Social Support	• Visualizing job crafting behavioural goals by writing them on a provided calendar • Identifying a "buddy" with whom to discuss settled goals give and receive feedbacks on crafting goals, discuss in the following weeks about experiences of meeting or not personal crafting goals.	Individual Couples

Note: Behaviour change techniques are described according to Michie's et al. (2013) taxonomy.

Overall, we argue that by participating in a JC intervention designed to sustain the main determinants of JC behaviours, i.e., intentions and their antecedents, employees will acquire the techniques to be aware of their engagement in expansion-oriented JC behaviours, to self-manage their crafting plans, and face possible obstacles and barriers when trying to pursue them.

> ***Hypothesis 1****: Participation in the intervention will increase (a) attitudes, (b) descriptive and (c) injunctive social norms, (d) PBC, and (e) expansion JC behaviours from pre- to post-test and compared to the control group.*

Moreover, in line with the TPB, we expect that the levels of attitudes, social norms, and PBC before the intervention will be positively related to weekly initial levels of intention referred to expansion JC behaviours because such variables build the motivational impetus that drives employees' weekly initial intentions. Also, based on the TPB, PBC measured before the intervention is expected to predict JC at the end of the study period directly. That is, employees' baseline sense of control and efficacy regarding how to craft their job can serve as a direct predictor of JC behaviours, which are proactive and therefore not imposing severe problems of control over behavioural engagement (Ajzen, 1991). Indeed, previous findings showed that self-efficacy, a component of PBC

(Ajzen, 2002), is a significant predictor of JC (Niessen, Weseler, & Kostova, 2016; Tims et al., 2014).

Hypothesis 2: *(a) Attitudes, (b) descriptive and (c) injunctive social norms, and (d) PBC referred to JC measured before the intervention will relate positively to weekly initial levels of intentions to engage in JC.*

Hypothesis 3: *Baseline measure of PBC referred to JC will relate positively to post-measure of expansion-oriented JC behaviour.*

Given that our intervention aims at enhancing the motivational variables that drive intentions to engage in JC, eventually strengthening it, we expect weekly intentions measured after the workshops to be prompted by employees' participation to the intervention. Indeed, we expect that participants in the intervention will develop a higher awareness of the positive outcomes deriving from engaging in expansion JC behaviours, eventually fostering higher intentions to engage in such behaviours compared to the control group. Moreover, by sustaining employees' awareness of the characteristics of their work environment, which can be changed by engaging in JC, and of the role of intentions as drivers of such change-oriented behaviours, we also expect that participants will be better able to recognise and modulate their weekly intentions to engage in expansion JC. Accordingly, weekly intentions will also be influenced in their trajectories of change based on the participation in the intervention.

Hypothesis 4: *Participation in the intervention will positively influence (a) weekly initial levels and (b) weekly changes in behavioural intentions to engage in expansion JC following the workshops.*

Finally, in line with the theoretical proposition and empirical evidence showing that intention is the best predictor of behaviour (Steinmetz et al., 2016), including JC behaviours (Bipp & Demerouti, 2015), we expect post-measures of JC to be determined by weekly intentions. Accordingly, we expect that both initial weekly levels and changes of JC intentions will positively influence the extent to which employees will craft their job in an expansion oriented way at the end of the intervention.

Hypothesis 5: *(a) Weekly initial levels and (b) weekly changes in intention to engage in JC will affect employees' engagement in expansion JC after the intervention.*

Effects of the Intervention on Participants' Flow at Work

Overall, we expect that participants in the intervention will develop and get acknowledged with a set of behavioural tools and techniques, allowing them to balance their resources and job demands autonomously. When employees experience a balance between the challenges of a task and the skills needed to face such challenges, they may experience flow (Csikszentmihalyi, 1975). Flow is defined as a short-term peak experience at work, characterised by absorption, work enjoyment and intrinsic work motivation (Bakker, 2005, 2008). Specifically, *absorption* refers to total concentration and immersion in the activity, *work enjoyment* refers to the outcome of cognitive and affective evaluations of the flow experience, and *intrinsic work motivation* refers to a state in which employees engage in the work activity to experience the inherent pleasure and satisfaction from it deriving. Evidence from research has shown that flow at work fuels the energy that individuals have at the end of the workday (Demerouti, Bakker, Sonnentag, & Fullagar, 2012) and that motivating job characteristics are correlated with the experience of flow at work (Demerouti, 2006). Accordingly, scholars argued that in order to support employees' flow, organisations should promote job redesign approaches that allow employees to experience autonomy, task identity and significance, and solving challenging problems or expressing creativity (Demerouti et al., 2012; Fullagar & Kelloway, 2009).

Accordingly, we expect that participants in the intervention will experience a better balance between the demands and the resources of their job, because of increased awareness and knowledge about the strategies that can be used to craft one's work in an expansion-oriented way. Thereby work should become more challenging and stimulating, in a way that is balanced with one's abilities. In turn, such improved knowledge on how to master the work characteristics to better align the job to oneself is expected to lead to higher experiences of flow at work because of increased experiences of working at full capacity with intense engagement, and perceptions of personal skills that match the required demands (Nakamura & Csikszentmihalyi, 2002).

> ***Hypothesis 6***: *Participation in the intervention will be positively associated to higher weekly flow at work in terms of (a) absorption, (b) work enjoyment, and (c) intrinsic motivation compared to the control group.*

Finally, the experience of flow at work will likely drive employees to engage in expansion JC as a means to create more resources to be used when facing job demands (Hobfoll, 2002). This is because employees reporting high levels of work enjoyment, intrinsic motivation, and absorption in their work will experience a positive psychological state that broadens their action repertoires aimed to expand the resources and challenges of the work environment, allowing the fulfilment of their goals (Bakker & Demerouti, 2014; Demerouti & Cropanzano, 2010).

Hypothesis 7: *Weekly initial levels of flow will be positively related to expansion-JC.*

Method

Participants and Procedure

This study applies a parallel design with an intervention and a control group which received no intervention (intended as described below) during the study period. The first author, who is a licensed[1] work and organisational psychologist and experienced trainer, together with two other licensed psychologists, experienced trainers, delivered the workshops. All trainers involved detailed the contents of both workshops in a standardised logbook, which served as a guide for the delivery of each workshop.

Participants in the study were employees in Italy, operating in healthcare, manufacturing, large-scale retail trade, construction, education, and public administration. Interventions were conducted in two organisations operating in the manufacturing sector (39.5% of the participants in the intervention group), one healthcare organisation (15.1% of the participants in the intervention group), one organisation providing services for teachers (13.3% of the participants in the intervention group), and two organisations operating in the social services (32.1% of the participants in the intervention group).

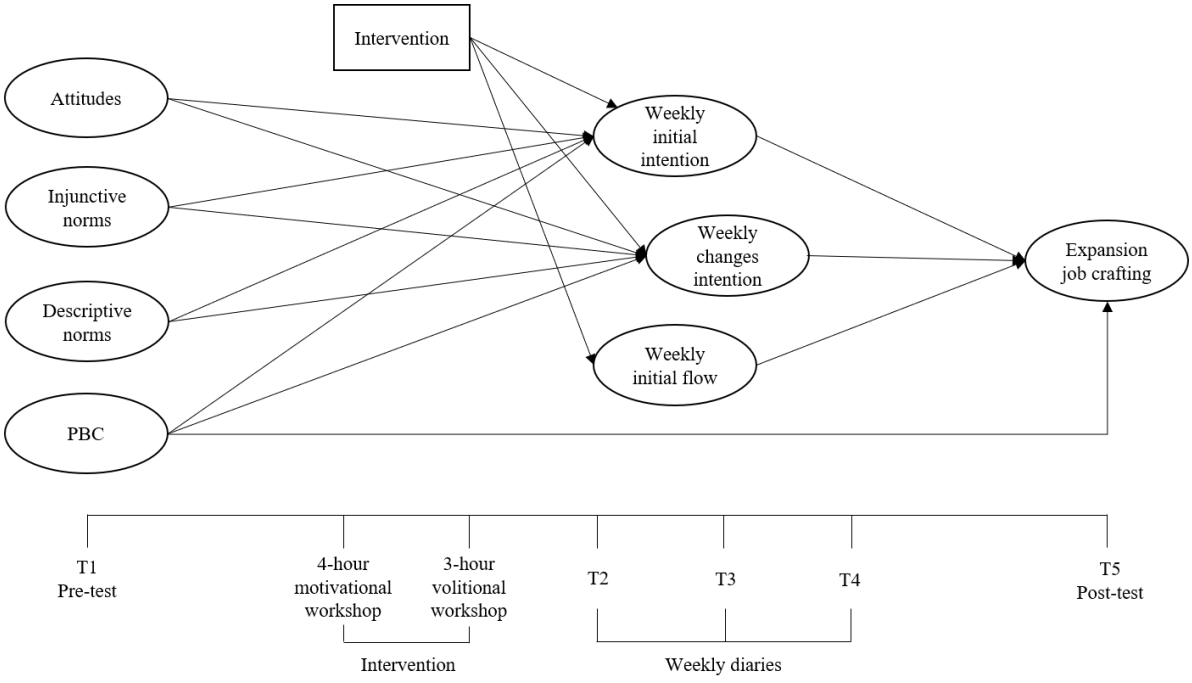
Potential participants were recruited via a message on the organisations' intranet and other communication channels (i.e., internal news, leaflets, and social networks). Participation in the workshops was voluntary, and participants were not paid but received lifelong learning credits for their participation in the workshops. The study took place over eight weeks (see Figure 1 for an overview of the study design and model).

[1] In Italy, all psychologists practicing in organizations or privately are required to register with the national Albo degli Psicologi. Qualifications required to register typically include a Master's degree in Psychology followed by a 1-year supervised practice as a psychology trainee, and a final exam.

Participants who agreed to take part in the study were assigned to either a waiting list control condition or the experimental condition. Participants in the control group were not aware that they were part of the control condition and were offered the chance to participate in the workshops after the study. The study procedure complied with APA's policy of ethical treatment of participants.

Two weeks before the start of the workshops, participants in both the control and the intervention groups received an invitation via email with the link to the first online questionnaire, including demographics and pre-test (T1) for our measures. This resulted in n=115 returns – response rate 76%, of which n=54 in the experimental group (76% females; M_{age}=43.98, SD=10.69; M_{tenure}=17.25, SD=13.01) and n=61 in the control group (44% females; M_{age}=40.06, SD=14.01; M_{tenure}=12.77, SD=11.88). Participants in the two groups did not differ in age (t(113)=-1.66, p =.10) nor tenure (t(113)=-1.92, p =.06). However, a chi-square test of independence comparing the frequency of women and men in the two groups showed that the distribution of gender was unbalanced between the two groups (χ^2 (1) = 10.27, p<.01). The two groups did not differ as for work contract (F(1,113) =.20, p=.66), but participants in the intervention group did report a higher educational level (F(1,113) =14.27, p<.001). Accordingly, in our analyses, we controlled for gender and educational level. Overall, fifty-seven per cent of the participants had a full-time, permanent contract, and 58% of the participants hold a high school diploma.

Figure 1 shows the study model and design.



The Combined Motivational and Volitional Intervention for Job Crafting

At the beginning of week 3, participants in the experimental group took part in a four-hour JC workshop, delivered in Italy, in groups of up to fifteen employees. The workshop was designed to strengthen participants' intentions to engage in expansion-oriented JC behaviours by increasing their positive attitudes, social norms, and PBC regarding the possible strategies to self-manage job demands and job resources of the work environment. A booklet was provided to each participant, which was designed to target the contents of the workshop, including (a) the meaning of JC and the factors influencing well-being at work; (b) a section referred to how JC is linked to well-being; (c) a part on the contextual and social boundaries of JC, and (d) a planning sheet, designed to set goals and implementation intention.

The four-hour motivational workshop was focused on strengthening participants' intentions to craft their jobs by increasing their positive attitudes and subjective norms. The following behaviour change techniques (cf. Michie et al., 2013) were used to stimulate positive beliefs regarding JC. First, participants were introduced to the meaning of JC and supported in identifying and understanding how their work behaviours can be viewed as different forms of JC. After that, the session was focused on making participants aware of their *attitudes* towards such proactive, work-related behaviours, and reinforcing the positive ones. Facilitators helped the participants map identified behaviours as seeking resources and challenges and supported them in reflecting on their consequences, with particular regards to work-related well-being. Social and emotional consequences of such behaviours were then discussed in small groups, and participants individually listed the pros and cons of their past JC behaviours on their booklets. In the following step, participants were randomly assigned to groups of up to five people each. They were then guided to share their beliefs about the contextual and informal processes informing JC behaviours in the organisation, i.e., *social norms*, followed by group discussions about others' approval of said behaviours and practical and emotional support experienced. At the end of these guided group discussions, all participants identified a "buddy" helping in the identification of possible helpful behavioural strategies to be carried out in order to make the work experience more engaging.

One week after the workshop, i.e., at the beginning of week 4, employees assigned to the experimental group participated in a 3-hour session focused on supporting

behavioural goal attainment through increased *PBC* and the development of *implementation intention*. First, participants were guided to recall the contents of the previous workshop by making use of their booklets. Then, to promote action planning, participants were asked to create two plans for each JC strategy, specifying what behaviour (referring to seeking resources and challenges), when (day of the week), during which working task, with whom and where (place) they would pursue their behavioural intentions. Next, to promote coping planning, participants were asked to identify barriers that they might encounter when trying to engage in expansion-oriented JC and to generate strategies to overcome them. Two such examples were given: "…*and if the feedback meeting with my supervisor gets cancelled, so I do not know whether s/he satisfied with my work, then I will write to her/him an email*"; "…*and if an interesting project comes along when my workload is high, so I feel like I cannot manage it all, then I will sit down at my desk and make an outline of my priority tasks*". Then, participants were asked to write down their implementation intentions related to their JC behaviours. To encourage self-monitoring, the last part of the booklet included a calendar for a month where participants were asked to indicate the types of JC behavioural strategies that they would have engaged in the following three weeks.

At the end of each of the three weeks following the 3-hour goal-setting session, participants in both groups completed a questionnaire measuring JC behavioural intentions and flow at work. Finally, in week 8, a post-test questionnaire (T5) was sent to participants in both groups to measure attitudes, social norms, PBC, and self-reported JC behaviours.

Measures

All measures were administered in Italian. Measures that were not available in Italian were translated, using the forward-backwards translation method (Behling & Law, 2000).

Theory of planned behaviour constructs referred to JC. In this study, we used direct measures of the psychological constructs of the TPB, e.g. we asked respondents about their overall JC attitudes, social norms, PBC, behavioural intention, and behaviour (as detailed below), rather than indirect measures, e.g. asking respondents about specific behavioural beliefs referred to JC and its outcome evaluations. Direct and indirect measurement approaches make different assumptions about the underlying cognitive structures, and neither approach is perfect. Given that in this study we were focused on

understanding the role of different variables over intention and subsequent behaviours while keeping the questionnaire as short as possible, using direct measures of the constructs of the TPB represented a recommended choice (Francis et al., 2004).

Two sub-dimensions of JC were considered based on Petrou and colleagues' (2012) scale, i.e., seeking resources and seeking challenges. Three behaviours referred to these dimensions were used to create the TPB questionnaire based on Ajzen's instructions (2006), i.e., "*I ask my supervisor for advice*" and "*I ask others for feedback on my job performance*" (seeking resources), and "*I ask for more responsibilities*" (seeking challenges). Confirmatory factor analyses conducted at T1 and T5 revealed in both cases a good fit for a five-factor model, including attitudes, injunctive and descriptive norms, PBC, and behaviour (T1: $\chi^2(17) = 27.19$, CFI =.98; TLI =.95; SRMR =.03; T5: $\chi^2(13) = 28.10$, CFI =.98; TLI =.94; SRMR =.04).

As for *attitudes*, participants were asked to evaluate each behaviour on a 7-point scale, ranging from *exhausting* (1) to *motivating* (7). A factor was calculated in such a way that higher scores indicated respondents' overall more positive evaluation of JC behaviours. Cronbach's α were .75 at T1 and .78 at T5.

To measure *descriptive norms*, participants had to indicate whether other employees in the organisation themselves perform each JC behaviour on a scale ranging from *completely false* (1) to *completely true* (7). Cronbach's α were .76 at T1 and .86 at T5.

Injunctive norms were measured by asking participants to indicate whether other people working in the organisation whose opinion was valued to the respondent thought each behaviour to be appropriate. Responses were given on a 7-point scale ranging from *not appropriate* (1) to *appropriate* (7). Cronbach's α were .82 at T1 and .86 at T5. All factors were calculated in such a way that higher scores indicated desirable, approved and frequent behaviours.

PBC was measured by asking participants to indicate the extent to which they thought it would be possible for them to be engaged in each of the listed JC behaviours. Responses were given on a 7-point scale ranging from *impossible* (1) to *possible* (7). Cronbach's α were .89 at T1 and .83 at T5.

Weekly behavioural intention was measured by asking participants to indicate how likely it was that they would engage in each JC behaviour in the forthcoming week. Only

for T4 the instruction asked about intentions referred to the coming weeks. Participants responded on a 7-point scale ranging from *extremely unlikely* (1) to *extremely likely* (7). Cronbach's α were .83 at T2, .81 at T3, and .78 at T4.

JC behaviour was measured by asking participants to indicate the extent to which they engage in each listed behaviour in the past week, on a 7-point scale ranging from *never* (1) to *every day* (7). Cronbach's α were .80 at T1 and .91 at T5.

Weekly flow at work was assessed with items from the Italian version of the Work-related flow inventory (Zito, Bakker, Colombo, & Cortese, 2015). Participants were asked to report about their experiences in the past week on a 7-point scale, ranging from 1 (*never*) to 7 (*always*). Three items per each dimension were used (Cronbach's α for an overall score at T2 and T3=.89, at T4=.90). For absorption (Cronbach's α at T2 and T3=.92, at T4=.93), an example item is "*I am totally immersed in my work*"; for work enjoyment (Cronbach's α at T2=.91, at T3=.89, and at T4=.92), an example item is "*I feel happy during my work*"; for intrinsic work motivation (Cronbach's α at T2 and T3=.80, at T3=.92), an example item is "*I get my work motivation from work itself, and not from the rewards for it*".

Data Analysis Strategy

In order to examine the effects of the intervention over time and compared to the control group, we used a series of mixed two-way repeated-measures analyses of variance (RM-ANOVA) with time (T1 and T5) by group (intervention & control) design. The within-person factor was time, and the between-person factor was the assigned condition. The Bonferroni correction factor was used to control for Type I error (Bland & Altman, 1995). Mixed RM-ANOVA was also used to examine changes in intentions and in the dimensions of flow over time (i.e., T2, T3, and T4, corresponding to the three weeks after the last workshop) and among the two groups, before proceeding with latent growth curve modelling.

Latent growth curve (LGC) modelling combined with a path model was used to test how individual trajectories of change in intentions over time related to subsequent expansion JC behaviours, and whether participation in the intervention influenced such trajectories. To do so, we created an intervention variable where participants in the intervention group were coded 1 and participants in the control group were coded 0. Moreover, we also tested the role of the antecedents of intention as postulated in the TPB,

i.e., attitudes, social norms, and PBC, in influencing weekly initial levels and changes of intention. Finally, to investigate how flow at work was related to the intervention and final JC behaviours, we created an LGC model of flow and nested it together with the other relationships described. Specifically, we proceeded as follows.

First, we tested a basic LGC model of intentions where we created a latent factor (Intercept) constrained to be constant for any individual across time by fixing values of 1 for factor loadings on the repeated weekly measures of our diary variables. Then, we used another latent variable (Slope) to represent the individual's trajectories of change in intentions. Paths from the Slope to the repeated weekly observed scores were used to indicate the rate of time, fixing loadings to 0, 1, and 2 given that our measures were collected for three consecutive working weeks, every week on the same workday (Friday). Slope and Intercept were allowed to covary (Duncan & Duncan, 2009). Preliminary testing showed that a linear model fits the data better than other shapes of growth over time. We then included five additional paths from our observed predictors (i.e., attitudes, descriptive and injunctive norms, PBC, and intervention) to the Intercept and Slope, and from the Slope and the Intercept to our observed post-measure of expansion JC. Finally, we built a basic LGM of the aggregate score of the flow dimensions, following the same procedure used for intentions. Given that a linear growth fit the data better than alternative shapes of change, we nested such basic LGM of flow together with the LGM already described and included a path from the intervention to the intercept of flow, and another path from the intercept of flow to post-measures of JC. Our model is shown in Figure 1.

RM-ANOVAs were run using the complete data set ($N_{intervention}$ =51, $N_{control}$ =50), while for LGC modelling, we used Full Information Maximum Likelihood. Analyses were run using SPSS v.21 and Amos package (Arbuckle, 2014). Model fit was determined based on the model chi-square (χ^2) and the ratio χ^2/df with values < 3.00 accepted as indicating a reasonable fit. While the root mean square error of approximation (RMSEA) can also be considered (Widaman & Thompson, 2003) because it evaluates the fit of the hypothesized model without comparison to a saturated baseline model (Wu & West, 2010), which is not possible within the multilevel framework (Curran, Obeidat, & Losardo, 2010), literature shows that RMSEA with small df can be misleading and

accordingly it should not be computed for models with low df (Kenny, Kaniskan, & McCoach, 2015).

Results

Tables 4 and 5 show the correlations among the study variables at different time points, while Table 6 shows the means, standard deviations, and t-tests comparing the means of the two groups for each variable at different time points.

Table 4

Correlations for Study Variables at T1 (N= 113) and T5 (N = 114).

Variable	1	2	3	4	5
1. Attitudes	-	.44**	.51**	.38**	.54**
2. Descriptive norms	.44**	-	.51**	.15	.43**
3. Injunctive norms	.51**	.51**	-	.19*	.35**
4. PBC	.38**	.15	.19*	-	.34**
5. Expansion job crafting behaviours	.54**	.43**	.35**	.34**	-

*$p < .05$ (2-tails); **$p < .01$ (2-tails).

Notes: T1 correlations are reported below the diagonal. T5 correlations are reported above the diagonal. PBC = Perceived Behavioural Control.

Table 5

Correlations for Study Variables at T2, T3, and T4.

	1	2	3	4	5	6	7	8	9	10	11	12
1. Intention T2	-											
2. Intention T3	.812**	-										
3. Intention T4	.840**	.871**	-									
4. Work enjoyment T2	.399**	.458**	.433**	-								
5. Work enjoyment T3	.417**	.497**	.435**	.844**	-							
6. Work enjoyment T4	.480**	.491**	.509**	.751**	.820**	-						
7. Absorption T2	.401**	.395**	.442**	.421**	.394**	.368**	-					
8. Absorption T3	.405**	.428**	.454**	.355**	.396**	.394**	.814**	-				
9. Absorption T4	.403**	.413**	.457**	.305**	.371**	.433**	.795**	.864**	-			
10. Work motivation T2	.382**	.468**	.490**	.666**	.642**	.589**	.550**	.493**	.463**	-		
11. Work motivation T3	.375**	.429**	.459**	.653**	.662**	.619**	.536**	.534**	.474**	.853**	-	
12. Work motivation T4	.352**	.380**	.426**	.495**	.598**	.671**	.459**	.457**	.495**	.735**	.893**	-

*$p < .05$ (2-tails); **$p < .01$ (2-tails).

Notes: N = 102.

Table 6

Descriptive Statistics and T-Tests for the Study Variables.

Variable	T1					T2					T3					T4					T5				
	Intervention group		Control group		*t*	Intervention group		Control group		*t*	Intervention group		Control group		*t*	Intervention group		Control group		*t*	Intervention group		Control group		*t*
	M	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*	
Attitudes	5.76	1.45	5.45	1.23	-1.23																5.86	1.24	5.38	1.32	-1.98*
Descriptive norms	5.58	1.41	5.18	1.42	-1.49																3.75	1.25	3.07	1.34	-2.79**
Injunctive norms	5.36	1.49	5.12	1.51	-.82																3.75	1.22	3.30	1.41	-1.82
PBC	4.67	2.05	5.18	1.47	1.54																5.21	1.17	4.82	1.59	-1.48
Intention						4.87	1.20	4.55	1.41	-1.34	4.75	1.28	4.17	1.39	-2.34*	4.89	1.18	4.22	1.38	-2.75**					
Absorption						4.21	1.06	3.35	1.32	-3.69***	4.10	1.02	3.37	1.41	-3.03**	4.21	.99	3.30	1.55	-3.56**					
Work enjoyment						3.80	.74	3.77	1.28	-.14	3.85	.85	3.67	1.14	-.92	3.99	.88	3.72	1.20	-1.34					
Work motivation						4.00	1.21	3.67	1.40	-1.30	3.91	1.22	3.59	1.57	-1.13	4.00	1.32	2.74	2.08	-3.83***					
Expansion JC	4.43	1.36	4.05	1.29	-1.54																3.95	1.34	2.64	2.06	-4.11***

*$p \leq .05$ **$p \leq .01$ ***$p \leq .001$

PBC = Perceived behavioural control. JC = Job crafting.

Mixed Repeated-Measures ANOVAs

Hypotheses 1 stated that participation in the intervention would have increased (a) attitudes, (b) descriptive and (c) injunctive social norms, (d) PBC, and (e) expansion-oriented JC behaviours from pre- to post-test and compared to the control group. The results of the interaction terms from the mixed two-way RM-ANOVAs are reported in Table 7.

Table 7
Results of the Mixed Two-Way Repeated Measures Analyses of Variance for the Pre-Post Measures.

Outcome variable	RM-ANOVA		
	F	***p***	**Power**
Attitudes	.23	.63	0.08
Descriptive norms	.45	.50	0.10
Injunctive norms	.30	.59	0.08
Perceived behavioural control	4.82	.03	0.58
Expansion job crafting behaviours	5.35	.02	0.63

Notes: Intervention group N = 52; Control group N = 48. Reported results are referred to the interaction between Time X Group (intervention/no intervention).

Regarding *attitudes*, results showed that there was no significant main effect for time ($F(1,98)=.06$, $p=.81$, $\eta_p^2=.01$), nor for the intervention ($F(1,98)=3.61$, $p=.06$, $\eta_p^2=.04$). Also, the interaction between time and intervention was not significant ($F(1,98)=.23$, $p=.63$, $\eta_p^2=.01$). Differently, for *descriptive norms*, results showed that there was a significant main effect of time ($F(1,98)=124.85$, $p<.001$, $\eta_p^2=.56$) and of the intervention ($F(1,98)=8.36$, $p<.01$, $\eta_p^2=.08$). Specifically, participants reported overall higher means of positive descriptive norms at pre- ($M=5.31$) compared to post-measures ($M=3.37$), and participants in the intervention group reported overall higher means ($M=4.66$) compared to participants in the control group ($M=4.02$). However, the interaction between time and group was not significant ($F(1,98)=.45$, $p=.50$, $\eta_p^2=.01$). For *injunctive norms*, results showed a significant main effect of time ($F(1,98)=114.54$, $p<.001$, $\eta_p^2=.54$) but no significant main effect for the intervention ($F(1,98)=3.01$, $p=.09$, $\eta_p^2=.03$). Descriptive statistics showed that overall means were higher at T1 ($M=5.18$) compared to T5 ($M=3.51$). However, the interaction term between time and group was not significant ($F(1,98)=.30$, $p=.59$, $\eta_p^2=.01$).

Overall, results showed that significant interactions between time and group were found only for *PBC* and expansion JC behaviours. Specifically, results showed that there

was no significant main effect of time (F(1,98)=.12, p=.73, η_p^2=.01) on PBC. Also, there was no significant main effect of the intervention on PBC (F(1,98)=.26, p=.61, η_p^2 =.01). In this case, there was, however, a significant interaction between time and intervention (F(1,98)=4.82, p=.03, η_p^2=.05). Descriptive statistics showed that while participants in the control group reported a decline in PBC over time ($\Delta M_{T1\text{-}5}$ =.37), in the intervention group PBC was boosted at the end of the study ($\Delta M_{T1\text{-}5}$ =-0.5).

As for *expansion-oriented JC behaviours*, results showed that there was a significant main effect of time (F(1,98)=28.96, p<.001, η_p^2 =.21), with participants reporting overall higher levels of JC at pre- (M=4.28) compared to post- (M=3.38) measures. Also, there was a significant main effect of the intervention on JC behaviours (F(1,98)=13.70, p<.001, η_p^2=.11), with participants in the intervention group reporting overall more frequent JC behaviours (M=4.25) compared to the control group (M=3.41). Besides, in this case, there was a significant interaction between time and intervention (F(1,98)=5.35, p=.02, η_p^2=.05). Specifically, descriptive statistics showed that while participants in both groups reported a decline in expansion JC behaviours over time, such a decline was less pronounced for participants in the intervention group ($\Delta M_{T1\text{-}5}$ =0.51) compared to participants in the control group ($\Delta M_{T1\text{-}5}$ =1.28). Overall, these findings provide support for Hypothesis 1b, Hypothesis 1d, and 1e, while Hypothesis 1a and 1c are rejected.

Results from a mixed RM-ANOVA examining changes in *intentions* over the three weeks following the workshops and among the two groups showed that there was a significant main effect of time (F(2,98)=3.71, p=.03, η_p^2=.04) and a significant main effect of the intervention (F(2,98)=6.20, p=.01, η_p^2=.06). Descriptive statistics showed that participants' levels of intentions were overall higher at T2 compared to T3 ($\Delta M_{T2\text{-}3}$ =.19, p=.051) and that participants in the intervention group reported overall higher intentions (M=4.84) compared to the control group (M=4.22). However, the interaction between time and intervention was not significant (F(2,98)=2.86, p=.06, η_p^2=.03).

Results from the ANOVAs examining changes in the dimensions of flow over the three weeks following the workshops and among the two groups, showed that, for *absorption*, there was a significant main effect of the intervention (F(2,98)=13.54, p<.001, η_p^2=.12), while neither the main effect of time (F(2,98)=.17, p=.85, η_p^2=.01) nor the interaction between time and intervention was significant (F(2,98)=1.49, p=.23,

η_p^2=.02). Descriptive statistics showed that overall participants in the intervention group reported higher scores of absorption (*M*=4.15) compared to participants in the control group (*M*=3.31). For *work enjoyment,* results showed that there was no significant main effect for time (*F*(2,98)=1.23, *p*=.29, η_p^2=.01), nor for the intervention (*F*(2,98)=.89, *p*=.35, η_p^2=.01). Also, the interaction between time and intervention was not significant (*F*(2,98)=1.79, *p*=.17, η_p^2=.02). For *work motivation,* results showed no significant main effect for time (*F*(2,98)=.07, *p*=.93, η_p^2 =.01) and for the intervention (*F*(2,98)=1.91, *p*=.17, η_p^2=.02). Also, the interaction between time and intervention was not significant (*F*(2,98)=2.13, *p*=.15, η_p^2 =.02).

Latent Growth Modelling

Hypotheses 2 and 4 focused on the relationships between the antecedents of intention as postulated in the TPB, and weekly initial levels of intentions in the three weeks following the workshops, and behavioural outcomes at the end of the study period. Moreover, Hypothesis 3 proposed a role of the intervention in influencing the trajectories of intentions over the three weeks after the workshops. Finally, Hypotheses 6 and 7 focused on the relations between the intervention and weekly flow, and between flow and engagement in subsequent expansion JC.

To test such hypotheses in a single model, we first built a basic LGM of behavioural intention with three time points[2]. We then added our T1 measures of attitudes, descriptive and injunctive norms, and PBC as predictors of initial levels of intentions. Also, we added paths from these variables to the slope of intention, to control for the effects of these theoretical motivational variables on the trajectories of change in intentions. Afterwards, we added our intervention variable dummy coded (0=no intervention; 1=intervention), to account for the role of the intervention on the trajectories of intentions over time and added a path from the intervention variable to the intercept and the slope of intention. We then included our T5 measure of expansion-oriented JC as a dependent variable of the intercept and the slope of intention. The model fit the data well: χ^2(13)=7.40, *p*=.88; χ^2/df=0.57. Inspection of the estimates revealed that, in this model, only attitudes (B=.40, *p* <.001) were significant predictors of the intercept of

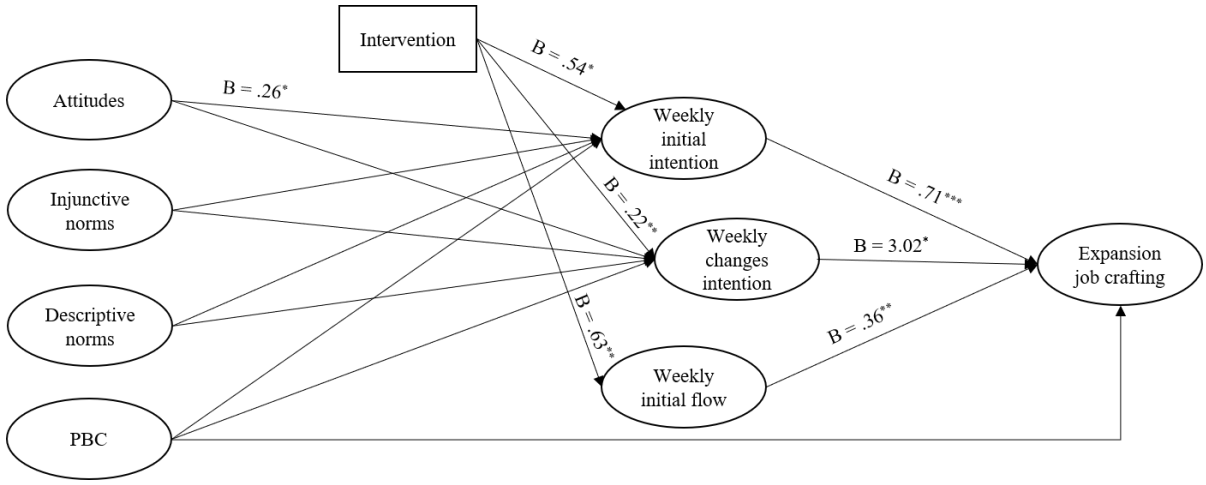
[2] Since preliminary analyses showed that participants in the two groups significantly differed as for gender distribution (G) and educational level (EDU), we first tested the effect of these two variables on the intercept and slope of weekly intentions. Results showed that neither G nor EDU had a significant effect on the intercept (G: B=-.29; *p*=.26; EDU: B=.11; *p*=.15) and on the slope (G: B=-.01; *p*=.15; EDU: B=.01; *p*=.55). Accordingly, we removed these variables from subsequent analyses.

intentions. Moreover, the intervention was a significant predictor of the slope (B=.24, p<.001) and of the intercept (B=.57, p=.01). In turn, both the slope (B=3.17, p<.01) and the intercept (B=.86, p<.001) of intentions were significant predictors of expansion-oriented JC behaviours measured at T5. Besides, we also tested a model including the baseline measure of PBC as a predictor of T5 expansion JC behaviours (Hypothesis 3). Results showed that PBC at the beginning of the study period was not a significant predictor of JC at T5 (B=-.01, p=.90).

In order to examine whether participation in the intervention influenced flow in the weeks following the workshops (Hypothesis 6) and if weekly flow was related to expansion JC at the end of the study period (Hypothesis 7), we examined the results of a final model including the trajectories of change of flow[3]. Findings showed that the final model fit the data well: $\chi^2(39)=105.92$, p<.001; $\chi^2/df=2.72$. Inspection of the estimates revealed that participation in the intervention was related to higher starting weekly levels of flow after the workshops (B=.63, p=.001). Also, such initial weekly levels of flow at work were significant positive predictors of expansion JC at T5 (B=.36, p=.003).

Figure 2

Results of the Final Model.



Notes.

*p≤.05; **p≤.01; ***p≤.001. Unstandardized significant coefficients are reported. PBC = Perceived Behavioural Control. Intervention dummy coded: 1 = Intervention group; 0 = Control group.

[3] The basic LGM of an overall dimensions of flow fit the data well: $\chi^2(1)=.50$, p=.48; $\chi^2/df = 0.50$

Overall, results from our final LGC model provide support for Hypothesis 2a, while Hypotheses 2b, 2c, and 2d are rejected. Hypothesis 3 is rejected, while Hypothesis 4a and 4b on the relations between the intervention and the trajectories of intentions are accepted. Besides, Hypothesis 5a and 5b on the relations between the trajectories of intention and T5 JC behaviours are accepted. Hypotheses 6 are accepted when considering an overall score of flow. Finally, Hypothesis 7 on the link between flow and expansion JC is accepted.

Discussion

This paper presented an intervention study designed to support employees' engagement in expansion-oriented JC behaviours (Petrou et al., 2012) based on the TPB (Ajzen, 1991) and including intervention techniques based on behaviour change literature (e.g. implementation intentions; Gollwitzer, 1999). To the best of our knowledge, this is the first JC intervention study specifically focused on the examination of the theoretical mechanisms of action involved in intervention effectiveness. Our findings show that the JC intervention based on the TPB can be implemented to sustain employees' expansion-oriented JC because it prompts perceptions of control related to such behaviours over time, which would otherwise decline more steeply over time, eventually resulting from being effective in sustaining employees' efforts to engage in JC. Moreover, results from our final LGM show that participation in the intervention prompted higher initial weekly intentions to craft one's work, as well as a higher rate of weekly changes in such intentions, compared to the control group. Apart from the effect of the intervention, only baseline attitudes were a significant predictor of the initial levels of weekly intentions, while the other theoretical predictors of intention were not significant. In turn, both weekly initial levels and changes in intentions were significant predictors of expansion JC at the end of the study period. These findings suggest that our JC intervention was effective in supporting employees' development of behavioural intentions to be translated into actual expansion-JC behaviours. Moreover, the finding that the intervention was a significant predictor of weekly changes in intentions may signal that it was effective in supporting employees' coping plasticity referred to their JC intentions.

Besides, results also showed that participation in the intervention triggered higher weekly experiences of concentration and immersion in the work tasks, which may suggest that the intervention provided the employees with the knowledge and tools to experience

higher awareness and involvement in their work activities. Results also showed that the intervention was a positive predictor of higher weekly levels of overall flow, which eventually predicted expansion-JC measured at the end of the study period. This suggests that employees who are immersed in their work and enjoy it intensely broaden their action repertoires to proactively expand their work characteristics and make the work environment more stimulating and resourceful (Hobfoll, 2002; Fredrickson, 2001). Based on our findings, such a virtuous cycle can be supported through intervention initiatives supporting proactive work redesign, based on behaviour change techniques.

Against this background, this intervention study contributes to the literature on JC and behavioural change interventions in several ways. By applying the TPB to the design and evaluation of a JC intervention, we were able to unpack the mechanisms underlying why and under what conditions such a positive psychology intervention can be effective (Donaldson, Lee, & Donaldson, 2019). Specifically, our findings show that such interventions can be effective when they are designed to support higher employees' awareness towards the intentional ways and tools that can be used to balance the demands and resources of their work. In doing so, this research contributes to theory-driven evaluation science by detailing the causal processes expected to happen during JC interventions, as well as the steps to be taken and techniques to be applied in order to support behavioural outcomes in the workplace (Rogers, 2000; Chen, 1990). Such an approach allows improving evaluation design further than by only investigating the connection between the intervention and the expected outcomes, in that it provides information about the role of contextual factors that may play a role in explaining the effects of the intervention (Donaldson et al., 2019). Indeed, our results showed that while interventions can be effective to sustain JC if they provide behavioural tools designed to support individual intentions and PBC, pre-existing positive attitudes towards individual proactive job redesign behaviours do play a role in the extent to which individuals intend to craft their work on a weekly basis.

Moreover, our results also show that helping employees in the formation of implementation intentions can significantly influence the trajectories of changes in weekly intentions. This suggests that providing employees with such a self-regulatory strategy useful to attain behaviour goals by facilitating the initiation of planned responses

upon encountering critical situations (Bieleke, Legrand, Mignon & Gollwitzer, 2018) is effective when it comes to sustaining proactive behaviours in the workplace.

Limitations and Implications for Future Research and Practice

Despite its merits, this intervention study does not come without limitations. First, the behavioural outcomes of our intervention were assessed at only one time-point, four weeks after the last workshop. Thus, we have no information about the long-lasting effects of the intervention, nor on how personal beliefs and contextual factors may interact with the effects of the intervention over more extended time frames. Future research could include repeated follow-up measures to understand the effects of the intervention and the trajectories of change in behavioural outcomes, improving the evaluation of the effects of the intervention over time.

Second, in our study, we adopted the JD-R conceptualisation of JC and focused explicitly on specific expansion-oriented JC (i.e., seeking resources and challenges). Accordingly, we have no information about whether and how our intervention could have an effect on helping employees in positively channel reduction-oriented efforts to shape one's work, or on dimensions of JC that refer to other theoretical proposals. Future intervention studies could try to tailor the structure and contents of our intervention to include different JC dimensions and support a broader range of proactive behaviours aiming at redesigning one's work.

Third, in our study, we compared participants in the intervention group to participants who received no intervention. Future studies could compare more than two groups, including different training conditions, in order to investigate which intervention is more effective and why in supporting JC. For example, future studies could compare the effects of different training, where one may focus only on improving motivational drivers of intention, another one only on supporting the volitional aspects of intentions, and another one that implements our combined motivational and volitional intervention. By doing so, it would be possible to further understanding about the contribution of different phases of behavioural formation in improving training effectiveness.

Our study holds practical value that is key to inform the design of participatory initiatives to job redesign. The approach that we adopted supports the validity of designing, implementing, and evaluating organisational interventions based on an overarching theoretical framework (namely, in our study, the TPB), which allows

unpacking the mechanisms of action involved in intervention effectiveness. This suggests that participatory job redesign initiatives are likely to benefit from their inscription within validated theoretical frameworks that help in identifying which intervention techniques are likely to be more effective.

Based on our results, interventions that aim at effectively supporting expansion-oriented JC should include not only motivational techniques that sustain and boost employees' perceptions of control over their work environment, but also provide tools to translate intentions into actual behaviours. Among these, interventions can benefit from including coping strategies related to goal achievement that strengthens the association between relevant critical situations and planned responses. Indeed, helping employees in the formation of implementation intentions referred to their strategies to expand the work characteristics can facilitate behavioural responses in critical situations that may otherwise derail individual motivations, eventually resulting in being beneficial for goal attainment referred to proactive individual job redesign.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Arbuckle, J. L. (2014). Amos (Version 23.0) [Computer Program]. Chicago: IBM SPSS.

Bakker, A. B. (2005). Flow among music teachers and their students: The cross-over of peak experiences. *Journal of Vocational Behavior*, 66, 26–44.

Bakker, A. B. (2008). The work-related flow inventory: Construction and initial validation of the WOLF. *Journal of Vocational Behavior*, 72, 400–414.

Bakker, A. B., & Demerouti, E. (2014). Job demands-resources theory. In P. Y. Chen, & C. L. Cooper (Vol. Eds.), *Work and wellbeing: Wellbeing: A complete reference guide*. Vol. 3. Work and wellbeing: Wellbeing: A complete reference guide (pp. 37–64). Chichester, UK: Wiley-Blackwell.

Bandura, A. (1989). *Human agency in social cognitive theory*. American psychologist, 44, 1175.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50, 248–287.

Behling, O., & Law, K. S. (2000). *Translating questionnaires and other research instruments: Problems and solutions*. Thousand Oaks, CA: Sage.

Benner, P. (1984). *From novice to expert: Excellence and power in clinical nursing practice*. Addison-Wesley, Menlo Park, CA, US.

Berg, J. M., Dutton, J. E., Wrzesniewski, A., & Baker, W. E. (2008). *Job crafting exercise*. University of Michigan: Center for Positive Organizational Scholarship.

Bieleke, M., Legrand, E., Mignon, A., & Gollwitzer, P. M. (2018). More than planned: Implementation intention effects in non-planned situations. *Acta Psychologica*, 184, 64-74.

Bipp, T., & Demerouti, E. (2015). Which employees craft their jobs and how? Basic dimensions of personality and employees' job crafting behaviour. *Journal of Occupational and Organizational Psychology*, 88, 631-655.

Bland, J. M., & Altman, D. G. (1995). Multiple significance tests: the Bonferroni method. *BMJ: British Medical Journal*, 310, 170-171.

Bruning, P. F., & Campion, M. A. (2018). A Role–resource approach–avoidance model of job crafting: A multimethod integration and extension of job crafting theory. *Academy of Management Journal*, 61, 499-522.

Chen, H. T. (1990). *Theory-driven evaluations*. Thousand Oaks, CA: Sage.

Costantini, A., & Sartori, R. (2018). The intertwined relationship between job crafting, work-related positive emotions, and work engagement. Evidence from a positive psychology intervention study. *The Open Psychology Journal*, 11, 1-12.

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety: Experiencing flow in work and play*. San Francisco, CA: Jossey-Bass.

Curran, P. J., Obeidat, K., & Losardo, D. (2010). Twelve frequently asked questions about growth curve modeling. *Journal of Cognition and Development*, 11, 121-136.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 319–338.

Demerouti, E. (2006). Job characteristics, flow, and performance: The moderating role of conscientiousness. *Journal of Occupational Health Psychology*, 11, 266–280.

Demerouti, E. (2014). Design your own job through job crafting. *European Psychologist*, 19, 237–247.

Demerouti, E., Bakker, A. B., & Halbesleben, J. R. B. (2015). Productive and counterproductive job crafting: A daily diary study. *Journal of Occupational Health Psychology*, 20, 457-469.

Demerouti, E., Bakker, A. B., Sonnentag, S., & Fullagar, C. J. (2012). Work-related flow and energy at work and at home: A study on the role of daily recovery. *Journal of Organizational Behavior*, 33, 276-295.

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). New York: Psychology Press.

Demerouti, E., Peeters, M. C., & van den Heuvel, M. (2019). Job Crafting Interventions: Do They Work and Why?. In *Positive Psychological Intervention Design and Protocols for Multi-Cultural Contexts* (pp. 103-125). Springer, Cham.

Demerouti, E., Xanthopoulou, D., Petrou, P., & Karagkounis, C. (2017). Does job crafting assist dealing with organizational changes due to austerity measures? Two studies among Greek employees. *European Journal of Work and Organizational Psychology*, 26, 574-589.

Donaldson, S.L., Lee, J. Y., & Donaldson, S. I. (2019). The effectiveness of positive psychology interventions in the workplace: A theory-driven evaluation approach. In L. E. van Zyl and S. Rothmann Sr. (eds.), *Theoretical approaches to multi-cultural positive psychological interventions*.

Dubbelt, L., Demerouti, E., & Rispens, S. (2019). The value of job crafting for work engagement, task performance, and career satisfaction: Longitudinal and quasi-experimental evidence. *European Journal of Work and Organizational Psychology*, 28, 300-314.

Duncan, T. E., & Duncan, S. C. (2009). The ABC's of LGM: An introductory guide to latent variable growth curve modeling. *Social and Personality Psychology Compass*, 3, 979-991.

Fishbein, M., & Ajzen, I. (2012). *Predicting and changing behavior: The reasoned action approach*. New York: Psychology Press.

Fox, S., & Spector, P. (2010). Instrumental counterproductive work behavior and the theory of planned behavior. A "cold cognitive" approach to complement "hot affective" theories of CWB. In L. L. Neider and C. A. Schriesheim (Eds.). *The "dark" side of management*. Charlotte, NC: IAP, pp. 93-114.

Francis, J., Eccles, M. P., Johnston, M., Walker, A. E., Grimshaw, J. M., Foy, R., Kaner, E. F. S., Smith, L. & Bonetti, D. (2004). *Constructing questionnaires based on the theory of planned behaviour: A manual for health services researchers*. Newcastle upon Tyne, UK: Centre for Health Services Research, University of Newcastle upon Tyne.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist: Special Issue*, 56, 218–226.

Fullagar, C. J., & Kelloway, E. K. (2009). Flow at work: An experience sampling approach. *Journal of Occupational and Organizational Psychology*, 82, 595-615.

Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493–503.

Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology*, 38, 69-119.

Gordon, H. J., Demerouti, E., Le Blanc, P. M., Bakker, A. B., Bipp, T., & Verhagen, M. A. (2018). Individual job redesign: job crafting interventions in healthcare. *Journal of Vocational Behavior*, 104, 98-114.

Hakanen, J. J., Peeters, M. C., & Schaufeli, W. B. (2018). Different types of employee well-being across time and their relationships with job crafting. *Journal of Occupational Health Psychology*, 23, 289-301.

Hobfoll, S. E. (2002). Social and psychological resources and adaptation. *Review of General Psychology*, 6, 307–324.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6, 1–55.

Karasek, R. A., & Theorell, T. (1990). Health work. *New York: Basic Book*.

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research*, 44, 486-507.

Kooij, D. T., van Woerkom, M., Wilkenloh, J., Dorenbosch, L., & Denissen, J. J. A. (2017). Job crafting towards strengths and interests: The effects of a job crafting intervention on person-job fit and the role of age. *Journal of Applied Psychology*, 102, 971–982.

Kolb, D. A., Boyatzis, R. E., & Mainemelis, C. (2001). Experiential learning theory: Previous research and new directions. *Perspectives on thinking, learning, and cognitive styles*, 1, 227-247.

Lichtenthaler, P. W., & Fischbach, A. (2018). A meta-analysis on promotion- and prevention-focused job crafting. *European Journal of Work and Organizational Psychology*, 1-21.

Lin, C. Y., Scheerman, J. F., Yaseri, M., Pakpour, A. H., & Webb, T. L. (2017). A cluster randomised controlled trial of an intervention based on the Health Action Process Approach for increasing fruit and vegetable consumption in Iranian adolescents. *Psychology & Health*, 32, 1449-1468.

Luthans, F., Avey, J. B., Avolio, B. J., Norman, S. M. and Combs, G. J. (2006). Psychological capital development: toward a micro-intervention. *Journal of Organizational Behavior*, 27, 387-393.

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., ... & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine*, *46*, 81-95.

Nakamura, J., & Csikszentmihalyi, M. (2002). The concept of flow. In C. R. Snyder & J. S. Lopez (Eds.), *Handbook of positive psychology* (pp. 89–105). New York: Oxford University Press.

Oprea, B. T., Barzin, L., Vîrgă, D., Iliescu, D., & Rusu, A. (2019). Effectiveness of job crafting interventions: a meta-analysis and utility analysis. *European Journal of Work and Organizational Psychology*, 1-19.

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). In making things happen: A model of proactive motivation. *Journal of Management*, 36, 827–857.

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

Rogers, P. J. (2000). Program theory evaluation: Not whether programs work but how they work. In D. L. Stufflebeam, G. F. Madaus, & T. Kellaghan (Eds.), *Evaluation models:*

Viewpoints on educational and human services evaluation (pp. 209–232). Boston, MA: Kluwer.

Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior*, 102, 112-138.

Sakuraya, A., Shimazu, A., Imamura, K., Namba, K., & Kawakami, N. (2016). Effects of a job crafting intervention program on work engagement among Japanese employees: a pretest-posttest study. *BMC Psychology*, 4, 49.

Sheeran, P. (2002). Intention—behavior relations: A conceptual and empirical review. *European Review of Social Psychology*, 12, 1-36.

Sheeran, P., & Silverman, M. (2003). Evaluation of three interventions to promote workplace health and safety: evidence for the utility of implementation intentions. *Social Science & Medicine, 56*, 2153-2163.

Steinmetz, H., Knappstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How Effective are Behavior Change Interventions Based on the Theory of Planned Behavior? *Zeitschrift für Psychologie*, 224, 216-233.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA 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.

van den Heuvel, M., Demerouti, E., & Peeters, M. C. (2015). The job crafting intervention: Effects on job resources, self-efficacy, and affective well-being. *Journal of Occupational and Organizational Psychology*, 88, 511-532.

van Wingerden, J., Bakker, A. B., & Derks, D. (2016). A test of a job demands-resources intervention. *Journal of Managerial Psychology*, 31, 686–701.

van Wingerden, J., Bakker, A. B., & Derks, D. (2017). Fostering employee well-being via a job crafting intervention. *Journal of Vocational Behavior*, 100, 164-174.

van Wingerden, J., Derks, D., & Bakker, A. B. (2017). The impact of personal resources and job crafting interventions on work engagement and performance. *Human Resource Management*, 56, 51-67.

Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 132, 249-268.

Widaman, K. F. & Thompson, J. S. (2003). On specifying the null model for incremental fit indices in structural equation modeling. *Psychological Methods*, 8, 16–37.

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

Wu, W., & West, S. G. (2010). Sensitivity of fit indices to misspecification in growth curve models. *Multivariate Behavioral Research*, 45, 420-452.

Zito, M., Bakker, A., Colombo, L., & Cortese, C. G. (2015). A two-step study for the Italian adaptation of the work-related flow (Wolf) inventory: The I-Wolf. *TPM-Testing, Psychometrics, Methodology in Applied Psychology*, 22, 553-570.

CHAPTER 6

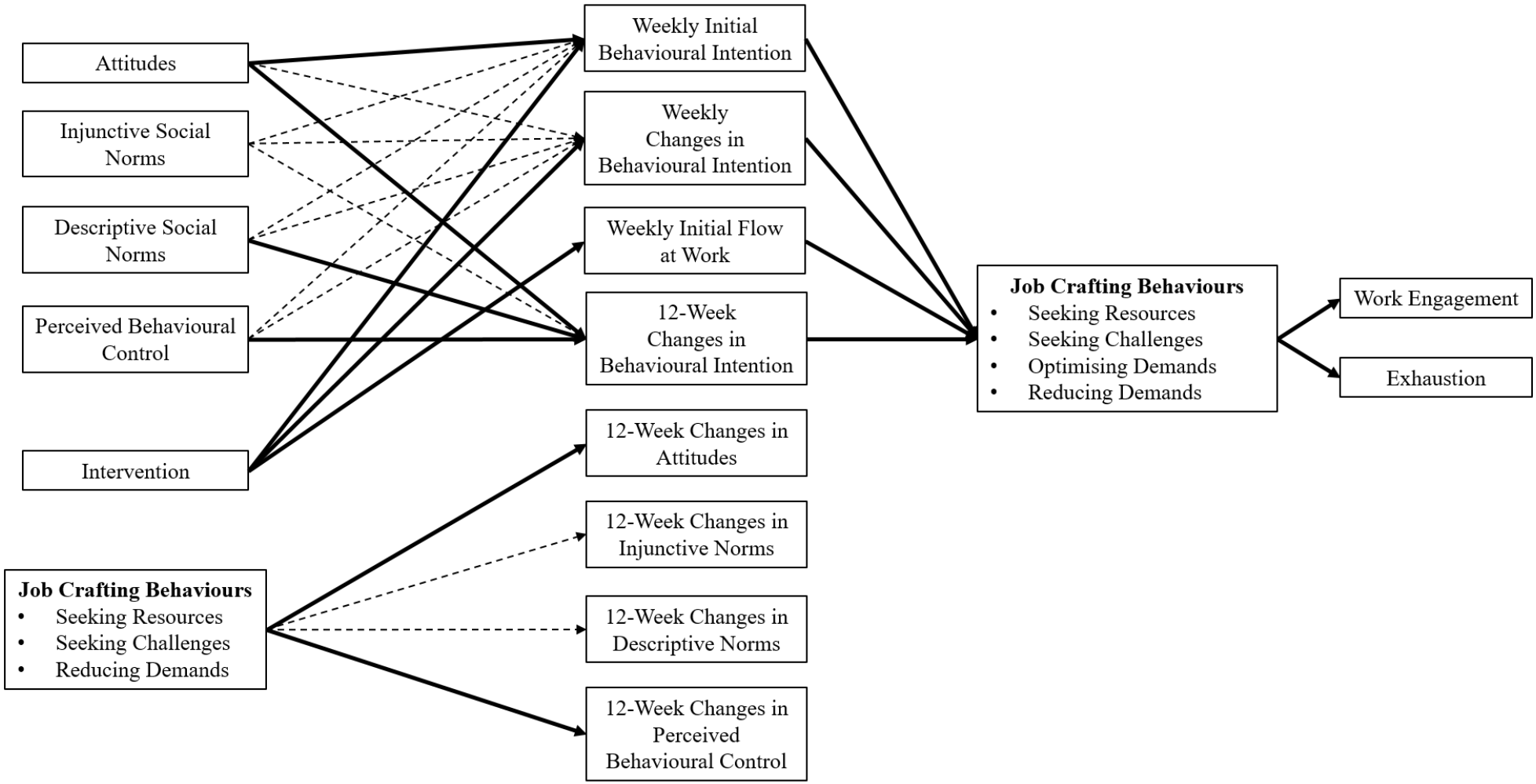
General Discussion

Job crafting refers to a set of employees' proactive behaviours, intentionally enacted to balance the resources and the demands of the work environment. Being a bottom-up work redesign process, job crafting unfolds spontaneously among employees, based on their perceptions and evaluations, referred to both personal beliefs and social boundaries. In turn, depending on the behavioural strategies used to craft one's work, employees may experience, as a result, different levels of well-being. Moreover, interventions can be designed and implemented to support employees' proactive efforts to redesign their work.

The main aim of this dissertation was to gain insights into the nature of behavioural job crafting, its antecedents, and intervention opportunities. Specifically, it aimed at shedding light on the role of different cognitive factors, referred to personal and social beliefs, influencing employees' intentions to craft their job, and whether it is possible to stimulate job crafting by leveraging on such factors. To do so, we presented three empirical studies with different research designs and one theoretical chapter. In this final chapter, we will offer a summary of the main findings, which are depicted in Figure 1, and present the answers to the research questions that guided this project, which designate implications for the literature and practice, and avenues for future research. We will then close this dissertation with a general conclusion.

Figure 1

Summary of the Empirical Findings.



Notes. Solid lines represent supported hypothesised paths. Dash lines represent non-supported hypothesised paths. Control variables are not reported for the sake of clarity.

Main Findings

Question 1. ***How do different job crafting strategies and behaviours map into an overarching, hierarchical conceptualisation of behavioural job crafting?***

Chapter 2 presented three empirical studies conducted with different designs, i.e., cross-sectional, three-wave longitudinal, and weekly diary. These studies aimed to investigate the validity of a four-dimensional, hierarchical conceptualisation of behavioural job crafting that, together with seeking resources, seeking challenges, and decreasing demands, also accounts for behaviours aiming at optimising hindering demands.

Furthermore, before introducing our empirical studies, we presented a systematic literature review on the job crafting scales developed and adapted to measure behavioural job crafting, which allowed us to dig into how it has been operationalised among different cultural contexts and in light of different methodological choices. Our literature review showed that many different scales had been developed or adapted to measure behavioural job crafting, leading to a somehow inconsistent structure of job crafting among different countries and studies. Explaining the reasons behind such inconsistencies is relevant because our understanding of job crafting and its nomological network depends on its operationalisation. Based on our systematic search, we could highlight that scale development and validation has to date been based on different psychometric criteria and operational choices, which we tried to address when testing our proposed overarching structure of behavioural job crafting.

In our proposal, building on recent theoretical recommendations (cf. Zhang & Parker, 2018), we hypothesized a hierarchical structure encompassing behaviours referred to both expansion (i.e., seeking resources and challenges) and contraction (i.e., decreasing and optimising hindering demands) strategies, and made up of both reflective and formative indicators. To test the validity of this operationalisation, we first investigated its factorial structure in an explorative (EFA) and confirmative (CFA) manner, using cross-sectional data collected in a sample of 939 Italian employees. In both cases, a four-factor structure fit the data well, and results showed that one of the items that was originally included as part of the dimension of decreasing hindering demands actually refers to the dimension of optimising demands. The validity of the proposed four-dimension structure was also investigated to understand whether it replicated at the trait

and state level of analysis. To do so, we collected weekly data over three consecutive working weeks, among 199 Italian employees. Results from a multilevel confirmatory factor analysis showed that the four job crafting behaviours fluctuated weekly and that the proposed structure replicated at both the general and the state level. Besides, results from a three-wave data collection among 226 employees showed that individual differences in the extent to which employees tend to craft their job are rather stable over four months. Finally, findings from our hierarchical model showed that job crafting could be better characterised as defined by its behavioural facets than from two broad classes of strategies encompassing behaviours. More specifically, results provided evidence for the validity of job crafting as characterised by effortful actions aiming at approaching the characteristics of the job (i.e., seeking resources and challenges, and optimising demands) rather than by withdrawing behaviours aiming at shrinking the work environment (i.e., decreasing hindering demands). In turn, such an overarching job crafting construct showed to be positively related to work engagement and negatively related to exhaustion.

Overall, these findings contribute to shed light on the nature of job crafting and to unpack its behavioural facets. Our studies show that employees craft their job by expanding their work characteristics, which results not only from seeking more resourceful aspects or by engaging in extra and new tasks but also by allowing a better resource allocation through the optimisation of work processes. Differently, decreasing the demanding aspects of the job by avoiding them results in a contraction of the work characteristics, which counteracts the effects of the other job crafting behaviours. This suggests that behavioural job crafting is better characterised by effortful actions to make the work environment more resourceful than by behaviours that purposefully aim to avoid job demands perceived as excessive.

Question 2. ***To what extent is the TPB an adequate framework to predict and explain job crafting behaviours?***

Chapter 3 presented a two-wave, cross-lagged panel study examining how attitudes, injunctive and descriptive norms, and PBC relate to employees' intentions to craft their job and whether such an intention is effectively translated into actual behaviours. Besides, adopting a bidirectional perspective and a dynamic approach to the study of the psychological antecedents of job crafting, we also proposed that not only beliefs fuel intention as an antecedent of behaviour, but also that previous engagement in

job crafting serves as a source for shaping personal beliefs related to it (Bem, 1972). Thus, we suggested that job crafting behaviours play a role in defining the psychological perceptions related to the work environment and appropriate behaviours in it enacted, such that not only they are determined by personal and social beliefs but also they contribute to shaping such beliefs and their interpretations, which in turn define subsequent behaviour formation.

Results from two-wave data collected among 346 employees working in different organisations and functions provided support for the validity of the theory of planned behaviour (Ajzen, 1991) to explain job crafting and showed that the motivational drivers of intention played different roles in increasing or decreasing its rate of change. Specifically, findings showed that descriptive norms and perceptions of behavioural control were significant predictors of changes in employees' intentions to craft their work. At the same time, positive individual attitudes towards job crafting led to lower changes in intentions. Moreover, data supported our hypothesis that employees' previous engagement in job crafting served as a source for shaping cognitive beliefs underlying it, specifically regarding attitudes and perceptions of behavioural control.

Overall, these findings show that co-workers' observed proactive work redesign provides important contextual cues influencing employees' intentions towards their direct involvement in job crafting. Also, the extent to which employees perceive that they have the skills and abilities to craft their work significantly influences the fluctuations occurring in their intentions. In turn, engagement in job crafting is likely to lead to a virtuous cycle in which employees who craft their work develop positive attitudes about such proactive behaviours and high sense of control about them, which in turn further fuel intentions and eventually behaviours. Taken together, these results suggest the importance of providing employees with initiatives supporting their knowledge about the strategies that can be used to craft one's work, leveraging on the crucial effects of modelling (Bandura, 1977) and of experienced sense of control in shaping intentions, which in turn define behaviours. Moreover, given that intentions showed to be significant predictors of job crafting behaviours, even when they fluctuated over time, our findings further highlight the importance of providing employees with the tools and techniques that can be used to translate such intentions into actual job crafting behaviours.

Question 3. ***Can the TPB be a valid framework to design job crafting interventions that are effective to sustain behavioural job crafting and employees' well-being?***

Chapter 4 presented a theoretical contribution to how the TPB can represent a valid framework for designing job crafting interventions. We suggested that the theoretical mechanisms of the TPB can be used to tailor the phases of job crafting interventions based on motivational and implementation processes (Steinmetz et al., 2016), and to select the most effective tools and techniques to be used during interventions. Moreover, we proposed that such a theoretical framework can provide effective practical recommendations for the design and structure of psychological interventions supporting employees' proactive adjustment to the work environment in multi-cultural contexts because it builds on common psychosocial mechanisms driving behaviours (Wiethoff, 2004). Applying the TPB to job crafting interventions allows identifying specific components that can be influenced through the intervention, eventually promoting behaviour change in terms of higher job crafting. Accordingly, drawing on taxonomies developed in the literature on behaviour change (cf. Michie et al., 2013), we provided directions about the techniques that can be used to support each employees' belief underlying their intentions to engage in job crafting (i.e., attitudes, social norms, perceived behavioural control), and tools to translate their intentions into behaviours. Drawing on evidence from research in the field of cognitive neuroscience, we further proposed that interventions aiming at supporting job crafting should focus on expansion strategies because behaviours forming such a domain are associated to positive information that makes cognitive functions more efficient (Sharot, Korn, & Dolan, 2011). Thus, behaviour formation and change literature suggests that job crafting interventions are likely to benefit from strengthening positive beliefs and information associated with proactive work redesign, additionally suggesting that interventions should focus on expansion behaviours that are linked to higher well-being (Rudolph, Katz, Lavigne, & Zacher, 2017), i.e., positive cognitive evaluations.

Chapter 5 presented a quasi-experimental intervention study examining the effectiveness of a job crafting intervention based on the TPB. Drawing on the theoretical considerations noted in Chapter 4, we designed a new job crafting intervention that built on knowledge from behaviour formation and change literature and tested its effectiveness in supporting both employees' engagement in expansion-oriented job crafting behaviours

and flow at work. Specifically, our job crafting intervention was designed based on the phases of the first job crafting intervention introduced in the literature (cf. van den Heuvel, Demerouti, & Peeters, 2015), integrated with elements from the TPB and research on implementation intentions (Gollwitzer, 1999). We proposed that employees taking part to our workshops aiming at enhancing the motivational variables that drive intentions and learning the techniques to translate their intentions into actual behaviours would have been better able to craft their work in an expansion-oriented way. Moreover, we suggested that by doing so, employees would also have been better able to experience flow at work because of increased balance experienced between their job challenges and their resources. Pre- and post-measures and weekly diaries were collected among 115 employees, comprehending participants in both a control and an intervention group. Results from RM-ANOVAs and latent change growth model showed that the intervention was effective in supporting higher perceptions of behavioural control among employees in the intervention compared to those in the control group. Also, participation in the intervention prompted higher weekly initial intentions to engage in expansion job crafting and higher weekly flow at work, which in turn were both significantly related to expansion-oriented behaviours measured eight weeks after the starting of the intervention.

Concerning Question 3, we can conclude that the TPB represents a useful framework to design and implement job crafting interventions providing the employees with the tools needed to craft their work in an expansion-oriented manner effectively. Moreover, such an intervention approach can be used to sustain beliefs driving intentions to engage in job crafting, and support coping plasticity referred to job crafting intentions, which in turn can serve to sustain employees' states of flow. This means that the job crafting intervention based on the TPB, focusing on both motivational and implementation processes, can enhance not only employees' proactive work redesign but also employees' ability to be aware and modulate their behavioural intentions and subsequent responses in a manner that allows their positive adaptations to the work environment.

Theoretical Contributions and Implications for the Literature

Behavioural Job Crafting

Within the JD-R framework to job crafting (Tims & Bakker, 2010; Tims, Bakker, & Derks, 2012), we found that the dimension of optimising hindering job demands (Demerouti & Peeters, 2018) positively contributes to the formation of an overarching job crafting construct. It seems that employees who optimise their work by redefining costly work processes or coming out with new solutions to organise tasks better eventually expand their work characteristics thanks to better resource allocation.

On the contrary, decreasing hindering job demands negatively contributes to a higher-order job crafting formative construct, suggesting that this strategy is not consistent with the complex set of self-initiated behaviours redesigning the work characteristics by enriching them, which eventually constitute behavioural job crafting. This finding corroborates the theoretical proposal of Zhang and Parker (2018) that current measures of avoidance crafting do not account for active behaviours that are part of deliberate crafting strategies. Thus, while optimising job demands may imply quitting demanding tasks, it differs from decreasing hindering job demands in that it encompasses active efforts to allow improved resource allocation. This component is missing from the conceptualisation of decreasing hindering job demands, referring to retracting work behaviours in situations that are negatively perceived.

These findings have theoretical implications regarding the role of behavioural job crafting as a mechanism linking the work characteristics and experienced well-being at work as postulated in the JD-R theory (Bakker & Demerouti, 2014). Specifically, our results suggest that gain spirals between work engagement and higher job resources can be facilitated through employees' engagement in redesign behaviours consisting in proactively trying to improve job resources, seeking more challenges, and optimising demands. On the other side, behaviours aiming at decreasing hindering demands constitute conscious (but possibly not proactive) efforts that are likely to result in self-defeating outcomes. These behaviours may arise as a result of perceived negative work situations, which are likely to occur specifically when employees are already affected by exhaustion because the perceived high demands will lead employees to try to avoid them. In turn, employees' engagement in withdrawal behaviours referred to job demands are likely to lead to even higher job demands, because of demand accumulation over time,

eventually defining loss spirals threatening well-being at work. The contribution of our findings to such theoretical mechanisms underlying employees' well-being at work is further highlighted by our results showing that individual differences in engagement in different job crafting behaviours are rather stable when assessed at three time points in four months. This suggests that employees tend to form habits regarding their own ways of managing their work characteristics, irrespective of them being functional (i.e., when referred to expansion-oriented behaviours) or not (i.e. when referring to behaviours aiming at decreasing hindering demands). Thus, gain or loss spirals are likely to perpetuate if initiatives are not developed to support employees' positive redesign efforts.

Just like increasing job resources, seeking challenges, and reducing job demands (cf. Petrou, Demerouti, Peeters, Schaufeli, & Hetland, 2012), also optimising demands fluctuates over relatively close time points, i.e., on a weekly basis. This suggests that such behaviours are characterised by both a general individual tendency and by a more contextual component, which varies based on the contingencies of the work environment and personal motivational states. From a theoretical point of view, this finding is particularly interesting because it implies that behavioural strategies shaping and shaped by the work characteristics and motivational outcomes fluctuate, providing a possible way to change established habits that, in the long term, may be detrimental and dysfunctional. Specifically, given that optimising job demands aims at tackling demanding characteristics to allow better functioning that is, it comprises elements of simply decreasing hindering demands, health-impairment and motivational processes (Bakker & Demerouti, 2014) may be moderated in the long term by employees' consolidation of their own weekly strategies aiming at optimising the work processes rather than simply withdraw from costly demands.

Personal and Social Beliefs Underlying Job Crafting Behaviours

Intentional behaviours are driven by a set of underlying motivational variables, i.e., attitudes, social norms, and perceptions of behavioural control (Ajzen, 2015). Drawing on evidence from research showing job crafting as an intentional behaviour (Bipp & Demerouti, 2015), we examined if and how these motivational variables contribute to building employees' intentions to engage in job crafting behaviours and changes occurring in such intentions. By adopting a dynamic examination of the mediation processes contributing to job crafting behaviour formation, we were able to

uncover how different beliefs referred to both the individual and the social context of work contributed to higher or lower changes in employees' intentions towards their engagement in proactive redesign efforts. Moreover, we further contributed to deepening knowledge on the formation of job crafting by integrating the theory of planned behaviour with self-perception theory (Bem, 1972), stating that individuals come to know their own attitudes and beliefs by inferring them from observation of their overt behaviours and circumstances where these occur.

Our two-time repeated measures over 12 weeks from the same employees allowed us to explore the relationships between our theoretical variables accounting for changes occurring over time. Employees holding positive attitudes towards job crafting behaviours are likely to keep stable their original intentions to craft their work. Differently, when they observe that their co-workers and supervisors engage (or not) in such behaviours, they are likely to change their intentions towards job crafting accordingly. Also, they are more likely to change their intentions based on their levels of perceived behavioural control, meaning that the more they feel in control over their work environment, the more they modulate their intentions to engage in job crafting. In turn, employees' previous engagement in job crafting behaviours positively influenced changes in attitudes referred to job crafting. That is, employees' perceptions of job crafting as a positive strategy to redesign work fluctuated based on the extent to which employees previously crafted their work. Likely, engagement in job crafting behaviours shaped perceptions of behavioural control to them related, such that the more employees engaged in proactive redesign behaviours, the more their perceptions of control related to how it is possible to balance their demands and resources proactively fluctuated over three months. This may suggest that by crafting their work, employees expand their resources and make the work environment more challenging. As a result, the crafted work environment may require the development of incremental or diverse skills, causing initial perceptions of behavioural control to change as a result of enacted behaviours. Finally, despite research suggesting that stability of intentions is a useful index of intention strength (Webb & Sheeran, 2006), our findings showed that changes occurring in intentions over 12 weeks were still a significant predictor of job crafting behaviours. The key characteristic of job crafting is that it is a proactive work behaviour enacted under the condition of choice (Bruning & Campion, 2018). Accordingly, employees who built

intentions to engage in such behaviours are likely to develop a sense of commitment to their intentions, which eventually result strong enough to predict subsequent behaviours despite fluctuations occurring during time (Kiesler, 1971; Salancik, 1977).

In short, by modelling the cross-lagged changes occurring between the motivational and behavioural variables driving employees' intentions to engage in job crafting, we contributed to the existing literature by providing an overarching framework of the dynamic and intertwined relationships of the personal and social beliefs, and volitional factors driving proactive work redesign.

Job Crafting Interventions

Organisations can develop initiatives to support employees' proactive efforts to redesign their work (Demerouti, 2014) in a way that allows higher adaptability, more resourceful work contexts, and eventually higher well-being. By adopting the theory of planned behaviour (Ajzen, 1991) to the design and implementation of a job crafting intervention, we contributed to advance theory on the mechanisms behind job crafting intervention effectiveness, concerning both behavioural (expansion job crafting) and well-being (i.e., flow at work) outcomes.

Theories of behaviour formation and behaviour change can provide valuable frameworks to intervention design because they allow pinpointing of potential targets referred to contents, structure, and techniques that are likely to be effective in reaching the proposed outcomes (Lin, Scheerman, Yaseri, Pakpour, & Webb, 2017). Accordingly, we designed a job crafting intervention based on the principles of the theory of planned behaviour integrated with implementation intentions (Gollwitzer, 1999) and collected pre- and post-measures and weekly diaries. Moreover, by adopting a parallel design, we were able to compare participants in a control group, who received no intervention, to employees who took part in our workshops. Such a research design allowed us to test the effectiveness of our intervention in terms of changes occurred in the motivational variables of the TPB, and to track the trajectories of changes in intention and flow at work among the two groups.

Our results indicated that the job crafting intervention based on the TPB was effective in promoting higher frequencies of job crafting behaviours because it sustained participants' perceptions of behavioural control to them related and higher intentions to engage in such behaviours. While employees differed in their initial weekly intentions to

craft their job registered after the workshops, the intervention was effective in promoting higher behavioural intentions, as well as a higher rate of changes in intentions compared to the control group. By enhancing employees' awareness of job crafting as a strategy to customise work and to face changing configurations of the work characteristics dynamically, the intervention may have promoted the development of employees' higher flexibility referred to their intentions, subject to fluctuations based on the dynamic work characteristics. Besides, by learning the behavioural strategies to balance their work characteristics effectively, employees acquired a set of repertoires that allowed higher experiences of weekly flow during work, because of experienced matching between the work challenges and the skills needed to face them (Csikszentmihalyi, 1975).

In a nutshell, we contributed to the literature on job crafting interventions by unpacking the mechanisms behind intervention effectiveness and detailing the casual processes expected to happen and influence both behavioural and motivational outcomes (Donaldson, Lee, & Donaldson, 2019; Rogers, 2000; Chen, 1990). Our findings support the value of adopting theories of behaviour formation and change in advancing our understanding of the processes occurring during job crafting interventions, which, in turn, define their effectiveness.

Behaviour Formation Literature

The studies presented in this dissertation also contribute to the literature on behaviour formation and change. In our studies, we took an initial step to a dynamic examination of the motivational and volitional variables that drive behaviours and intentions. In doing so, to the best of our knowledge, we are among the first modelling the trajectories of change occurring over time in beliefs that are likely to fluctuate, both at the within and the between levels of analysis, eventually influencing behavioural outcomes. Such an examination of the dynamic features of the variables constituting a theory is important to provide a better test of theoretical prepositions (Mitchell & James, 2001).

Individual and social beliefs regarding target behaviour do not constitute stable dispositions and are likely to change based on unstable circumstances or disruptive events (Webb & Sheeran, 2006; Sheeran, 2002). Nevertheless, to date, studies conducted within the TPB framework have mainly been focused either on testing the validity of the overall theoretical model to explain behaviour formation or the existence of significant

differences in the variables of the TPB among different groups after an intervention occurred. By adopting longitudinal designs and collecting repeated measures of the TPB over multiple time points from the same individuals, we were able to deepen understanding on whether and how attitudes, social norms, perceptions of behavioural control, and intentions changed over time, both between different individuals and within persons. Our results indicated that fluctuations in personal and social beliefs and intentions did occur, both across persons and within the same individual. Even despite such occurring changes, the TPB proved to be still able to account for behaviour formation referred to job crafting. That is, fluctuations in the motivational and volitional variables of the TPB did not lead to modifications in the pattern of relationships theoretically described and observed when assuming stable features of the beliefs and intentions underlying behaviours. Accordingly, our dynamic perspective allowed to further investigate the validity of the TPB in explaining behaviour, enriching our understanding of the changing patterns and nature of personal and social beliefs and on how they concur in lowering or increasing the rate of change in intentions.

Literature on behaviour formation has to date acknowledged that past behaviours might concur in influencing subsequent behaviours (Webb & Sheeran, 2006). However, empirical investigations accounting for the competing role of past behaviours and beliefs in building behavioural intentions and behaviour are still scarce. By integrating the TPB with self-perception theory (Bem, 1972), we provided a first empirical test of an overarching theory of behaviour formation that simultaneously accounts for the dynamic role of both motivational variables and past behaviours in shaping changes in the beliefs underlying job crafting behaviours and intentions. Our findings showed that past job crafting behaviours provide a source to shape attitudes and perceptions of behavioural control, while social norms were not significantly transformed based on previous individual engagement in the target behaviour.

In summary, we have contributed to the literature by adopting a dynamic perspective to the study of proactive behaviour formation in the work context. By modelling changes occurring in the motivational and volitional variables of the TPB and adopting a bidirectional perspective that simultaneously accounts for the role of both past behaviours and individual beliefs, we were able to shed light on how proactive behaviours

unfold in the work context as a result of changing and competing, beliefs and personal experiences.

Limitations and Directions for Future Research

Despite the strengths of the presented studies, findings should be interpreted with awareness about their limitations. This dissertation aimed at furthering knowledge on a specific behavioural construct referring to the ways in which employees proactively balance their demands and their resources, i.e., job crafting. However, job crafting can also occur at the cognitive level, specifically when employees intentionally alter how they frame or view their tasks or job and relations at work, in order to change their work meaning, identity, or emotions (Wrzesniewski & Dutton, 2001). Thus, Zhang and Parker (2018) suggested that cognitive crafting represents a complementary component of job crafting, which eventually may influence employees' perceptions of their work characteristics. Future research could try to integrate different perspectives on job crafting in order to deepen understanding of their reciprocal relationships. For example, cognitive crafting may define an additional motivational variable influencing behavioural job crafting, such that cognitive reframing of the job may drive subsequent actions to shape such reframed work.

The studies presented made use of different research designs (i.e., intervention, weekly diary, cross-sectional, longitudinal) that strengthened the validity of our findings. However, even though some of our studies adopted time-lagged and quasi-experimental designs, the measures we collected were all self-reported, meaning that they reflected employees' perceptions of their own behaviours rather than observed scores provided by others. While research shows that self-reported measures of the variables of the TPB are quite reliable (Milfont, 2009), and that self- and colleague-ratings of job crafting are positively correlated (Tims, Bakker, & Derks, 2012), definitive conclusions about causality are unwarranted given the common source of our data (Fernet, Gagné, & Austin, 2010).

In our research, we focused on the individual experiences and perceptions related to the self and the social work environment. Acknowledging that job crafting does not happen in a vacuum, we collected self-reported measures on perceived descriptive and injunctive social norms. However, it is likely that such perceptions may also stem and be shaped by the common belongingness to a work team, a department, or a work unit. Yet,

we were unable to collect data allowing us to run multilevel models that account for the role of nested structures in organisations. An interesting avenue for future research could be to investigate how team-level social norms referred to job crafting are shared among members and whether team norms interact with personal beliefs and influence subsequent individual job crafting behaviours.

All of our studies were conducted with Italian employees. On one side, this aspect contributes to advance knowledge on how job crafting unfolds within the specific cultural boundaries of a South European country, given that the majority of the studies on job crafting in Europe have to date been conducted in Northern countries. However, on the other side, this aspect also limits the generalizability of our findings because the perceived importance of the work-role and particular job characteristics differ among countries with different cultural heritage (Warr, 2008). Researchers may consider examining the transcultural validity of our findings, as well as the role of work values among different countries as moderators of job crafting outcomes.

Practical Implications

Employees' job crafting is a multifaceted set of intentional behaviours driven by personal beliefs regarding oneself and the social work environment. These behaviours share a common focus on enriching the work environment, such that, thanks to individual agency, it becomes more resourceful and challenging. Our findings showed that employees can purposefully enrich their work characteristics not only by seeking resources or challenges, but also by reorganising their hindering demands in a more efficient way, which may include quitting demanding tasks that are draining, counterproductive, or useless. However, rather than being focused only on decreasing their demands, employees who craft their work specifically aim at favouring the creation of resourceful work contexts. On the contrary, behaviours strictly focused on decreasing the hindering aspects of job negatively contribute to the success of an overarching job crafting strategy, eventually potentially threatening the effects of previously enacted expansion behaviours. Thus, to benefit from their individual, behavioural redesign tendencies, employees should be supported in the processes of designing their jobs by channelling their efforts towards expansion-oriented behaviours, which include seeking more resources, challenges, and optimising demands.

While job crafting is enacted under the condition of choice, we showed that organisational initiatives that build on theoretical principles might serve to effectively support employees' efforts referred to their discretional redesign behaviours. Moreover, thanks to experienced higher matching between one's challenges and resources, such interventions can be effective to sustain employees' states of flow at work, which represent an indicator of work-related well-being (Salanova, Bakker, & Llorens, 2006). We proposed and tested a job crafting intervention based on the principles of the TPB (Ajzen, 2001). Thus, we designed our workshops to (i) be focused on, and strength, the motivational drivers of intentions, and (ii) provide participants with the tools to translate their intentions into actual behaviours, using specific behaviour change techniques, including implementation intentions (Gollwitzer, 1999). By applying such an intervention model to the design and implementation of job crafting interventions, organisations can benefit from a detailed evaluation of the effectiveness of the intervention, because specific intervention phases are detailed, where pre-definite psychological variables building behaviours are targeted. Moreover, organisations can benefit from the adoption of quasi-experimental designs that provide an empirical evaluation of the effectiveness of interventions that goes beyond the assessment of participants' satisfaction.

Among the motivational drivers of intentions, our findings showed that co-workers' observed behaviours provide important contextual cues based on which employees shape their intentions to craft or not their work. Likely, the extent to which employees perceive to have some extent of control over their work environment lead them to change their intentions, such that the more employees feel to be in control over their proactive redesign behaviours, the more they tend to change their intentions to craft their job. On the contrary, employees who think that behaviours to redesign their work on their initiative hold beneficial outcomes, show stable intentions. Accordingly, organisations willing to promote job crafting should develop initiatives that (i) emphasise employees' proactive work redesign behaviours and (ii) support employees' perceptions of control on how to craft their work especially among those who display low intentions towards job crafting.

Concluding Remarks

With working contexts having become fluid, employees' proactivity represents a key resource to face dynamic demands and support well-being at work. However, more important than individual tendencies in terms of proactive dispositions are the ways in which such proactivity is translated into working behaviours, which drive curiosity on the factors that allow such a translation. Job crafting describes a set of discretionary proactive behaviours arising in the workplace, aiming at redesigning one's work characteristics to reconstruct a tailored work environment that matches with one's needs. In this dissertation, we explored the role of different behavioural strategies in defining an overall conceptualisation of employees' job crafting behaviours. Through such behaviours, employees make their work contexts more resourceful. We then explored the psychosocial boundaries and processes that contribute to the formation of such beneficial behavioural strategies, by leveraging on knowledge developed in the field of behavioural formation. Understanding the role of different personal and social drivers of employees' job crafting is useful to develop theoretically-driven intervention initiatives that can be used to support employees' proactive job redesign. In conclusion, this dissertation provides a key contribution to unveiling the role of different psychosocial factors and organisational initiatives shaping individual behavioural tendencies towards the development of work environments that are auto-generative of resources.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Ajzen, I. (2015). The theory of planned behaviour is alive and well, and not ready to retire: a commentary on Sniehotta, Presseau, and Araújo-Soares. *Health Psychology Review*, 9, 131-137.

Bakker, A. B., & Demerouti, E. (2014). Job demands-resources theory. In *Wellbeing: a complete reference guide. Volume III. Work and Wellbeing* (pp. 37-64). Wiley-Blackwell.

Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall.

Bem, D. J. (1972). Self-perception theory. In *Advances in experimental social psychology* (Vol. 6, pp. 1-62). Academic Press.

Bipp, T., & Demerouti, E. (2015). Which employees craft their jobs and how? Basic dimensions of personality and employees' job crafting behaviour. *Journal of Occupational and Organizational Psychology*, 88, 631-655.

Bruning, P. F., & Campion, M. A. (2018). A role–resource approach–avoidance model of job crafting: a multimethod integration and extension of job crafting theory. *Academy of Management Journal*, 61, 499-522.

Chen, H. T. (1990). *Theory-driven evaluations*. Thousand Oaks, CA: Sage.

Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety: Experiencing flow in work and play*. San Francisco, CA: Jossey-Bass.

Demerouti, E. (2014). Design your own job through job crafting. *European Psychologist*, 19, 237–247.

Demerouti, E., & Peeters, M. C. (2018). Transmission of reduction-oriented crafting among colleagues: A diary study on the moderating role of working conditions. *Journal of Occupational and Organizational Psychology*, 91, 209-234.

Donaldson, S. L., Lee, J. Y., & Donaldson, S. I. (2019). The effectiveness of positive psychology interventions in the workplace: A theory-driven evaluation approach. In L. E. van Zyl and S. Rothmann Sr. (eds.), *Theoretical approaches to multi-cultural positive psychological interventions*.

Fernet, C., Gagné, M., & Austin, S. (2010). When does quality of relationships with colleagues predict burnout over time? The moderating role of work motivation. *Journal of Organizational Behavior*, 31, 1163–1180.

Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493–503.

Kiesler, C. (1971). *The Psychology of Commitment: Experiments Linking Behavior to Belief*. New York: Academic Press.

Lin, C. Y., Scheerman, J. F., Yaseri, M., Pakpour, A. H., & Webb, T. L. (2017). A cluster randomised controlled trial of an intervention based on the Health Action Process Approach for increasing fruit and vegetable consumption in Iranian adolescents. *Psychology & Health*, 32, 1449-1468.

Michie, S., Richardson, M., Johnston, M., Abraham, C., Francis, J., Hardeman, W., ... & Wood, C. E. (2013). The behavior change technique taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine*, 46, 81-95.

Milfont, T. L. (2009). The effects of social desirability on self-reported environmental attitudes and ecological behaviour. *The Environmentalist*, 29, 263-269.

Mitchell, T. R., & James, L. R. (2001). Building better theory: Time and the specification of when things happen. *Academy of Management Review*, 26, 530-547.

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

Rogers, P. J. (2000). Program theory evaluation: Not whether programs work but how they work. In D. L. Stufflebeam, G. F. Madaus, & T. Kellaghan (Eds.), *Evaluation models: Viewpoints on educational and human services evaluation* (pp. 209–232). Boston, MA: Kluwer.

Rudolph, C. W., Katz, I. M., Lavigne, K. N., & Zacher, H. (2017). Job crafting: A meta-analysis of relationships with individual differences, job characteristics, and work outcomes. *Journal of Vocational Behavior*, 102, 112-138.

Salancik, G. R. (1977). Commitment and the control of organizational behavior and belief." In Barry M. Staw and Gerald R. Salancik (Eds.), *New Directions in Organizational Behavior*: 1-54. Chicago: St. Clair Press.

Salanova, M., Bakker, A. B., & Llorens, S. (2006). Flow at work: Evidence for an upward spiral of personal and organizational resources. *Journal of Happiness Studies*, 7, 1-22.

Sharot, T., Korn, C. W., & Dolan, R. J. (2011). How unrealistic optimism is maintained in the face of reality. *Nature Neuroscience*, 14, 1475-1482.

Sheeran, P. (2002). Intention—Behavior Relations: A Conceptual and Empirical Review, *European Review of Social Psychology*, 12, 1-36.

Steinmetz, H., Knappstein, M., Ajzen, I., Schmidt, P., & Kabst, R. (2016). How Effective are Behavior Change Interventions Based on the Theory of Planned Behavior? *Zeitschrift für Psychologie*, 224, 216-233.

Tims, M., & Bakker, A. B. (2010). Job crafting: Towards a new model of individual job redesign. *SA 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.

van den Heuvel, M., Demerouti, E., & Peeters, M. C. (2015). The job crafting intervention: Effects on job resources, self-efficacy, and affective well-being. *Journal of Occupational and Organizational Psychology*, 88, 511-532.

Warr, P. (2008). Work values: Some demographic and cultural correlates. *Journal of Occupational and Organizational Psychology*, 81, 751-775.

Webb, T. L., & Sheeran, P. (2006). Does changing behavioral intentions engender behavior change? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 132, 249-268.

Wiethoff, C. (2004). Motivation to learn and diversity training: Application of the theory of planned behavior. *Human Resource Development Quarterly*, 15, 263-278.

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

Zhang, F., & Parker, S. K. (2018). Reorienting job crafting research: A hierarchical structure of job crafting concepts and integrative review. *Journal of Organizational Behavior*, 40, 126-146.

Acknowledgements

My PhD journey has been an incredible life experience. The past years were filled with experiences that many times have called into question my viewpoint on work and life, opening up to new (self) awareness I later realised I was blind to.

First, I want to thank my two supervisors, Eva and Riccardo. Eva, having the chance to work with you is an honour I was not thinking to be possible, and you made it look so natural. Thank you for all the time you reserved for me, for your guidance and constant support as a researcher and a woman, for always having been there, also at a distance. To me, you are an inspiring model. Riccardo, thank you for having believed in me during this journey and having supported me, many times not only as a PhD student but also as a human being. I truly appreciate your trust in allowing me to work "my way", as well as the opportunities to let me grow. Andrea, also a big thank you for the long time spent discussing research ideas and how to implement them concretely. Giuseppe, when I started drafting this page, I did not imagine you would not have been here anymore. I know these words will reach you anywhere you are now: thank you for your support, kindness, and positivity since before the beginning of my PhD.

I want to thank the professors of the reading committee: Emanuela Ingusci and Jari Hakanen, and Arnold Bakker for his support for my Doctor Europaeus title. Thank you for your time and effort into reading and evaluating my thesis. It is an honour to have you in my committee.

During this PhD journey, I got to know and work with Manuela Lavelli, Arnaldo Soldani, and Catia Cordioli. Thank you, Manuela, for your energy, your perspective on research, and your close support in the past three years. Your guidance provided me with the resources to face the challenges of research and opened up new engaging possibilities that drove my motivation. As a former PhD student representative, I want to express my gratitude to Arnaldo Soldani for having always been encouraging, valuing, and supportive of our ideas. Arnaldo, the meetings with you were a source of positive energy and motivation. To Catia Cordioli, who has constantly been there to take care of the papers referred to my travelling, expenses, and bureaucracy. Thank you for having always welcomed me with a smile despite the huge amount of papers you have to manage. My PhD adventures around the world wouldn't have been possible without your work.

I want to warmly thank my two roommates during my stays in the NL at the HPM, Piet and Huatian. Piet, you enriched and inspired me with your creativity and big smiles, and with your constant availability to help everybody. Also, your sense of (Italian) style and passion for coffee never failed to make me feel home there in the NL. Huatian, having had the chance of sharing the room with you nourished my vision on how beautiful and enriching life can be when one opens up to what's unknown and challenging. Also, I want to thank Angela and Anniek, for their close support with bureaucracy and a warm welcome every time I was there in the NL.

Thanks to Janna, Bregje, Ad, Leander, Llewellyn, for letting me feel welcomed all the times I arrived there.

Thanks to all the great scholars and co-authors I have the chance of collaborating with and from whom I keep on learning so much: Stephan Dickert, Hai-Jiang Wang, Diana Rus, Oscar Oviedo-Trespalacios. And thanks to those with whom I had the chance of spending some good time with and sharing thoughts during conferences and methodological courses: Chiara Guglielmetti, Enrico Perinelli, Christine Fong, Jørn Hetland, Arnold Bakker, Michela Vignoli, Fangfang Zhang, Despoina Xanthopoulou, Shengquian Chen.

Thanks to all the bachelor's and master's students I met and co-supervised in the past years, and the companies that made it possible to have my hypotheses empirically tested and without whom this thesis would have been only theoretical.

Un grazie speciale a mio papà Duilio, a mia zia Laura e a mia nonna Vanda. Grazie per tutte le volte che vi siete presi cura di Edo quando ero via o impegnata per la ricerca e per il valore che avete sempre mostrato di attribuire a quello che faccio all'università. Il vostro supporto è stato importante per la realizzazione di questa tesi e per l'intero percorso del mio dottorato.

Nello scrivere queste parole non riesco a non pensare a quando la mia avventura all'università è iniziata e alle persone che mi sono state vicine e mi hanno supportata quando un dottorato non era minimamente nelle mie previsioni. Grazie a Nicole e Irene per tutte le volte che tenevano un Edo ancora piccolo mentre io facevo gli esami. Grazie a Silvana ed Elena per il supporto concreto, la fiducia e il modo in cui hanno creduto in me. Non dimenticherò mai il vostro ruolo nel mio percorso di vita. Grazie a Laura, per l'anno in cui le nostre vite e quelle dei nostri bimbi si sono incrociate e tutte le emozioni e le esperienze che abbiamo condiviso. Grazie a Rachele, Alessandra, Francesca, Cinzia, Diego, Alessia per i momenti di supporto, condivisione e divertimento, a Edoardo, Leonardo e Cora per quest'ultimo mese in cui la quarantena è stata meno pesante grazie ai nostri allenamenti insieme.

Bedankt, Luuk. Thank you for letting me experience what it feels like to be loved. For your constant encouragement, support, and for pushing me anytime an opportunity seemed to be there, even when this meant something "less" for us. Thank you for the patience, the efforts, the adventures, the acceptance, and the reminders about switching off. Thank you for being here even when you are there. I don't know where life will take us, but I'm curious to discover it with you.

Grazie al mio Edo. Questa tesi è dedicata a te, che con me hai affrontato questo percorso ogni giorno. Che nonostante i tuoi sette anni, offri conforto e aiuto a chi credi ne possa aver bisogno per sentirsi meglio. Partecipare alla tua vita è un'esperienza che mi fa sentire onorata e mi riempie di meraviglia. Ma adesso basta con questo computer e andiamo a giocare! :)

Verona, April 2020