Adaptation to Organizational Change

The Role of Meaning-making and other Psychological Resources

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Adaptation to Organizational Change:

The Role of Meaning-making and other Psychological Resources

Aanpassing aan organisatieverandering:

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Proefschrift

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Contents

Grant me the serenity to accept the things I cannot change,
The courage to change the things I can,
And the wisdom to know the difference

Adapted from Reinhold Niebuhr, 1943

Voor Greetje Koopal en Dick van den Heuvel

CHAPTER 1
Introduction

1.1 Organizational change and the change recipient: the employee

The interest in the study of organizational change and its impact on organizations is growing. Ongoing technological, economic and societal change has increasingly taxed adaptive capacity of organizations. Being able to rapidly respond to change is now a key imperative in order to survive and build a thriving organization. Organizational change can be defined as: "..the observed differences over time on selected dimensions of an entity" (Van de Ven and Poole, 1995, p.1380). Organizational change is a process in which an organization moves from a current situation to a desired future situation (Mack, Nelson & Quick, 1998). The adaptive capacity of organizations typically manifests itself as being able to integrate, build and modify resources by e.g. restructuring, optimizing work processes, increasing managerial capabilities, and innovation (Kor & Mesko, 2012), in order to function efficiently and maintain competitive advantage. Organizational change is thus necessary in order to remain adaptive and competitive. However, the process of implementing change is not without difficulty. More often than not, change programs fail to fully reach their intended outcomes (Beer & Nohria, 2000; Kotter, 1995). One important factor these failures have been attributed to, is a lack of individual behavior change aligned with the change program (Stanley, Meyer, Topolnytsky, 2005; Strebel, 1996). Organizations are contexts that consist of individuals that jointly manage / operate the systems and processes that constitute the services and / or products on offer (Robertson, Roberts, & Porras, 1993). Therefore, individual employees together form the building blocks of a successful organization. When individuals can shape their work in such a way that it is perceived as meaningful and enjoyable, they tend to perform better (Bakker & Bal, 2010; Halbesleben & Wheeler, 2008) and show innovative behavior (Hakanen, Perhoniemi, & Toppinen-Tanner, 2008). This may be especially important during organizational change, when employees need to adapt psychologically and behaviorally to the change, which may influence adaptation of other employees (Greenhalgh, Robert, Macfarlane, Bate, & Kyriakidou, 2004). Ultimately, organizations need willingness and behavioral support from employees in order to build a truly adaptive organization. From this perspective it makes sense that in order to build adaptive organizations we need to study factors and processes that build adaptive and resourceful employees (Woodman & Dewett, 2004).

There are three reasons why more research on (positive) employee characteristics and behaviors during change is warranted. First, organizational change studies have traditionally focused either on the innovation or change itself (Greenhalgh et al., 2004; Van de Ven & Poole, 1995), or on macro-level change success

determinants, both structural (e.g. size, specialization of the organization) as well as the softer elements such as organizational culture (Zammuto & O'Connor, 1992) or future focus (Worley & Lawler, 2009). Since resistance to change is often situated at the level of the individual employee, we need to understand what (individual-level) factors positively influence change attitudes and behaviors. In addition, there is a lack of knowledge on adaptation processes to change on the individual level (Armenakis & Bedeian, 1999). To further optimize change processes, it is important that macro-perspectives are complemented by knowledge on micro-level adaptation processes. This includes research on how employees adapt to change and how context and employee characteristics may affect positive change reactions (Armenakis & Harris, 2009; Sonenshein & Dholakia, 2012).

Secondly, in micro-level research, more focus is needed on behavioral outcomes. Most (practitioner) change models incorporate some element of behavior change, but more empirical research is needed to explain how employee behavior change comes about (Armenakis & Bedeian,1999). Although the last decade has seen an increase in studies that include employee attitudes towards organizational change, more in-depth work is called for, both on change attitudes, individual characteristics and change behavior (Armenakis & Harris, 2009). In particular, studies have focused on (antecedents of) attitudinal constructs (e.g. resistance to change) as outcome variables, but not extensively on *behaviors* that support organizational change. The implicit assumption may have been that low resistance to change would automatically lead to successful change implementation and/ or behavior change. It has been suggested that organizational change research should focus more on outcomes of attitudes (e.g. behavior change**)** since these outcomes may be the mechanism that translates proposed changes into enhanced organizational performance (Robertson et al., 1993). However, few studies have attempted to predict actual behavior change. Consequently, more work is needed on predictors of adaptive behavior as opposed to attitudes (Shoss, Witt & Vera, 2011). Adaptation outcomes such as adaptive behavior, in conjunction with motivational outcomes such as work engagement and commitment, may together form the factors that determine organizational change success in the longer run.

Thirdly and interrelated with the second reason, we need to complement research on negative attitudes and change outcomes with research that includes employee strengths, resources and positive outcomes in relation to change. Negative change attitudes or resistance to change have been recognized as important factors that need to be overcome (Piderit, 2000). However, it is unclear whether absence of resistance implies presence of willingness to change. A focus on positive constructs may advance knowledge of (antecedents of) successful organizational change.

Relatively little research has focused on positive individual-level factors that may foster successful change endeavors (Avey, Wernsing & Luthans, 2008). Psychological or 'personal' resources are related to a sense of control over the environment. They support individuals to stay motivated in the face of change and adversity (Hobfoll, Johnson, Ennis, & Jackson, 2003). In a work setting, personal resources have been shown to predict positive employee outcomes such as work engagement, as well as an increase in job resources (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009a, 2009b). That is why they may form protective factors during organizational change. A focus on positive individual characteristics / beliefs, such as personal resources, may lead to knowledge that can better inform interventions. Also, including this positive perspective gives more room to examine and truly understand how employees contribute to organizational change and sustainability of organizations, rather than perceiving employees and their potential resistance merely as an obstacle during change. From a positive psychological 'promotion focus' perspective, the question during change implementation may be: "Which employee resources can we boost via interventions aimed at successful adaptation?" As opposed to: "What negative attitudes do we need to eliminate in employees?"

In addition, developing employee adaptivity or 'adapt-ability', is not only helpful for organizations, but also for employee well-being. It enhances flexibility, and can be seen as a component of employability (Fugate & Kinicki, 2004; Van der Heijde & Van der Heijden, 2006). Therefore, research findings in this area may benefit organizational performance as well as employee well-being. In this sense, the research in this thesis is in line with the recently emerged field of 'Positive Organizational Behavior' that emphasizes theory, research, and valid measurement of positive state-like constructs that have an impact on performance-based outcomes (Bakker & Schaufeli, 2008; Luthans, 2002), both to aid organizational development, as well as to stimulate employee health and well-being as intrinsically valuable goals (Wright, 2003). We apply this perspective to employee adaptation processes in changing work settings.

This thesis focuses on the importance of the individual employee both as change recipient (or object) as well as change 'shaper' (or subject). Individual characteristics are suggested to be an important theme for organizational change researchers (besides change context, content, and process; Holt, Armenakis, Field & Harris; 2007). We study micro-factors, i.e. (personal) resources, attitudes and behaviors of individual employees, in the awareness that employees interact and influence their environment in an ongoing reciprocal dynamic interaction. Hence, the level of analysis in our studies is the individual employee as opposed to (characteristics of) the change itself. The change initiatives we study are organizational changes that have an impact on

the work environment, and therefore on the day-to-day work activities of employees. We do not focus in organizational mergers or restructuring situations in which rounds of redundancies are part of the process. The purpose of the studies presented is to contribute to knowledge on the process of how employees respond to change and how psychological (personal and job) resources may help change adaptation.

1.2 The importance of personal resources

Personal resources have been described as "aspects of the self that are generally linked to resiliency" (Hobfoll et al., 2003, p. 632). The concept refers to individual aspects that are useful in dealing with (adverse) situations, add to the creation of a more favorable situation and help to maintain a sense of control over the environment. Similar constructs such as core-self evaluations, resemble the function of personal resources, since both may foster goal achievement, motivation and performance (Erez & Judge, 2001). Personal resources are lower-order personality traits or individual differences that can change, as opposed to stable higher-order personality factors (e.g. Big Five) (Gist & Mitchell, 1992; Van den Heuvel, Demerouti, Schaufeli & Bakker, 2010). Since one of the aims of this thesis is to contribute knowledge that can be used in practical interventions, our focus is on such malleable individual-level factors. Studies have shown that the positive influence of personal resources is particularly salient at times when resources are needed, for example during stressful events (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Hakanen, Bakker, & Demerouti, 2005; Hobfoll, 2002), and during change (Avey et al., 2008; Callan, Terry, & Schweitzer, 1994).

A key attribute of personal resources is that they facilitate goal attainment in the face of challenging, stressful, or ambiguous events (Xanthopoulou, Bakker, Demerouti & Schaufeli, 2007). During crisis it has been shown that both personal resources and social resources such as support can predict adjustment. However, when looking at adjustment in the longer run (after the crisis has resumed), personal resources may be more important for well-being (Hobfoll & Liebermann, 1987). In other words, people need to resort to, or 'fall back' on their own psychological resources. In this thesis, we introduce the concept of 'meaning-making' as a personal resource that may foster employee adaptation to change. Meaning-making is defined as the ability to integrate challenging or ambiguous situations into a framework of personal meaning using value-based reflection (Van den Heuvel, Demerouti, Schreurs, Bakker & Schaufeli, 2009). Organizational change means giving up established ways of working and changing structures (Woodman & Dewett, 2004) and has been described as a critical life event, capable of evoking negative outcomes in employees (Jimmieson, Terry & Callan, 2004). This explains why having the right skills and knowledge to deal

with change may not be enough to adapt, since knowledge and skills alone may not help to manage the feelings of uncertainty, insecurity or ambiguity that change may evoke. Personal resources can help to protect health and well-being, increase motivation and goal achievement, which may stimulate knowledge, skills and abilities. For this reason, we have included personal resources in our research as predictors of successful change adaptation.

Important to note is the malleable nature of personal resources, in other words, personal resources can be developed (Gist & Mitchell, 1992) via interventions (e.g., Luthans, Avey, Avolio, Norman, & Combs, 2006). By including such malleable aspects, we aim to be able to translate research findings into practical solutions; i.e. to inform the design of interventions that can assist organizations and their employees to successfully implement change while maintaining employee work engagement and commitment.

1.3 Theoretical perspectives

The purpose of this thesis is to provide a better understanding of (some of) the mechanisms on the micro-level that facilitate employee adjustment to change. This issue can be approached from several theoretical perspectives. In the following five chapters of this thesis we use various theoretical perspectives to address this issue, including Conservation of Resources (COR) theory (Hobfoll, 1989, 2001), broaden-and-build (B&B) theory (Fredrickson, 2001), and Social Identity Theory (SIT; Tajfel &Turner, 1979; 1986). Each theory and its relevance for our research questions will be described in detail in the chapters that follow. The theoretical perspectives are mostly combined with insights from the organizational change literature. In addition, the motivational process of the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007, 2008; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) is used as a heuristic framework guiding the research questions of each chapter. This model has previously been used to test the processes put forward by COR theory (e.g., Bakker & Demerouti, 2007; Llorens, Schaufeli, Bakker, Salanova, 2007) as well as B&B theory (Ouweneel, Le Blanc & Schaufeli, 2011).

The aim of this thesis is not so much to test the assumptions of these theories, but rather to shed light on the research questions regarding employee adaptation to change, and explaining the expected relationships. The studies of this thesis focus on resources of (a) individual employees and (b) the work environment as predictors of employee adjustment to change. Meaning-making is included in all studies as a potential facilitator of adaptation to organizational change. We aim to predict both motivational outcomes as well as actual adaptive behavior. The overall research

question is: *How do meaning-making and other psychological resources facilitate employee adaptation to organizational change?*

1.4 Research model for employee adaptation to change

The model presented in Figure 1 provides an overview of the relations studied in the chapters of the thesis. As can be seen, psychological resources stemming from the individual (personal resources), as well as from the context or work environment (job resources) are included as predictors. Further, we included a number of mediating variables with the aim of explaining the process of adjustment. The model includes motivational outcomes as well as behavioral outcomes related to adaptive performance, i.e. the extent to which employees show work behaviors that are required by the organizational change. This model has guided the specific research questions of our studies.

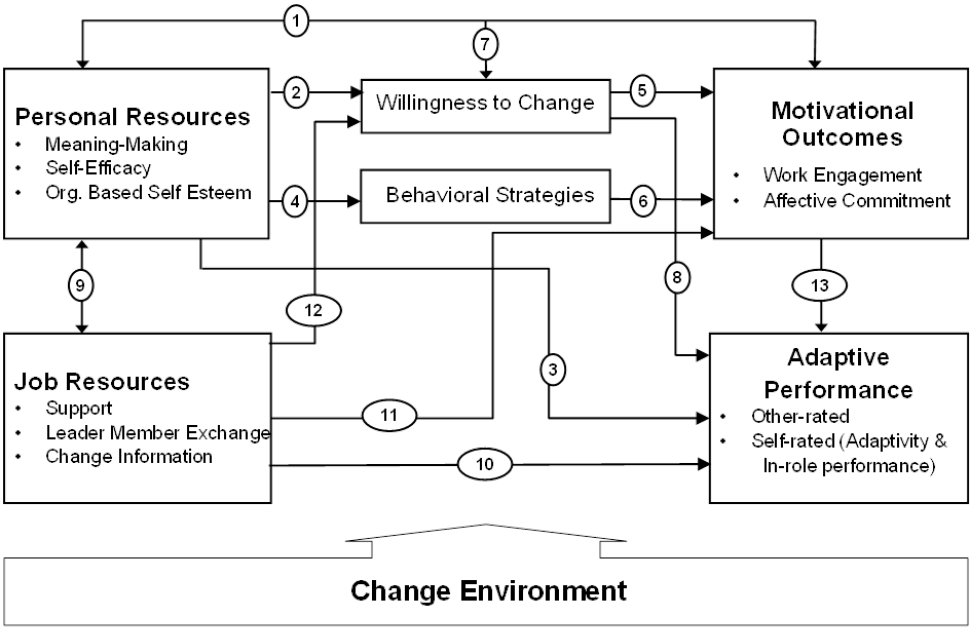

Figure 1. Overall research model for employee adaptation to change

1.5 Research questions

Below five research questions are introduced that will guide the studies presented in the remainder of this thesis. The numbers attached to the paths in Figure 1 are referred to below when the various research questions of each chapter are described.

Q.1. What are personal resources and how do they facilitate adaptation to change?

According to Conservation of Resources (COR) theory, employees are motivated to maintain, protect and build resources. COR theory was originally developed to explain adaptation to adverse life conditions (Hobfoll, 1989, 2001), but has later been applied to a work setting (Hobfoll & Shirom, 2001). In *Chapter 2* we describe the relevance of personal and job resources in a changing work environment. This theoretical chapter forms an introduction to the study of psychological resources (personal and contextual / job resources) and their function in facilitating adaptation to organizational change. We propose a detailed definition for the construct of personal resources. In addition, a number of relevant personal resources are described, i.e. self-efficacy, optimism, hope, resilience, organization-based self-esteem, promotion focus, and meaning-making. A research model (Personal Resources Adaptation Model) is proposed and some of the described relationships are tested in the consequent chapters of this thesis. The model is similar to *Figure 1*, however, not all proposed links were tested in the studies of this thesis. Therefore, *Chapter 2* can also guide future work in the area of employee adaptation to change.

Q.2. What is meaning-making and how does it facilitate adaptation to change?

Meaning is an important construct associated with individual well-being and adaptation to adversity. The concept has originally been studied mainly from a clinical/health psychological perspective (e.g., Taylor, 1983). Finding positive meaning been linked to positive adjustment outcomes when dealing with adversity, such as disease, bereavement and trauma (e.g. Linley & Joseph, 2004; Schok, Kleber, Elands & Weerts, 2008). Also, work on interpersonal sensemaking processes has been used to conceptualize the construct of meaning-making (Wrzesniewski, Dutton & Debebe, 2003). This thesis aims to provide a contribution to this work by applying insights to a broader context, i.e. the changing work environment. It seems relevant to examine whether the beneficial effects of being able to create meaning can be applied to less 'dramatic' experiences such as organizational change processes. An encounter with organizational change or an imposed demand to work in a different way, may not be as 'existentially' urgent as coping with disease or losing a loved one. However,

understanding whether the meaning-making can function as a personal resource during change, may foster employee adaptation and successful change implementation. In *Chapter 3* we therefore introduce the construct of *meaning-making* and a way of measuring it: 'The Meaning-Making Scale'. Meaning-making is defined as the ability to integrate challenging or ambiguous situations into a framework of personal meaning using value-based reflection (Park, 2010; Van den Heuvel et al., 2009). The theoretical background and overlap with other constructs is discussed. This cross-sectional study includes a validation of the meaning-making construct. We test the factorial and discriminant validity of the construct of meaning-making by comparing it to other personal resources and related constructs. Also, we test its incremental validity for important change adjustment outcomes, namely *work engagement* (arrow 1 in *Figure 1*), *willingness to change* (arrow 2), and *in-role performance* (arrow 3).

Q.3. What is the role of job resources in facilitating change adaptation?

Throughout the thesis we include the role of the work environment by including job resources as predictors of successful adaptation to change. *Chapter 2* discusses the importance of job resources during change. A number of key contextual factors that function as job resources during change are included in our studies. First, social support from colleagues is included in *Chapter 4* (arrow 10). Secondly, since the leader may form an important source of support, information and motivation during change, we included the relationship with the leader (i.e. Leader-Member Exchange relationship - LMX) in *Chapter 5*. LMX is included as a predictor of change adaptation outcomes (arrow 10). Also, the reciprocal relationship between LMX and personal resources is examined in *Chapter 5* (arrow 9). Thirdly, in *Chapter 6* we include a change-related job resource, that is change information as a predictor of willingness to change and adaptivity over time (arrow 10, 12).

Q.4. How does the adaptation process unfold over time?

Researchers in the field of organizational change have emphasized the use of longitudinal research designs in order to progress our knowledge of how change unfolds over time (Pettigrew, Woodman & Cameron, 2001). This thesis includes three empirical papers that use multiple measurements. Weekly measures allow for examination of fluctuations over time, as well as longitudinal relationships between resources and adjustment outcomes as change unfolds in an organization.

Q.4.a. How does the adaptation process unfold in the short-term?

In *Chapter 4* we take a short-term perspective by zooming in on the first weeks after a change has been introduced. We designed a study in which employees were asked to respond to a survey on a weekly basis, starting the first week after a profound change (i.e. flexible workspaces) was introduced. The specific research question we tried to answer here was: do weekly fluctuations in personal resources and social support facilitate adjustment? It addresses the question whether within-person fluctuations of resources are positively related to adjustment outcomes, i.e. work engagement (arrows 1, 10 & 11), willingness to change (arrow 2), and adaptive performance (arrow 3). Also, indirect sequential relationships between resources, change attitudes/ strategies, motivational outcomes and adaptive performance are studied (arrows 4, 5, 6, 7 & 8).

Q.4.b. How does the adaptation process unfold in the long-term?

Taking a longer-term perspective, *Chapter 5* and *6* both examine the question: how do resources facilitate employee adaptation to change over time? In *Chapter 5*, we aim to predict adaptation outcomes during change by focusing on the presence of resources one year before the change was introduced. This 2-wave study focuses on resources related to identification processes; i.e. meaning-making, OBSE and LMX (arrows 1 & 3). The mediating role of affective commitment in the relationship between these resources and adaptivity is tested (arrows 11 & 13). This chapter also sheds light on the reciprocal relationships between a high-quality employee-leader relationship and the presence of personal resources (arrow 9).

In *Chapter 6*, we build on this by further examining the longitudinal relationship between resources and adaptation to change over time. The data of this study consists of three measurement waves, that coincided with the implementation of a reorganization over a period of three years. We measured before, during and after formal implementation. Again, we examine relationships between a personal resource (i.e. meaning-making), and a change resource (i.e. change information), and willingness to change and employee adaptivity. Further, we examine how information may lead to more adaptive behavior by testing the mediating role of meaning-making and willingness to change in the relationship between change information and adaptivity (arrow 9 + 3 / arrow 12 + 8).

Q.5. How can adaptation to change be conceptualized in a comprehensive way?

This final question will not be addressed empirically in this thesis, rather we will discuss our approach to the operationalization of adjustment at the end of the thesis, by reflecting on our chosen outcomes and implications for future work. To ‘adapt’ can be

described as to 'adjust appropriately', meaning that an individual adjust his/her behavior to the demands of the new environment (Ashford, 1986). Also, adaptation has been referred to as the manner or the extent to which a person (or team, or organization) achieves alignment between the person's behavior and a set of novel demands that they are faced with (LePine, 2005). In line with other studies in the field of organizational change, we will use the terms adjustment and adaptation interchangeably. Adaptation to change has been conceptualized by using attitudinal, motivational, well-being and behavioral outcomes (e.g., Avey et al., 2008; Oreg, Vakola & Armenakis, 2011; Rafferty & Griffin, 2006). The emphasis in terms of adaptation to change seems to have been primarily on attitudinal outcomes in terms of (negative) attitudes towards change. We aim to combine attitudinal- with motivational and behavioral outcomes. In *Chapter 4* and *6*, we study a sequence of adaptation, where attitudes to change and motivation play a mediating role in the adaptation process.

The following adaptation outcomes are included: in the theoretical chapter (*Chapter 2*) we discuss attitudes (willingness to change), motivation (work engagement) and adaptive performance. We view adaptive performance as a specific measure of change-related or change-supportive behavior. In *Chapter 3*, three adaptation outcomes are included; willingness to change, work engagement and in-role performance. *Willingness to chang*e captures the positive behavioral intentions towards the (implementation of) organizational changes (Metselaar, 1997, p.34). *Work engagement* refers to a positive, fulfilling, affective-motivational state of work-related well-being, characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). Finally, *in-role performance* pertains to behaviors directly related to the formal role or job description. It is an indication of how well an employee performs tasks, duties, and responsibilities as listed in their job description (Williams & Anderson, 1991). In the weekly study (*Chapter 4*) we complement self-report measures with *other-ratings*. This weekly study includes *adaptive performance* as rated by the supervisor. Supervisors rated the extent to which employees showed adaptivity in face of the studied organizational change (introduction of flexible work spaces). In the 2-wave study (*Chapter 5*), we use Griffin, Neal & Parker's (2007) individual *adaptivity* scale, which captures adaptive behaviors at the employee level. Since the fifth study's focus is on identification processes during change, we also include *affective commitment* as an indicator of change adaptation. In the sixth and final empirical chapter, we use *willingness to change* (attitude) and *adaptivity* (behavior) together as indicators of change adaptation.

1.6 Outline of the thesis

The following chapters will address the questions above. Below is a brief overview of what follows:

- *Chapter 2* is a theoretical chapter outlining the role of personal resources in the face of change.
- *Chapter 3* is a cross-sectional study introducing the concept of meaning-making and its relevance during organizational change.
- *Chapter 4* is a weekly quantitative diary study that focuses on the role of work engagement as a facilitating factor for short and long-term change adaptation.
- *Chapter 5* is a 2-wave (1-year follow-up) study that examines the value of identity-related resources for adaptation outcomes, as well as reciprocal relationships between resources.
- *Chapter 6* is a 3-wave (2-year follow-up) study that focuses on longitudinal relationships between resources and adaptation outcomes before, during and after change implementation.
- *Chapter 7* is the general discussion which summarizes the findings and implications for theory and practice.

Please note that Chapter 2 to 6 can be read independently of each other since they were prepared separately as journal articles. As a result, there is some overlap in the content of these chapters.

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CHAPTER 2
Personal Resources and Work Engagement in the Face of Change

Based on:
Van den Heuvel, M., Demerouti, E., Schaufeli, W. B. & Bakker, A. B. (2010). Personal resources and work engagement in the face of change. In: Houdmont, J. (Ed.) *Occupational health psychology, European perspectives on research, education and practice. Vol. 4* (pp.124-150).

2.1 Introduction

Organizations are continuously changing. Developments in society such as the current financial crisis and ongoing technological innovation increase pressure on employees to show change-ability and resilience. Most planned change initiatives, whether they concern a restructuring, cultural change or policy innovation, share the aim of maximizing organizational performance. Recently, organizations have begun to refer to the 'new world of work' indicating a digital work style characterized by flexible hours and no fixed locations (Microsoft, 2005). The ideal 'new' employee is a self-directed, pro-active, networking entrepreneur, taking responsibility for their own performance and development. Innovative IT systems aim to make working life easier and support employee productivity. However, the pace of change is high and multiple change efforts often coincide and overlap, adding to the demands on employees' adaptive capacities (Herold, Fedor, & Caldwell, 2007). Change processes have become a stressor irrespective of the content of the change (Korunka, Weiss, & Karetta, 1993).

Organizational change is a process in which an organization moves from a current situation to a desired future situation (Mack, Nelson & Campbell, 1998). In order to successfully implement change, many factors at many levels (societal, organizational, departmental, individual) need to be managed simultaneously (e.g., Armenakis, Harris, & Mossholder, 1993; Fernandez & Rainey, 2006). However, considering that ultimately work is carried out by employees, individual knowledge, attitudes and behavior are crucial aspects of any change endeavor (Woodman & Dewett, 2004). In spite of this, most empirical organizational change studies have focused on macro-level factors, such as organizational productivity. Empirical studies that do include employee-level variables tend to focus on the influence of organizational factors on attitudinal outcome variables (e.g., resistance to change). Organizational change research has not sufficiently included the role of individual (psychological) resources in successful change implementation (Armenakis & Bedeian, 1999; Judge, Thoresen, Pucik, & Welbourne, 1999).

Therefore, in line with the positive organizational behaviour (POB) approach to studying employee development and performance in organizations (Bakker & Schaufeli, 2008; Luthans, Youssef, & Avolio, 2007), we focus in this chapter on the sustainability of work engagement during change. We aim to advance the knowledge of antecedents of successful and healthy organizational change, both from an organizational and employee perspective. This chapter provides an overview of the role of personal resources in the process of positive adaptation to change. Also, we present a

research model that offers a micro-level framework for studying how personal resources are related to work engagement and performance during change.

2.1.1 Healthy Organizational Change

Three themes can be distinguished in change research, reflecting the multiple processes involved in organizational change (Armenakis & Bedeian, 1999). First, research on organizational *context* variables examines the work-environment (internal context) or broader societal (external) contexts. Internal context (e.g., working conditions, (leader) support, or culture) is relevant to our focus on the employee-level. Secondly, *process* variables refer to how the change is implemented, for example, in terms of employee participation and information provided. Thirdly, the *content* theme reflects studies on the substance of change (e.g., strategic change, performance-incentives, etc.) and its relationship with organizational effectiveness. In line with Holt, Armenakis, Field, and Harris (2007), we include a fourth theme, namely, individual characteristics and, specifically, personal (psychological) resources. We will first focus on how work environments influence well-being and performance at work, before turning to the individual factors that are important for healthy organizational change.

2.1.2 Effects of change on employees

Many change initiatives do not reach their objectives within the given timeframe, partly due to individual reactions to change (Sorge & Van Witteloostuijn, 2004). How does change affect employees? First, organizational change is likely to have an impact on the working environment and subsequently, it may affect employee well-being, motivation and performance. Studies have focused on the role of changes in psychosocial working conditions, and the subsequent impact on health and well-being. For example, it was shown that when employees perceived a reduction in decision latitude and an increase in job demands, they were more likely to go on long term sickness absence (Head et al., 2006). In contrast, an increase in support at work led employees to have fewer long spells of sickness absence (Head et al., 2006; Vahtera, Kivimaki, Pentti, & Theorell, 2000). Amabile & Conti (1999) showed that changes due to downsizing negatively impacted creativity-enhancing aspects of the work environment, i.e., freedom, challenge, resources, encouragement, and support. Individual characteristics may explain or buffer the effects of organizational change (Judge et al.,1999; Wanberg & Banas, 2000).

Secondly, *how* change is implemented can affect employee health. This has been studied by focusing on change process characteristics, often leading to practitioner guidelines (Armenakis & Bedeian, 1999). For example, in a recent study by Saksvik et

al. (2007), five implementation criteria for healthy organizational change were identified. The criteria were: 1) awareness of norms and how imposed change may conflict with unwritten rules, 2) awareness of diversity, or how different departments may respond differently to change, 3) manager availability, for support and information, 4) constructive conflict, whereby resistance is welcomed and dealt with rather than avoided, emphasizing dialogue regarding the change, and 5) role clarification, similar to role clarity, a job resource (e.g., Abramis, 1994) that becomes even more important in times of transition. Organizational change will nearly always include new ways of working, new roles and new ways of relating to others. These points are linked to our focus on the

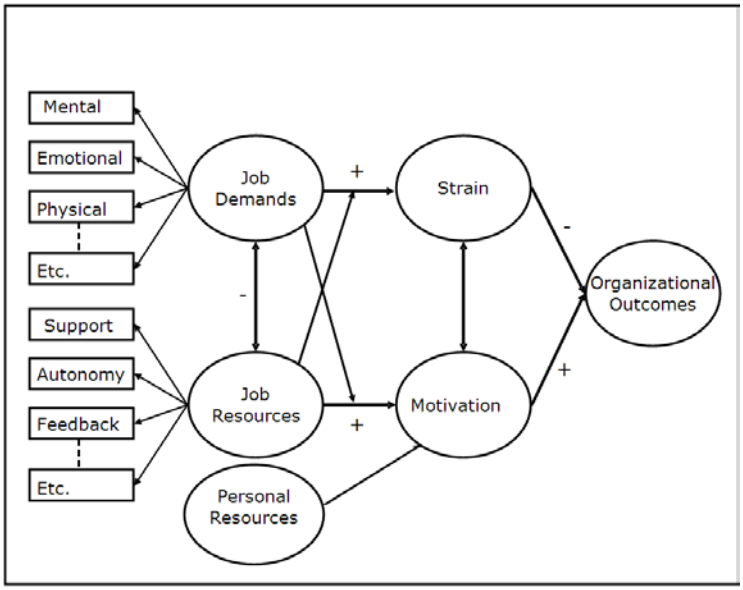

Figure 1. Job Demands-Resources model (adapted from Bakker & Demerouti, 2007, 2008).

interplay of the changing work environment and the individual. First, the diversity in change reactions and use of constructive conflict underlines the importance of taking into account individual factors. Secondly, awareness of norms, role clarification and manager availability underline the importance of job demands and resources.

2.1.3 Job Demands-Resources Model

Our approach is based on the assumptions of the Job Demands-Resources model (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). This model (*Figure 1*) provides a framework for studying the processes by which work environment factors determine well-being and motivation, often operationalized as

burnout and engagement. The JD-R model proposes that each workplace has its own unique demands and resources. *Job demands* refer to those physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skill and are therefore associated with physiological and/or psychological costs. Examples are high work pressure, unfavourable physical environments, or emotionally demanding client interactions. Job demands are not necessarily negative; however, they may turn into job stressors when meeting those demands requires high effort from which the employee cannot adequately recover (Meijman & Mulder, 1998). *Job resources* are defined as those physical, psychological, social or organizational aspects of the job that may do any of the following: (a) are functional in achieving work related goals, (b) reduce job demands and the associated physiological and psychological costs, and (c) stimulate personal growth and development. Studies using the JD-R model have shown the positive impact of job resources on work engagement and subsequent performance (Bakker & Demerouti, 2007, 2008; Bakker, Schaufeli, Leiter, & Taris, 2008; Schaufeli & Salanova, 2007).

The JD-R model was recently expanded to include personal resources (Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). Recent studies show the important role of personal resources in explaining why job resources are translated into engagement and in turn, job performance (Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009a, 2009b). Personal resources mediated the relationship between job resources and work engagement/exhaustion. Moreover, personal resources influenced the perception of job resources over time and predicted objective financial turnover via work engagement.

As of yet, the JD-R model has not been tested in dynamic work environments. In this chapter we propose a framework that allows us to test parts of the JD-R model in changing work environments. First, we outline the nature of personal resources.

2.2 What are personal resources?

The interest in personal resources originates in stress and coping research. As research showed that there were no fixed associations between stressful life events and distress, attention shifted to factors that could explain the relationship between stressful events and health and well-being outcomes, e.g., personal resources (Rabkin & Streuning, 1976). Personal resources have been described as “aspects of the self that are generally linked to resiliency” (Hobfoll, Johnson, Ennis, & Jackson, 2003, p. 632). Many researchers use similar concepts, for example, psychological resources (Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000), psychological capital (Luthans &

Youssef, 2004), personal coping resources (Aldwin, Sutton, & Lachman, 1996; Wheaton, 1983), and general resistance resources (Antonovsky, 1979). What is less clear in the broad definition is the ontological status of the umbrella-term 'resources'. What are the defining attributes of a personal resource and how do they relate to personality traits, states and coping styles? In order to add to the conceptualization of the term 'personal resources' we propose a more detailed definition.

2.2.1 Key attributes of personal resources

Inherent in the term 'resource' is a reference to it being a means of supplying a want or deficiency. What value the resource has is closely linked to the value of the outcome that it will produce or contribute towards (Ashford, 1986). 'Personal' in personal resources refers to the idea that individual characteristics can function as a means of dealing with the outside world (Hobfoll, 1986). In that sense, personal resources refer to an interplay between person and environment. Personal resources can pertain to a specific domain, e.g., work-related self-efficacy. In personality research and occupational health psychology the importance of this interplay of person and (work) environment is widely accepted. Mischel (2004) states that, in order to advance our knowledge of human behavior, the focus should be on patterns that can be found when studying the person–situation interaction.

Semantic definitions of the word 'resource' include that resources (1) are useful in coping with (adverse) situations, and (2) add to the creation of a more favorable situation or goal attainment. Pearlin and Schooler (1978) defined psychological resources as "the personality characteristics that people draw upon to help them withstand threats posed by events and objects in their environment" (p.5). Studies in occupational health psychology have shown that the positive influence of resources is particularly salient when they are needed, i.e. when demands are high, e.g. during stressful events (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Callan, Terry, & Schweitzer, 1994; Hakanen, Bakker, & Demerouti, 2005; Hobfoll, 2002). Therefore a key attribute of personal resources is that they facilitate goal attainment in the face of adversity.

Personal resources can be measured both as traits and states; however, most studies take a state-perspective. It may be useful to imagine a continuum where personality traits are on the 'fixed' side and highly situation-specific attitudes and/or emotions are placed on the opposite, malleable side. Personal resources have also been studied from a more trait-like perspective (e.g. Judge, Van Vianen & De Pater, 2004). In order to develop interventions, it is relevant to focus on characteristics that are malleable. Personal resources can be developed over time, influenced by significant life

experiences and specific personal development interventions or coaching (Luthans, Avey, Avolio, Norman, & Combs, 2006; Lyubomirsky, Sousa, & Dickerhoof, 2006). Jerusalem (1993) refers to personal resources as self-beliefs and commitments. Personal resources can have both affective and cognitive components and are often valued in their own right (e.g., self-esteem: a combination of positive beliefs about intrinsic self-worth accompanied by positive affect). Personal resources can be considered as lower-order, malleable elements of personality (Gist & Mitchell, 1992).

Personality traits may influence the ease with which personal resources are developed. For example, people who are high on extraversion may be more likely to think optimistically than people who are low on extraversion. However, regardless of traits, it is possible to develop optimistic explanatory styles (Seligman, 1991). In our view, the mobilization of personal resources takes place as follows: when confronted with adversity or ambiguous events, underlying traits influence the presence of lower-order cognitive/affective states. In a stressful situation, these states either function as personal resources or as vulnerability factors (characteristics that increase a person's vulnerability to the adverse impact of stressors). These states influence the perception of the situation, and abilities to positively influence the environment. The presence of personal resources will influence how a person will manage the situation (strategies).

We propose the following working definition for the concept of personal resources in organizational settings:

Personal resources are lower-order, cognitive-affective aspects of personality; developable systems of positive beliefs about one's 'self' (e.g., self-esteem, self-efficacy, mastery) and the world (e.g., optimism, faith) as well as abilities (hope, meaning-making) which motivate and facilitate goal-attainment, even in the face of adversity or challenge.

2.3 Personal resources at Work

There is a growing tendency in occupational health psychology to focus on personal resources. Personal resources have been studied in relation to the work environment and in relation to outcomes such as performance, job satisfaction, commitment and work engagement. A number of theories have included personal resources and their influence on well-being and performance.

First, *cognitive adaptation theory* states that individuals who are able to adjust well to stressful life events are those who are high on optimism, self-esteem and personal control (Taylor, 1983). The theory proposes that the process of adjustment to threatening events is structured around the processes of (1) searching for meaning in the

experience, (2) attempting to gain control of the situation in order to restore a general sense of mastery over one's life and (3) restoring self-esteem through self-enhancing evaluations (Taylor, 1983). This theory is mostly used in health psychology studies (e.g., Helgeson, 1999, 2003). However, it has also been applied to the study of organizational change, where it was found that personal resources predicted openness to change (Wanberg & Banas, 2000).

Another approach to personal resources in the workplace is Positive Organizational Behavior (POB), which focuses on positive attributes of people and organizations (Bakker & Schaufeli, 2008; Luthans, 2002). POB was introduced as "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed and effectively managed for performance improvement in today's workplace" (Luthans, Youssef, & Avolio, 2007, p.10). *Psychological Capital* or 'PsyCap' was introduced as a higher order construct that operationalizes the individual component of POB, including self-efficacy, hope, optimism and resilience (Luthans & Youssef, 2004). In contrast with signature strengths and virtues (Peterson & Seligman, 2004), PsyCap constructs are operationalized as developable states (Luthans, Avolio, Avey, & Norman, 2007). Even though some concerns have been raised about PsyCap's discriminant validity (Little, Gooty, & Nelson, 2007), PsyCap has been found to predict work-related performance and job satisfaction, both as a higher-order construct and the components individually (Luthans, Avolio, Walumbwa, & Li, 2005; Luthans, Norman, Avolio, & Avey, 2008). Below we describe the four personal resources used in the PsyCap construct. In addition, two other relevant resources (meaning-making and regulatory focus) are briefly described.

2.3.1 Optimism

Optimism has been defined as generalized, positive outcome expectancies (Scheier & Carver 1985). Optimism has also been approached as an explanatory style, which indicates a tendency to attribute causes of negative events to external, transient circumstances, rather than personal factors (Seligman, 1991). Optimism can be measured either state-like or trait-like, and in general or work-related terms, depending on the research question. Optimism has been shown to predict academic performance (Peterson & Barrett, 1987), effective coping with life stressors (Nolen-Hoeksema, 2000), successful management of stressors (Aspinwall & Taylor, 1997), physical health (Peterson, 2000), and work productivity (Seligman & Schulman, 1986). The PsyCap measure reflects work-related optimism. In a recent study, optimism was found to (partially) mediate the relationship between job resources and work engagement, and indirectly influenced organizational performance (Xanthopoulou et al., 2009b).

2.3.2 Hope

Related to optimism, the concept of hope has been defined as the ability to plan pathways to desired goals despite obstacles, and the agency or motivation to use these pathways (Snyder, 2000). Hope is viewed as a result of these two components, and as such differs from the layperson's meaning of 'hope'. This definition has an active nature, in that it speaks of motivation to use the ability to plan. This motivational and agency component of hope suggests some overlap with self-efficacy. Peterson & Luthans (2003) showed that hope can influence financial performance. In order to build hope, the focus needs to be both on goal setting and building pathways towards these goals. Empowerment and mental rehearsal are ways of enhancing sense of control and finding pathways to attain goals (Snyder, 2000).

2.3.3 Resilience

Resilience can refer to the ability to bounce back from adverse events, or cope successfully (Rutter, 1985). The interest in resilience originates from the field of developmental psychology (Masten, 2001). Resilience is related to processes of adaptation during stress, or the capacity to maintain positive outcomes in the face of negative life events (Ryff & Singer, 1996). Resilience can be measured as a trait, for example, ego-resiliency (Block & Kremen, 1996), indicating general resourcefulness regardless of the situation (Earvolino-Ramirez, 2007). Over the past two decades, resilience has also been used to indicate a dynamic, modifiable process that occurs during exposure to adversity (Luthar, Cicchetti, & Becker, 2000). Positive relationships, assertiveness, self-worth, sense of humor, and decision-making abilities have been identified as protective resources within the resilience process (Earvolino-Ramirez, 2007). This may suggest that resilience can be composed of (the presence of) several (personal) resources. The process of resilience can be developed in individuals using cognitive coaching interventions (Luthans, et al., 2006). Resilience is slightly different from the other PsyCap constructs in that it always has an object, i.e., resilience is a response to a situation. Concluding, different conceptualizations of resilience have been used in research, some consider it to be a trait, while others view it as a process of adaptation. From the process-definition of resilience; i.e. resilience as '..patterns of positive adaptation in the context of risk and adversity' (Masten & Powell, 2003, p.4), the process of adaptation to organizational change (which we aim to predict) may be a specific type of resilience-process.

2.3.4 Self-efficacy

Self-efficacy is one of the most studied personal resources and has been extensively used in research in educational, clinical, and organizational settings (Hodgkinson & Healey, 2007). Derived from Bandura's Social Learning Theory and later Social-Cognitive Theory, the construct is concerned with how knowledge influences action. Self-efficacy is defined as judgments about how capable one is of organizing different skills in order to execute appropriate courses of action to deal effectively with the environment (Bandura, 1989, 1997), or beliefs about one's ability to mobilize the relevant resources to meet situational demands (Gist & Mitchell, 1992). It is a dynamic construct, i.e., the beliefs or judgments can change over time. Self-efficacy influences thought-patterns, emotions and actions, and as such it is a motivational construct. In work settings, significant correlations have been found between self-efficacy and work-performance (Stajkovic & Luthans, 1998) as well as work engagement (Llorens, Schaufeli, Bakker & Salanova, 2007; Xanthopoulou et al., 2007).

2.3.5 Organization-based Self-esteem

Organization-based Self-esteem (OBSE) is a personal resource pertaining to the self-esteem an employee gains from his/her relationship with the organization. OBSE is that part of the self-concept that is based on work/organizational experiences. It is "the degree to which an individual believes him/herself to be capable, significant and worthy as an organizational member" (Pierce & Gardner, 2004, p. 593). This type of self-esteem is an important predictor of employee motivation, attitudes and behavior. OBSE may help to offset the negative consequences of organizational change and other demanding conditions (Pierce & Gardner, 2004). Also it has been shown to translate the positive effects of job resources into motivational outcomes such as work engagement (Xanthopoulou et al., 2007).

2.3.6 Meaning-making

Many influential theorists have acknowledged the importance of being able to experience meaning for optimal human functioning (Baumeister & Vohs, 2002; Frankl, 1963; Jahoda, 1958; Maslow, 1968; Rogers, 1961). Research has shown that an ability to make meaning, (i.e., to understand why an event has occurred and what its impact/benefits are) when faced with adversity can be beneficial to both mental and physical health (Frankl, 1963; Taylor et al., 2000). Recently, the interest in the study of meaning at work has increased. Many studies focus on the importance of meaningful work for organizational outcomes (e.g., Chalofsky, 2003; Cartwright & Holmes, 2006;

May, Gilson, & Harter, 2004; Wrzesniewski, Dutton, & Debebe, 2003). How do people create meaning? What personal resource or strategy leads to the experience of meaning at work? Our view is that deliberate efforts to reflect on what happens at work and the ability to link this to broader values and life goals is a form of meaning-making that can help employees deal with on-going change. In line with other theories, we view employees as self-regulating, active agents (Bandura, 1989; Bell & Staw, 1989; Wrzesniewski & Dutton, 2001). In deliberate meaning-making, ambiguous or challenging events are integrated into a framework of personal meaning, values and goals, which results in a sense of meaningfulness. Meaning-making is viewed as a cognitive/affective resource that one can develop. Recently, we developed a scale to capture the degree to which people engage in meaning-making (Van den Heuvel, Demerouti, Schreurs, Bakker, & Schaufeli, 2009). Meaning-making was shown to be related to willingness to change and in-role performance. We expect that meaning-making will facilitate positive attitudes to change and motivation to engage with the changed situation, resulting in more work engagement and enhanced (adaptive) performance.

2.3.7 Self-regulatory focus

Regulatory focus theory (Brockner & Higgins, 2001) states that people can operate in two distinct self-regulatory foci. A promotion focus indicates a tendency to perceive the environment in terms of growth and development opportunities (approach), while prevention-focused individuals are motivated by security needs and focused on avoiding risks and threats (avoidance). These tendencies may influence appraisal in change situations. Regulatory focus can be studied both as state or trait; chronic regulatory focus pertains to a dispositional focus, while situational regulatory focus is influenced by situational factors (Brockner & Higgins, 2001). The regulatory fit between the type of regulatory cues in the situation and the regulatory focus of the person is central to the theory. Both promotion and prevention are associated with positive outcomes, although some negative correlates of prevention focus have been noted, while for promotion focus, mainly beneficial impacts are emphasized (Brockner & Higgins, 2001; Dewett & Denisi, 2007; Kark & Van Dijk, 2007). Therefore, we propose that a promotion focus may function as a personal resource during change. The different foci will influence how employees perceive changes in work processes. In turn, this may influence how change demands and resources are dealt with.

2.4 Personal resources and organizational change

As described above, and recognized by many authors in the management literature (Kotter, 1996, 2005; Stewart-Black, & Gregersen, 2008), ultimately it is not organizations as entities that change, it is the people who are part of the organizations who change (Bovey & Hede, 2001, Woodman & Dewett, 2004). Obviously, employees need the right knowledge, skills and tools in order to work in the new ways that the organizational change imposes. However, in addition to this, the role of personal resources in change contexts should be explored, since knowledge and skills alone may not be enough to offset feelings of uncertainty during change. Dealing with uncertainty and adversity also requires cognitive/affective resources (Taylor, 1989). Individual characteristics have been included in the study of organizational change in different ways. Besides studies that included attitudes, personal resources have also been included, either as predictors, mediators, or moderators.

Self-efficacy is often included as a *predictor* in studies on the adoption of technological innovations (e.g., Lam, Cho, & Qu., 2007). For example, Hill, Smith, and Mann (1987) showed the importance of efficacy beliefs in the decision to adopt an innovation. They demonstrated the impact of computer self-efficacy on adoption, independent of the beliefs relating to the instrumental value of doing so. It has been argued that self-efficacy is crucial for adaptive behavior and performance. If employees lack confidence regarding new behaviors they are unlikely to try these out (Griffin & Hesketh, 2003). Wanberg and Banas (2000) found that change-related self-efficacy, self-esteem, optimism and a sense of control predicted openness to change, while openness predicted outcomes such as job satisfaction, irritation and turnover intentions. Ashford (1988) found that people with high self-esteem were better at coping with stress during organizational change than people low on self-esteem. Campbell (2006) showed that employees with a high learning orientation were more positive and proactive towards change than employees with a low learning orientation. Holt et al. (2007) used change-efficacy in their model for individual readiness for change. Efficacy beliefs were found to partially mediate the relationship between change-related information and well-being. Furthermore, self-efficacy was found to buffer stress during the change process (Jimmieson, Terry, & Callan, 2004).

Promotion focus has been suggested to be associated with more engagement in change-related behaviors compared to prevention focus (Dewett & Denisi, 2007). Also, Liberman, Idson, Camacho, and Higgins (1999) found that promotion focused individuals showed more openness to change than individuals with a prevention focus. Avey, Wernsing, and Luthans (2008) found that the predictive value of PsyCap on

change attitudes was mediated by positive emotions. Mindfulness had a moderating role and was found to compensate for low PsyCap. Stark, Thomas, and Poppler (2000) found that self-esteem moderated the effects of organizational change on job satisfaction. Employees with high self-esteem reported higher job satisfaction than those with low self-esteem.

Personal resources have also been studied as mediators in organizational change settings. For example, Martin, Jones, and Callan (2005) found a relationship between psychological climate and adjustment indicators (well-being, job satisfaction, commitment, absenteeism, and turnover intention). This relationship was mediated by change-efficacy, control, and change-related stress. Frayne and Geringer (2000) found that self-efficacy partially mediated the relationship between self-management training, outcome expectancies, and job performance.

2.5 Employee attitudes to organizational change

Attitudes to specific behaviors have been shown to have predictive value for behavior (Petty & Cacioppo, 1981). Many organizational change studies include attitudinal constructs such as resistance or willingness to change (e.g. Metselaar, 1997; Rafferty & Griffin, 2006; Van Dam, Oreg, & Schyns, 2007). One of the earliest influential studies dealing with employees' resistance to change was that of Coch and French (1948), which showed the positive impact of employee participation on reducing employee resistance to change. More recently, studies have also included positive attitudes, such as willingness and readiness for change (Armenakis et al., 1993; Piderit, 2000). Readiness for change is defined as employees' beliefs, attitudes and intentions regarding the necessity and the chance of successful implementation of organizational change. It is seen as the cognitive pre-cursor to resistant or supporting behaviors in relation to the change. Willingness to change refers to a positive behavioral intention towards the implementation of change in the structure, culture or work processes of an organization, resulting in efforts to support or enhance the change process (Metselaar, 1997). Other constructs that focus on positive attitudes and beliefs include commitment to change (Herscovitch & Meyer, 2002) and openness to change (e.g., Miller, Johnson, & Grau, 1994). In our approach we include the relationship and interaction between change attitudes and personal resources. Furthermore, we include attitudes not as outcomes but as driving forces predicting actual behaviors towards the change.

2.6 Dealing with organizational change: Strategies

What do employees actually do in terms of interacting with the change, managing themselves and their working environment? Organizational change impacts the work environment which, in turn, demands a response from the employee. Employees make an effort to maintain the fit between their abilities and the external demands of the environment. These strategies range from those aimed at regulating the external environment (e.g. job crafting) to those regulating intrapersonal processes (e.g. mindfulness). Reactive responses have been described as those efforts where employees try to change themselves in order to manage changing demands. Active or proactive responses are those strategies that entail employees initiating behaviors that positively impact their working environment and restore the fit (Griffin & Hesketh, 2003).

2.6.1 Strategies to cope

Coping can be defined as the conscious cognitive and behavioral efforts to manage the internal and external demands of situations that are appraised as stressful (Folkman & Lazarus, 1980; Lazarus & Folkman, 1984). Coping strategies can be problem-focused; aimed at eliminating the stressor, or emotion-focused; aimed at managing emotional responses. Aspinwall and Taylor (1992) showed that the impact of psychological control and self-esteem on adjustment and performance was mediated by specific forms of active, problem-focused coping. In organizational change research, support has been found for the mediating role of coping strategies in the relationship between personal resources and positive employee outcomes (Callan, 1993; Judge et al., 1999). Main effects of coping strategies on well-being have also been found, irrespective of the level of stress (Callan et al., 1994). Recently, researchers have suggested a move away from the broad distinction of problem-focused vs. emotion-focused coping (Connor-Smith & Flachsbart, 2007; Skinner, Edge, Altman, & Sherwood, 2003). A focus is needed on more specific coping strategies and personality facets. In line with the person-situation perspective, it is important to view coping as an ongoing, interactive process between employees and their working environment (Briner, Harris, & Daniels, 2004). Our approach provides scope to do this and it may provide insights concerning the specific relationships between different personal resources and specific strategies they predict. Strategies represent the measurable behaviors employees engage in. We differentiate strategies to manage the external change environment (job crafting and active coping) versus strategies to manage oneself (self-regulation and self-leadership).

2.6.2 Job crafting and Self-leadership

Self-regulation is a broad term that illustrates the evolving focus on employees as "purposeful, goal-striving individuals" (Vancouver & Day, 2005, p.156). The idea of behavioral self-regulation refers to a mechanism that monitors progress towards desired states or goals. When a discrepancy is detected, an effort is made to change behavior in order to reduce the discrepancy and move towards desired end states (Carver & Scheier, 1981, 1998). There is no consensus on a uniform definition of self-regulation. It has been broadly defined as "the processes involved in attaining and maintaining internally represented desired states" (goals) (Vancouver & Day, 2005, p.158). Goal establishment, planning, striving and revision have been identified as key components of self-regulation processes. Where coping is a reactive process to a demanding, stressful situation, self-regulation processes view employees as goal-oriented, active agents. Individuals who are resourceful in terms of being confident and hopeful were found to persist when faced with obstacles in attaining their goals, as opposed to disengaging or searching for alternative goals (Carver & Scheier, 1998). Employees are not mere products of their environment, but actively sculpt their environments (Bell & Staw, 1989). This notion is part of both job crafting theory and self-leadership theory.

Job Crafting is defined as "the physical and cognitive changes individuals make in the task or relational boundaries of their work" (Wrzesniewski & Dutton, 2001, p. 179). The concept of job crafting recognizes that employees are continuously interacting with their environments, regardless of their hierarchical position within an organization. Different types of crafting have been identified; firstly employees can change the number, scope and type of job tasks. Secondly, employees can craft the quality and the amount of social encounters with other people encountered at work. Thirdly, cognitive task boundaries can be changed, by thinking differently about which tasks are and aren't part of the role, and how these fit together (Wrzesniewski & Dutton, 2001). In a change situation these dynamic processes are likely to be even more salient.

Self-leadership was introduced as an expansion on the concept of self-management, which refers to the degree to which an employee takes responsibility for the managerial aspects of his or her job over and above the content and production-related responsibilities (Manz & Sims, 1980; Markham & Markham, 1995). Self-leadership emphasizes intrinsic work motivation and rewards. It is related to job resources such as autonomy, in that it allows employees to influence how a task is carried out. Self-leadership focuses on *what* to do and *why* (goal selection and setting), and also *how* to attain these goals. Self-leadership is defined as "a process through which individuals control their own behavior, influencing and leading themselves through the use of specific sets of behavioral and cognitive strategies" (Neck &

Houghton, 2006, p.270). The main components of self-leadership include behavior-focused strategies (i.e., self-observation, self-goal setting, self-reward, self-punishment), and self-cueing (i.e., reminding oneself of important goals). Secondly, natural reward strategies that focus on building intrinsically pleasurable or motivating aspects into a task or working environment. These strategies can range from changing lighting or decoration at work to focusing on particular enjoyable aspects of a job. The theory suggests that these strategies will lead to feelings of self-control, purpose and increased performance (Houghton & Neck, 2002). Thirdly, constructive thought patterns pertain to "the creation and maintenance of functional patterns of habitual thinking" (Houghton & Neck, 2002, p. 674). These strategies lean on theories from therapeutic settings such as rational emotive therapy (Ellis, 1977) and are nowadays widely used in interventions outside clinical contexts such as in coaching, which is also focused on facilitating self-regulation behaviors (self-observation, self-management, goal-setting) (e.g., Costa & Garmston, 2002; Wasylyshyn, 2003). A positive relationship was found between personal resources and the use of self-leadership strategies (Norris, 2008). We expect personal resources to positively influence employees' use of self-leadership strategies in order to work productively while having positive work experiences. Since self-leadership is a normative theory, these strategies may be particularly relevant for intervention studies in change research.

2.7 Outcomes: Adaptive performance and work engagement

Although many studies focus on attitudes to change as outcomes, not many studies include both individual characteristics and behavioral outcomes in terms of adaptive performance. In our model we propose that personal resources can boost work engagement and adaptive performance during change processes in organizations. We expect this process to be partially mediated by change attitudes and behavioral strategies. Below outcome variables in our model are described.

Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Vigor refers to high levels of energy and mental resilience while working, the willingness to invest effort in one's work, and persistence in the face of difficulties. Dedication refers to a sense of significance, enthusiasm, inspiration, pride, and challenge. The third dimension of engagement is absorption, or flow, and is characterized by being fully concentrated and happily engrossed in one's work, whereby time passes quickly and one has difficulties with detaching from work. Job and personal resources are found to be the main predictors of engagement; these resources gain their salience in the context of high job demands (Bakker & Demerouti,

2004). Engaged workers are more creative, more productive, and more willing to go the extra mile. Work engagement has been shown to be contagious and may therefore be of special importance during change, as a counterforce for possible change-cynicism.

Employees typically engage in in-role and extra-role performance. In-role or task performance is defined as those officially required outcomes and behaviors that directly serve the goals of the organization (Motowidlo & Van Scotter, 1994). In-role performance includes meeting organizational objectives and effective functioning (Behrman & Perreault, 1984). Extra-role or contextual performance is defined as employees' discretionary behaviors that are believed to directly promote the effective functioning of an organization, without necessarily directly influencing a person's target productivity (Podsakoff & MacKenzie, 1994). Examples include willingness to help colleagues who have heavy workloads or the avoidance of problems with colleagues (this is also known as a specific form of organizational citizenship behavior; Organ & Paine, 1999). According to Dewett and Denisi (2007), a specific form of extra-role performance is change-related citizenship behavior. This refers to the expression of constructive challenge intended to improve rather than undermine the functioning of an organization undergoing change.

In our model we use *adaptive performance* as an outcome variable that expresses adaptation to the change content. Since our level of analysis is the employee, the content of organizational change can be anything from cultural change to implementation of new software, as long as it affects the way in which people are required to behave at work. We define adaptive performance as work behaviors related to the new way of working, which is part of the organizational change (cf. LePine, 2005). Adaptive performance can be understood as in-role performance in a change context. Pulakos, Arad, Donovan, and Plamondon (2000) developed an eight-dimension behavioral taxonomy for adaptive performance, including such aspects as learning new tasks, technologies and procedures, handling work stress, demonstrating interpersonal adaptability and creative problem solving. Our approach to adaptive performance is different from this and other general conceptualizations (e.g., Griffin & Hesketh, 2003) in that we view adaptive performance as a specific measure of change-related behavior. Ideally this should be captured both by a combination of self and other-ratings. The measure is specified based on the specific change content. For example, when the change is related to multidisciplinary team-working, a measure is used that specifies team-working behaviors. Examples include discussing project progress with the team, designing methods as a team, and soliciting feedback from the team. Employees are consequently asked how often they engage in these behaviors. This type of measure allows us to capture behavior change and thus, employee adaptive performance.

2.8 Personal Resources Adaptation Model

As argued above, when it comes to understanding adaptation to organizational change, employees' personal resources are relevant factors. Our model (Figure 2) departs from the assumption that organizational change will result in changes in the work environment. For example, employees may be confronted with increased demands (e.g., more time pressure, higher workload, etc.) and more ambiguous operating environments (Armenakis & Bedeian, 1999; Campbell, 2006). People are expected to show new behaviors, process new information, and/or utilize new equipment during changes (Armenakis & Bedeian, 1999). At the same time, the change may positively impact job resources, for example by increasing efficiency, facilitating communication, or possibilities for learning. The example of a Dutch regional college illustrates this. Teachers were confronted with a new policy that required them to change their didactic approach in order to help students to develop their talents. This resulted in having to use new materials and having to coach students, which was far-removed from more traditional methods of transferring knowledge. Due to this change, teachers were exposed to higher cognitive demands, but they may have also perceived more task variety.

Below we discuss the relationships represented in the 'Personal Resources Adaptation Model' (Figure 2.). Each relationship is indicated with a number in Figure 2 and discussed in a separate paragraph.

1. Personal resources and the work environment: Reciprocal influences

The model suggests a reciprocal relationship between employees' personal resources and job demands/resources. In line with the work of Kohn and Schooler (1982), we expect that personal resources will influence job demands/resources. This is also in line with the suggestions of Zapf, Dormann, and Frese (1996) regarding reversed causal effects of well-being on (perceived) working conditions and the drift hypothesis (people in a bad state drift to worse jobs). Employees with more personal resources will create job resources for themselves. For example, Scheier, Weintraub, and Carver (1986) found that people high on optimism were more likely to seek and receive social support.

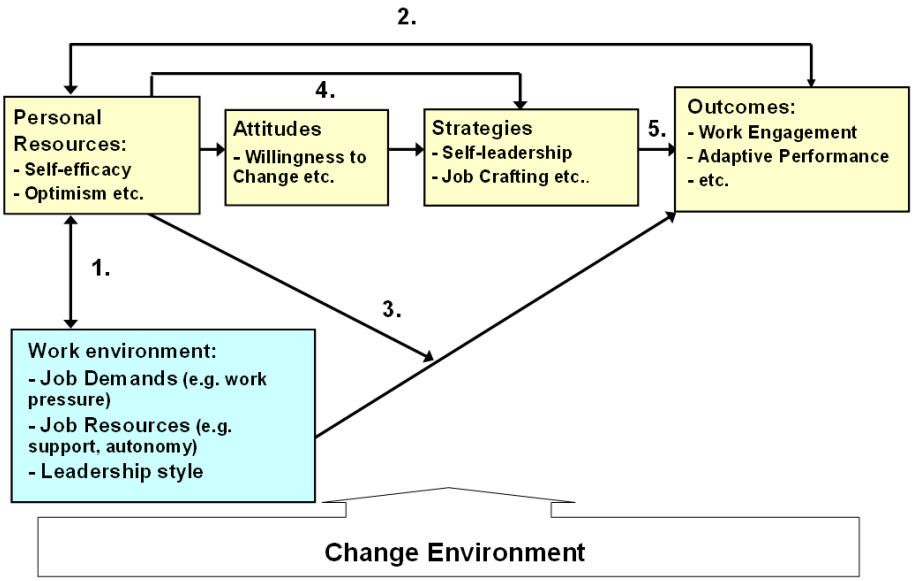

Figure 2. Personal resources adaptation model

This may be influenced by employees' self-regulation strategies. Personal resources may also influence perceptions of the changed work environment. Resilient employees are more likely to perceive a new requirement as a challenge, while less resilient employees will experience changed requirements as taxing demands (Maddi, 2005).

Secondly, we expect demands and resources in the working environment to influence the presence of personal resources. Many studies have established that job demands and job resources can impact employee health and well-being (e.g., Bakker & Demerouti, 2008; Hackman & Oldham, 1980; Karasek, 1979; Schaufeli & Salanova, 2007). We expect that job resources (e.g., support) may enhance the presence of

personal resources (e.g., self-efficacy). These relationships should be tested in a longitudinal design.

2. Personal resources as mediators in the relationship between work environment and outcomes

The model suggests that personal resources may act both as mediators and moderators in explaining the relationship between the work environment and outcomes (i.e., work engagement and adaptive performance) while direct effects can also be observed.

A *direct* positive effect of personal resources on work engagement and performance is expected. Aspinwall and Taylor (1992) found that optimism had a direct effect on college adjustment. This direct effect can work for other personal resources as well. For example, self-efficacy makes employees feel competent, confident, and motivated. Self-efficacious employees therefore experience more engagement towards their work and eventually perform better (Xanthopoulou et al., 2009a).

In addition to this, we expect personal resources to *mediate* the influence of changes in the work environment on work engagement and performance. The model proposes that job resources (e.g., support, autonomy) will influence and build personal resources, which in turn will have a direct favorable impact on work engagement and performance. This process was observed in a study by Xanthopoulou et al. (2008), which showed that support enhanced self-efficacy which consequently increased work engagement. This mediated relationship between work environment, personal resources and positive organizational outcomes, has also been shown for organizational-based self-esteem (Pierce & Gardner, 2004) and PsyCap (Luthans et al., 2006).

3. Reciprocal relations between personal resources and outcomes

We expect that over time there will be a beneficial impact of work-engagement and adaptive performance on personal resources. This is in line with the broaden-and-build theory, that outlines how the presence of positive emotions triggers an upward spiral towards broadminded coping (i.e., taking a broad perspective and finding positive meaning), which in turn leads to more positive affect (Fredrickson & Joiner, 2002). In our model this would mean that positive emotions that accompany work engagement and performance can build enduring personal resources.

4. Personal resources as moderators

The model also suggests that personal resources will moderate the influence of job resources on performance and engagement. Personal resources can form a buffer against the adverse impact of job demands. This has been shown in a study where self-efficacy

moderated the relationship between job demands and psychological health outcomes (Van Yperen & Snijders, 2000). This effect has also been shown for job resources, which buffered the negative impact of job demands on work engagement (Bakker et al., 2007). In addition, we expect that personal resources will enhance the positive impact of job resources on well-being and performance. We expect more resourceful employees to be more motivated and better able to spot resources in the changing environment and use them to their advantage, resulting in improved performance and engagement.

5. Role of change attitudes and strategies

Most studies in this area have focused on the impact of change context variables (e.g., communication, participation, and trust) on attitudes to change (e.g., Kotter & Schlesinger, 1979; Winter, 1973). We focus on the presence of personal resources and how this influences attitudes to change. We expect the presence of more resources to lead to a more positive change attitude. In turn, change attitudes will influence employees' choice of strategies for interacting with the change.

The model suggests that personal resources are translated into (cognitive) behavioral strategies. For example, self-efficacy beliefs are linked to a strategy of remembering previous mastery experiences and using these in evaluating one's current capacities to deal with a situation (Bandura, 1997). Maddi (2005) studied responses to radical organizational change and found that resilient employees used more adaptive behavioral and cognitive strategies than less resilient employees. They were more pro-active in initiating support and were able to change their thinking on the situation, which allowed them to develop more understanding and more effective plans. Similar dynamic processes are described in Aldwin et al.'s (1996) Deviation Amplification Model, which suggests that high base-levels of general personal resources lead to more adaptive coping strategies. These strategies lead to high situational and personal resources and ultimately this, in turn, builds up general levels of personal resources. This idea of a positive gain spiral has also been applied to the workplace (e.g., Llorens, Schaufeli, Bakker, & Salanova, 2007; Xanthopoulou et al., 2009a). In spite of the fact that behavioral strategies of using and creating resources may be most effective in boosting well-being and engagement during chnage, strategies haven't been studied widely in this process as of yet.

In our view it is useful to include personal resources separately, as opposed to combining them into a higher-order construct (such as PsyCap). Being able to distinguish between the impact of different personal resources will inform the design of targeted interventions. We expect that strategies used to deal with change will predict work engagement and adaptive performance. Problem-focused strategies were shown to

predict higher levels of job satisfaction during a merger (Amiot, Terry, Jimmieson, & Callan, 2006). Also, self-leadership strategies were shown to be related to innovative behaviours at work (Carmeli, Meitar, & Weisberg, 2006).

2.9 Conclusion

The aim of this chapter was to outline why it is relevant to include the role of the person in studies on organizational change. Change has become a constant and may form a risk factor for employee health and well-being (Saksvik et al., 2007). Healthy organizational change requires both the creation of positive working conditions and the development of employee personal resources and strategies, such as self-efficacy, optimism and self-leadership, which in turn may positively influence organizational change-ability. Our model proposes that employees are active agents that shape their environment using behavioral strategies, influenced by personal resources and change attitudes. These employee-level processes influence positive employee outcomes, i.e., work engagement and adaptive performance. This type of research will inform the design of employee-level change interventions. Behavior change at this level is often the missing link in large-scale change interventions. Research in this area will help organizations to balance top-down with bottom-up initiatives to facilitate positive change.

2.9.1 Practical implications

This chapter emphasizes the need for organizations and managers to be aware of individual differences in employee personal resourcefulness. Besides the widely known steps concerning communication, participation and skills training, it is important to be aware that employees are resourceful, active agents that generally don't think of themselves as resisting. Managers should focus on bringing self-managing behaviors to the fore, helping employees to see positive sides of the change, giving support to less self-efficacious employees, etc. Employees should be encouraged to find meaning in the change. This could be achieved by discussing how the changes will affect personal and work-related goals, and how to best manage this impact. Being open to negative change attitudes and actively leveraging positive attitudes is important in monitoring progress. Negative attitudes may hold important information, and it has been suggested that resistance can be a sign of commitment. Soliciting feedback on the change content and process is important. Methods such as appreciative inquiry may be used to involve all employees in a positive change effort (Cooperrider & Sekerka, 2003). Employers might consider training their managers to develop coaching leadership styles that support and encourage employees' self-leadership strategies. Employees and managers could jointly

map the working environment in terms of job demands/resources, including both the physical and psychosocial working environment (support, task variety, etc.). Finally, it is important for managers to be aware of their own personal resources, attitudes and strategies, and how these may impact their leadership behaviors.

2.9.2 Future research

In order to develop practical interventions, research should focus on further investigating the development process of personal resources over time, and the role of traits, self-awareness, and other relevant variables. Also, research might focus on which behavioral strategies are most conducive to adaptive performance (taking into account moderation effects, i.e., which strategies are most suitable for which employees). Another topic relevant during organizational transitions is the positive gain spiral or learning cycle in which general levels of personal resources are built, based on successful strategies, mastery experiences, and performance. Also, the interaction between leaders' and followers' personal resources, attitudes and strategies, and the impact of this interplay on successful adaptation would be interesting for future organizational change research. This could result in practical guidelines to facilitate the adoption of new work practices. Multiple measurement methods like quantitative diary studies can make this process more transparent by examining how this micro-process unfolds on a daily or weekly level.

2.9.3 Final Note

Managing change will always be a challenging, dynamic process where different perspectives at different levels need to be taken into account. We have argued here that an individual-level focus ought to be a crucial element in any change process, since transitions to new ways of working are nearly always accompanied by ambiguity and uncertainty. Besides the obvious aspects of knowledge and skills training, employees' personal resources, attitudes, and strategies can and should be actively managed to facilitate adaptive performance and work engagement. Organizational change cannot be successful without individual change, and individual change requires personal resourcefulness.

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CHAPTER 3
Does Meaning-Making help during Organizational Change?
Development and Validation of a New Scale

Based on:
Van den Heuvel, M., Demerouti, E., Schreurs, B.H.J., Bakker, A.B., & Schaufeli, W.B. (2009). Does meaning-making help during organizational change? Development and validation of a new scale. *Career Development International, 14*, 508-533.

3.1 Introduction

People are motivated to make meaning of what happens in their environments (Baumeister & Vohs, 2002; Frankl, 1963). The individual ability to find meaning has become increasingly important in work settings. Due to globalization, technological developments, reengineering and numerous other changes, the complexity of work and organizational life has increased rapidly. As a result employees are seeking value, support and meaning in their lives, not only through activities outside work, but also on the job (Cash & Gray, 2000).

In this thesis, we conceive meaning-making as the ability to integrate challenging or ambiguous situations into a framework of personal meaning using value-based reflection. Such a conceptualization of meaning-making is relevant for work settings where employees are expected to deal with change, ambiguity and uncertainty on an ongoing basis. The main aim of the present study is to introduce a new measure of meaning-making. We investigate the added value of this new construct in predicting work engagement and performance during change. In order to do this, we test the factorial validity of meaning-making by examining its relationship with first of all, meaning in life (i.e. perceived meaning in life), secondly, personal resources (i.e. self-efficacy, optimism, and mastery) and finally, coping (i.e. positive reinterpretation and acceptance). These constructs show resemblance to meaning-making as they have been shown to facilitate resilience in dealing with challenging or ambiguous situations.

3.2 Theoretical Framework: The Concept of Meaning

The recent focus in psychology on positive experiences (Seligman, 2002) sparked a renewed interest in psychological meaning (Auhagen, 2000; Morgan & Farsides, 2007; Steger, Frazier, Oishi, & Kaler, 2006). Many researchers have acknowledged the importance of being able to experience meaning for optimal human functioning (e.g., Frankl, 1963; Hobfoll, 2001; Jahoda, 1958; Maslow, 1968; Rogers, 1961). This chapter links insights from the existing work on meaning in life (Reker & Chamberlain, 2000; Steger et al., 2006; Wong & Fry, 1998) meaning at work (May, Gilson & Harter, 2004; Wrzesniewski & Dutton, 2001, Wrzesniewski, Dutton & Debebe, 2003) and sensemaking (Weber & Manning, 2001; Weick, 1995; Wrzesniewski et al., 2003). The ability to find meaning has been shown to correlate with psychological well-being (Shek, 1992). Finding meaning positively affects physical health outcomes (Taylor, 2000), better adjustment to disease, less depression and more positive well-being (Helgeson, 2003; 2006). Meaning in a work context serves as mechanism through

which employees may feel more energized about their work (Spreitzer, Kizilos & Nason, 1997). Experienced meaning at work can be considered to be an outcome of societal influences, work environment and personal characteristics (James & James, 1989; May et al., 2004; MOW, 1987; Spreitzer, 1995). Meaningfulness is suggested to mediate the relation between job characteristics and work engagement (May et al., 2004) and the relation between transformational leadership and psychological well-being (Arnold, Turner, Barling, Kelloway & McKee., 2007). Other studies show that meaning at work predicts high commitment and energy (Kanter, 1983), managerial effectiveness and innovative behavior, (Spreitzer, 1995), personal growth and work motivation (Spreitzer, 1997) and job satisfaction (Wrzesniewski, McCauley, Rozin & Schwartz, 1997).

In this chapter we build on the process model proposed by Wrzesniewski and colleagues (2003), which outlines how interpersonal sensemaking results in perceived meaning at work. They define 'work meaning' as employees' understanding of the content and value of the work as a result of continuous, automatic process of sensemaking based on interpersonal cues. Meaning at work in this model predicts employees' efforts to alter or create work content and social contexts (job crafting) to make it more meaningful. In our conceptualization, meaning-making is the ability to link work meaning to meaning in life. Meaning-making allows individuals to evaluate and reflect on events at work in light of personal values and life goals. We expect that meaning-making can help to maintain a sense of well-being and motivation at work. This is in line with classic work that shows that work satisfaction is dependent on perceived personal meaningfulness and fulfillment of one's personal work values (Herzberg, 1966; Locke, 1976).

3.2.1 Meaning and Organizational Change

Meaning has proven to be an important factor in dealing with changing life circumstances (Linley & Joseph, 2004; Reker, Peacock & Wong, 1987; Tedeschi & Calhoun, 1996). In the same line, meaning-making is important when work or organizations change, both in terms of understanding the content of the change and in terms of the impact on employees personal goals (Weber & Manning; 2001; Weick, 1995). Nowadays, the pace of organizational change is high, whether strategic, technological, cultural, regulatory or due to economic crisis. Increasingly, this poses demands on employees to be proactive, resilient and self-managing (Korunka, Weiss & Karetta, 1993; Weick & Quinn, 1999). Some go as far as suggesting that managing change is no longer possible, and the only focus should be on facilitating the internalization of the change by individual employees (O'Hara & Sayers, 1996). Despite

the extensive research on implementation of organizational change, the need for further research to expand our understanding of why people resist or support change is still needed (Armenakis & Harris, 2009; Bouckenooghe, 2009; Bovey & Hede, 2001). When employees use meaning-making, they may be better able to understand what is happening around them, and link the changes in their work environment in a positive way to their own personal goals and values. For example, when a change in work processes occurs that implicates that employees have to work in new teams, meaning-making may help them to first understand why the change is necessary for the organization (sensemaking), and they may then find personal meaning by appreciating the fact they meet new colleagues or can develop new skills, even though it will take some time to get used to the new situation.

When employees' work activities are aligned to their personal values, they are likely to feel empowered and experience intrinsic task motivation (Thomas & Velthouse, 1990). Meaning-making may help employees to accept changes in the work situation, even when initially the changes seem negative. Moreover, studies have shown that it is important for employees to be able to make sense of the change (Weber & Manning, 2001; Weick, 1995). In addition, being in a psychological state of doubt about what the change means, leads to higher turnover intentions and reduced job satisfaction (Rafferty & Griffin, 2006). We think that if employees are able to attach personal meaning to changes at work, they will be more open to change. The reality of organizational life is that often multiple changes are overlapping; therefore, in this study we will therefore not focus on the impact of a discrete change at work (Herold, Fedor & Caldwell, 2007; Weick & Quinn, 1999). Rather, we investigate whether meaning-making in change contexts contributes to work engagement, willingness to change and performance.

3.3 Meaning-making

In line with Wrzesniewski and colleagues (2001, 2003), we view employees as active construers of meaning. We suggest this construction happens through the individual meaning-making process of interpretation and reflection. Individuals may differ in the extent to which this ability is developed. Our view is in line with other theories that view individuals as self-regulating, active agents (Bandura, 1987, 1989; Bell & Staw, 1989; Wrzesniewski & Dutton, 2001). In line with this view (what do people do to create meaning?) we focus on the degree to which individuals engage in meaning-making, which may facilitate successful implementation of change. In using meaning-making, employees can regulate their own experience and well-being. We define

meaning-making as the ability to integrate challenging or ambiguous situations into a framework of personal meaning using conscious, value-based reflection.

A distinction can be made between the *experience* of meaning and the *creation* of meaning (or meaning-making). *Experiencing meaning* has been studied widely (e.g., Crumbaugh & Maholick, 1964; Steger et al., 2006; Wong & Fry, 1998) and is typically measured by asking people to what degree they perceive meaning. *Meaning–making* can be captured by asking people to what degree they engage in value-based reflection and whether they manage to make meaning. We propose to make this distinction because we assume that meaning is fluid and needs to be constructed on an ongoing basis (Wrzesniewski et al., 2003). In dynamic environments such as changing organizations, it is important to focus on the ability to consciously make meaning of ongoing change, rather than trying to capture perceived meaning as a 'static' outcome. We are interested in the conscious use of meaning-making, and by solely measuring the outcome (the experience) of meaning, we cannot know whether it was constructed by the individual in conscious awareness or subconsciously or automatic.

Moreover, it is important to clarify the difference between sensemaking and meaning-making in organizational change settings (e.g., Buchanan & Dawson, 2007; Gioia & Chittipeddi, 1991; Weick, 1995; Weick, Sutcliffe & Obstfeld, 2005) and psychological meaning-making. Sensemaking refers to an ongoing, 'immediate' interpretative process that allows a person to label, categorize, and order the ongoing stream of events and experiences, in order to take adequate action (Weick, 1995). Meaning-making, on the other hand, pertains to the cognitive and behavioral abilities used in value-based reflection. Meaning-making is less automatic and immediate than sensemaking and can only occur when primary interpretation processes (sensemaking) has taken place. It refers to conscious reflection on the impact of ambiguous or challenging events based on personal meanings, values and goals (value-based reflection). Meaning-making concerns the psychological process of in-depth, internal exploration of an issue of concern. 'Challenging' indicates that meaning-making occurs when attention is triggered by an encountered situation, regardless of the positive or negative impact on the person.

An example of meaning-making during change (from our conversations with employees) is the story of an engineer who had just moved to a new job which was an outcome of organizational change. Although this employee felt some anxiety about what would be expected of him in his new role, he also felt enthusiasm about this new opportunity. This enthusiasm arose when he reflected on the opportunities for development the new role would bring him (self-development was an important personal goal for this person). Another example is an individual who had a conflict with

her manager in which she felt she was treated unfairly. This person used reflection and discovered that in order for her to maintain a sense of joy and meaning at work, she needed to speak up and discuss the incident with her boss. This would help her to assert her value of justice while at the same time she saw this as a moment of practising assertiveness skills. In this way she was able to turn the conflict into a learning experience which gave her a sense of meaningfulness, even though she still felt tension between her manager and herself.

3.3.1 Measurement of Meaning-making

Besides the use of qualitative research methods, (e.g., Isaksen, 2000; Lips-Wiersma, 2003; Solomon, 2004), to our knowledge, there are no quantitative measures of meaning-making in our conceptualization. There are, however, several measures for meaning in life, for example the Purpose in Life Test (Crumbaugh & Maholick, 1964), the Life Regard Index (Battista & Almond, 1973), the Life Attitude Profile (Reker et al., 1987), and more recently the Meaning in Life Questionnaire (Steger et al., 2006) and the Meaningful life Measure (Morgan & Farsides, 2007). Meaningful work has been measured with short scales (May et al., 2004; Spreitzer, 1995). These scales mainly focus on measurement of the experience of meaning, and do not capture whether meaning made was a result of an automatic process or deliberate meaning-making in terms of reflection activities.

In order to capture meaning-making, we constructed a short scale (see Appendix I). The meaning-making scale was developed by focusing on the reflection process that precedes the experience of meaning. Items capture reflection activities, e.g. "I actively look for time to reflect on things that are happening" and "I actively focus on things that I find worthwhile". Inherently in this meaning-making process is the generalized result, that is, the *feeling of leading a meaningful life* or not (e.g., "I feel my life is meaningful"). In our conceptualization, the reflection activities and their result (i.e. meaningfulness achieved) *together* form the construct of meaning-making. We measure whether people reflect (using personal values and goals), and perceived meaning in life. Meaning-making is tied to personal values, therefore it is related to meaning in life. Yet, it is different, because it focuses on the cognitive and behavioral aspects as well as the perceived meaningfulness, while meaning in life solely concerns the degree to which individuals *find* meaning or not. In this study, we evaluate the discriminant validity of the meaning-making scale vis-à-vis the Meaning in Life Questionnaire (MLQ-P, Steger et al., 2006), which was recently found to be a reliable and valid measure of meaning in life. Specifically, we will examine whether these constructs are separate factors.

We expect that items used to assess meaning-making and meaning in life will load on two separate factors, which would demonstrate the distinctiveness of meaning-making from meaning in life (*Hypothesis 1*).

3.4 Meaning-Making and Related Constructs

3.4.1 Personal Resources

Studies have shown that it is important to take into account micro-level, within-person factors that positively influence adaptation to organizational change (e.g. Armenakis & Bedeian, 1999; Cunningham et al., 2002). Personal resources can positively influence adaptation to change (Avey, Wernsing, & Luthans, 2008; Judge, Thoresen, Pucik, & Welbourne, 1999; Wanberg & Banas, 2000). Personal resources can be defined as "aspects of the self that are generally linked to resiliency" (Hobfoll, Johnson, Ennis, & Jackson, 2003, p. 632). This definition emphasizes their functionality when circumstances require attention or place demands on an individual. Personal resources are malleable, lower-order elements of personality that tend to fluctuate over time (Gist & Mitchell, 1992; Luthans, Youssef, & Avolio, 2007). Self-efficacy, optimism, perceived control or mastery are often used in studies (e.g. Luthans, Luthans & Luthans, 2004; Maddi, 2002; Wanberg & Banas, 2000). Similar to the abovementioned personal resources, meaning-making as an individual ability also contains strategies and helps individuals to remain resilient. We therefore expect that meaning-making functions as a personal resource. We will test whether meaning-making has added value in predicting work engagement and performance, over and above other personal resources discussed below.

Self-efficacy is defined as 'judgments about one's capability of organizing different skills in order to execute appropriate courses of actions to deal effectively with the environment' (Bandura, 1977, 1997). Self-efficacy is positively related to adaptation to change through its positive relation with openness to change, persistence, learning new tasks, taking initiative, and developmental activities (Hornung & Rousseau, 2007; Schyns, 2004). Moreover, self-efficacy predicts increased performance (Barling & Beattie, 1983; Frayne & Geringer, 2000; Stajkovic & Luthans, 1998; Taylor, Locke, Lee, & Gist, 1984) quality of work (McDonald & Siegall, 1996) and work engagement (e.g., Schaufeli, Taris, & Bakker, 2006; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007; 2009; Xanthopoulou, Bakker, Heuven, Demerouti, & Schaufeli, 2008). We expect that meaning-making is related, yet different from self-efficacy. This is because self-efficacy is the cognitive evaluation of one's competence or abilities, while

meaning-making refers to the ability to reflect and perceive meaning, based on a broader system of personal meaning, not just competence. Both function as motivators; self-efficacy beliefs work as incentives to act, and meaning-making reminds people of their personal values, which can serve as a guide for goal-setting and action (Bandura, 1998; Thomas & Velthouse, 1990). We predict that the items used to assess meaning making and self-efficacy will load on two separate factors (*Hypothesis 2a*).

Optimism is defined as 'generalized positive outcome expectancies' (Scheier & Carver 1985). It has been shown to predict many positive outcomes, including effective coping with life stressors (Nolen-Hoeksema, 2000), successful stress management (Aspinwall & Taylor, 1997), physical health (Peterson, 2000), and productivity at work (Seligman & Schulman, 1986). Recently, optimism was found to partially mediate the relationship between job resources and work engagement (Xanthopoulou et al., 2009). We expect meaning-making to be related, but distinct from optimism, since optimism is a positive way of thinking characterized by an expectation of positive outcomes, while meaning-making is a tendency to reflect on events and find meaning, regardless of expectations about outcomes. We predict that the items used to assess meaning-making and optimism will load on two separate factors (*Hypothesis 2b*).

Mastery is defined as "the extent to which one regards one's life-chances as being under one's own control in contrast to being fatalistically ruled" (Pearlin & Schooler, 1978, p. 5). Thinking differently about adversity can help to regain a sense of control (Taylor, 1983; 2000). Unexpected events can threaten one's sense of control. Mastery beliefs may be the outcome of reflection on past experiences. We therefore think that mastery may be a result of meaning-making. Moreover, while perceived control over the situation is crucial for mastery, understanding of the situation is crucial for meaning-making. Therefore, although both concepts function as resources, we expect them to be conceptually distinct. Thus, we expect that the fit of the model where meaning-making is a separate factor from mastery, is superior to that of the model where these dimensions form one factor (*Hypothesis 2c*).

3.4.2 Coping

Coping is defined as intentional cognitive or behavioral attempts to manage a stressor (Carver, Scheier & Weintraub, 1989). Meaning-making bears similarities with coping and recently, meaning-making was described as a coping process: "[meaning-focused coping] is appraisal-based coping in which the person draws on his or her beliefs (e.g., religious or spiritual), values and existential goals (e.g., purpose in life) to motivate and sustain coping and well-being during a difficult time" (Folkman, 2008, p.7). A measure of meaning-making coping has not been developed as of yet. Meaning-making in our

view is different from Folkman's conceptualization, in that we think meaning-making not only occurs when people are faced with hardship or adversity. In this study, we included the coping measures 'positive reinterpretation and growth' and 'acceptance' from the COPE inventory, which are conceptually close to meaning-making (Carver et al., 1989). 'Positive reinterpretation and growth' was originally viewed as 'positive reappraisal', in which distress emotions are dealt with by interpreting a stressful transaction positively (Lazarus & Folkman, 1984). The strategy 'Acceptance' is particularly useful when the stressor is not easily changed. We expect that the fit of the model where meaning-making is a separate factor from coping constructs is superior to that of the model where these dimensions form one factor (*Hypothesis 2d*).

3.5 Meaning-making and Employee Outcomes

We expect that meaning-making is related to positive employee outcomes that are of particular importance during times of change; i.e. positive attitudes, motivation to engage with the change, work engagement, and enhanced performance. First, it is important that employees continue to do their work as is expected from them, that is why we include in-role performance as an outcome measure. In-role performance captures behaviors directly related to an employee's formal role. It is a self-reported indication of how well an employee carries out formal tasks, duties, and responsibilities as included in their job description (Williams & Anderson, 1991). People who are able to give meaning to changes that happen at work, will be better able to understand why changes are necessary and more willing to perform and invest effort in their work. We expect meaning-making to be motivational for employees, increasing willingness to invest effort in one's tasks and responsibilities, which in turn would lead to successful in-role performance. Thus, meaning-making is positively related to in-role performance (*Hypothesis 3a*).

3.5.1 Work Engagement

Especially during change (which requires extra effort and attention from employees) it is important for organizations that employees remain enthusiastic and motivated. This is why we chose work engagement as an outcome variable. Studies have shown that a lack of meaning in one's work can lead to disengagement or alienation (Aktour, 1992). Work engagement is conceptualized as a positive, fulfilling, affective-motivational state of work-related well-being, characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002, p. 74). Work engagement includes a sense of meaningful work through the dimension of 'dedication' (Bakker, Schaufeli, Leiter &

Taris, 2008; Schaufeli & Salanova, 2007). Dedication refers to being committed and experiencing a sense of significance, enthusiasm, inspiration, pride and challenge in work (Schaufeli et al., 2002; Bakker & Demerouti, 2008). Employees who are able to make meaning at work are likely to be intrinsically motivated and committed (Thomas & Velthouse, 1990). We therefore expect that individuals who are able to make meaning, will also be engaged in their work. In other words: Meaning-making is positively related to work engagement (*Hypothesis 3b*).

3.5.2 Willingness to Change

In order to successfully implement change, employees need to be open and willing to invest effort in the proposed changes. Therefore, 'willingness to change' is an important attitudinal outcome. 'Willingness to change' is defined as: a positive behavioral intention towards the implementation of modifications in an organization's structure, work, or administrative processes, resulting in employee efforts to support or enhance the change process" (Metselaar, 1997, p.34). Willingness to change is crucial in implementing organizational change successfully (Armenakis, Harris & Mossholder, 1993; Holt et al., 2007; Weiner, Amick & Lee, 2008). Meaning-making involves reflection using personal values. Clarity on personal values has been shown to predict willingness to change, job performance and mental health (Bond et al., 2006). Employees' understanding of the change is also important for change implementation (Weber & Manning, 2001; Weick, 1995). We therefore expect that meaning-making will facilitate both willingness and motivation to engage with the changed situation. Thus, meaning-making is positively related to willingness to change (*Hypothesis 3c*).

3.6 Methods

3.6.1 Procedure and Participants

A sample of 238 employees was recruited to participate in the present study. In total, 200 written surveys were distributed in-person to health care workers employed in a health care institution located in the center of the Netherlands. The institution had just gone through a thorough reorganization that included the resignation of a significant number of the health care personnel, and the introduction of a new working methodology. In a letter accompanying the survey, the purpose of the research was explained. Also, in the letter the anonymity and confidentiality of the data were emphasized. Employees were asked to fill out the questionnaire, where necessary in the presence of a research-assistant (who was working part-time at the center) who answered questions. The same research-assistant collected completed surveys in person.

This route was chosen as many of the healthcare workers were lower-educated and had very little experience with answering surveys. In this way, 58 usable surveys were obtained (response rate = 29%). The remaining 180 employees were recruited using a snowball sampling technique (Goodman, 1961). Three master students sent an e-mail containing the survey web link to working adult acquaintances who, in turn, were encouraged to recruit their working acquaintances to participate in the study as well. In the instructions to the survey, it was clearly mentioned that only employees who recently had been facing organizational change were to fill out the survey. Also, the anonymity and confidentiality of the data were emphasized. No response rate can be calculated with this sampling strategy.

The final sample included 81 men (34%) and 146 women (61.3%). For 11 employees (4.6%), information about gender was missing. Their ages ranged from 18 to 65 years with an average of 39 years (*SD* = 12.56). Approximately half the respondents had higher education (24% university degree; 33% higher vocational training). 50% of the respondents were blue-collar workers. 29% of the employees had less than two years of organizational tenure, while 16% had worked more than 20 years for the same employer. The majority of the respondents (72%) had a permanent contract. About half of them (56%) had full-time employment. Participants were employed in a broad range of job positions as appears from employees' job names, including 'sales support manager', 'office manager', 'nurse', 'police officer', 'entrepreneur', and many others. We examined whether our two samples (i.e., health care [N=59] vs. snowball [N=179]) differed significantly on any of the demographic variables. Multivariate analysis of variance revealed that, relative to the snowball sample, the health care sample included more women, more elderly and lower-educated workers, and more employees with a permanent and a part-time contract.

3.6.2 Measures

Personal Resources. Self-Efficacy was assessed with a six-item generalized self-efficacy scale (Schwarzer & Jerusalem, 1995). Items (e.g., "I can always manage to solve difficult problems if I try hard enough") were scored on a five-point scale, where (1) indicated 'strongly disagree' and (5) indicated 'strongly agree'. Cronbach's α was .80. *Optimism* was measured with six items of the Life Orientation Test – Revised (LOT-R; Scheier et al., 1994). Three items of the scale are positively phrased (e.g., "I am always optimistic about my future") and three are negatively phrased (e.g., "I hardly ever expect things to go my way"), with answers ranging from (1) "strongly disagree" to (5) "strongly agree". All negatively keyed items were recoded in order to allow higher scores to reflect higher levels of optimism. Cronbach's α for this scale was .70. *Mastery*

was measured with seven items from Pearlin and Schooler's (1978) self-mastery scale. This scale captures the tendency to feel personal control over life events. The scale consists of five negatively phrased items and two positively phrased items. The two positively phrased items were recoded; therefore higher scores reflect lower levels of mastery. Example items are: "What happens to me in the future mostly depends on myself", and "I often feel helpless in dealing with the problems of life". Answer categories ranged from strongly disagree (1) to strongly agree (5). Cronbach's α was .80.

Coping was assessed using two four-item subscales from the COPE inventory (Carver et al., 1989). The first was 'Positive reinterpretation and growth', which refers to coping by positively reframing the negative event, e.g. "I try to see the negative event more positively". The second subscale was 'Acceptance', which refers to coping by accepting the negative event, for example: "I learn to live with the negative event" (1 = strongly disagree, 5 = strongly agree). Cronbach's α was .80 and .60 for positive reinterpretation and for acceptance respectively.

Meaning in Life was measured with the five-item MLQ-P scale developed by Steger et. al. (2006). The scale measures the presence of meaning in life. An example item is 'My life has a clear sense of purpose' (1 = strongly disagree, 5 = strongly agree). Cronbach's α was .87.

Meaning-making. We developed the meaning-making scale using literature in health psychology (e.g. (Helgeson, Reynolds & Tomich, 2006; Linley & Joseph, 2004, Taylor, 1983). Using the body of work on finding meaning in adversity, the type of activities that individuals engage in when making meaning were identified. Since our aim was to conceptualize meaning-making in a broad sense (in terms of being used both in negative as well as positive events), it was important to phrase items as general statements, as opposed to statements about negative events. An seven-item scale was developed which captures activities related to the psychological process of making meaning, for example, reflection: "I actively take the time to reflect on events that happen in my life" and tendency to focus on meaningful outcomes, "I actively focus on activities and events that I personally find valuable". One reversed item was included. Cronbach's α was .78. The full scale is included in Appendix I. Answers ranged from '1= strongly disagree' to '6= strongly agree'.

Work Engagement was measured with the short, nine-item version of the Utrecht Work Engagement Scale (UWES: Schaufeli, Bakker & Salanova, 2006), which includes three subscales (all including three items). Following are example items for each of the subscales: "I feel vital and strong when I am working (*Vigor*), "I am enthusiastic about my job" (*Dedication*), and "When I am working, I forget everything

around me" (*Absorption*). Items were rated on a 7-point scale ranging from '0 = never' to '6 = always'. The reliabilities (Cronbach's α's) were .91, .92, and .83 for vigor, dedication, and absorption, respectively.

In-role performance was measured with seven items from a scale based on the work by Goodman and Svyantek (1999), who studied in-role or 'task performance' in relation to the person-environment fit. Respondents were asked to rate how well they performed on a five-point scale ranging from '0 = very badly' to '5 = very well'. An example item is "How well did you achieve the objectives of the job?". Cronbach's α was .84.

Willingness to Change was assessed using a four-item scale developed by Metselaar (1997). The items measure employees' intention to invest time and effort to support the implementation of the change. Originally the scale was devised for middle managers. We re-phrased the items slightly in order to make them relevant for general employees. Example items are: "I'm willing to convince colleagues of the benefits the change will bring", and "I'm willing to put effort into achieving the goals of the change" (1 = strongly disagree, 5 = strongly agree). Reliability of the scale was high, with a Cronbach's α of .91.

3.6.3 Strategy of Analysis

First, we investigated the factorial validity of the meaning-making scale by means of Confirmatory Factor Analysis (CFA). Specifically, in the CFA we included meaning-making, meaning in life; self-efficacy, optimism, mastery, and the coping dimensions of positive reinterpretation and acceptance as separate latent factors. Following the partial disaggregation method (Bagozzi & Heatherton, 1994), each factor was operationalized by two indicators representing parcels of the scale items. In order to categorize the items in two parcels, we conducted an EFA on the items of each scale separately, in which we forced a two-factor solution. In this way we had roughly sufficient power to conduct our analysis (namely 51 free parameters x 5 participants = 255 participants (cf. Bentler & Chou, 1987). The model included seven latent factors which were allowed to correlate. This model was compared to a six factor model where the meaning-making parcels collapsed with the meaning in life parcels to form one factor. In a similar vein, we tested the distinctiveness of meaning-making from the other constructs by calculating in total six different six-factor models.

All CFA's were conducted with AMOS (Arbuckle, 2005). Maximum likelihood estimation methods were used and the input for each analysis was the covariance matrix of the items. The goodness-of-fit of the models was evaluated using the χ^2 goodness-of-fit statistic. However, χ^2 is sensitive to sample size so that the

probability of rejecting a hypothesized model is very high. To overcome this problem, the computation of relative goodness-of-fit indices is strongly recommended (Bentler, 1990). Two relative goodness-of-fit indices were computed: the Incremental Fit Index (IFI), the Normed Fit Index (NFI) and the Comparative Fit Index (CFI). The latter is particularly recommended for model comparison purposes (Goffin, 1993). For both relative fit-indices, as a rule of thumb, values greater than .90 are considered as indicating a good fit (Byrne, 2001, pp. 79–88). In addition, the Root Mean Square Error of Approximation (RMSEA) is computed for which values up to .08 indicate a reasonable fit of the model (Browne & Cudeck, 1993).

Hypotheses 3a-c were tested with stepwise regression analysis for each dependent variable separately. In each regression analysis, we included personal resources in the first step and the two coping dimensions in the second step and meaning in life was added in the third step. This was done in order to calculate the R^2, which indicate the amount of explained variance of each group of variables in each dependent measure. Meaning-making was added in the fourth step to determine the amount of variance that it explained in the dependent measures, after controlling for other related constructs.

The latent factors were allowed to correlate. This model was compared to a model where the meaning-making parcels collapsed with the meaning in life parcels to form one factor. In a similar vein, we tested the distinctiveness of meaning-making from the other constructs.

3.7 Results

3.7.1 Descriptive Statistics

Table 1 displays the means, standard deviations, and the bivariate correlations of the variables included in the study. As predicted, correlations between meaning-making and the outcome variables; work engagement, willingness to change and in-role performance were positive and moderate, ranging from $r = .34$, $p < .01$ for work engagement to $r = .40$, $p < .01$ for in-role performance.

Table 1. Means, Standard Deviations, and Correlations among study variables (N = 238)

		Mean	SD	1	2	3	4	5	6	7	8	9
1	Meaning-making	4.56	.70	-								
2	Self-efficacy	3.90	.57	.58**	-							
3	Optimism	3.77	.59	.52**	.52**							
4	Mastery	2.21	.63	-.42**	-.45**	-.62**						
5	Positive Reinterpretation	3.83	.66	.54**	.57**	.40**	-.27**					
6	Acceptance	3.14	.96	-.01	.07	-.16*	.21**	.22**				
7	Meaning in Life	3.85	.77	.62**	.45**	.53**	-.43**	.40**	.05			
8	Work engagement	4.76	1.10	.34**	.30**	.29**	-.14*	.29**	.11	.40**		
9	Willingness to Change	3.73	.80	.36**	.44**	.27**	-.26**	.27**	-.02	.21**	.37**	
10	In-role Performance	3.84	.55	.40**	.37**	.33**	-.12	.29**	.06	.28**	.41**	.31**

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

3.7.2 Factorial Validity of the Meaning-Making Scale

Hypotheses 1 and 2 stated that the fit of the model where meaning-making is a separate factor from the constructs: meaning in life (1), self-efficacy (2a), optimism (2b), mastery (2c), and coping (2d) is superior to that of the model where meaning-making and the respective constructs collapse into one factor. The CFA showed that the fit of the model could be substantially improved by allowing the parcel of optimism that included negative items, to correlate with the parcels of meaning in life and mastery that also included the negative items. As can be seen in Table 2, the fit of the free model including the seven hypothesized factors is satisfactory. By collapsing meaning-making and meaning in life in one factor, the fit of the model deteriorated significantly, $\Delta\chi^2$ (6) = 51.53, $p < .001$. This means that the meaning-making scale and the (presence of) meaning in life scale (MLQ-P) are conceptually different. Their estimated correlation was $r = .82$, $p < .001$. However, these constructs have discriminant validity, because when their correlation was constraint to be 1, the model deteriorated significantly and substantially, $\Delta\chi^2$ (1) = 93.37, $p < .001$, compared to the original seven-factor model. This shows that the constructs are not overlapping.

In a next step, each personal resource was modeled separately such that it formed one factor next to meaning-making. The model that includes separate factors was significantly better than the model in which meaning-making and self-efficacy collapsed ($\Delta\chi2(6) = 79.17$, $p < .001$), or the model in which meaning-making and optimism collapsed ($\Delta\chi2(6) = 29.32$, $p < .001$), or the model in which meaning-making and mastery formed one factor ($\Delta\chi^2(6) = 38.19$, $p < .001$). The models assuming no discriminant validity between meaning-making and personal resources (i.e., where the respective correlations were constrained to 1) confronted computational problems indicating poor model fit. Finally, the models in which positive reinterpretation or acceptance coping formed one factor with the parcels of meaning-making, showed a fit to the data that was significantly worse than the model which included separate factors for these constructs ($\Delta\chi^2(6) = 87.11$, $p < .001$, and $\Delta\chi^2(6) = 112.02$, $p < .001$, respectively). In sum, *Hypotheses 1* and *2a-c* are confirmed. Meaning-making can be distinguished from meaning in life, personal resources, and coping.

Table 2. Fit Statistics of Confirmatory Factor Analyses

Model description	χ^2	df	GFI	NFI	IFI	CFI	RMSEA
7 Factors	187.13	54	.90	.87	.91	.91	.10
6 Factors: Meaning-making & Meaning in life	238.66	60	.88	.84	.88	.87	.11
6 Factors: Meaning-making & Self efficacy	266.30	60	.86	.82	.86	.85	.12
6 Factors: Meaning-making & Optimism	216.45	60	.89	.86	.89	.89	.11
6 Factors: Meaning-making & Mastery	225.32	60	.89	.85	.88	.88	.11
6 Factors: Meaning-making & Acceptance	299.15	60	.85	.80	.83	.83	.13
6 Factors: Meaning-making & Positive reinterpretation	274.24	60	.86	.82	.85	.85	.12
Null model	1489.30	91	.38				.26

Note. χ^2 = chi square; df = degrees of freedom; GFI = Goodness of Fit Index; NFI = Normed Fit Index; IFI = Incremental Fit Index; CFI Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation.

3.7.3 Incremental Validity

A hierarchical multiple regression predicting each of our outcome measures (willingness to change, work engagement and in-role performance) was computed to establish the incremental validity of meaning-making over other personal resources and coping measures (Hypotheses 3a-c). Table 3 displays the relationship between personal resources, coping, meaning in life, and meaning-making on the one hand, and the outcomes; willingness to change, work engagement and in-role performance, on the other hand. In the first step, personal resources were included. Reported self-efficacy and optimism were positively related to willingness to change and work engagement. All three personal resources were related to in-role performance. In the second step, coping was included, however, as is shown in Table 3, coping was not related to either willingness to change, work engagement or in-role performance. In the third step, meaning in life was included, which was related to work engagement.

In the final step, meaning-making was included, which was related to both willingness to change ($\beta = .18$; $p < .05$) and in-role performance ($\beta = 0.25$; $p < .01$), hence *Hypotheses 3a* (in-role performance) and 3c (willingness to change) were confirmed. Against our prediction, meaning-making was not related to work engagement and therefore *Hypothesis 3b* (work engagement) was rejected. However, when the regression analysis was repeated without 'meaning in life', a significant result was found for the relation between meaning-making and work engagement.

Table. 3. Summary of Hierarchical Regression Analysis for Variables Predicting Willingness to Change, Work Engagement and In-role performance (N=238)

		Willingness to Change			Work Engagement			In-role Performance		
Step		*B*	*SE B*	*β*	*B*	*SE B*	*β*	*B*	*SE B*	*β*
1. Personal Resources	Self-efficacy	.562	.097	.403***	.421	.141	.219**	.286	.067	.301***
	Optimism	.035	.107	.025	.449	.156	.239**	.280	.074	.303***
	Mastery	.080	-.096	.063	-.188	-.140	-.106	-.180	-.066	-.207**
R^2 *Change*		.202***			.119***			.187***		
2. Coping	Pos. Reinterpretation	.034	.091	.028	.209	.130	.124	.055	.063	.066
	Acceptance	-.030	.053	-.036	.110	.076	.096	.021	.036	.036
R^2 *Change*		.001			.023			.005		
3. Meaning in Life		.013	.076	.013	.432	.105	.302***	.072	.052	.101
R^2 *Change*		.000			.059***			.007		
4. Meaning-making		.211	.099	.183*	.137	.138	.086	.196	.068	.249**
R^2 *Change*		.015*			.003			.028**		

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

3.8 Discussion

Departing from previous studies on meaning in life, meaning at work and sensemaking, this study focused on the making of meaning in line with the theories of employees as active construers of meaning (Wrzesniewski et al., 2001, 2003). We introduced and evaluated the validity of a new measure of meaning-making. Meaning-making refers to the ability to integrate challenging or ambiguous situations into a framework of personal meaning, values and goals, using conscious value-based reflection. Because organizational changes tend to be stressful, challenging or ambiguous situations for employees (Ashford, 1988), we expected that being able to find meaning may help to adapt to changing organizational environments (Cash & Gray, 2000).

Meaning-making differs from sense making in that meaning-making is deliberate reflection on ambiguous events, in light of an individual's personal values and goals. Due to its conscious and reflective nature, meaning-making could be described as 'secondary sensemaking'. With the rise of positive organizational behavior, attention is no longer solely on overcoming resistance to change, but also on employee aspects that positively influence willingness to change (Avey et al., 2008; Bakker & Schaufeli, 2008; Campbell, 2008). In our view, focusing on meaning-making as a predictor is useful in organizational change research, because the growing complexity of dynamic work environments has increased employees' need for meaning and value both in life and in work (Cash & Gray, 2000). Being able to construe this sense of meaning may help to adapt to changing environments on an ongoing basis.

Results confirmed the factorial validity of the meaning-making scale by showing that meaning making was psychometrically distinct from related constructs (meaning in life, personal resources and coping strategies). We were particularly interested in the question whether meaning-making can explain employee outcomes in times of organizational change, when it is crucial to gain continued enthusiasm and motivation from employees. We confirmed the incremental validity of meaning-making by showing the construct can explain variance in positive employee outcomes i.e., in-role performance, and willingness to change, over and above the impact of personal resources, coping and meaning in life. Regression results showed however, that meaning-making was not uniquely related to work engagement. Taken together, these findings suggest that meaning-making can form an important addition to the study of employee-level factors contributing to positive outcomes during organizational change.

3.8.1 Meaning-making vs. meaning in life, personal resources and coping

This study aimed to take a step towards understanding whether meaning-making can help employees in dealing with organizational change. We tested the factorial validity of the meaning-making construct against meaning in life, personal resources (self-efficacy, optimism, mastery) and coping strategies (positive reinterpretation and acceptance). Meaning in life and meaning-making were strongly correlated, yet the CFA showed that it makes sense (from a psychometric point of view) to separate the two constructs.

Our aim was to gain insight into the importance of the ability to reflect on, and find meaning in everyday events. This reflection includes making sense of how events relate to what an individual finds important and meaningful. We showed that meaning-making is distinctive from meaning in life (Steger et al., 2006), which makes us conclude that there is merit in studying the two constructs separately and using the measure to further the study of meaning-making and its resource-function at work. Meaning-making captures the extent to which individuals actively use reflection to find meaning, while the meaning in life scale captures solely perceived meaning in life. The analyses showed that meaning-making was moderately to highly correlated with other personal resources (self-efficacy, optimism and mastery), yet could be distinguished from those resources. The difference between meaning-making and the abovementioned personal resources is partly the result of the fact that personal resources all measure beliefs, while our scale includes both behaviors and their result, namely meaning 'made'. Thus, meaning-making carries a quality which forms another type of resourcefulness. Is meaning-making not just a way of coping? Results indicated that meaning-making was highly correlated to the positive reinterpretation coping dimension. No significant correlation was found between meaning-making and acceptance. The regression analyses showed that meaning-making has incremental value over coping behaviors in explaining variance in the dependent measures. Meaning-making is not the same as positively re-interpreting or accepting negative events, but rather a broader measure of something that people do to create meaning. Not just in response to negative events, but also in everyday life. Seeking meaning is something that people are inclined to do, regardless of how positively or negatively they appraise their circumstances (Frankl, 1963; Klinger, 1998).

3.8.2 Correlates of Meaning-making in a Changing Work Environment

In this study we showed that the ability to create meaning and link everyday events to a framework of personal values, positively relates to willingness to change and

performance. In the same line, previous studies showed that understanding the change is important for successful organizational change (Rafferty & Griffin, 2006; Weber & Manning, 2001; Weick, 1995). Results show that meaning-making is related to how open employees are towards changes encountered at work. Meaning-making can function as a resource and help employees to sustain their performance despite the ambiguity of changing requirements. These relations make us belief that meaning-making can function as a personal resource during times of change, namely it may help employees to remain willing and open to change their behavior when confronted with organizational changes. The construct of meaning-making has an additional value as resource compared to other personal resources such as self-efficacy, optimism and mastery. Therefore it forms a valuable individual characteristic relevant to the study of adaptation to organizational change.

3.8.3 Meaning-making and the changing work environment

In this study we showed that the ability to create meaning and link everyday events to a framework of personal values, positively relates to willingness to change and performance. Results show that meaning-making is related to how open employees are towards changes encountered at work. Meaning-making can function as a resource and help employees to sustain their performance despite changing requirements. These relations make us belief that meaning-making can function as a personal resource during times of change. Although there is some overlap, the construct of meaning-making can be distinguished from other personal resources such as self-efficacy, optimism and mastery, and it therefore forms a valuable addition to the study of adaptation to organizational change.

3.8.4 Meaning-making and Work engagement

Studies have shown the importance of experienced meaningfulness at work (Hackman & Oldham, 1980; May et al., 2004) and how this sense of meaningful work can positively influence personal growth, work motivation and work engagement (May et al., 2004; Spreitzer et al., 1997). Personal resources have also been shown to predict work engagement (Xanthopoulou et al., 2008, 2009). We therefore expected meaning-making to be positively related to work engagement. Although there was a moderate, bivariate correlation between the constructs, regression results showed that meaning-making was not uniquely related to work engagement after controlling for the impact of personal resources, coping and meaning in life. This was surprising, since the engagement subscale ‘dedication’ refers to a sense of significance and meaning in one’s work. A possible explanation for this result may be statistical. In the regression analysis,

meaning in life showed a strong relationship to work engagement. When the analysis was conducted without meaning in life, meaning-making was significantly positively related to work engagement. Most likely, the information in meaning in life 'masks' the relationship between meaning-making and work-engagement. Meaning-making and meaning in life are strongly correlated. Therefore, according to Maassen and Bakker (2001) such variables may represent 'masking variables'.

3.8.5 Theoretical Implications and Future research

Many qualitative studies have used the process of sensemaking or meaning-making, but as of yet, to our knowledge, no quantitative measure has been developed, which limited the use of this construct in empirical research. This study aimed to develop a short measure to capture the individual meaning-making. We were able to show that meaning-making is relevant in studying adaptation to change.

More research should be done to determine what factors and which events in particular trigger meaning-making. From the health psychology literature (e.g., Helgeson et al., 2006; Taylor, 1983) we know that negative events tend to trigger a search for meaning, however, it is less clear what triggers meaning-making. Is it specific attributes of events, or is it linked to personality factors? As said above, our scale includes statements referring to meaning-making behaviors and their outcome (being successful at making meaning). Further research should refine the conceptual framework and determine how the concept relates to stable and malleable personality characteristics, which will clarify the ontological status of meaning-making as an individual difference variable, strategy or skill.

In order to answer these questions, more qualitative research may also be useful. In addition, multiple measurement methods can be used in order to shed light on the process of meaning-making and how it develops over time. Other methods of data collection, e.g. daily or weekly measures could be used to investigate the relevance of meaning-making in changing work environments. Longitudinal studies should be used to unveil dynamics between meaning-making and other personal resources in the process of organizational change.

Our scale was based on existing literature from the field of health psychology (e.g. Affleck & Tennen, 1996; Helgeson et al., 2006; Linley & Joseph, 2004). From a theoretical and practical point of view it would be useful to further investigate empirically the type of behaviors and strategies people engage in when creating meaning during times of change. This will result in more specific behaviors, which may help to develop interventions to build up meaning-making capacity as a personal resource. Meaning-making is a measure of a general ability. Future work may include

more specific measures of meaning made, for example, meaning made of a specific organizational change. This way the general meaning-making ability can be linked to the outcome- meaning made of change. That way the validity and usefulness of the meaning-making measure can be further established.

It would also be useful to understand more about the interplay between the employee and his or her personal resources and the work environment. Which job resources favor the process of meaning-making during change? What is the impact of different types of change and employees' change appraisals? Since the manager is also part of an employee's work environment, and a crucial change-agent in times of change, leadership styles and leader-member exchange may influence the process of meaning-making during organizational change and should therefore be included in future studies. We tested the construct validity of meaning-making against three commonly used personal resources. There are many more personal characteristics that could function as resources, for example, self-esteem, hope and resilience. Especially resilience seems an important construct to take into account when studying dynamic or ambiguous environments. In future studies, meaning-making should be compared against other personal resources, in order to more thoroughly understand the incremental value of meaning-making as compared to other personal resources, as well as the value of each for successful adaptation to change.

3.8.6 Limitations

The limitations of this study should be noted. First, we used cross-sectional data, which made it impossible to investigate causal relations between variables. However, a cross sectional analysis is not problematic when one wants to determine factorial and incremental validity. Secondly, we relied on self-report data, while especially for the outcomes measures such as in-role performance and willingness to change, other sources of information would have been preferable. Although self-reports are the most appropriate measure to reflect individual perceptions on fairness or job insecurity, well-being and individual attitudes, they carry the risk of common method variance, artificially inflating the association between the measured constructs. There has been considerable debate among scholars on the common method problem (Spector, 1994), but in order to reduce potential risks, we have followed many recommendations for suitable questionnaire techniques (e.g. changing the response format, stressing anonymity, instructing participants that there are no right or wrong answers:, see Podsakoff, MacKenzie, Lee & Podsakoff 2003). Finally, it is unclear to what extent the use of different sampling methods may have affected the results. It is possible that the strength of the relationships differed somewhat in the two samples. Unfortunately, the

sample size was too small to draw strong conclusions on this. Furthermore, there is almost no empirical evidence to support the claim that the nature of the research sample matters much in making inferences about behavior in organizations (Highhouse & Gillespie, 2009).

3.8.7 Practical implications and Conclusions

Meaning-making or creating a sense of meaning or significance was shown to be positively related to positive employee functioning during times of organizational change. From an organizational change and development practitioners perspective, our findings underline the need to facilitate and stimulate employees to reflect on organizational change and how it relates to them personally. Managing change is about managing people (Moran & Brightman, 2001). Encouraging employees to actively reflect on what it means to them personally may increase intrinsic task motivation (Thomas & Velthouse, 1990) and facilitates the adaptation process by creating willingness to change and maintaining in-role performance. In practice, this encouragement could possibly come from a coach or mentoring relationship, which has been shown to buffer the negative impact of adverse working conditions on job and career satisfaction (Van Emmerik, 2004). Linking change to opportunities for development and personal growth has been suggested to reduce job insecurity and increase subjective security (through increased employability) (Millward & Kyriakidou, 2004). Practitioners could focus in their interventions on actively encouraging and facilitating meaning-making, not just for leaders, but also for individual employees. Training, coaching and mentoring interventions could include possibilities to learn how to link work events to personal values, through reflection and mindfulness (see e.g. Shapiro, Astin, Bishop & Cordova., 2005). Future research should focus on workplace interventions that may facilitate the process of meaning-making in times of organizational change. 'Mindfulness' as a concept is related to being able to step back and observe oneself, which is an important part of meaning-making (Baer, 2003; Hayes, Bond, Barnes-Holmes & Austin, 2006; Kabat-Zinn, 2003). Mindfulness training (may be a practical way of helping employees to be aware of their personal values, which in turn facilitates meaning-making. The realization that it is necessary to actively involve employees in organizational change processes is widespread. In addition to this, the facilitation of meaning-making can be an in-depth way of engaging employees in the change.

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Appendix I

The Meaning-Making Scale

1. I actively take the time to reflect on events that happen in my life.
2. I have an understanding of what makes my life meaningful.
3. I prefer not to think about the meaning of events that I encounter. (r)
4. When difficult things happen, I am usually quick to see the meaning of why they happen to me.
5. Self-reflection helps me to make my life meaningful.
6. I actively focus on activities and events that I personally find valuable.
7. I feel my life is meaningful.

CHAPTER 4
Adaptation to Flexible Workspaces
A Multilevel Study of Resources and Work Engagement

Revise & Resubmit (*Journal of Occupational Health Psychology*)
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4.1 Introduction

Ongoing global change and requirements for adaptability cause organizations to search for increased efficiency and productivity. Literature on organizational change has primarily focused on macro-variables of organizational structures, profitability and survival. Although insights from these studies have undoubtedly added to implementation success, many change initiatives do not reach their intended goals within the intended time frame (Kotter, 2008). In order to increase successful change endeavors, we believe that insights from macro-level studies need to be complemented by knowledge on micro, employee-level of adaptation to change processes. This is important since organizational change is typically dependent on behavioral change and flexibility by employees. Since changes in work processes may jeopardize employee health (Callan, 1993) and therefore (on the macro-level) organizational productivity, we need to increase our understanding of (antecedents of) successful employee adjustment to change.

Flexible working practices (e.g., teleworking, flexible workspaces) are a popular example of such changes (David, Leach & Clegg, 2011; Gephart, 2002). Previous studies have found contradicting results regarding their impact (Golden & Veiga, 2005). Although some studies show favorable effects, e.g., increased autonomy (De Jonge & Rutten, 1999; Gajendran & Harrison, 2007), other studies show negative effects, e.g., increased negative affectivity, stress, health complaints (Mann & Holdsworth, 2003), and reduced job satisfaction (De Croon, Sluiter, Kuijer, Frings-Dresen, 2005). Although it seems clear that adapting to flexible working practices can proof difficult, not much is known about how adaptation processes fluctuate during change implementation. So far, most studies used cross-sectional or longitudinal designs, focusing on before/after differences and using longer intervals (several months up to a year) between measurements (e.g., De Jonge & Rutten, 1999; Robertson, Huang, O'Neill & Schleiffer, 2008). Those designs allow examination of *overall levels* of variability in employee reactions to change (between-person effects) and are based on the implicit assumption that there is a significant degree of stability over time and across relationships. Less is known about the *specific* individual variation (within-person effects) in how adaptation unfolds during the early stages of change implementation. The aim of this study is to address this gap. Short-term (within-person) adaptation during the first weeks of change may have important implications for the speed and success of adjustment in the long run. In an effort to examine both short-term adaptation to change, as well as longer-term adaptation, we address two key questions. First, do (personal and job) resources help employees maintain their levels of work

engagement during the first weeks of working in a flexible workspace office? Secondly, how does short-term work engagement benefit change adaptation in the longer run, up to six months?

We combine organizational change literature (e.g., Amiot, Terry, Jimmieson & Callan, 2006; Wanberg & Banas, 2000) with conservation of resources (COR) theory (Hobfoll, 1989, 2001). Our theoretical model suggests a short-term and long-term process (see *Figure 1*). To answer the first research question, we measure work engagement and its antecedents every week during the first five, consecutive weeks of using flexible workspaces (short-term process). Expanding on existing (between-person) studies on precursors of work engagement (for an overview see: Bakker, Albrecht & Leiter, 2011), we expect that on a weekly basis, resources foster work engagement which, in turn, may be related to attitude to change. This short-term process is expected to predict longer-term adaptation (i.e. self-reported attitude to change and supervisor-rated adaptive behavior). The full process suggests an adaptation sequence whereby resources trigger work engagement which consequently triggers short-term and long-term adaptation outcomes.

4.2 Flexible Workspaces: Definition and Research Design

The current study focuses on flexible workspaces or 'hot-desking', i.e. an office-space design where employees share workspaces instead of working from assigned desks. Employees lose their personal desk, including the option of leaving personal items / files on their desk. In addition, they have to get used to finding and working from a different desk each day, as well as sharing a bigger open space with colleagues. In this study, the objective for hot-desking was to increase social interaction and cooperation in the department, as well as cost savings. Besides reduced overhead costs, increased efficiency and collaboration are amongst the drivers for flexible workspace designs (Van der Voordt, 2004). Despite these benefits, some question how employees can stay engaged in such clean desk environments, especially since hot-desking tends to prevent expression of identity and personality at work (Pitt & Bennett, 2008). Associated risks are potential loss of productivity due to noise, concentration problems, and decreased job satisfaction (David et al., 2011). Clearly, there is a need to manage the psychosocial risks associated with flexible workspaces (Veitch, Charles, Farley, & Newsham, 2007). However, to our knowledge no quantitative studies have investigated intra-individual adaptation to hot-desking as of yet.

4.3 Resources and Work Engagement During Change

Central in this study is the role of work engagement; a positive, fulfilling, work-related state, characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Work engagement can predict work behavior and is said to be particularly important during change (Frese, 2008). Our tenet is that in order for the workspace change to be successfully implemented, employee work engagement needs to be protected, especially during the transition phase. Particularly during change, employees need to be willing and able to go the extra mile. However, (implementation of) organizational change may cause health hazards and stress due to the associated anxiety, uncertainty (Ashford, 1988; Callan, 1993), ambiguity, perceived loss, and unfairness (Robinson & Griffiths, 2005). Given this potential negative impact, how do employees maintain their enthusiasm and dedication at work?

COR theory (Hobfoll, 1989, 2001) states that people strive to maintain, protect and build resources in the face of threat. Hot-desking is often perceived as threatening (Elsbach, 2003), and resources may therefore facilitate adjustment. Personal and job resources may help to maintain motivation during adaptation to flexible workspaces. *Personal resources* are malleable aspects of the self that contribute to resiliency and a sense of control (Hobfoll, Johnson, Ennis, & Jackson, 2003). Self-efficacy, for example, can benefit adjustment to change (Fugate, Prussia, Kinicki, 2010; Judge, Thoresen, Pucik & Welbourne, 1999). *Job resources* also help to maintain health and motivation during change (Amiot et al., 2006, Terry & Jimmieson, 2003), because they (a) reduce the negative effects of job demands; (b) facilitate goal achievement and need fulfillment; and (c) encourage personal growth (Demerouti & Bakker, 2011). The Job Demands-Resources model (JD-R model; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) is an often used heuristic model to study relationships between resources, work engagement and performance. Studies have shown that both job and personal resources predict motivational outcomes such as work engagement (Bakker & Demerouti, 2007, 2008; Saks, 2006; Schaufeli et al., 2009) – also at the day level (Xanthopoulou, Bakker, Heuven, Demerouti & Schaufeli, 2008) and week level (Bakker & Bal, 2010).

4.3.1 Personal Resources: Meaning-making and Self-efficacy

Meaning-making and self-efficacy may be relevant resources for adaptation to change. Rooted in the literature on adaptation to life stressors (e.g., Linley & Joseph, 2004; Taylor, 1983), meaning-making is the ability to integrate challenging or ambiguous situations into a framework of personal meaning using value-based reflection (Park, 2010; Van den Heuvel et al., 2009). Finding meaning is prominent in stress adaptation

and coping theories (Lazarus & Folkman, 1984). By reducing discrepancies between appraisal of a challenging situation and one's values, beliefs and goals (personal meaning system), a sense of meaningfulness is maintained or restored. This leads to better adjustment to ambiguous or stressful events (Park, 2010). Similar processes occur when individuals adapt to change (George & Jones, 2001). However, meaning-making has not been studied extensively in an organizational change setting. In response to change, employees attempt to make sense of what happens (Weber & Manning, 2001), and relate this to their personal meaning system. In turn, this may result either in resistance or in supportive behaviors (Armenakis, Bernerth, Pitts & Walker, 2007). Meaning-making has been suggested to foster employees' openness to change (Sonenshein & Dholakia, 2012; Van den Heuvel et al., 2009) and intrinsic motivation (Thomas & Velthouse, 1990).

Self-efficacy refers to personal beliefs held about one's ability to deal with external demands (Bandura, 1989; Gist & Mitchell, 1992). Self-efficacy contributes to action-readiness and positive change behavior (Schaubroeck & Merritt, 1997). It may increase self-motivation and effort investment to succeed at challenging tasks (Luthans & Youssef, 2007). Efficacious employees perform better (Stajkovic & Luthans, 1998), and adapt more easily to challenges (Bandura, 1997). Moreover, self-efficacy has been found to be related to openness to change (Rafferty & Simons, 2006; Wanberg & Banas, 2000), and predicts successful coping with change (Callan, Terry & Schweitzer, 1994). We propose that when employees are more resourceful in terms of self-efficacy and meaning-making, they will also be more engaged at work:

Hypothesis 1: Weekly personal resources, i.e. (a) meaning making and (b) self-efficacy are positively related to weekly work engagement.

4.3.2 Job Resource: Co-worker Support

Support or the overall level of helpful social interactions available at work, is a crucial aspect for creating a change-conducive work environment (Bouckenooghe, Devos & Van den Broeck, 2009) and for employee change acceptance (Vakola & Nikolaou, 2005). Support may increase employee health and motivation via effective coping behavior (Lazarus & Folkman, 1984). Also, co-worker support may be instrumental in meeting employees' emotional / instrumental needs regarding the change. It may provide access to appropriate resources (e.g., information) to deal with change-induced stress (Hobfoll & Shirom, 2001). The relationship between social support and work engagement, health and well-being seems well-established (see Bakker & Demerouti,

2007; Halbesleben, 2006). Support may be particularly important when implementing flexible workspaces, since these typically change or eliminate established social support structures (Wiesenfeld, Raghuram & Garud, 2001). Managing presence of support during implementation of hot desking is therefore extra important, since the change per se will require higher levels of support, while the nature of the change may undermine the provision of such support. Based on the above, we expect that:

Hypothesis 1c: Weekly co-worker support is positively related to weekly work engagement.

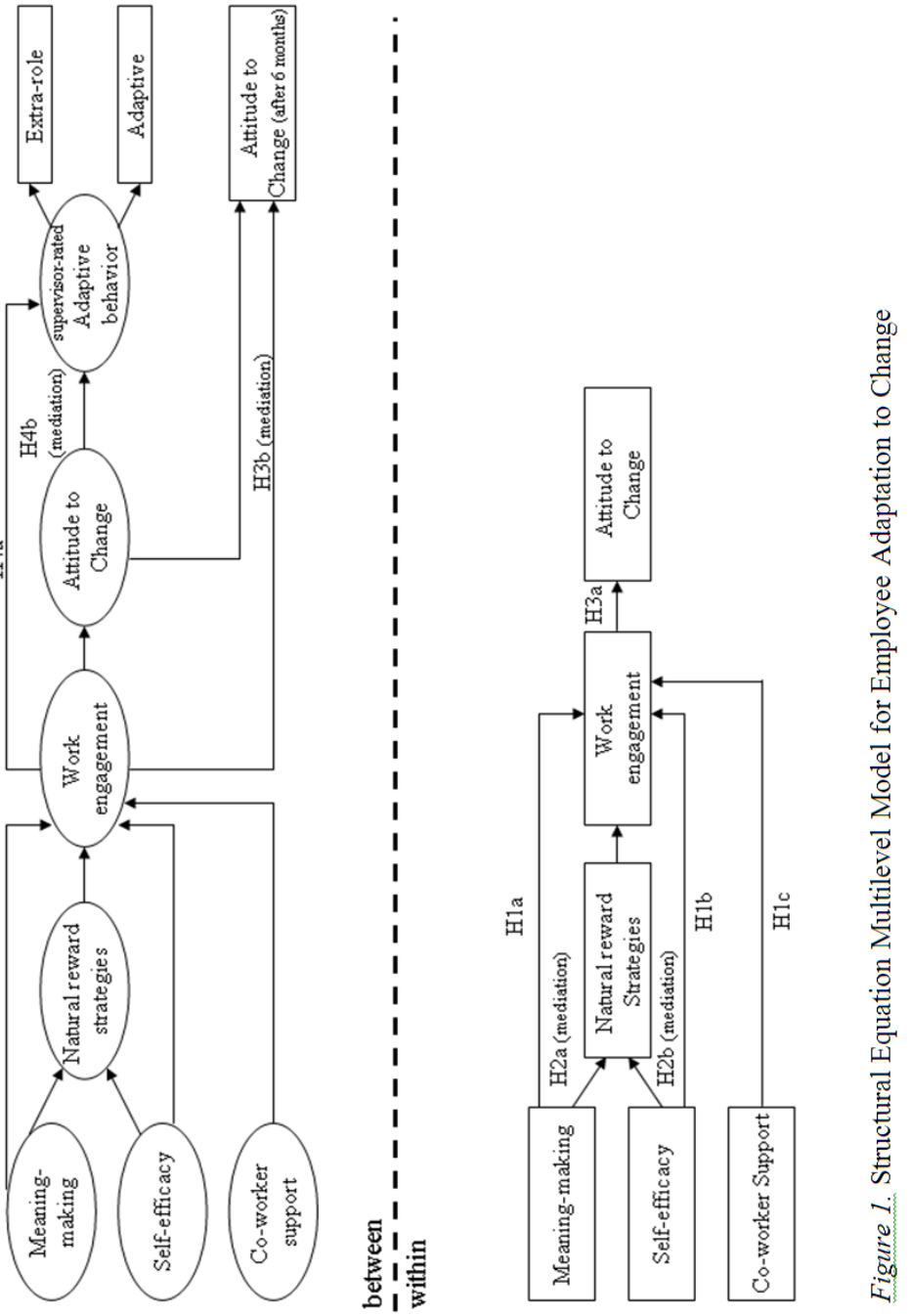


Figure 1. Structural Equation Multilevel Model for Employee Adaptation to Change

4.3.3 Mediating Role of Natural Reward Strategies

Scholars have emphasized the need to understand *how* personal characteristics influence motivational and performance outcomes (Barrick, Mount & Judge, 2001). In line with research on the mediating role of coping strategies during change (cf. Fugate, Kinicki & Prussia, 2008), we include self-leadership behaviors as a potential mediator that may explain the relation between personal resources and work engagement. Self-leadership is a 'self-influence' process through which employees motivate themselves to perform in enjoyable and desirable ways (Houghton & Neck, 1996; Manz, 1986). As a self-management strategy it facilitates adaptation to change (Kozlowski, Gully, Nason & Smith, 1999) and it may be particularly relevant to hot-desking, which requires working in self-managed ways. One aspect of self-leadership seems particularly relevant, i.e. '*natural reward strategies'*(NRS). NRS refers to self-regulated behaviors used to pro-actively cope with the work environment. It captures how employees 'craft' their work to make it intrinsically rewarding (Houghton & Neck, 2002; Lee & Turban 2010). For example, an employee may use different workspaces at different times or for different tasks. Using preferred ways of working (drawing on personal interests and meaningfulness) makes work intrinsically motivating (Manz, 1986). We expect that employees with higher levels of personal resources will make more use of NRS. Meaning-making may stimulate awareness of what is rewarding, while self-efficacy may foster self-regulation (Luthans &Youssef, 2008) and action-readiness (Bandura, 1998) to try out such strategies. In turn, NRS may lead to an increased sense of purpose, energy, and enjoyment (Houghton & Neck, 2002; Lee & Turban, 2010). Based on the above, we predict that:

Hypothesis 2: Weekly use of NRS mediates the relationship between (a) weekly meaning-making and (b) weekly self-efficacy on the one hand, and weekly work engagement on the other hand.

4.4 Adaptation to Change: Longer-term Outcomes

In the present study, adaptation to change is operationalized by both attitudinal and behavioral components (adaptive performance). *Attitude towards organizational change* has been defined as employees' overall evaluation of how favorable or unfavorable they perceive the change (Bovey & Hedey, 2001). Engaged employees identify themselves with their roles and express themselves via their work (Kahn, 1990). This may be one of the reasons why they tend to experience positive emotions (Bakker, 2010). The positive affect associated with work engagement may have important consequences for change

adaptation. Positive emotions that accompany positive states such as work engagement, can *broaden* peoples' attention and thinking, and increase openness to new experiences (Fredrickson, 2001; Fredrickson, Cohn, Coffey, Pek & Finkel, 2008). We therefore expect that more engaged employees will also be more positive towards change. In addition, a broadened, positive outlook has been found to *build* enduring (inter)personal resources over time (Fredrickson et al., 2008), which may explain the link between work motivation and long-term positive change attitude. Moreover, being 'vigorous' (key-component of work engagement) implies resilience and willingness to persevere in the face of adversity (Schaufeli et al., 2001). Based on the above, we predict the following:

Hypothesis 3a: Weekly work engagement is positively related to weekly attitude to change.

Our design allows us to link the short-term adaptation process (e.g., Lazarus, 2000) to long-term adaptation outcomes. We expect that initial work engagement can positively impact long-term attitudes via initially formed attitudes. Once formed, attitudes tend to remain relatively stable (Staw & Ross, 1985), especially when people use similar attitude-related contextual information when forming, and later reconstructing attitudes (Glasman & Albarracín, 2006). When employees are able to maintain work engagement from the onset of change, this may positively influence attitudes both short-term and long-term. Underlying this effect may be the broaden and build (B&B) processes described above (Fredrickson, 2001). If employees manage to protect resources and work engagement from the start, access to resources may be increased, which may lead to better adjustment and positive change attitudes in the longer run. Therefore, we also contend that:

Hypothesis 3b: The relationship between short-term work engagement and long-term attitude to change (six months later) is mediated by short-term attitude to change.

Adaptive performance refers to "those aspects of performance related to changing job requirements" (Griffin & Hesketh, 2003: 66). It forms the basis of long-term effectiveness, both at the individual, team and ultimately the organizational level (Kozlowski et al., 1999). Adaptive performance has been operationalized using *general* behavioral measures that include handling emergencies, creative problem-solving, or interpersonal adaptability (Pulakos Arad, Donovan & Plamondon, 2000). In order to

predict the success of organizational change, it is also important to measure the adaptive performance in terms of *specific* behavior change envisaged by the change (Van den Heuvel et al., 2010). Hot-desking impacts interpersonal dynamics on the work floor profoundly. Besides cost-cutting, the main objective of introducing hot-desking was to increase social interaction and other-oriented behaviors in the department, not only within but also outside one's own team. Therefore, adaptive behavior within this context is captured using two relevant constructs. First, we measure individual adaptive behaviors that contribute to effectiveness of a team or work group (in this case the department) – as opposed to individual effectiveness (Griffin et al., 2007). We do not focus on behaviors towards the *team*, rather, we focus on adaptive behaviors towards *co-workers in the department*, since improving departmental interaction was the objective of the hot-desking. Secondly, we include extra-role performance, i.e. discretionary, interpersonal behaviors that go beyond the formal job description (Podsakoff & MacKenzie, 1994). Together these constructs reflect the adaptive behaviors envisaged for the new working environment. In order to limit social desirability bias, we chose to ask supervisors to rate their subordinates on these adaptive behaviors.

Work engagement is important in order to produce adaptive behaviors needed to deal with rapid change (Frese, 2008). Previous studies have shown that engagement is related to performance outcomes, e.g., customer-rated performance (Salanova, Agut, & Peiro, 2005), and in-role and extra-role performance (Bakker, Demerouti & Verbeke, 2004). Moreover, daily engagement has been shown to be related to increased financial results (Xanthopoulou et al., 2009a). In line with both COR theory (Hobfoll, 1989, 2001) and B&B processes (Fredrickson, 2001), the relationship between engagement and performance may be explained by increased accessibility of resources. Also, the relationship may be explained by more effective allocation of attentional and energetic resources used by engaged employees (Demerouti & Cropanzano, 2010). During change, additional resources and attention is needed to deal with uncertainty. Similarly, we expect that the explanatory processes mentioned above will lead to a positive impact of work engagement on adaptive performance behavior (i.e. adaptive performance towards the department and extra-role performance) as observed by supervisors. Based on the above, we formulate our fourth hypothesis:

Hypothesis 4a: Work engagement is positively related to supervisor-ratings of adaptive behavior (rated after change implementation).

In addition to the direct effect of work engagement on adaptive behavior, we expect that this relationship may be explained by short-term attitude to change. This is in line with perspectives that outline the link between attitudes and behavior (Ajzen, 1991; Glasman & Albarracín, 2006). The presence of positive attitudes to change may predict the degree to which employees ultimately display the behaviors that are envisaged by the change (i.e. adaptive behavior). Accordingly, attitude to change also determines whether adaptive behavior is observable by others, including the supervisor. Therefore, our final hypothesis is:

Hypothesis 4b: Short-term attitude to change mediates the relationship between work engagement and supervisor-ratings of adaptive behavior (after change implementation).

4.5 Method

4.5.1 Sample and procedure

The present study was conducted in an engineering company that introduced hot-desking in one of its departments. This meant that 157 employees would no longer have assigned, personal desks. Starting the first week after the renovations, employees were invited to complete a weekly electronic survey for a period of 5 consecutive weeks. To encourage participation we emphasized the consideration of employees' feedback (with regards to the change) by management, as well as the opportunity to enter a lottery draw to win an iPod. Response rates ranged from 45% in week 1 to 35% in week 5. Analyses were conducted on a total sample consisting of 296 observations across 71 employees (total response 45.2%) that completed at least 2 weekly surveys (on average 4.17 weeks per participant). Although 59 observations were missing, an advantage of multilevel modeling is that an equal number of observations is not assumed. Therefore respondents with missing observations pose no problem and can be included in the analysis (Hox, 2002). The final sample consisted of 59 males (83%) and 12 females, with an average age of 42 years (*SD*=10.41). Average tenure was 8.1 years (*SD*=8.21). The majority of respondents (81.3%) were highly educated and worked full-time (60.9%). Supervisor-ratings of adaptive behavior were obtained for all employees after week 5. The first author met face-to-face with seven supervisors during weeks 6 and 7. After explaining the purpose of the ratings and emphasizing confidentiality, supervisors gave their ratings for each of their employees in an excel spreadsheet.

4.5.2 Measures

Validated scales were used for all constructs included in this study. Due to the weekly measures it was necessary to use shortened scales to minimize survey fatigue in employees. The wording of the items in the weekly measures was adjusted to apply to the preceding week. For within–person measures, items were scored on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) unless otherwise indicated.

4.5.3 Within-person measures

Self-efficacy was measured with two items adapted from the 10-item general self-efficacy scale (Schwarzer & Jerusalem, 1995). Items were: ‘‘Last week while at work, I was confident that I could deal efficiently with unexpected events/ I felt confident that I could handle whatever came my way”. Inter-item correlations ranged from .55 till .87 across the five weekly measures, indicating acceptable reliability. To strengthen confidence in the reliability and validity of the short scale, we examined the correlation between our shortened scale and the complete scale including 10 items using a larger data set (AUTHORS, 2007; *N*= 714). We found that the shortened scale correlated highly with the full scale, r =.82, p < .001.

Meaning-making was measured with three items adapted to the weekly format from the meaning-making scale (Van den Heuvel et al., 2009). An example item is: “Last week, I actively took the time to reflect on events that happened”. Cronbach’s alpha ranged from .78 till .88. These items had highest face validity for a weekly study. We used data of (AUTHORS, 2009; N = 238) to check the validity of this shortened scale and we found that the short scale correlated strongly (r = .90, p < .001) with the complete scale

Co-worker support was measured with two items based on Van Veldhoven, De Jonge, Broersen, Kompier and Meijman’s (2002) scale. An example item was: “Last week, my colleagues helped me with my tasks if necessary”. Inter-item correlations ranged from .75 to .84 across the five weeks. Using a larger dataset (N=714) we again checked reliability of the shorter scale. This 2-item scale correlated highly (r =.96, p < .001) with the original 3-item scale in the study of (AUTHORS, 2007; *N*= 714).

Natural reward strategies was captured with three items from the 5-item self-leadership subscale (Houghton & Neck, 2002). An example item was: “Last week, I sought out activities in my work that I enjoy doing”. Cronbach’s alpha ranged from .66 to .89.

Work engagement was measured with six items of the UWES-9 (Schaufeli, Bakker, & Salanova, 2006) consisting of three subscales; vigor (“Last week, I felt

bursting with energy at work"), dedication ("Last week, I was proud of the work that I do"), and absorption ("Last week I was immersed in my work"). Cronbach's alpha ranged from .92 to .96. The 2-item scale correlated highly (r =.97, p < .001, for vigor, r =.98, p < .001, for dedication and r = .95, p < .001, for absorption) with the original 3-item scale in the dataset of (AUTHORS, 2007; N= 714).

Attitude to change (short-term) was assessed with a single item: 'Last week, taking all things together, how positive or negative would you say you were about the change?' In line with recommendations for single-item measures (Cummins & Gullone, 2000), we used a ten-point scale ranging from 1 (*very negative*) to 10 '(*very positive*). Therefore, higher scores indicated a more positive attitude to change.

4.5.4 Between-person measures.

Adaptive behavior was captured using supervisor-ratings. Based on rating-methods used in previous studies (cf. Barrick, Stewart & Piotrowski, 2002), supervisors were provided with four short descriptions (ranging between 55 and 84 words) of the scales used. The descriptions included the information from the items in the scales, where the word 'team' was replaced by the word 'department' (see Appendix for two example descriptions).

The first three descriptions referred to the three subscales of the scale for adaptive work role performance towards others at work: 1) proficiency, 2) adaptivity and 3) proactivity. Together, these three constructs capture behavior that adds to the effectiveness of a (work) group as opposed to individual effectiveness (Griffin et al., 2007). One overall rating of adaptive performance towards the department was created by computing the mean of the three subscale ratings (Cronbach's alpha: .75). The fourth description consisted of extra-role performance behaviors (Goodman & Svyantek, 1999). Supervisors were asked to rate both types of individual behaviors (i.e. adaptive performance towards the department and extra-role performance) of each of their team members on a 100-point scale. A 100-point scale was used in order to increase the sensitivity of the scale (Cummins & Gullone, 2000). Instructions were to base ratings on the previous 7-week period, starting from the introduction of the flexible workspaces up to the moment of the ratings.

Long-term attitude to change was assessed with a single-item measure six months after the introduction of hot-desking: 'Taking all things together, how positive or negative would you say you are about the change?" Again, we used a ten-point scale ranging from 1 'very negative' to 10 'very positive'. Higher scores therefore indicated a more positive attitude to change.

4.6 Strategy of Analysis

Hypotheses 1a-c, 2a-b and 3a addressed within-person (*intra*-individual) weekly fluctuations, while Hypotheses 3b, 4a and 4b addressed between-person (*inter*-individual) differences (see *Figure 1*.). Due to the weekly measurement occasions, our data had a hierarchical structure, whereby week level observations were nested within the individual. Hypotheses were therefore tested using multilevel structural equation modeling (MSEM) with the Mplus program (Muthén & Muthén, 2006). Mplus allows analysis of data consisting of both within and between-person variables, in particular when between-person outcomes are predicted from variables measured at the within-level (cf. Croon & Van Veldhoven, 2007). Week level predictor variables were centered to the person mean. We modeled both within- and between-person variance of our within-person variables. The hypothesized model (*Figure 1*.) consisted of six observed variables at the within-person level. The week level, within-person variables were meaning-making, self-efficacy, co-worker support, NRS, work engagement, and short-term attitude to change. Mplus decomposes the variance of these variables in a within- and between-person component. The between-person components of these variables were therefore modeled at the between-person level as latent variables. The adaptation outcomes were also modeled on the between-person level. These were: attitude to change after six months and a latent factor; supervisor-rated adaptive behavior. The latter was indicated by 2 observed variables, i.e. adaptive performance towards the department and extra-role performance. The hypothesized model included: (1) direct and indirect effects of personal resources on work engagement via NRS; (2) direct effects of co-worker support on work engagement; (3) direct and indirect effects of work engagement on adaptive behavior and long-term attitude to change via short-term attitude to change.

To examine mediation hypotheses, we first tested two models (M1 and M2, see Table 2) in which only direct effects were successively included in order to confirm whether there were direct effects to be mediated (cf. Mathieu & Taylor, 2006). Paths to and from the mediators were constraint to zero. Following this we tested our hypothesized model (M3) as presented in *Figure 1*. The significance of mediation effects was tested in Mplus using the estimation of indirect effects via the multivariate delta method, an equivalent of the Sobel test (Muthén & Muthén, 1998-2010). Overall model fit was assessed with the comparative fit index (CFI), the Tucker-Lewis Index (TLI), the AIC (Akaike) and the Root Mean Square Error of Approximation (RMSEA) (Hu & Bentler, 1999). According to Hu and Bentler (1999), a cut-off value of .06 for

RMSEA and .95 for CFI and TLI indicates a good fitting model, in addition, models with lower AIC values indicate a better model fit.

4.7 Results

4.7.1 Descriptive Statistics

The means, standard deviations, and correlations among the study variables are presented in Table 1. Demographic variables (sex, age and tenure) did not correlate significantly with our outcome variables and were therefore not included in further analyses.

4.7.2 Weekly Fluctuations

The intraclass correlation shows the proportion of variance of the variables at the within-person and between-person level of analysis. Results showed that 43% of the variance in meaning-making, 38% in self-efficacy, 37% in co-worker support, 39% in NRS, 15% in work engagement, and 15% in attitude to change, can be explained by the within-person level. Although there is more unexplained variance at the between-person level, there is enough variance left to be explained by variations in our within-person variables.

Table 1. Means, Standard Deviations, and Correlations among Study Variables

	Variable	Mean	SD	1	2	3	4	5	6	7	8
1	Meaning-making	4.37	0.96								
2	Self-Efficacy	5.24	.80	.36**							
3	Co-worker support	5.21	.86	.25*	.42**						
4	Natural reward strategies	4.70	.78	.60**	.35**	.25					
5	Work engagement	4.64	1.23	.41**	.60**	.67**	.44**				
6	Attitude to change (short-term)	5.97	1.80	.20	.49**	.59**	.37**	.72*			
7	Supervisor-rating	70.22	10.48	.17	.24	.37**	.16	.33**	.45**		
8	Supervisor-rating extra-role	74.41	12.04	.18	.25*	.29	.09	.34*	.35**	.69**	
9	Attitude to change (long-term)	5.78	2.17	.10	.31	.40*	.24	.45**	.78**	.37*	.18

Note. Week level data was averaged across the 5 weeks. N = 69 to 71. * $p < .05$, ** $p < .01$.

4.7.3 Hypotheses Testing

As several mediating effects were hypothesized, we first included the direct paths from personal and job resources to work engagement and from work engagement to adaptive behavior and long-term attitude to change successively. In model 1 (M1) we included direct paths from personal resources (meaning-making and self-efficacy) to work engagement, as well as paths from work engagement to adaptive behavior and long-term attitude to change. In Model 2 (M2) we added the path from co-worker support (job resource) to work engagement. In Model 3 (M3) we added NRS and short-term attitude to change as mediators. All direct paths were significant. Model 3 is displayed in *Figure 2* and included all hypothesized paths (M3, Table 2). This model yielded a good fit to the data (χ^2 (24) = 24.36, p = 0.44, CFI = .99, TLI = .99, RMSEA = 0.007). Next we tested each hypothesis separate using model comparisons and inspecting path coefficients.

4.7.4 Within-person Hypotheses: Resources and Work engagement

First, within-person direct effects were tested, i.e. Hypotheses 1a-c. Hypothesis 1 was tested with M1 and M2 (see Table 2) and stated that meaning-making (H1a), self-efficacy (H1b), and co-worker support (H1c) are positively related to work engagement.

As a starting point, we compared the fit of M3, which included the paths to and from NRS, with the fit of M2 (model where indirect paths from personal resources to NRS and from NRS to work engagement were set to zero) using the χ^2difference test (Jöreskog & Sörbom, 1993). The model that included NRS as a mediator (M3) showed a significantly better fit to the data ($\Delta\chi^2$ (10) = 153.62, p < .001) than M2. Also, the AIC of the hypothesized model was lower than the AIC of M1 and M2. This indicates that M3 explains the data better than the alternative models. Next, we inspected path coefficients and found significant paths from meaning-making to work engagement (.13, p < .05); from self-efficacy to work engagement, (.29, p < .001, M1); and from co-worker support to work engagement (.27, p < .001, M2), thereby confirming Hypothesis 1a, 1b, and 1c respectively.

Hypothesis 2 proposed a (within-person level) mediated effect of NRS in the relationship between meaning-making (H2a) and self-efficacy (H2b) on the one hand, and work engagement on the other hand. The first precondition regarding the direct effects was satisfied for the proposed mediation effects (see above). In addition, meaning-making was significantly related to NRS (.23, p < .001, M3). Also, NRS was positively related to work-engagement (.22, p < .001, M3). The direct relation between meaning-making and work engagement was no longer significant when NRS was

included in the model. The indirect effect found was significant (indirect effect estimate = .05, p = .013, M3). These results show that NRS fully mediates the relationship between meaning-making and work engagement, thus confirming Hypothesis 2a. The relationship between self-efficacy and NRS, however, was only marginally significant (.13, p = .056, M3). The indirect effect was consequently found to be non-significant (indirect effect estimate = .03, p = .090). Therefore, hypothesis 2b was disconfirmed. Taken together, results suggest that NRS mediates the relationship between meaning-making and work engagement, while self-efficacy and co-worker support were directly and positively related to work engagement.

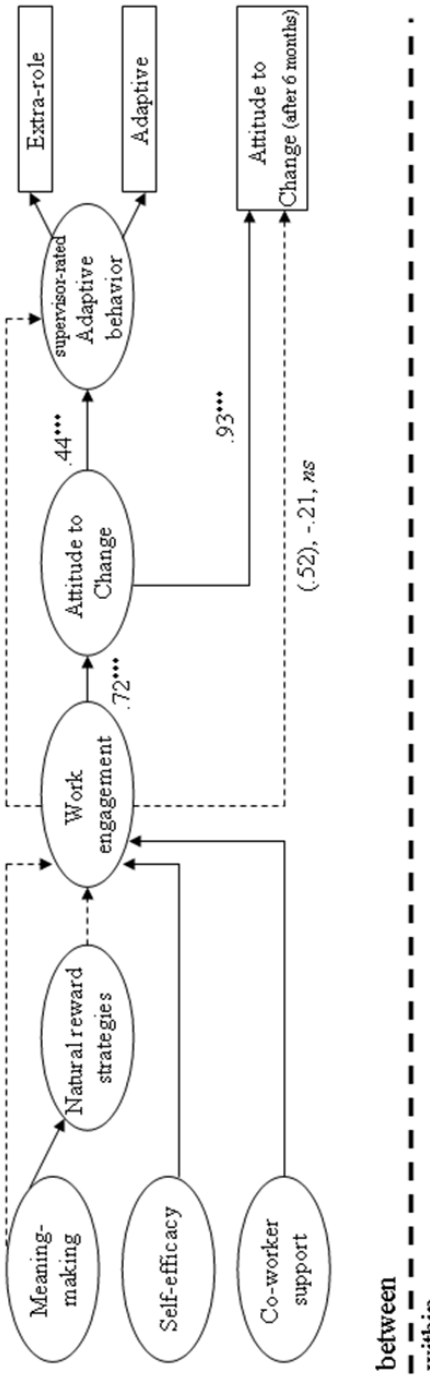
Table 2. Goodness of fit indices and chi-square difference tests of nested structural equation models, *N* = 296.

Model	χ^2	Df	$\Delta \chi^2$	Δ df	CFI	RMSEA	TLI	AIC
M_1: PR only → WE →Adaptive Behavior	219.53***	36			0.40	.13	.25	5759.25
M2: PR +Support→ WE → Adaptive Behavior.	177.99***	34	41.54***	2	0.53	.12	.38	5721.71
M3: Hypothesized model (M2 + both mediators: NRS and Short-term Attitude to change)	24.37	24	153.62***	10	.99	.00	.99	5588.09

Note. PR = personal resources, i.e. meaning-making & self-efficacy.NRS = Natural Reward Strategies. $^{**}p < .001$. $^{*}p < .01$.

4.8 Within- and Between-person Hypotheses: Work engagement and Attitude to change

Hypothesis 3a (within-person) suggested that weekly work engagement would be related to weekly attitude to change. Hypothesis 3b (between-person) stated that the direct effect of short-term work engagement on long-term attitude to change is mediated by short-term attitude to change. M3, which included the direct and indirect paths of short-term attitude to change, had a significantly better fit ($\Delta\chi^2$ (10) = 153.62, $p < .001$) than the direct effects only model (M2). When inspecting path coefficients we found that on the within-person level, the path from work engagement to short-term attitude to change was significant and positive (.19, $p < .01$, M3), which confirmed Hypothesis 3a. Moreover, we found that on the between-person level, this relationship was also significant (.72, $p < .001$, M3). Note that between- and within-level estimates of the same relationship may differ. Further, both the direct path from short-term work engagement to long-term attitude to change (.53, $p < .001$, M2), as well as the path from short-term attitude to change to long-term attitude to change (.93, $p < .001$, M3), were significant and positive. These findings satisfied the preconditions for mediation. The direct path from work engagement to long-term attitude to change was no longer significant when the indirect paths (through short-term attitude to change) were included in the model (M3). In addition, the indirect effect was significant (indirect effect estimate =.66, $p < .001$). Thus, Hypothesis 3b was confirmed, indicating that short-term attitude to change mediates the relationship between work engagement and long-term attitude to change.



Note. Estimates within brackets refer to estimates in direct effects only model. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.

Figure 2. Significant Structural Relationships in the Hypothesized Multilevel Model

4.9 Between-person Hypotheses: Work Engagement and Adaptive Performance Behavior

Hypothesis 4a stated that short-term work engagement would predict supervisor-rated adaptive behavior. We found that work engagement was indeed positively related to ratings of adaptive behavior in M2 (.40, $p < .001$). Thus, Hypothesis 4a was confirmed. Hypothesis 4b proposed that the relationship between work engagement and supervisor-rated adaptive behavior is mediated by short-term attitude to change. As stated above, M3 included the mediators, and showed a better model fit compared to M2. We inspected path coefficients and we found that short-term attitude to change was also positively related to ratings of adaptive behavior (.44, $p < .01$, M3). When short-term attitude to change was included in the model as a mediator, the significant relationship between work engagement and adaptive behavior disappeared (.05, n.s., M3). The indirect effect was significant (indirect effect estimate = .32, $p = .01$, M3). Taken together, results confirm hypothesis 4b and suggest that the effect of short-term work engagement on adaptive behavior is fully mediated by short-term attitude to change.

4.10 Additional Indirect Effects: Sequential Process of Adaptation

Our hypothesized model suggests that when the adaptation process is examined sequentially over time, work engagement is the link between short-term resources (during change implementation) and longer-term adaptation. Therefore, in M3, we tested additional indirect relationships between short-term, week level resources and long-term adaptation via short-term work engagement using the multivariate delta method in Mplus (Muthén & Muthén, 1998-2010). On the weekly, within-person level, we found that self-efficacy (indirect effect estimate = .05, $p = .025$) and co-worker support (indirect effect estimate = .05, $p = .018$) were both indirectly related to short-term attitude to change via work engagement. This pattern was not found for meaning-making.The same pattern was found on the between-person level; i.e. self-efficacy (indirect effect estimate = .23, $p = .001$), and co-worker support (indirect effect estimate = .35, $p < .001$) were indirectly related to short-term attitude to change via work engagement. Linking the implementation phase to longer-term adaptation, we proceeded to test the sequence in which short-term resources lead to short-term work engagement, which in turn is related to short-term attitude to change, that consequently leads to long-term adaptation outcomes. Significant indirect effects are shown in *Table 3*. This sequence was not found for meaning-making, but it was observed for self-efficacy and co-worker support.

Table 3. Additional Indirect Effects: Sequential Process of Adaptation

Predictor (resources)	Mediator	Short-term outcome	Long-term adaptation outcome	Est.	*p*
Self-Efficacy	Work engagement	Attitude to change	Adaptive Behavior	.10	.042
Co-worker Support	Work engagement	Attitude to change	Adaptive Behavior	.15	.02
Self-Efficacy	Work engagement	Attitude to change	Attitude to change (long-term)	.22	.004
Co-worker Support	Work engagement	Attitude to change	Attitude to change (long-term)	.32	.001

Note. Est. = Indirect effect standardized estimate.

4.11 Discussion

This multilevel study on adaptation to hot-desking set out to examine the process by which employees maintain work engagement during implementation of such flexible workspaces. In addition, we investigated how work engagement is related to adaptation to change over time. Using a combined within- and between-person research design, we followed employees during the first five weeks of the implementation of a hot-desk policy (which had a fixed starting date). Furthermore, after implementation, we captured supervisor-ratings of employee adaptive behavior and self-rated attitude to change. We used insights from organizational change research and COR theory (Hobfoll, 1989, 2001) to propose a research model in which (short-term) resources were related to (short-term) work engagement, and where (short-term) work engagement was expected to predict short and long-term adaptation outcomes. A key finding of our study is that short-term work engagement is the linking mechanism predicting adaptation over time, in terms of observed behavioral change and long-term positive change attitude. In addition, we found that the short and the long-term process are linked in an indirect effects sequence. In this process, resources are related to work engagement, which in turn, leads to (positive) attitude to change (short-term). Short-term attitude to change consequently predicts adaptive behavior and long-term attitude to change. Thus, as expected, the positive influence of resources on adaptation over time was transmitted through work engagement and attitude to change and partly through NRS.

Whereas earlier research on change adaptation typically relied on cross-sectional or longitudinal designs, we addressed the need for empirical research that attempts to capture the adaptation process itself (Lazarus, 2000). Multiple measurements methodology was used, which is a way to study dynamic processes such as adaptation. It means that proximal stressors, resources and adaptation outcomes are measured 'closer' to their actual occurrence, thereby reducing re-call bias (Bolger, Davis, & Rafaeli, 2003). The combination of week level within-person data with between-person measures allowed for conclusions on how intra-individual adaptation processes affect longitudinal adaptation outcomes. Below we expand on implications of our findings.

4.11.1 Theoretical Contributions: Short-term Adaptation to Change

The results of the current study expand findings from related studies that emphasize the importance of contextual and personal resources for adjustment to organizational change (e.g., Amiot et al., 2006; Terry & Jimmieson, 2003). In particular, during the

first phase of change adaptation (i.e., first five weeks of adapting to hot-desking), the factors that were found to promote work engagement were meaning-making, self-efficacy, and co-worker support. The underlying processes of these relationships can be explained by COR theory (Hobfoll 1989, 2001) which states that if people manage to maintain, foster and protect resources in response to a stressor (here: loss of personal workspace), they will be better suited to adapt to the stressor. Similarly, in our study, presence of resources was related to higher levels of work engagement.

In addition to the direct effects of personal resources on work engagement, our model suggested a possible behavioral self-management strategy (NRS) to explain the relationship between personal resources and work engagement. We showed that during weeks when employees are more involved in reflecting and making sense of the new situation (meaning-making), they also seem to be more involved in creating a rewarding work environment for themselves (NRS). This, in turn, leads to more work engagement during that week. This underscores the perspective on employees as self-regulating agents who proactively create conditions in which they can thrive (Lee & Turban, 2010; Wrzesniewski & Dutton, 2001). Especially in flexible working environments it is important that employees become better 'self-managers'. That is, in today's organizations, there is a need for employees to be proactive and to take responsibility that traditionally would have been exercised higher up (Gephart, 2002; Parker & Collins, 2010). These proactive behaviors are seen as an important aspect of individual and organizational adaptive capacity (cf. Frese, 2008; Kozlowski et al., 1999; Parker & Collins, 2010). However, we only found the mediation effect for meaning-making, not for the relationship between self-efficacy and work engagement. Even though self-efficacy has been linked to active (coping) approaches during change (Amiot et al., 2006; Schaubroeck & Merritt, 1997), there was no significant relationship between self-efficacy and NRS. An explanation could be that different types of personal resources have different types of behavioral correlates. Self-efficacy may be related to extraverted, *inter*personal behaviors, while meaning-making is a more introverted, reflection process and may therefore be more likely to trigger *intra*personal self-management behaviors. Future research may include other (inter- and intrapersonal) behaviors and strategies as possible mediating mechanisms.

Our study shows that the relationship between social support and work engagement also holds during change, and when week-to-week variation is taken into account. Flexible workspaces tend to change interactions between co-workers. Employees use different desks each day, encounter new co-workers and have to make an effort to find familiar co-workers. Team identification and interpersonal dynamics (e.g. networking, support and communication) also tend to change (Millward, Haslam,

& Postmes, 2007). Regular electronic communications have been shown to be important to maintain organizational attachment when using hot-desking (Millward et al., 2007). Future studies could therefore include the role of electronic communications and social media, to provide job resources such as social support, and thus boost engagement and avoid employee alienation. We also found that during weeks in which employees experienced more engagement, they were more positive about hot-desking. This might be because work engagement may help employees to access necessary resources to deal with change (Fredrickson, 2001, Hobfoll, 2001). Also, work engagement helps to use and allocate resources more effectively (Demerouti & Cropanzano, 2010) which may lead to less anxiety and more feelings of control regarding the change.

4.11.2 Theoretical Contribution: Adaptation outcomes

In line with COR theory and previous studies on adaptation to change, we linked resources to motivational outcomes (cf. Jimmieson, Terry & Callan, 2004). In addition, work engagement was found to predict supervisor-ratings of adaptive behavior, as well as attitude to change six months later. These findings contribute to organizational change literature and expand existing knowledge on the relationship between work engagement and various behavior outcomes (e.g. Bakker & Demerouti, 2008; Demerouti & Cropanzano, 2010). Also, our study contributes by examining antecedents of adaptive performance in terms of observed individual behavior, which, as of yet, not many studies have focused on (Shoss, Witt & Vera, 2011). Work engagement seems to translate into adaptation to change in ways that are observable for supervisors.

Combining the short-term and long-term process of adaptation inherent in our model, we found significant indirect effects. Resources led to more work engagement, which, in turn, led to a positive attitude to change and higher supervisor ratings of adaptive behavior. This sequence was observed for co-worker support and self-efficacy, but not for meaning-making. Our results suggest that meaning-making was mainly important during short-term adaptation, while self-efficacy and support were important both for short- as well as long-term adaptation. In both processes (short and long-term) work engagement was the linking pin between resources and adaptation. Higher levels of work engagement were related to attitude to change. Again, this may indicate a process whereby enduring work engagement builds (access to) resources to deal with changing work conditions, and therefore change may be appraised more positively. This process of accumulating resources and work engagement may then also explain the last observed links in the indirect effects sequence, i.e. work engagement predicted observed adaptive behavior and enduring positive attitudes. When employees are successful in protecting their cognitive and social resources, they will also successfully protect their

engagement, which allows them to be more positive and behaviorally flexible and adaptive. These variables are likely to be reciprocally related, which may be tested in future research.

4.11.3 Limitations and Future Research

A number of limitations of this study should be pointed out. First, our sample consisted of employees from one single organization introducing a specific change, which makes it hard to generalize findings to other occupational groups and organizational changes. It is therefore important to replicate findings in other occupational and change settings. Despite these limitations, the study provides interesting findings on the relationship between resources, work engagement and adaptation to change. A second limitation refers to the 'unmeasured or third variable' problem. Future studies could aim to include other adaptive behaviors in relation to hot-desking, as well as performance outcomes on different levels. For example, the team and the organizational level, thereby allowing examination of cross-level processes that predict performance (Klein & Kozlowski, 2000). Although a strength of this study was the use of supervisor-ratings, ideally we would have captured adaptive behaviors on a weekly basis as well as after change implementation. This would have allowed for conclusions about the fluctuations in weekly adaptive performance. We examined the mediating role of NRS; however, other processes and variables are likely to play a role in explaining the relationship between resources and work engagement. For instance, future studies could include affective processes such as need fulfillment, positive emotions (Fugate et al, 2008; George & Jones, 2001) *and* behavioral mediators simultaneously. Also, other change-specific resources (such as change-related information) are likely to play an important role in the formation of change-related attitudes and adjustment (e.g., Wanberg & Banas, 2000). Future studies should aim to start measuring these antecedents early on in the change process, ideally at the time when pending organizational changes are first announced to employees. When measuring over longer periods, cross-lagged panel designs and latent-growth modeling could shed light on causal links and adaptation trajectories. Also, this study focused on the motivational process of the JD-R model (Demerouti et al, 2001). However, since change can be stressful and may have a negative impact on health and motivation, future studies should aim to include change-related demands (e.g. noise or workspace functionality). A final limitation refers to the study design. Our study examined processes during and after the implementation of a flexible workspaces. Ideally, we would have used a control group to compare the adaptation process in the control group and the hot-desking group. However, it was not possible for the organization to involve employees that were not exposed to hot-desking at the time of

our study. Taking such a quasi-experimental approach would allow for an even more in-depth examination of adaptation to flexible working environments.

4.11.4 Practical Implications

Our study shows that in order to adapt to hot-desking successfully, it is important to help employees maintain work engagement. Engaged employees are vigorous, focused, dedicated and they identify with their work. Organizational change may disrupt these positive processes (Callan, 1993). As our study shows, it is therefore important to manage the psychosocial work environment in order to reduce the risk of deteriorating work engagement. The introduction of flexible workspaces may simultaneously trigger positive and negative attitudes towards different aspects of the change involved (Piderit, 2000). We found that resourceful employees are able to maintain work engagement and are consequently more positive about the change. Therefore, in the early phases of change, organizations should focus on facilitating resourcefulness by providing support, information and necessary means, in order for employees to belief they can deal with the change. For example, employees can be involved via focus groups to share (learning) experiences regarding the change and to express forms of support needed. In the current study, we used open-ended questions in the survey to capture types of support needed. Also, helping employees to understand the change (meaning-making) is important, especially during the first month. Dialogue or coaching may facilitate reflection on how the change will affect them and their personal goals. This may also be help to work through any resistance that employees may feel. Such actions are informative for managers, especially given that resistance is not always indicating a lack of commitment. In fact, it may indicate thoughtfulness and involvement (Ford, Ford & D'Amelio, 2008). Meaning-making may trigger employee awareness of their preferred working styles during change. In our study, meaning-making helped employees to become better 'self-managers' or 'job crafters' (Wrzesniewski & Dutton, 2001), which was related to experiencing more engagement. Managers could help employees to develop NRS by discussing the (limits of) autonomy that employees have regarding how and where to work. In light of the 'new, flexible world of work', these discussions, as well as building mutual trust will become increasingly important. The current study showed that managing employee resources will help to maintain vigor, dedication and absorption during change, and that this work engagement translates into adaptation to change on the longer term.

4.11.5 Conclusion

Using COR theory and empirical evidence of its processes via the JD-R model, we argued that work engagement facilitates employee adaptation to change. During the implementation process, resources were related to work engagement, which was related to short-term attitude to change. Work engagement also predicted positive attitude to change and adaptive behavior. Thus, being engaged helps employees to be resilient and allocate energy and resources which are needed in times of change. This study contributes to the organizational change literature and in particular studies on adaptation to new ways of working. Overall, findings suggest the importance of including positive motivational states such as work engagement in organizational change studies, not only as an adjustment outcome, but also as an active contributor to organizational change success.

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Appendix: Items

Co-worker support

Last week..

- ... my colleagues helped me with my tasks if necessary.
- ... I felt valued by my colleagues.

Self-efficacy

Last week…

- ...I was confident that I could deal efficiently with unexpected events at work.
- ...I felt confident that I could handle whatever came my way at work.

Meaning-making

Last week…

- ... I actively took the time to reflect on events that happened.
- ... self-reflection helped me to make my life meaningful.
- ... I actively focused on activities and events that I personally find valuable.

Natural reward strategies

Last week…

- …I tried to surround myself with objects and people that bring out my desirable behaviors.
- ...I found my own favorite ways to get things done at work.
- ...I sought out activities in my work that I enjoy doing.

Work engagemen t

Last week,…

- ... I felt bursting with energy at work.
- ...my job inspired me.
- ...I felt like going to work when I got up in the morning.
- ...I felt happy when I was working intensely.
- …I was proud of the work that I do.
- ... I was immersed in my work.

Attitude to change

- Last week, taking all things together, how positive or negative would you say you were about the change?

Supervisor-rated Adaptive behavior

For each of your employees, please rate to what extent the person shows the behaviors in the description. 0% indicates “extremely poor performance on this aspect ”. 100% indicates “performs extremely well on this aspect”. Please think of employee behavior since the introduction of the hot-desking environment.

1. Adaptive performance towards the department

The extent to which a person is adequately coping with and responding positively to changes in the department, and the extent to which this person supports these changes. Think of such behaviors as taking co-workers into account, supporting the new rules of working, and a constructive attitude. For example: did the person adapt or learn new things in order to be able to cope with the new environment? Is the person dealing effectively with the hot-desking environment, emptying desks etc.? Is the person responding constructively to problems or issues caused by the introduction of hot-desking?

2. Extra-role performance

The extent to which an employee is willing to to things that are not part of the formal job description, but that are in the interest of the team, department or the organization as a whole. For example; voluntarily taking on extra tasks, helping co-workers that are under pressure, or those who are returning after illness or absence, or helping to get new co-workers started in their work. (This concerns discretionary behavior, behavior that one cannot be reprimanded for if one does not show it).

CHAPTER 5
Affective Commitment and Adaptivity during Change

The Role of Identity-related Resources

Revise & Resubmit **(***European Journal of Work and Organizational Psychology*)
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5.1 Introduction

With ongoing organizational change, including reorganizations and new, flexible ways of working, the employee-organization relationship is at risk of becoming tenuous. The loosening of this bond may result in a decrease in organizational identification (Ashforth, Harrison & Corley, 2008). Employees' sense of organizational membership may become less important to them. This holds risks for organizations in terms of reduced employee motivation and commitment, and impaired organizational performance. There is a need for organizations to manage organizational identification during change, since maintaining the employee-organization bond (affective commitment) may increase employees' willingness to adapt their behavior, which is essential for successful change implementation (Bovey & Hede 2001). It is therefore important to understand the driving forces behind employee adaptivity, also since as of yet, adaptive capacity has been studied primarily at the organizational level (Shoss, Witt & Vera, 2011).

The aim of the present longitudinal study is to examine the process that may facilitate adaptive behavior in police officers during reorganization and to investigate the role of affective commitment. Three resources related to identification processes are proposed; (1) the leader-member exchange (LMX) relationship; (2) meaning-making; and (3) organization-based self-esteem (OBSE). As shown in our research model (*Figure 1*) we expect that these resources will be positively and reciprocally related over time, and that they will predict employee adaptivity during change via affective commitment. This longitudinal study contributes to our knowledge of the process of adaptation. A model is proposed that includes contextual and personal factors as driving forces for adaptivity in turbulent times. Meaning-making is included in addition to more familiar change-facilitating resources.

5.1 Theoretical Framework

The benefits of a strong employee-organization relationship during change can be explained by theories addressing organizational identification, such as social identity theory (SIT; Tajfel &Turner, 1979; 1986). The relevance of this classic approach to the study of organizational behavior has become apparent during the past two decades (Ashforth & Mael, 1989; 2008; Haslam & Ellemers, 2005; Hogg & Terry, 2000; Van Knippenberg, 2000). According to SIT, group membership is internalized and contributes to an individual's self-concept (or identity – note that the terms are used interchangeably) which may hold the psychological basis for some types of employee

motivation (Leonard, Beauvais, & Scholl, 1999). It is (partly) composed of a *personal* identity (idiosyncratic characteristics) and a *social or collective* identity (group classifications). Brewer and Gardner (1996) suggested a further distinction, leading to a three-level system that was also applied to organizational contexts (Lord, Brown & Freiberg, 1999).

First, a *personal* or *individual self*, based on personal attributes and goals; secondly, an *interpersonal or relational self*, based on relationships with others (e.g., leader-member relationship); and thirdly, a *collective self*, which is derived from group membership or the relationship between individual and collective. Individuals are motivated to gain acceptance / status and to avoid dissonance between their self-concept and external feedback, in order to maintain a positive self-image (Tajfel & Turner, 1986). Therefore, the three levels of identity hold different sources of employee motivation (Leonard et al., 1999) that can facilitate adaptation to change in different ways, e.g. a strong bond with one's manager (relational self) may motivate employees to adapt their behavior in line with what the manager expects of them. Social identity approaches suggest that the degree to which an employee feels part of the collective, influences enactment of the collective (organizational) identity and a willingness to contribute, resulting in, e.g. citizenship behaviors (cf. Ashforth & Mael, 1989; Bergami & Bagozzi, 2000), motivation, and performance at work (Van Knippenberg, 2000). Especially during change it is important to maintain employee motivation and citizenship behaviors. Therefore, the social identity approach has clear implications for the study of adaptation to change. We relate the three levels of identity to three different identity-related resources, which may strengthen each other over time and may positively influence adaptation.

5.2 Identity-related Resources

Organizational change can be demanding and stressful for employees (Vakola & Nikolaou, 2005). Policing organizations are faced with many changes following from governmental initiatives and new legislation, which may increase cynicism and reduce commitment. According to resources theories (for an overview see: Gorgievski, Halbesleben & Bakker, 2011) individuals tend to draw on both job and personal resources to protect themselves during stressful events (Hobfoll, 1989). Personal resources, such as self-efficacy, are internal characteristics, beliefs and energies that are malleable and related to a sense of control over the environment (Hobfoll, Johnson, Ennis, & Jackson, 2003). Job resources, such as leader support, are equally important for employees in order to obtain, retain and protect what they value during change (Hobfoll & Shirom, 2000). The three resources included in the present study can be

Figure 1. Research model for employee adaptation to change

linked to the three levels of identity. Identity can be a source of motivation since individuals have a need to maintain and enhance their perceived selves (e.g. "I as a follower of leader X"). This need can influence organizational behavior, in that it would motivate employees to choose behavior consistent with their self-perception (Leonard et al., 1999). The beneficial effects of resources may positively influence this identity-related motivation. We include one job resource, leader-member exchange (LMX), and two personal resources, meaning-making and organization-based self-esteem (OBSE).

LMX pertains to the interpersonal self (Lord et al., 1999) and captures the quality of the relationship between employee and leader (Graen & Uhl-Bien, 1995). Mutual respect, liking, and trust describe high-quality LMX relationships (Dansereau, Graen, & Haga, 1975) indicating strong leader-member bonds. When employees perceive high LMX, they are likely to define themselves in terms of their role as a follower (interpersonal self), which motivates employees to maintain the LMX relationship and to fulfill their role-obligations (Sluss & Ashforth, 2007). During change this may lead to behavior in line with the change vision as communicated by the leader. LMX is associated with supportive leader behaviors and empirical studies have shown the importance of LMX relationships for organizational outcomes, e.g. turnover intentions, commitment, job satisfaction, and job performance (Gerstner & Day, 1997), and citizenship behaviors (Dulebohn, Bommer, Liden, Brouer & Ferris, 2012). LMX seems to be particularly important for police officers, since poor management is often

mentioned as a job stressor, more often than job content-related stressors (Kop et al., 1999).

Meaning-making is a personal resource pertaining to the individual self. It is defined as the ability to integrate challenging or ambiguous events into a personal meaning system (Van den Heuvel, Demerouti, Schreurs, Bakker, & Schaufeli, 2009). Meaning-making seems particularly relevant during change, when other sources of meaning and motivation, for example, work roles or relationships at work, are changing. Meaning-making may help employees to access sources of meaning and motivation from the individual self (i.e. what is important to me as an individual?) and use this to find meaning in challenging or stressful events. Reflection on the impact and effects of change on personal goals, values, and beliefs, may help employees to reduce uncertainty and may facilitate willingness to change.

Finally, OBSE is a personal resource refers to the self-esteem an employee gains from his/her relationship with the organization. OBSE is that part of the self-concept that is based on work/organizational experiences. It is "the degree to which an individual believes him/herself to be capable, significant and worthy as an organizational member" (Pierce & Gardner, 2004, p. 593). Therefore, OBSE can be regarded as an expression of the quality of the employee-organization relationship (cf. Bergami & Bagozzi, 2000) and is an aspect of employees' collective self ("I as an employee of organization X"; Turner, Oakes, Haslam, & McGarty, 1994). Together these resources facilitate motivation, support, resiliency and a sense of control in the face of threat (Hobfoll et al., 2003; Xanthopoulou, Bakker, Demerouti & Schaufeli, 2009), and may therefore contribute to successful adaptation to change.

5.3 LMX and Personal Resources: Reciprocal Relationships?

Job resources have been shown to be reciprocally related to personal resources (Xanthopoulou et al., 2009). Resources theories state that people are motivated to obtain, retain, protect, and accumulate resources (Hobfoll, 1989). Access to resources may positively influence accumulation of other resources over time (Gorgievski et al., 2011) indicating a so-called gain cycle or gain spiral of resources (Salanova, Schaufeli, Xanthopoulou, & Bakker, 2010). In our context of organizational change, this implies that LMX may be positively related to personal resources (i.e. meaning making and OBSE), while personal resources may be positively related to LMX. Researchers have indeed shown the importance of LMX as a contexual job resource that may positively influence personal resources, e.g. OBSE, self-efficacy (Pierce & Gardner, 2004; Schyns, 2004). However, since followers play an important role in defining the relationship quality (Van Gils, van Quaquebeke, & Van Knippenberg, 2010), the opposite, i.e. that

employee characteristics may influence the LMX relationship, has also been suggested (Lord et al., 1999; Pierce & Gardner, 2004). LMX and personal resources may therefore be reciprocally related over time.

Since high LMX has been associated with positive leader behaviors (e.g., support / communication), it may trigger employee meaning-making (i.e. discussing /reflecting on the situation) which may help reduce change-related uncertainties (Leonard et al., 1999; Sonenshein & Dholakia, 2012). The reverse effect may also exist; meaning-making may help to maintain positive leader-member interactions, for several reasons. Employees involved in meaning-making may be easier to manage, since they are better at self-managing their work motivation. Also, it may be that leaders need less time and energy to help followers to understand / accept the change and therefore there is less chance of disagreement / misunderstanding in the LMX relationship. Also, meaning-making may help to maintain vitality (Fritz, Lam & Spreitzer, 2011), which may boost enthusiasm and positive interactions between leaders and followers.

LMX may also be beneficial for employees' OBSE. Managerial respect has been argued to be one of the antecedents of OBSE (Pierce & Gardner, 2004), as is supervisor support (Bowling, Eschleman, Wang, Kirkendall, & Alarcon, 2010), and transformational leadership (Kark, Shamir, & Chen, 2003). High LMX may strengthen employees' work-related identity (i.e. work-related values, beliefs, goals; Shamir et al., 1993) via recognition received from the leader (Leonard et al., 1999). Since leaders tend to convey important messages regarding employee functioning (e.g., recognition / appreciation), LMX leader behaviors are likely to be positively related to follower OBSE (Kark & Shamir, 2002; Pierce & Gardner, 2004). The reverse may also be true; i.e. OBSE may be positively related to LMX over time, since high OBSE employees may attract a supportive leadership style (Pierce & Gardner, 2004). High OBSE employees may take their contribution to the organization serious, and work proactively and independently since they trust their own judgment and come up with solutions. This may trigger positive leader evaluations, which in turn may positively contribute to LMX. The above suggests a gain cycle between identity-related personal resources and LMX, and we expect that:

Hypothesis 1: LMX has a positive relationship with (a) meaning-making and (b) OBSE over time.

Hypothesis 2: (a) Meaning-making and (b) OBSE have a positive relationship with LMX over time.

5.4 Resources and Adaptation to Change

Ultimately, successful organizational change depends on the degree to which individual employees are willing to adjust their behavior in line with the envisaged change (Bovey & Hede, 2001). This willingness and the actual expression of adaptive behavior ('adaptivity') may be dependent on the degree to which employees stay affectively committed to their organization during change. Adaptivity is a behavioral indicator of adaptation to change which may be facilitated by identity-related resources. Adaptivity has been defined as: "the degree to which individuals cope with, respond to, and/or support changes that affect their roles as individuals" (Griffin, Neal, & Parker, 2007, p.331).

Organizational change can disrupt expressions of organizational identification such as affective commitment. At the same time, in order to successfully implement reorganizations and other changes, organizational identification is an important 'glue' that can bind employees to their organizations. Affective commitment is important for change success (Vakola & Nikolaou, 2005) and can be regarded as an attitudinal indicator of change adaptation. It is defined as identification, involvement and emotional attachment to the organization. It is characterized by a willingness to exert effort on behalf of the organization (Allen & Meyer, 1996; Mowday, Steers, & Porter 1979) which is particularly important during change. We expect that resources will help employees' to continue to feel a strong bond with their organization (affective commitment), and that as a result, they will be more likely to show adaptive behaviors in response to change. In other words, we expect that affective commitment will mediate the relationship between resources and adaptivity. This mediating role of affective commitment is in line with the investment model (Rusbult & Farrell, 1983), which has been applied to the work-context to show how commitment mediates the relationship between job satisfaction / job-related resources and employee turnover (Rusbult & Farrell, 1983). Also, commitment has been shown to be a mediating mechanism in the relationship between resources and performance / absence spells (Bakker, Demerouti, De Boer, & Schaufeli, 2003; Yousef, 2000). In a similar vein, identity-related resources, may -through their rewarding and motivating qualities- heighten employee affective commitment to the organization. In turn, high commitment may increase likelihood of employees adapting their behavior to the changing environment (Visagie & Steyn, 2011). We therefore expect that identity-related resources can facilitate adaptivity and that this process can be explained by affective commitment. Below we discuss how each resource may relate to affective commitment and adaptivity.

5.4.1 LMX and adaptation to change.

Leaders who build positive relationships with their followers, can positively influence followers' organizational identification (Van Knippenberg, Van Knippenberg, de Cremer, & Hogg, 2004; Lord et al., 1999), commitment (Joo, 2010; Yousef, 2000), and work engagement (Tims, Bakker, & Xanthopoulou, 2011). High LMX can lower resistance to change (Schyns, 2004; Van Dam, Oreg, & Schyns, 2007). Therefore LMX may lead to behavioral flexibility and adaptivity. The relationship between LMX and adaptivity may be explained by affective commitment. LMX forms a job resource, characterized by leader behaviors such as provision of guidance and support, which may boost affective commitment.. Also, 'liking' and emotional attachment may bring positive affect to the LMX relationship (Shamir et al., 1993) strengthening commitment. Based on the above, we expect that:

Hypothesis 3a: LMX has a positive relationship with employee adaptivity.

Hypothesis 3b: Affective commitment mediates the relationship between LMX and employee adaptivity.

5.4.2 Personal resources and adaptation.

Meaning-making helps to self-motivate during change, since it facilitates integration of the changed situation into an employee's personal meaning system (Park, 2010; Van den Heuvel et al., 2009). This, in turn, may facilitate change adjustment (Iyer, Jetten, Tsivrikos, Postmes & Haslam, 2009). Also, making sense of the change may increase willingness to change as well as performance (Sonenshein & Dholakia, 2012; Van den Heuvel et al., 2009) and work engagement (Authors, submitted for publication). Meaning-making may help to reduce perceived threat and maintain vitality (Fritz et al., 2011), and it may therefore also facilitate enduring positive beliefs / affect towards the organization. This builds on suggestions by Ashforth et al. (2008) regarding the importance of employee sensemaking for organizational identification. We therefore expect that meaning-making may protect the affective bond employees feel towards the organization, which in turn will motivate employees to show adaptivity. Hence, our next hypotheses are as follows**:**

Hypothesis 4a: Meaning-making has a positive relationship with adaptivity over time.

Hypothesis 4b: Affective commitment mediates the relationship between meaning-making and adaptivity.

Over time, a higher level of OBSE may help adaptivity during change. Although general self-esteem has been shown to predict change adaptation (e.g., Judge, Thoresen, & Pucik, 1996), not many studies focused specifically on OBSE during change. OBSE may strengthen loyalty towards the organization, and has been shown to be related to job satisfaction, commitment, performance, citizenship behaviors (Bowling et al., 2010; Pierce & Gardner; 2004) and coping with change (Staehle-Moody, 1998). High OBSE may predict motivation (guided by the collective self) to try out new behaviors and thus adaptivity (Dutton & Dukerich 1991). Feeling valued by the organization may predict feeling committed to the organization's vision despite potential change-related uncertainties / stressors; in turn, this may lead to adaptivity. Therefore we expect that:

Hypothesis 5a: OBSE has a positive relationship with adaptivity over time.

Hypothesis 5b: Affective commitment mediates the relationship between OBSE and adaptivity.

5.5 Method

5.5.1 Design and Participants

The panel group that participated in this study was recruited as part of a research project conducted within a Dutch police district undergoing reorganization. The changes (departmental merges, technological innovations, professionalization and relocation of employees) were implemented after the first measurement wave and were still ongoing during the second wave. No employees were made redundant. After initial communications regarding the purpose of the research via intranet / newsletters, e-mail invitations were sent out to all employees (1780). Since we repeated the survey three times, it was important to keep the survey manageable for employees by using shortened scales for some constructs. We used existing data sets to check overlap with the longer scales where possible. A total of 950 employees completed the online survey (response: 53%). At T2, 1854 invitations were sent, and a total of 810 employees completed the survey (response: 44%). The final sample consisted of 580 employees

who completed both surveys. The drop-out group was slightly younger (Δ mean: 1.84, $p < .01$), had lower tenure (Δ mean: 1.57, $p < .05$), and was slightly lower educated. However, no differences were found on our study variables. Two-thirds of the sample were male (66%; female: 34%), average age was 43 years (SD = 9.93), and mean tenure was 18 years (SD = 11.37). More than half (58%) held a predominantly operational position (working in the street), while 42% of the sample held a predominantly support position (administrative tasks).

5.5.2 Measures

Leader-Member Exchange was measured using five items from the Dutch adaptation of Graen and Uhl-Bien's (1991, 1995) Leader–Member Exchange Scale (Le Blanc, 1994). A sample item is "My supervisor uses his/her influence to help me solve my problems at work"; (1) "never", (5) "always".

Meaning-making was measured using five items from the meaning-making scale (Van den Heuvel et al., 2009). Sample items were: "I actively take the time to reflect on events that happen in my life", and "I have an understanding of what makes my life meaningful"; (1) "strongly disagree", (6) "strongly agree". This 5-item scale correlated highly ($r = .95$, $p < .001$) with the original 7-item scale in the study of Van den Heuvel et al. (2009; $N = 238$).

Organization-based self-esteem (OBSE) was measured using 4 items from Pierce et al.'s (1989) instrument. Employees rated the extent to which they agreed or disagreed with the statements, e.g. "I count around here", and "I am taken seriously in this organization"; (1) "strongly disagree, (5) "strongly agree". The 4-item scale correlated highly ($r = .92$, $p < .001$) with the original 10-item scale in the study of Xanthopoulou, Bakker, Demerouti, Schaufeli (2007; $N = 714$).

Affective commitment was measured with three items from Allen and Meyer's (1990) affective commitment scale. A sample item was: "I really feel as if this organization's problems are my own"; (1) "strongly disagree", (6) "strongly agree".

Adaptivity was measured using the three-item individual adaptivity scale developed by Griffin et al. (2007). An example item is: "During the past month I adapted well to the changes in my core tasks". Respondents could indicate how often they had showed the adaptive behavior on a scale ranging from (1) "never" to (5) "very often".

5.6 Strategy of Analysis

Data was analyzed using structural equation modeling (SEM, Jöreskog & Sörbom, 1996) and the maximum-likelihood method implemented in the AMOS program (Arbuckle, 2007). All variables presented in the model were measured for both study waves, except for adaptivity. Adaptivity captures change-supportive behavior and since change was not implemented yet at Time 1 (T1), adaptivity was only measured at Time 2 (T2), when change was in progress. To account for across-time stability in the scores, we included stability paths from T1 to T2 for all variables measured at both times. We controlled for gender and age as they were related to some study variables. Model fit was assessed using the standard χ^2 test. We also assessed Goodness of fit Index (GFI), Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). CFI and GFI should have values of .90 or higher to indicate a good fit, while RMSEA should have values of .08 or lower to indicate a reasonable fit (Browne & Cudeck, 1993).

A number of nested models were fit to the data to test hypotheses. First, we tested the stability model (M1), which included stability paths from each of the constructs measured at T1 to their corresponding construct measured at T2, as well as synchronous correlations. Then we constructed a normal causality model (M2) in which the paths from T1 LMX to T2 meaning-making, OBSE, affective commitment, and adaptivity were included. The fit of the stability model was compared to M2. Next, we fit a reversed causality model (M3) in which the paths from T1 meaning-making and OBSE (personal resources) to T2 LMX, affective commitment and adaptivity were added. Consequently, M3 was compared to M2. Following guidelines for testing mediation in a two-wave data set (Taris & Kompier, 2006), we fitted a mediation model (M4), in which the path from T1 affective commitment to T2 adaptivity was added, after which path coefficients were inspected and M4 was compared to M3.

5.7 Results

5.7.1 Descriptive Statistics

Descriptive statistics, correlations, and Cronbach's alpha's are displayed in Table 1. All scales had sufficient reliability at both times. Table 1 shows that gender was significantly related to meaning-making T2 (r = .12, p < .05) and adaptivity (r = .16, p < .05), such that women had higher scores. Age had a small but significant positive relationship with T1 meaning-making (r = .09, p < .05) and T2 affective commitment (r = .10, p < .05). There were no significant relationships with age and any of the T2

variables; therefore we excluded relationships with age and T2 variables in further analyses. Prior to further analyses, we conducted confirmatory factor analyses (CFA) to test the measurement model for each time-point. For T1, the 4-factor-structure model showed a marginally acceptable model fit, (T1: χ^2 = 641.00, df = 116, GFI = .88, RMSEA = .09, TLI = .89, CFI = .91), although it was better than any other factor solution tested ($\Delta \chi^2$ with 3-factor solution = 243.88^{***}; $\Delta \chi^2$ with 2-factor solution = 659.86^{***}). For T2, the model fit of the 5-factor solution was also marginally acceptable (T2: χ^2 = 858.10, df = 166, GFI = .87, RMSEA = .09, TLI = .89, CFI = .91), and better than any other factor-solution tested ($\Delta \chi^2$ with 4-factor solution = 517.28^{***}; $\Delta \chi^2$ with 3-factor solution = 1586.89^{***}).

Table 1. Means, Standard deviations (SD), Cronbach's alpha (on the diagonal) and Pearson correlations among study variables.

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
	Time 1													
1	Gender (1 = male, 2 = female)	-	-											
2	Age	43.4	9.93	-.28**										
3	LMX	3.07	.86	.07	.01	.91								
4	Meaning-making	4.81	.59	.05	.09*	.11*	.78							
5	Organization Based Self-Esteem	4.21	.95	.04	.00	.47**	.35*	.90						
6	Affective Commitment	3.72	1.01	.05	.10*	.34**	.25**	.52**	.77					
	Time 2													
7	LMX	2.96	.87	-.00	-.01	.56**	.21**	.41**	.28**	.79				
8	Meaning-making	4.81	.61	.12**	.03	.17**	.62**	.29**	.23**	.24**	.77			
9	Organization Based Self-esteem	4.13	1.03	.04	-.02	.41**	.23**	.70**	.52**	.49**	.32**	.91		
10	Affective Commitment	3.69	1.02	.04	.07	.34**	.25**	.52**	.71**	.39**	.31**	.67**	.79	
11	Adaptivity	3.97	.75	.16**	-.06	.21**	.23**	.27**	.23**	.24**	.34**	.32**	.26**	.90

Note. ** $p < .01$, * $p < .05$, $N = 580$.

5.7.2 Hypotheses Testing

Table 2 shows fit indices of the competing models, as well as model comparisons. The stability model (M1) showed a marginally acceptable fit to the data. The normal causality model (M2) showed a slightly improved model fit with most indices satisfying the cut-off criteria. As shown by χ^2 difference tests, M2 had a significantly better fit than M1. The reversed causation model (M3) had a superior model fit compared to M2 ($\Delta \chi^2 = 78.62^{**}$), with both GFI and CFI at .99, and the RMSEA at .04. The mediation model (M4), in which T1 affective commitment predicted T2 adaptivity, showed a good model fit. However, M4 did not fit the data better than M3 ($\Delta \chi^2 = 1.03$).

Hypothesis 1a-b stated that LMX would predict (a) meaning-making and (b) OBSE over time. M2 was built by adding the hypothesized paths from Hypothesis 1 to the stability model. M2 showed that T1 LMX had unique effects on both T2 meaning-making ($\gamma = .07$, $p < .001$), and T2 OBSE ($\gamma = .17$, $p < .001$). Thus, Hypothesis 1 was supported. Hypothesis 2 stated that T1 meaning-making and OBSE would be positively related to T2 LMX.

Hypothesis 2a (meaning-making is positively related to LMX) was supported ($\gamma = .18$, $p < .001$). Hypothesis 2b focused on the positive influence of OBSE over time and was assessed with M3. The results offered support for Hypothesis 2b (OBSE is positively related to LMX; $\gamma = .13$, $p < .001$).

M2 and M3 tested Hypothesis 3a, 4a, and 5a, which stated that resources would be positively related to adaptivity. First, Hypothesis 3a (LMX has a positive relationship with adaptivity) was tested and supported via M2. T1 LMX was positively related to T2 adaptivity ($\gamma = .18$, $p < .001$). Next, Hypothesis 4a (meaning-making is positively related to adaptivity) was tested. M3 showed that meaning-making was positively related to adaptivity over time ($\gamma = .21$, $p < .001$), confirming Hypothesis 4a. According to Hypothesis 5a, OBSE would be positively related to adaptivity. M3 showed a positive relationship between OBSE and adaptivity ($\gamma = .12$, $p < .001$), confirming this hypothesis.

Hypotheses 3b, 4b, and 5b suggested a mediating role of affective commitment in the relationship between resources and adaptivity. In order for a mediation effect to be present, the direct relationships between resources and the mediator (affective commitment) have to be significant. In addition, the relationship between affective commitment and the outcome (adaptivity) has to be significant (Mathieu & Taylor, 2006). In M2, T1 LMX had a significant, positive effect on T2 affective commitment ($\gamma = .17$, $p < .001$). M3 assessed the relationships between personal resources and affective commitment, and showed that the relationship between meaning-making and

affective commitment was significant ($\gamma = .13$, $p < .01$), as well as the relationship between OBSE and affective commitment ($\gamma = .13$, $p < .01$). Finally in M4, the path from T1 affective commitment to T2 adaptivity was added, following suggestions for testing mediation in a two-wave study (Taris & Kompier, 2006). This additional path however, did not increase model fit significantly, and T1 affective commitment did not significantly predict T2 adaptivity ($\gamma = .04$, $p = .24$). Thus, although we found significant direct relationships between resources and affective commitment, Hypotheses 3b, 4b and 5b, suggesting mediation, were not supported by the data. All significant relationships of Hypothesis 1 remained significant in M3. The significant path coefficients of Model 3 are depicted in *Figure 2.*

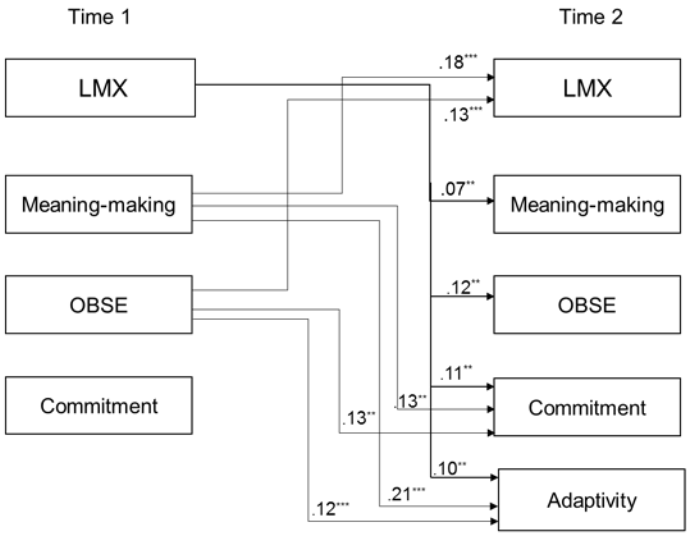

Figure 2. M3: Results of structural equation modeling (maximum likelihood estimates), $N = 580$.

Note. Stability paths, control variables and synchronous correlations are omitted for reasons of clarity; ** $p < .01$, * $p < .05$.

5.8 Discussion

5.8.1 Key findings and Contribution

Organizational change can cause uncertainty and stress (Vakola & Nikolaou, 2005) which may form a risk for employee commitment and identification (Ashforth et al., 2008). The purpose of this one-year follow-up study was to better understand the mechanisms that maintain affective commitment and predict individual level adaptivity. This study contributes to the literature on organizational change and organizational identification. We combined insights from resources theories (Gorgievski et al., 2011) with the application of SIT to organizational behavior (Ashforth & Mael, 1989; Van Knippenberg, 2000). This perspective implies that identity is an influential determinant of employee behavior and motivation (Leonard et al., 1999; Lord et al., 1999). Three identity-related resources with motivational qualities (cf. Van Knippenberg, 2000) were suggested to help the process of change adaptation; LMX (interpersonal self), meaning-making (personal self), and OBSE (collective self).

We proposed a model suggesting that identity-related resources are a driving force for adaptation. Our results showed that personal resources (meaning-making and OBSE) were reciprocally related to LMX as a job resource. Further, all three resources were found to be positively related to affective commitment and adaptivity. Contrary to our expectations, affective commitment did not mediate the relationship between resources and adaptivity. One contribution of our research is that we found reciprocal relations between resources in a changing organization. This may point to a positive gain cycle building employee resourcefulness during change, which is in line with previous work (in non-change settings) on reciprocal relations between job and personal resources (Salanova et al., 2010; Xanthopoulou et al., 2009). Such positive cycle or spiral effects may lead to positive outcomes on other levels, such as the team or organizational level, as well.

Further, our research contributes by including meaning-making, a resource that may be particularly important during change, when established relationships and organizational identification may alter. Meaning-making had the strongest effect on adaptivity of all three resources. In addition, employee meaning-making before the change, was positively related to affective commitment to the organization despite the reorganization. This is in line with suggestions that employee sensemaking may strengthen organizational identification (Ashforth et al., 2008). Interestingly, the positive association between meaning-making and LMX was stronger than the opposite, indicating that employees more involved in meaning-making also perceived higher

LMX, possibly due to the motivating potential inherent in meaning-making (Sonenshein & Dholakia, 2012). This motivating potential may be expressed in more enthusiasm and better performance, which in turn may benefit LMX as well as willingness to change (Van den Heuvel et al., 2009). These findings emphasize the shift towards the agentic perspective, i.e. employees actively craft LMX and meanings of their work (Rosso, Dekas & Wrzesniewski, 2010). This self-motivating process may explain why meaning-making also predicted affective commitment and adaptivity.

Findings regarding the role of LMX emphasize the importance of the leader during change via the relationship he/she holds with followers. Previous work has shown that positive leader-follower relations can strengthen organizational identification (e.g. Hobman, Jackson, Jimmieson, & Martin, 2011). Trust and support inherent in high LMX are likely to form protective factors, maintaining commitment and a willingness to change behavior. Also, LMX predicted meaning-making and OBSE, which is in line with recent findings that leader-communications can enhance follower meaning-making during change (Sonenshein & Dholakia, 2012). Our study shows that the leader is not only an important conveyor of reward / recognition on behalf of the organization-as-a-whole (OBSE), but can also trigger employee self-management in terms of meaning-making.

Our model proposed that affective commitment, which has been suggested to be important during change (Visagie & Steyn, 2011), would be the explanatory variable in the relationship between resources and adaptivity. However, contrary to previous work in non-change settings (Meyer, Stanley, Herscovitch, & Topolnytsky, 2002), we didn't find a mediating role of affective commitment. Affective commitment did not predict adaptivity, while resources were directly positively related to both affective commitment and adaptivity. This emphasizes the importance of resources during change and it questions the importance of affective commitment as a driving force for employee adaptive behavior.

Personal resources may *add* to action-readiness (Bandura, 1997), while in some cases high levels of affective commitment may *hinder* adaptation to change. For example, if employees are committed to established ways of working, their affective commitment may make it more difficult to accept new structures, especially if they feel the changes fundamentally alter their role or the organization. Future studies should delve deeper into the facilitating or hindering role of affective commitment. Also, other possible mediators may be included in future work, such as work engagement. Work engagement is a positive, affective work-related state of mind, which has been shown to predict employee outcomes such as job performance, turnover intentions and absenteeism (see: Demerouti & Cropanzano, 2010). If employees are able to maintain

work engagement, they may build up their capacity to be resilient, perhaps due to enduring positive emotions, which may influence individual adaptivity.

5.8.2 Strengths, Limitations and Future Research

The use of longitudinal data (allowing for causal inferences) from police officers is a strength of the study. However, given this specific context, findings might not generalize to other environments, where culture and type of work may differ (Bryant, Dunkerley & Kelland, 1985) . Therefore, findings need to be replicated in other occupational settings. Also, we used self-report data, which may lead to common method bias (Podsakoff, Mackenzie, Lee & Podsakoff, 2003). However, longitudinal data may reduce the negative impact of memory effects. Also, with the exception of adaptivity, the constructs under study are probably best rated by employees themselves, since employees are likely to be the best judges of their own attitudes. For adaptivity, future studies could aim to include other-ratings or observations. This study used change as the context and focused on a behavioral change outcome (adaptivity), for future work it would be interesting to include more specific change attitudes and how these may mediate / moderate relationships over time. Adaptation processes may differ at different levels in the organization; therefore differences between managerial and employee-levels could be included in future work. Although employees were faced with a large reorganization, scores did not differ greatly when comparing before and after mean scores (although there was a trend towards less positive scores from T1 to T2). For future work it would be interesting to compare high vs. low resources groups, or study moderation effects that may influence change adaptation outcomes.

5.8.3 Practical Implications and Conclusion

Our findings show the importance of managing resources, and imply that organizations should focus on top-down as well as bottom-up interventions to stimulate resourcefulness and change adaptation. Developing leadership potential to ensure high quality LMX relationships, as well as stimulating employee self-management and reflection may lead to a more adaptive workforce. More specifically, our findings point to three factors that may facilitate adaptation. First, organizations may invest in developing high LMX by developing leaders to use a coaching leadership-style (showing appreciation /support, sharing the change vision, and creating opportunities for learning). This may boost LMX, which can spark a positive spiral enhancing personal resources, and can lead to adaptivity. Secondly, when leaders become better coaches, they may facilitate meaning-making (e.g. by asking (change-related) reflection questions, exploring the impact of change on the employee and explaining the need for

change. Thirdly, organizations may invest in direct ways to boost OBSE (e.g. communications around importance of employee activities to the organization/community). Using such resource-boosting interventions may help to manage the often negative effects of change on the employee-organization relationship. Summarizing, our study sheds light on resources that help organizations to maintain strong employee affective commitment and adaptivity in the face of change.

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CHAPTER 6
Employee Adaptation to Change
The Value of Change Information and Meaning-making

Based on:
Van den Heuvel, M., Demerouti, E., Bakker, A. B. & Schaufeli, W. B. (2013, in press). Adapting to Change: The Value of Change Information and Meaning-making. *Journal of Vocational Behavior*.

6.1 Introduction

Successful organizations are capable of continuous adaptation to uncertainty (e.g. changing work processes, technology or evolving customer demands) in the environment (Griffin, Neal & Parker, 2007; Weick & Quinn, 1999). In order to adapt, organizations need to proactively build their resources and capabilities on an ongoing basis (Pettus, 2001). Inherent in this macro-adaptation process is the necessity of implementing changes in organizational structures, work processes, and leadership, which inevitably affect the daily work of employees. Many studies have addressed macro aspects of such strategic organizational change, focusing on outcomes such as profitability and survival (for a review, see Rajagopalan & Spreitzer, 1997). The macro-perspective has since been complemented with a micro-focus on employee change reactions (Armenakis & Bedeian, 1999; Oreg, Vakola, Armenakis, 2011). However, more work is needed, since ultimately, strategic change has to be supported and implemented by change-recipients (Armenakis & Harris, 2009; Bovey & Hedy, 2001). Traditionally, employees have been viewed as 'resisting' elements in the change process (Dent & Goldberg, 1999). Recently, researchers focus not only on (overcoming) change resistance, but also on willingness, openness, and readiness to change (Oreg, Vakola, & Armenakis, 2011). Although these studies help our understanding of attitudinal reactions, more attention should be given to behavioral change and change-*supportive* behaviours (Shoss, Witt & Vera, 2011). This would benefit organizational adaptive capacity, as well as employee well-being, since resistance to change has been associated with reduced well-being in terms of decreased job satisfaction, irritability, and intentions to quit (Oreg, 2006; Wanberg & Banas, 2000). It is therefore important to understand what factors may boost employee adaptivity. This study aims to add to our knowledge of the micro-level of employee adjustment to change. Rather than focusing on the change event as a unit of analysis, the present longitudinal field study zooms in on employee perceptions of change and the changing work environment in a context of a police district undergoing a reorganization.. More specifically, the purpose of this study is to examine factors contributing to employee adjustment to change. We study change resources (i.e. change information and meaning-making) that may facilitate employee change attitudes, i.e. willingness to change, as well as its behavioral expression, individual adaptivity (Griffin, Neal & Parker, 2007).

6.2 Theoretical Background

Change research indicates that how an organizational change may be characterized, depends on the perspective of the observer. From a macro perspective, a reorganization could be described as an "episodic" change, i.e. a relatively short period of intentional, planned change, while an analysis on the micro-level may observe a more "continuous", ongoing flow of change (Purser & Petranker, 2005; Weick & Quinn, 1999). In the organization under study a large reorganization was introduced whereby the structure of departments and team operations was altered. The organization merged their five districts into three districts, which meant that employees had to re-locate and were required to work flexibly; i.e. in different geographical areas and in new teams. Given that this was a clear change from the 'old system' this change can be described as "episodic". Episodic change is linked to the classic ideas of Lewin (1947). In this view, every change effort starts with 'unfreezing' the status quo or a state of equilibrium. Unfreezing entails preparing for change, communicating change, building psychological safety, creating a sense of urgency around the need for change, making the driving forces for change explicit, and removing restraining forces (e.g., personal defenses, group norms, etc.) that inhibit change (Schein, 1996). The second stage is the 'transition' phase, in which the actual changes take place. This is the phase in which employee learning and behavioral change is required. During transition, the target system is moved to a new equilibrium and it is therefore crucial to build change acceptance and motivation amongst change recipients. During the final phase of Lewin's model (re-freezing), the new equilibrium needs to be enforced, in order to avoid falling back towards the old pre-change situation. New ways of working need to be reinforced in order for the change to 'stick'. The measurement occasions of the current study correspond to these three phases of the change process.

Although Lewin's classic theory includes the role of change agents, group norms and organizational culture, (important determinants of organizational change), it primarily takes a macro perspective on how change events unfold. Consequently, it may generate insufficient knowledge about how employees perceive, interact with, respond to and adapt to change on the micro level, where change may be perceived as ongoing and continuous (Weick & Quinn, 1999; Brown & Eisenhardt, 1997). We aim to apply Lewin's perspective to the introduction of change in our organization under study, since it was possible to distinguish the three phases (pre-change actions, implementation phase and post-change phase). In addition, we complement this perspective with a micro-level focus by investigating relationships between employee-level constructs during the three different phases (i.e. unfreeze, transition, refreeze. As recently

emphasized, the micro aspects on the employee-level that contribute to successful change implementation need more attention in organizational change research (Sonenshein & Dholakia, 2012) and adaptation (Shoss, Witt & Vera, 2011).

The ultimate aim of this study is to predict what the organization needed to achieve in order for the reorganization to be a success: enhanced employee adaptivity. Adaptivity is defined as "...the extent to which an individual adapts to changes in a work system or work roles" (Griffin, Neal & Parker, 2007, p. 329). It refers to behavioral responses and can be regarded as a form of flexibility or 'adaptability' which has been proposed to be an important component of employability (Fugate & Kinicki, 2004; Van der Heijde & Van der Heijden, 2006).

6.3 Change resources

To study the process of change adaptation we use the construct of individual 'resources' based on Conservation of Resources (COR) theory (Hobfoll, 1989; 2001). Resources can be defined as " those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of these objects, personal characteristics, conditions, or energies" (Hobfoll, 1989; p. 516). According to this perspective, people are intrinsically motivated to obtain, retain, and protect as well as accumulate their resources (Hobfoll, 2001).

In an organizational change setting this would mean that more resourceful employees may be less vulnerable to resource loss and more capable of resource gain during change. This is because they may use resources such as information, social networks and / or self-efficacy to protect or gain other valued outcomes such as useful tools or technologies, energy, social interaction or a better position. Employees with many resources may therefore also be more open to 'experimenting' with behavioral change (which may be perceived as risky to less resourceful individuals). This experimenting could take the form of pro-actively crafting the changing work environment to their own needs (resource gain) (Hobfoll & Shirom, 2001). COR suggests that these positive gain cycles (i.e. presence of resources leads to more resources) over time may lead to other valued outcomes, such as work engagement, commitment, and well-being (Bakker, 2011; Hobfoll, 2001; Salanova, Schaufeli, Xanthopoulou, & Bakker, 2010).

We include two resources that may add to employees' understanding and adjustment to change (hence we refer to them here as 'change resources'). First, change information, a process resource referring to the levels and adequacy of change-related information that employees receive via their supervisors and/or management communication channels, e.g. intranet. Information provision is known in the change

literature to be crucial, both during "unfreezing" as well as during the transition phase (e.g., Jimmieson, Terry & Callan, 2004; Rafferty & Restubog, 2009).

Secondly, we focus on a psychological or personal resource, i.e. meaning making. Meaning-making refers to reflective actions that individuals may undertake to create meaning which are suggested to increase the willingness to adapt to change (Van den Heuvel, Demerouti, Schreurs, Bakker & Schaufeli, 2009; Van den Heuvel, Demerouti, Schaufeli & Bakker, 2010). Meaning-making is known in literature to be important for change adaptation to the extent that it facilitates understanding during change or adversity. *Figure 1* depicts our research model, which illustrates how we suggest resources have a positive effect on employee adjustment (i.e. willingness to change and adaptivity).

6.3.1 Change information.

"Process" resources pertain to qualities of the way in which the change is implemented (the process). Examples are communication and information about the change and

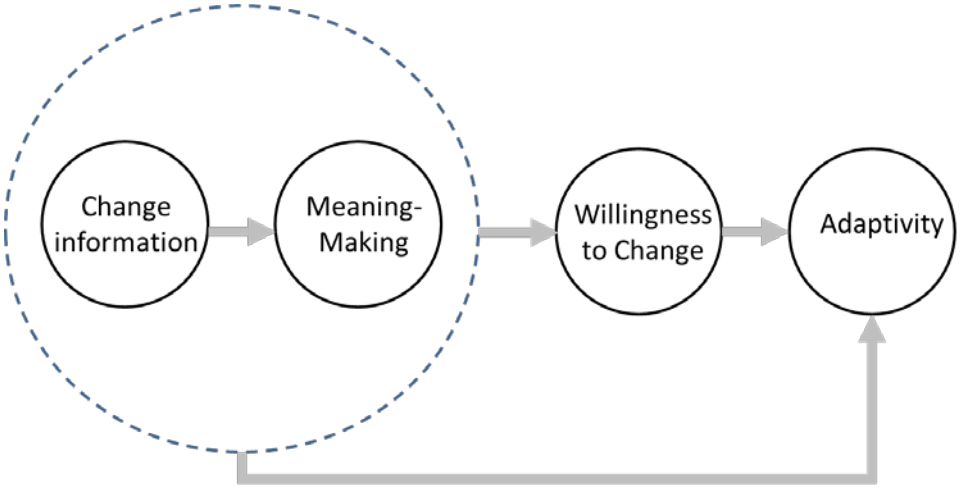

Figure 1. Change Resources Adaptation Model

opportunities to participate in designing /implementing the change. These process resources have been shown to be vital for successful change (Bartunek, Krim, Necochea & Humphries, 1999; Saksvik et al., 2007). In the present study, we focus on change information as communicated to employees. Jimmieson, Terry and Callan (2004) found that change information was positively related to adjustment in terms of well-being, job

satisfaction, and client engagement. The relation was mediated by change self-efficacy. Similarly, change information has been found to be predictive of higher openness to change (Wanberg & Banas, 2000) and less resistance to change (Oreg, 2006). Timely and detailed information seems a critical element of any change endeavor. This may be due to the anxiety/uncertainty reducing effect that information about the pending changes may have on employees (Ashford, 1988; Miller & Monge, 1985). We expect that change information will facilitate willingness to change (attitudinal) as well as behavioral change (adaptivity). However, detailed information regarding the change may not be available in every phase of the change implementation process. Therefore, there is a need for employees to use intra-individual 'personal' resources, such as meaning-making, especially in uncertain or dynamic situations with a lot of ambiguity (such as organizational change).

6.3.2 Meaning-making.

Building on social and health psychological research on adaptation to adversity (Linley & Joseph, 2004; Taylor, 1983), *meaning-making* has recently been suggested as a facilitating factor during change in organizational settings (Sonenshein & Dholakia, 2012; Van den Heuvel et al., 2009). Meaning-making is concerned with the extent to which individuals are effective in integrating challenging / ambiguous events into a framework of personal meaning using value-based reflection (Park, 2010; Van den Heuvel et al., 2009). Meaning-making has been shown to be positively related to coping with life changes (Linley & Joseph, 2004; Park, 2010). Meaning-making captures whether employees are successful in maintaining a sense of meaningfulness and purpose (Van den Heuvel et al., 2009). Therefore, in line with COR theory, meaning-making has been conceptualized as a personal resource that helps employees to gain and protect other personal resources (Hobfoll, 2001). Meaning-making may be particularly relevant during organizational change, when uncertainty and ambiguity are not easily avoided. Using meaning-making may help employees to process change-related information as communicated by management. In addition, it may also help to reduce uncertainty in the absence of detailed information. In this way, meaning-making may also help employees to protect other resources, such as self-esteem or motivation. In a workplace setting, it has been shown to be positively related to willingness to change and in-role performance during change (Van den Heuvel et al., 2009). Similar sensemaking processes (i.e. interpreting the environment using beliefs and assumptions) have also been shown to help employees adjust to change (Weber & Manning, 2001; Weick, 1995). Reflecting on ambiguous events and being mindful of how this relates to personal goals and values may help to reduce uncertainty. When employees have found

ways in which the change can be meaningful to them, this may help to build acceptance and a sense of control over the new situation. Over time, this may build resilience to deal with change. Given this positive relation between perceived meaning and adaptive behavior, we expect that meaning-making will also be positively related to adaptivity over time. The role of meaning-making over time during a longer transition has not been studied as of yet. Adequate information-provision regarding the change is a tool that organizations can use to boost employees' understanding / acceptance of the changes. Meaning-making is a resource that may be used by employees themselves to find meaning in the change. Inherent in meaning-making is the 'digesting' of information that employees receive from their environment. There may therefore be an important link between change information and meaning-making. Sonenshein and Dholakia (2012) show that managerial communication regarding the change can facilitate certain types of employee meaning-making, which in turn helps employees to adapt their behavior. Employees may be triggered to reflect on the changing environment by the information and communications from management. We therefore also expect that change information will have a positive effect on meaning-making. Taken together, based on the above reasoning, we formulate two hypotheses regarding the facilitating role of change resources over time (see also *Figure* 1).

Hypothesis 1: Information regarding the change is positively related to (a) meaning-making, (b) willingness to change, and (c) adaptivity over time.

Hypothesis 2: Meaning-making is positively related to (a) willingness to change, and (b) adaptivity over time.

6.4 Adaptation over Time

What processes can explain the positive influence of resources on employee adaptive behavioral change? Our model suggests different pathways that may explain the positive effect of change information and meaning-making on adaptivity. First, the positive influence of pre-change information on employee adaptivity over time may be transmitted via willingness to change. Information may reduce uncertainty and therefore facilitate positive attitudes towards the change. Extending previous research on organizational change that aimed to predict positive change attitudes (Jimmieson, Terry & Callan, 2004; Vakola & Nikolaou, 2005), we expect that change information before the change implementation phase will positively relate to willingness to change during implementation, which in turn will predict higher levels of adaptivity after formal

implementation is completed. This process resembles Lewin's (1947) perspective; that is, pre-change 'unfreezing' needs to take place via communication and information. Employee willingness to change has to (be) build up towards the transition phase. During the actual transition during which change is implemented, information is still an integral part of the process, as employees need to be motivated not only to change their attitudes (willingness), but also their behavior in line with the changing environment. After formal implementation is completed (re-freezing phase), employees need to continue their adaptive behaviors in order for the change to be successful in the longer term. This indirect effect of information on attitudes, which in turn influence behavior, is also inherent in classic perspectives on human behavior such as the theory of planned behavior (Ajzen, 1991). Hence;

Hypothesis 3: Time 1 (T1) Change information is indirectly related to T3 adaptivity through T2 willingness to change.

Secondly, the positive influence of change information on adaptivity over time may also be transmitted via meaning-making during the transition phase. Information regarding the changes may trigger employees' reflecting on the changing situation and how this affects them, which in turn may lead to employee adaptivity. This is in line with more recent perspectives on change adaptation (e.g., Sonenshein & Dholakia, 2012; Van den Heuvel et al., 2010). The Personal Resources Adaptation Model (Van den Heuvel et al., 2010) suggests that (change) resources in the work environment may trigger personal resources, which in turn may predict work engagement and adaptive performance. Sonenshein and Dholakia (2012) found a significant relationship between change communications and a change-specific type of meaning-making (change benefit-finding and understanding the change as part of an organizational strategy). In their study, meaning-making, in turn, predicted change implementation behaviors (via commitment, identification and change-efficacy).

However, these relationships have not been tested with a longitudinal design. Our study design allows us to test this indirect effect and our final hypothesis is:

Hypothesis 4: T1 Change information is indirectly related to T3 adaptivity through T2 meaning-making.

6.5 Method

6.5.1 Design

The panel group that participated in this study was recruited as part of a research project conducted within a Dutch police district undergoing reorganization. The changes (departmental merges, technological innovations, professionalization, and relocation of employees) were aimed at creating a more adaptive organization. Changes were implemented after the first measurement wave and were still ongoing during the second wave. All employees in the district were confronted with the change in that there were different planning systems and they were required to start working more flexible, at different locations with different colleagues. In addition, all staff members were required to further develop themselves professionally by taking part in training programs. The first measurement wave took place before change implementation. During this time employees were informed via intranet and meetings with their team leaders who dispersed the information from higher management to the lower-level employees. The second measurement wave took place during the implementation of change, when employees were starting to work in new ways, e.g. travelling to new locations for work, working with new teams and the new planning system. All formal changes were implemented at the time of the third measurement. No employees were made redundant. The survey had to be kept as concise as possible to increase response rates and to avoid survey fatigue. We therefore used shortened scales to measure constructs where possible. Adaptivity was only measured at T2 and T3 because adaptivity captures change-supportive behavior. The items only make sense to answer once change has been implemented. Therefore adaptivity was only measured at T2, when change implementation was in progress.

6.5.2 Participants

After initial information regarding the purpose of the research via intranet / newsletters, e-mail invitations were sent out to all employees (N = 1780). A total of 950 employees completed the online survey (response: 53%). At T2, 1854 invitations were sent, and a total of 810 employees completed the survey (response: 44%). At T3, 1736 invitations were sent out, and a total of 741 employees completed the survey (response 43%). The final sample consisted of 368 employees who completed all three surveys. Nearly two-thirds of the sample were male (63.3%; female: 36.7%), average age was 43.4 years (SD = 9.84), and mean tenure was 17.85 years (SD = 11.25). The majority of the sample worked in a non-managerial position (90.8%). More than half (56.2%) held a

predominantly operational position, while 43.8 % of the sample held a predominantly support position (administrative, IT, HR or finance tasks supporting the operational processes). We conducted dropout analysis to examine the differences between the group who completed the T1 survey only and the panel group, as well as the group who completed T1 and T2 versus the panel group. For both comparisons we found no significant differences between the dropout group and the panel group in terms of their demographic profile (age, gender, education and tenure). There was, however, a significant difference between the dropout group and the panel group on reported change information. The drop-out group scored slightly lower on change information than the panel group (T1 vs. panel group: $t = -2.28$, $p < .05$; T1 & T2 vs. panel group: $t = -2.49$, $p < .05$). Besides this difference, no other differences were found on our study variables.

6.5.3 Measures

Below all measurement scales are described. Cronbach's alpha values of all scales can be seen Table 1, which shows that reliabilities of all scales were acceptable across the three waves.

Change information was measured using three items based on the scale of Wanberg and Banas (2000) using a 6-point Likert-scale; (1) "strongly disagree" to (6) "strongly agree". An example item is: "I have received adequate information about the change".

Meaning-making was measured using five items from the meaning-making scale (Van den Heuvel et al., 2009). Sample items were: "I actively take the time to reflect on events that happen in my life", and "I have an understanding of what makes my life meaningful"; (1) "strongly disagree", (6) "strongly agree".

Willingness to change was assessed using a four-item scale developed by Metselaar (1997). The items measure employees' intention to invest time and effort to support the implementation of the change. Example item: "I'm willing to convince colleagues of the benefits the change will bring", and "I'm willing to put effort into achieving the goals of the change" (1) strongly disagree, (5) strongly agree).

Adaptivity was measured at T2 and T3 using the three-item individual adaptivity scale developed by Griffin et al. (2007). An example item is: "During the past month I adapted well to the changes in my core tasks". Respondents could indicate how often they had showed the adaptive behavior on a scale ranging from (1) "never" to (5) "very often".

6.6 Strategy of Analysis

We used structural equation modeling (SEM, Jöreskog & Sörbom, 1996) and the maximum-likelihood method implemented in the AMOS program (Arbuckle, 2007) to analyze the data. Change information, meaning-making and willingness to change were measured at all three measurement occasions, while adaptivity was measured only at T2 and T3. All study variables were included as latent factors that were operationalized by the respective items, which were included as their indicators. Change information and adaptivity were indicated by three items, meaning-making by five, and willingness to change by four items. Prior to the analyses, we conducted confirmatory factor analyses (CFA) at the item-level to test the measurement model that includes all observed and unobserved study variables and their relationships. Also, we conducted measurement invariance analyses. After these preliminary steps, a number of models were fit to the data in order to test the hypotheses. First, we tested the stability model (M1), which included stability paths from each of the constructs measured at T1/T2 to their corresponding construct measured at T2/T3, as well as synchronous correlations between the latent factors. Two items of the meaning-making scale, i.e. item 1 ("I actively take the time to reflect on events that happen in my life" and item 5 "I feel my life is meaningful"), were highly correlated over the three measurement occasions. Therefore, we allowed the measurement errors of these items to be correlated over time (i.e. error of item 1 T1 correlated with error of item 1 T2 and T3) (cf. Edwards & Webster, 2012). According to Pitts, West, and Tein (1996), this specification of covariance between errors of measurement accounts for the systematic (method) variance associated with each specific indicator.

Our proposed research model constitutes a causality model (M2) which included paths between T1/T2 change information and meaning-making to T2/T3 willingness to change and adaptivity. The paths from change information T1/T2 to meaning-making T2/T3 were also included. To rule out alternative causal effects of willingness to change and adaptivity on the perceived resources, M2 was compared to an alternative, reversed causality model (M3), which consisted of a model with reversed paths without the paths of M2. Thus, M3 included the paths from T1/T2 meaning-making to T2/T3 change information, as well as the paths from T1/T2 willingness to change to T2/T3 meaning-making and T2/T3 change information; and finally, the paths from T2 adaptivity to T3 change information, T3 Meaning-making and T3 Willingness T3. Finally, we built the reciprocal model (M4) which included both causality paths (M2) as well as the reversed causality paths (M3).

We controlled for managerial position as this variable was related to most of our study variables (see Table 1). Being in a managerial role would expose one to more information regarding organizational change. Also, a managerial role tends to require more willingness to change on the part of the manager. To account for across-time stability in the scores, we included stability paths from T1 to T2 to T3 and from T1 to T3 for all factors measured over time, as well as synchronous correlations between factors on each measurement occasion. Model fit was assessed using the standard χ^2 test. We also assessed Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA) and AIC. As suggested by Marsh, Hau, and Wen (2004), we used the conventional cut-off values to assess model fit i.e., CFI, TLI > .90, and RMSEA < .08 instead of the criteria that have been recommended by Hu and Bentler (1999) (i.e., CFI, TLI > .95, and RMSEA < .06). This was done because the cut-offs suggested by Hu and Bentler tend to be too stringent, in that otherwise acceptable models are too often rejected (Marsh et al., 2004). For the non-nested (reversed) model, we compared the Akaike (AIC) value. Lower values of AIC indicate a better model fit. To test the mediation effect of *Hypothesis 4*, we used a method of estimation proposed by Preacher and Hayes (2008) including bootstrapped estimates for Confidence Intervals. This method requests 5000 bootstrapped samples to estimate the bias corrected confidence intervals for estimates of the product of 'a' (path from T1 information to T2 meaning-making) and 'b' (path from T2 meaning-making to T3 adaptivity) model coefficients for the mediated or indirect effects.

6.7 Results

6.7.1 Descriptive Statistics

Descriptive statistics, correlations, and Cronbach's alpha's are displayed in Table 1. All scales had sufficient reliability at all measurement occasions. Table 1 shows that managerial position was significantly related to all variables and was therefore included as a control variable. Prior to further analyses, we conducted confirmatory factor analyses (CFA) to test the measurement model for each time point. At each time point we compared models with different factor solutions (i.e. 1-, 2-, 3- and 4-factor models). At T1, the 3 factor model (including information, meaning-making and willingness to change) showed an acceptable model fit (χ^2 = 175.77, df = 51, CFI = .94, TLI = .93, RMSEA = .08), which was superior to the 1-factor model ($\Delta\ \chi^2$ (3) = 719.05, $p < .001$). The 3-factor model was also superior to a 2-factor model, where meaning-making and information loaded on 1 factor (resources) while willingness to change formed the other factor ($\Delta\ \chi^2$ (2) = 448.22, $p < .001$).

At T2, the 4-factor model (including the factors information, meaning-making, willingness to change and adaptivity) showed a satisfactory model fit (χ^2 = 199.91, df = 84, CFI = .96, TLI = .95, RMSEA = .06), which was superior to the 1-factor model ($\Delta \chi^2$ (6) = 1463.36, $p < .001$), as well as the 2-factor model (including a resources factor formed by meaning-making and change information and a change-related factor formed by willingness to change and adaptivity ($\Delta \chi^2$ (5) = 1111.63, $p < .001$). The 4-factor model was also superior to the 3-factor ($\Delta \chi^2$ (3) = 416.84, $p < .001$) model, in which willingness to change and adaptivity were separate factors. At T3, we found a similar result, i.e. the 4-factor model showed a superior model fit (χ^2 = 246.27, df = 84, CFI = .95, TLI = .94, RMSEA = .07), when compared to the 1-factor model ($\Delta \chi^2$ (6) = 1545.05, $p < .001$). The 4-factor model was also superior to the 2-factor ($\Delta \chi^2$ (5) = 1125.68, $p < .001$) and 3 factor ($\Delta \chi^2$ (3) = 639.47, $p < .001$) models.

Following this, the model was tested for measurement invariance across the three waves. Factor loadings of each item at the three different waves were constrained to be equal. This constrained model was compared to the free model, where factor loadings were allowed to be different across the measurement waves. Note that the factor loading on one item of each scale had to be constrained to 1 (Arbuckle, 2007). The free model (χ^2 = 2183.91, df = 795, CFI = .87, TLI = .86, RMSEA = .07) differed significantly from the constraint model ($\Delta \chi^2$ (28) = 210.50, $p < .001$), indicating that constraining the loadings to be equal across the measurement waves resulted in a slightly worse model fit. This result indicates that the meaning of the items changed over the three measurement occasions. Therefore, results should be read in light of this finding, and be interpreted with caution.

Table 1. Means, Standard deviations (SD), Cronbach's alpha (on the diagonal) and Pearson correlations among study variables. $N = 368$

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
	Time 1														
1	Managerial (1= yes, no=2)	-													
2	Change Information	3.72	1.1	-.14**	.85										
3	Meaning-making	4.81	.61	-.15**	.16**	.78									
4	Willingness to change	3.89	1.1	-.29**	.53**	.27**	.90								
	Time 2														
5	Change Information	3.75	1.1	-.20**	.59**	.13*	.40*	.87							
6	Meaning-making	4.80	.60	-.15**	.21**	.64**	.28**	.26**	.77						
7	Willingness to change	3.97	1.0	-.28**	.40**	.21**	.70**	.45**	.30**	.90					
8	Adaptivity	3.96	.76	-.13*	.26**	.25**	.28**	.23**	.39**	.35**	.90				
	Time 3														
9	Change Information	3.68	1.1	-.18**	.52**	.13*	.36**	.58**	.22**	.40**	.18**	.91			
10	Meaning-making	4.81	.63	-.14**	.25**	.60**	.30**	.22**	.61**	.22**	.25**	.27**	.80		
11	Willingness to change	3.95	1.0	-.30**	.40**	.25**	.59**	.45**	.31**	.58**	.30**	.54**	.35**	.91	
12	Adaptivity	4.02	.74	-.03	.24**	.26**	.26**	.26**	.34**	.32**	.44*	.28**	.32**	.35**	.90

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

6.8.1 Longitudinal Analyses

Table 2 shows the fit indices of the competing models and the model comparisons. The stability model (M1) showed an acceptable fit to the data. The proposed research model was the causality model (M2), which showed a satisfactory model fit to the data with all indices satisfying the cut-off criteria. As shown by χ^2 difference tests, M2 had a significantly better fit than M1 ($\Delta \chi 2$ (12) = 93.58, $p < .001$). The same holds true for both the reversed causation model (M3) and the reciprocal model (M4) which were also significantly better than the stability model. M3 had a marginally acceptable model fit. M3 was not nested in M2, therefore AIC values were compared as an index of model fit. The AIC value of M2 was lower compared to that of M3, indicating a better model fit for M2. The reciprocal model (M4) did not fit the data significantly better than M2 ($\Delta \chi 2$ (9) 59.57, *n.s.*). Therefore, M2 is preferable compared to M4, as it is more parsimonious. In addition, Table 2 shows that the AIC value of M2 was lower than M4. This means that M2 explained the underlying structure of the data better. Significant paths in M2 are displayed in *Figure 2*.

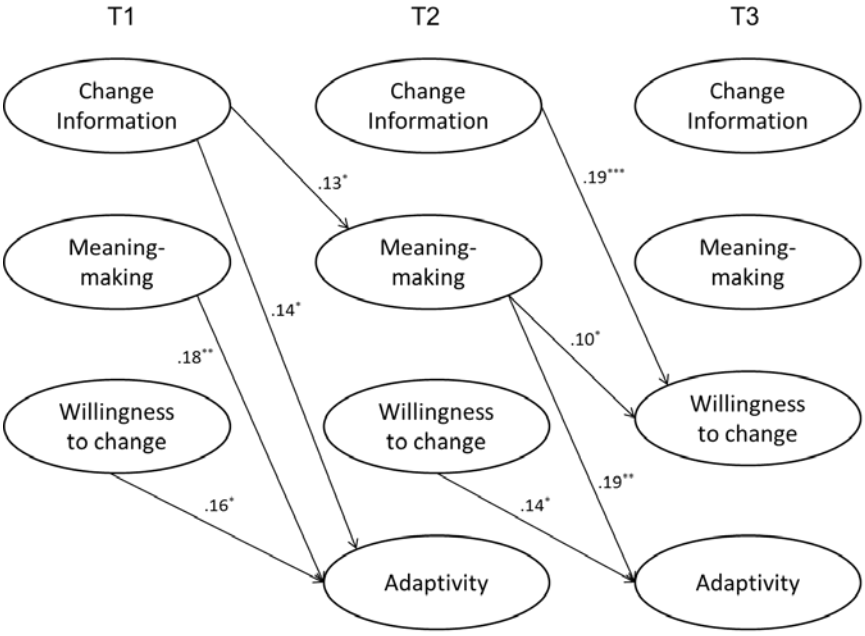

Figure 2. Significant paths in the Structural Causality Model (M2)

Notes: ** $p < .01$, * $p < .05$, $N = 368$. Maximum likelihood estimates (standardized) are displayed. Measurement models and control variable are not displayed for reasons of clarity

Hypothesis 1 stated that change information is positively related to (a) meaning-making, (b) willingness to change, and (c) adaptivity over time. Partially supporting H1a, we found one significant positive effect of T1 change information on T2 meaning-making. Also, T2 change information had a significant positive effect on T3 willingness to change, partially supporting H1b. In addition, we found partial support for H1c since T1 change information was significantly related to T2 adaptivity.

Hypothesis 2a was partially supported, since T2 meaning-making had a significant positive effect on T3 willingness to change, however, this was not the case for the T1-T2 relationship. Hypothesis 2b was fully supported by our model; meaning-making had a significant effect on adaptivity, both between T1-T2 as well as T2-T3. We did not find support for Hypothesis 3 which stated that T1 change information would be indirectly related to T3 adaptivity via T2 willingness to change. Although willingness to change had a significant, positive effect on adaptivity, the indirect effect of T1 change information on T3 adaptivity via T2 willingness to change was not significant, since T1 change information did not predict T2 willingness to change. To test Hypothesis 4 we used a method of estimation proposed by Preacher and Hayes (2008) including bootstrapped estimates for Confidence Intervals. Support was found for the indirect

effect of T1 change information on T3 adaptivity via T2 meaning-making. The indirect effect was significant ($z = 3.17$, $p<.01$, 95% *CI* = .05–.21). The confidence interval did not contain zero, which indicates there is a significant meditation effect of change information on adaptivity through meaning-making.

Table 2. Goodness of fit indices and chi-square difference tests of nested structural equation models, *N = 368*.

Model	χ^2	df	Comparison	$\Delta\chi^2$	Δ df	CFI	TLI	RMSEA	AIC
$M_{1:}$ Stability model	1846.66	819				.90	.89	.058	2100.66
M2: Causality model: M1 + Information T1/T2 →MM, Willingness, Adaptivity T2/T3 & MM T1/T2→ Willingness, Adaptivity T2/T3.	1753.08	807	M1 – M2	93.58***	12	.91	.90	.057	2031.08
M3: Reversed Causality model: MM T1/T2→ Information T2/T3 & Willingness T1/T2→ Information T2/T3, MMT2/T3, & Adaptivity T2 → Information T3, Meaning-making T3, Willingness T3	1834.98	810	M2 –M3	81.90***	3	.90	.89	.059	2106.98
M4: Reciprocal model: M2 +M3	1745.92	798	M2 –M4	7.16 *ns*	9	.91	.90	.057	2225.79

Note. Managerial position was controlled for.** $p < .001$, * $p < .01$.

6.9 Discussion

This study examined the facilitating effects of a resource in the work environment (change information) and a personal resource (meaning-making) on employee adaptation to change over time. Results showed that change information facilitates employee adjustment to change over time. Using a longitudinal cross-lagged panel design, we showed that the information provided before the implementation phase had a positive effect on employee meaning-making and adaptivity during implementation. Change information during the implementation phase positively affects willingness to change one year later (after formal implementation efforts were finished). Meaning-making (during implementation) positively predicted employee change attitudes (willingness to change) after the implementation was completed. In addition, meaning-making before and during change implementation positively predicted adaptivity. We found that meaning-making was the linking process in the relationship between pre-change information and post-implementation adaptivity, emphasizing the importance of employees' personal resourcefulness in terms of being open to reflect on the change and linking it to their own personal goals and values. How do these findings contribute to our knowledge on employee adaptation to change?

6.9.1 Theoretical contribution

One contribution of this study is that we gained insight on micro-level adaptation processes of employees, by studying longitudinal relationships across the three phases of change implementation (unfreeze-transition- re-freeze; Lewin, 1947). The utilization of a three-wave study integrating measures prior, during, and after the implementation of organizational change, enabled us to do so. In that sense we have made an attempt to link a macro-level model to a micro-level perspective of studying employee perceptions and behavior during change.

In addition, we applied COR theory to explain the longitudinal effects that resources have on adaptation outcomes. COR theory states that employees strive to obtain, maintain and protect resources (Hobfoll, 1989). During organizational change, resources may help individuals to adapt to change and maintain health, well-being and motivation (cf. Hobfoll, 1989; p. 516). Indeed, in line with COR theory, we found that resources facilitated adjustment to change over time, although the role of resources differed slightly depending on the phase in which they were studied. Change information and meaning-making *during* change helped employees to obtain an open attitude towards change and the ability to show adaptive behaviors. In light of COR

theory, these resources may have helped employees to regain a sense of control over their environment which may have reduced uncertainty. In addition, over time, more adaptive attitudes and behavior will, in turn, help employees to gain other valued resources, such as support from peers and managers in handling the change (Hobfoll, 1989, 2001).

Another contribution of this study is the knowledge on the role of meaning-making as an important facilitator for change adjustment. Meaning-making is mostly studied qualitatively in case studies or narrative studies, and has, as of yet, hardly been included in quantitative longitudinal settings. We found meaning-making to have a multiple role during change. Not only is it a direct predictor of adaptive behavior, it also helps to translate messages from management into adaptive behavior. This may point to a growing need in the study of organizational change to focus more attention on change recipients' proactive ability to self-regulate and craft meanings at work (Grant & Parker, 2009). Individual meaning-making may become increasingly important as the demands for flexibility, the pace of change and uncertainty grow.

6.9.2 Unfreezing: Pre-change to During-change

The relationships between pre-change resources and outcomes during change correspond to the 'unfreezing' period; when change resources and positive attitudes need to be built. We found partial support for the beneficial effects of change information on adaptation outcomes. Pre-change information predicted employee adaptivity during the implementation phase. This finding emphasizes that it is worthwhile to provide employees with as much information regarding pending changes as possible, even though not all details are finalized yet. For example, employees might have received information on the departmental merging and what this would have meant for working together or the work planning system.

Change information also had a positive effect on meaning-making during change. This is consistent with the proposed meaning-making change adaptation model (Sonenshein & Dholakia, 2012), which shows that managerial communication regarding the change can help employees to actively search for benefits in the changes. We extended this finding by showing that this relationship also holds over time. This indicates that the organization and its managers can trigger employees' meaning-making and reflection during change. T1 Meaning-making also predicted T2 adaptivity. This indicates that employees' tendency to reflect on ambiguous or challenging events –even before the change- can help adjustment to change. This emphasizes the role of meaning-making as a resource (Hobfoll, 2001; Van den Heuvel et al., 2009), in that regular use of

reflection and experiencing meaning might build resilience to bounce back from potential threatening or uncertain situations. Unexpectedly, pre-change information did not positively influence willingness to change *during* change (controlled for T1 willingness to change scores). This may be explained by the fact that at T1, not all information may have been available as is often the case in dynamic change trajectories. In addition, given the one-year time lag, the information at T1 may not have been specific / useful enough to facilitate employee attitudes during the change (T2). Finally, there may be a dispositional element in willingness to change (see Oreg, 2006) that may make it less malleable when controlling for T1 levels of willingness. Future work may include other resources as predictors (e.g. change-efficacy), and use research designs that allow for closer inspection of the influence of the timing of information provision on employee change attitudes.

6.9.3 From Change Implementation Towards "Re-freezing"

The relationships between T2 - during the change and T3 - after formal implementation was completed, showed a slightly different pattern. Overall resources were more predictive of change adaptation from T2 to T3 than from T1 to T2. This is in line with studies that show that resources are particularly beneficial when needed most (i.e. under stressful or changing conditions) (Hobfoll, 2001). Adequate and timely change information provided during the most turbulent time (i.e. the actual implementation phase) had a positive effect on willingness to change at T3 (unlike the T1-T2 relation). In line with previous studies (Jimmieson et al., 2004; Van Dam, Oreg & Schyns, 2007; Wanberg & Banas, 2000) our study shows that information regarding the change is very important, in that it positively affects willingness to change. At T3, although the formal implementation phase was completed, employees still needed to get used to the post-reorganization situation. The information received during the changes helped employees to be more positive and willing towards the change.

While neither T1 meaning-making nor T1 change-information predicted T2 willingness to change, from T2 to T3 these relationships were positive and significant for meaning-making. It seems that when employees have made the change 'their own' (in terms of integrating it into their personal meaning system), they will then show more adaptivity during the re-freeze period, indicating that the change will 'stick'. So while organizations need to provide essential information regarding the change, employees themselves must also be triggered to reflect on the change and its impact for them personally. This is an important finding since making change a 'lasting change' is often difficult for organizations. In order to consolidate positive change attitudes, it is important to provide enough information during the change, as well as to stimulate

individual meaning-making. As our study shows, these resources help not only willingness to change but also adaptivity over time. An underlying explanation may be that both resources may reduce employee uncertainty and increase a sense of control over the environment during change.

6.9.4 Limitations and Future Research

A number of limitations need to be mentioned. First, our study was set in a police organization, which may limit generalizability across other occupations and organizations. Future research should study these processes in different types of organizations as well. Also, ideally we would have combined our self-report measure of adaptivity with other-ratings, for example ratings by supervisors or peers. With regards to common method bias, since we measured at three different measurement occasions, these concerns may be disregarded (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Further, the dropout analysis showed that the panel group received slightly more change information than the dropout group. It seems that employees who were kept informed on the changes were more likely to complete the survey than employees who were not. This could be related to the extent that people were confronted with the change, i.e. when change was more prominent for employees, they might have been more inclined to participate, since the survey was advertised as dealing with work engagement and organizational change. Similarly, the meaning of the constructs that we measured changed over time, which indicates that respondents answered differently across the three measurement occasions. This may be due to the changing circumstances in which employees completed the survey.

The three-wave longitudinal design is a strength which leads us closer to process data on change, however, the design does not allow us to examine the events in between the three waves. Future studies should make an attempt to collect more precise, longitudinal data. Perhaps complemented by e.g. qualitative process data on how and when exactly employees are affected by the changes, as well as what meaning and benefits they see in the change. Obviously, taking account of other contextual resources, such as participation, transformational leadership and personal resources, such as (change) self-efficacy and organization-based self-esteem, will further increase our understanding of the adjustment process.

6.9.5 Practical Implications

Our study emphasizes the importance for organizations to provide sufficient and high-quality information regarding the pending changes, not only before the implementation, but also during transitions. In addition, an important finding is that provision of

information will trigger employees to ‘digest‘ the information by reflecting on how the change will affect them and their (working) lives using meaning-making processes. This finding redefines the view of employees in the change process as passive change recipients. It is important to challenge traditional practitioner views of employees as a source of resistance (Dent & Goldberg, 1999). Instead, managers and change agents should aim to facilitate processes of meaning-making and benefit finding during change. Although we cannot infer it from this study, it may help change adjustment if communications include both practical information as well as information on how the change will help employees and the organization to reach their goals. Managers may consider the use of individual coaching. On the team-level, focus groups could help to bring out both positive and negative employee perceptions regarding the change. This may assist managers to optimize (the planning of) the implementation process accordingly, and where possible address concerns. Early on in the change process, focus groups can also be used to allow employee participation in certain aspects of the content, timing and roll-out process of the changes; in as far as this is possible given budgets etc. Again, since employees are ultimately the ones who have to behaviorally support the change in order for it to be successful; no effort should be spared to learn from their experience and insights regarding the effectiveness of day-to-day operational processes. Managers may customize the type of information they provide based on specific needs of various departments, in order to provide the information that may best help those departments to understand the change. Building resources before entering the change process, by involving employees as much as possible via information, communications and participation will help employee meaning-making and adjustment to change over time.

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CHAPTER 7
General Discussion

7.1 General Discussion

Macro-level research has shown that organizations need to proactively build their (macro-level) resources and capabilities in order to successfully adapt to ongoing environmental pressures (Pettus, 2001). In order to stay ahead of competition or to fulfill increasing social / policy demand for service and efficiency, organizations aim to adapt by implementing strategic changes in work processes, technology, client relationship management, etc. (Rajagopalan & Spreitzer, 1997). These changes inevitably affect the daily working lives of employees (Griffin, Neal & Parker, 2007; Weick & Quinn, 1999). This thesis links the macro-level resource-perspective to a similar approach on the micro-level of the employee. Based on COR theory (Hobfoll, 1989, 2001), we have shown that psychological resources at work are important predictors of employee adjustment outcomes, both in terms of attitudes as well as adaptive behavioral outcomes. Employee adaptive behavior is a key element of successful change implementation, which has as of yet not received sufficient attention in studies on organizational change (Shoss, Vera & Witt, 2011).

The overall aim of this thesis was to increase understanding of whether and how personal resources and job resources facilitate employee adaptation to organizational change. We presented one theoretical article and four empirical articles with different (longitudinal) research designs in order to answer this question. In this concluding chapter, we start with a summary of the main findings (section 7.1) including answers to our research questions. Consequently, implications for future research are discussed (section 7.2), followed by limitations of the research (section 7.3). We end the general discussion with practical implications of our findings (section 7.4) and a conclusion (section 7.5).

7.2 Main findings and implications

Q.1. What are personal resources and how do they facilitate change adjustment?

Organizational change can be demanding and can form a risk factor for employee health and well-being (Armenakis & Harris, 2009; Saksvik et al., 2007). According to COR theory, change can be threatening, because it holds a risk of resource-loss for employees (e.g., loss of status, income, social relationships etc.), (Dent & Goldberg, 1999; Hobfoll & Shirom, 2001). Since the pace of change seems to transform organizations into continuously changing "turbulent systems" (Korunka, Ulferts & Kubicek, 2009), organizations are in need of resourceful employees who can handle change on an ongoing basis. This thesis uses personal resources to explain and predict employee

adaptation to change and has provided evidence that a number of personal resources are particularly valuable in times of change.

'Personal resources' is an umbrella term for those aspects of the self that are linked to a general sense of resilience (Hobfoll, Johnson, Ennis, & Jackson, 2003). In *Chapter 2* the concept of personal resources was further explained and a specific definition was proposed:

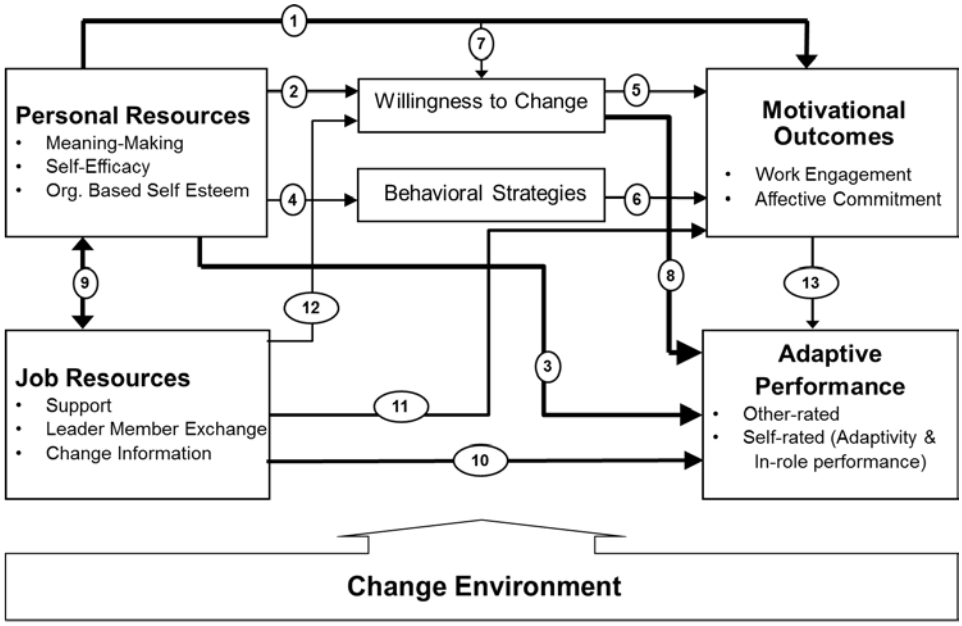
Personal resources are lower-order, cognitive-affective aspects of personality; developable systems of positive beliefs about one's "self" (e.g., self-esteem, self-efficacy, mastery) and the world (e.g., optimism, faith) as well as abilities (e.g., hope, meaning-making) which motivate and facilitate goal-attainment, even in the face of adversity or challenge.

With this definition we intended to further clarify the place of personal resources on a conceivable continuum between 'fixed' and peripheral or 'malleable' aspects of the self (Funder, 2001). That is, a continuum from personality traits on the 'fixed' side and highly situation-specific attitudes and/or emotions on the malleable side. This is in line with existing perspective on personal resources as aspects of the self that can fluctuate and can be developed via interventions (Gist & Mitchell, 1992; Luthans et al., 2006). Future research may further determine whether and how personal resources differ in terms of their malleability (Woodman & Dewett, 2001). For our remaining research questions the main point is that personal resources differ from trait perspectives in that they can be changed or developed over time. *Chapter 2* described a number of personal resources that may help employees to face the challenges of organizational change, in terms of being open to changes and being able to adapt their behavior in line with the proposed organizational changes. Based on previous research we argued that personal resources positively affect adjustment outcomes, such as work engagement and adaptive performance. Attitudes to change and behavioral strategies are proposed to function as explanatory mechanisms in the relationship between resources and adjustment outcomes. Although we have not been able to test all personal resources proposed in *Chapter 2*, some conclusions can be drawn from the studies we conducted regarding (the second part of) our first research question.

How do personal resources add to adaptation to change? In our studies, we found support for both direct and indirect positive effects of personal resources on adaptation outcomes. Regarding the direct effects we found evidence that self-efficacy, organization-based self-esteem and meaning-making are positively related to adaptation outcomes over time (see arrow 1 and 3 in *Figure* 2).

Self-efficacy pertains to beliefs about one's capability to organize different skills, in order to execute appropriate courses of action to deal effectively with the

environment (Bandura, 1989, 1997). In the weekly study (*Chapter 4*) we showed that during weeks in which employees reported more self-efficacy at work, they also reported more work engagement. Also, self-efficacy was indirectly positively related to adaptive performance as rated by supervisors (6 to 7 weeks after first introducing the flexible work spaces) via work engagement and positive change attitudes. With these results, we strengthen the existing evidence that a belief in one's capacities at work fosters the maintenance of work engagement (Xanthopoulou et al., 2007; 2009b). Our results show this relationship holds when examined on a weekly level during the first weeks of working in a drastically changed working environment. Previous research has shown similar results in terms of the positive relationship between efficacy beliefs and adaptation outcomes. For example, change-related efficacy was shown to be related to well-being, job satisfaction and client engagement (Jimmieson, Terry & Callan, 2004), as well as openness to change (Wanberg & Banas, 2000). We contribute by providing a mechanism that can explain part of the positive effects of self-efficacy on adaptation outcomes. *Chapter 4* shows that weekly self-efficacy is positively related to *work engagement* during change, which in turn, is positively related to positive change attitudes (arrow 7 in *Figure 2*) and supervisor-rated adaptive performance (arrow 13). Self-efficacy may boost work engagement since it allows employees to be task-focused as opposed to self-focused (Staijkovic & Luthans, 1998). When employees do not worry about being able to deal with the demands of the work environment, their energies can be focused on achieving their goals. This goal or task-focus may cause employees to stay engaged in their tasks at work, rather than being distracted by change-related demands. Work engagement is characterized by positive experiences of being enthusiastic, focused and a sense of pride in one's work (e.g., Bakker, Schaufeli, Leiter & Taris, 2008). These qualities may build employees' energy and perseverance to deal with demanding changes, as well as being accepting and positive towards change. The element of absorption in work engagement may help employees to stay focused on their work goals and not to be too distracted by the change. The element of vigor may provide the energy to show adaptive behavior, and where necessary to craft a situation in which they can continue to do their jobs in their own preferred ways. Self-efficacy indirectly affected adaptive performance via work engagement, which adds to existing evidence for the relationship between self-efficacy and performance on the job (Staijkovic & Luthans, 1998).



Note: a path is shown when at least 1 significant relationship was found. Thicker lines indicate more support found.

Figure 2. Research model for employee adaptation to change: Results

In *Chapter 5* we showed that *organization-based self-esteem* positively predicts affective commitment and adaptivity over time. Organization-based self-esteem pertains to "the degree to which an individual believes him/herself to be capable, significant and worthy as an organizational member" (Pierce & Gardner, 2004, p. 593). It is the self-esteem an individual gains from his/her relationship with the organization. We showed that high levels of OBSE in an organization can be instrumental in gaining employee behavioral support for change as well as affective commitment. Gaining a sense of self-esteem from the work situation may satisfy basic needs for self-worth and self-consistency, which is a rewarding and motivating experience for employees (Shamir, 1991). This motivational process may explain how OBSE can boost employees' willingness to stay with the organization (affective commitment) and support changes in the organization.

In addition to the positive effect of OBSE on adjustment outcomes, we showed that OBSE can predict LMX over time and that this is a reciprocal relationship. This relationship was suggested by OBSE researchers, but as of yet not tested over time (Pierce & Gardner, 2004). We found evidence that this relationship holds over time and is indeed reciprocal. The sense of self-esteem related to organizational membership may be transmitted via communications with one's leader. The leader is typically the first port of call via which feedback about an employee's performance and functioning is transmitted. At the same time, if employees feel valued by their organization, this may translate in more positive attitudes towards their leader. Positive attitudes are then likely to be reciprocated, adding to a high quality leader-member relationship. Both in practice and in science a lot of work has been done to show the importance of leaders and LMX for employee well-being and performance (e.g., Gerstner & Day, 1997) - especially during change (Hobman, et al., 2011; Sonenshein & Dholakia, 2011). Our results expand these findings on the importance of the leader during change (since high LMX is related to high OBSE). Also, we found evidence for the opposite, reversed causal relationship (OBSE – LMX), which emphasizes the importance of the relatively understudied topic of (positive effects of) followership on LMX relationships (Baker, 2007). Overall, our findings add to existing literature that suggests OBSE to strengthen loyalty towards the organization, and to be related to motivation and performance (Bowling et al., 2010; Pierce & Gardner; 2004). Our results show that the relationship between OBSE and adaptation outcomes holds over time, and adds OBSE as a personal resource important during change processes. The results regarding meaning-making are discussed in the next section, which is devoted to the discussion of our results regarding this construct.

Although the positive influence of personal resources on employee adjustment may work via different mechanisms, their general influence may be similar in that they assist employees to maintain well-being and motivation, and to achieve their goals during adversity or challenging events. Since personal resources are important to maintain health, well-being, motivation and goal achievement, they may be an underlying factor that stimulates the leverage of knowledge, skills and abilities. Individuals with more personal resources may be more resilient in seeing the positive and creating (learning) opportunities in changing environments (Kobasa, Maddi & Courington, 1981). In change settings where employees are made redundant, the role of personal resources may be even more important, both for employees made redundant and the 'survivors', since the presence of personal resources helps to protect a sense of control in employees and this helps to manage stress reactions and well-being (Brockner et al., 2004).

In sum, we described the nature and importance of personal resources during organizational change due to their motivational potential (*Chapter 2*). With four empirical studies, we have shown that personal resources are positively related to, and may predict adaptation to change over time. Personal resources were shown to facilitate motivational outcomes, i.e. work engagement (*Chapter 3 and 4*), affective commitment (*Chapter 5*) and willingness to change, as well as behavioral outcomes, i.e. in-role performance (*Chapter 3*) behavior change in line with the organizational change (adaptivity; *Chapter 5 and 6*). Personal resources were indirectly related to adaptive performance as observed by supervisors through work engagement and positive attitude to change (*Chapter 4*). Also, we have shown that personal resources can strengthen the quality of the LMX relationship over time, which may further boost positive adaptation to change (*Chapter 5*).

Box 7.1 Changes in an Engineering company

Chapter 4 is based on a study in a department of a Dutch engineering company. The department consisting of approximately 150 employees, started a project to re-design the working environment to create a more open, sociable workspace in which employees would freely exchange knowledge. Our study took place during the first five weeks of the introduction of these flexible workspaces. The primary incentive to do this was to enhance social networks and knowledge sharing amongst employees. In order to realize this, the fixed workspaces in small offices were renovated to a more open office space using flexible workspaces, also known as 'hot-desking'. This meant employees were required to share workspaces instead of working from assigned desks. Employees therefore lost their own personal desk, including the option of leaving personal items and files on their desk. Also, they were no longer allowed to eat at their desk. In addition, they had to get used to finding and working from a different desk each day, finding each other, as well as sharing a bigger open space with colleagues. Efforts were made to enhance the working environment with features such as extra meeting spaces, special phone booths, since there were increased complaints about noise. A social area with coffee/tea facilities where informal meetings could take place was part of the new office space. Also, an art project was initiated which meant that employees could send in photographs that would be turned in to artwork for the department. Employees were involved in the planning and brainstorming before and during the implementation of the new working environment. An overview of the research we did, and average levels of work environment indicators, work engagement and adaptation outcomes were presented back to employees and management after the implementation of change was complete. The department was the first in the organization that introduced these flexible workspaces. It was well-received by the rest of the company and currently preparations are made for the rest of the organization's buildings to be renovated following the example and using the learning-points of the 'pioneer-department' which we studied.

Q.2. What is meaning-making and how does it facilitate adaptation to change?

This thesis has argued and found support that the construct of meaning-making can predict adaptation outcomes during change. The first part of the question refers to what meaning-making really is. In *Chapter 2* and *3* we introduced the concept of employee meaning-making and proposed a short scale to capture it. We introduced meaning-making as a potentially useful personal resource for change adaptation, based on research in other domains. Research has shown that the ability to give meaning in times of adversity can be beneficial to mental / physical health, and well-being (Frankl, 1963, Helgeson, 2003; 2006; Taylor, 2000). Individuals are motivated to make meaning of what happens in their environment, but differ in the degree to which they manage to do this (Baumeister & Vohs, 2002). Experiencing a sense of meaning has been shown to be an important resource (Hobfoll, 2001). Organizational change has been shown to trigger stress reactions and has been described as a critical life event (Jimmieson et al., 2004). Therefore, we transferred findings from research on benefit-finding and post-traumatic growth (Linley & Joseph, 2004; Taylor, 2000; Park, 2010) to an organizational change context. We expected that individuals who take time to reflect on what happens to them, using their personal values and goals, will find it easier to adapt to change. This ability was proposed to be a form of 'meaning-making' and was defined as the ability to integrate challenging or ambiguous situations into a framework of personal meaning using conscious, value-based reflection. We showed that meaning-making can be differentiated from other personal resources, coping and meaning in life (*Chapter 3*).

The second part of the question is: How does meaning-making facilitate adaptation to organizational change? Overall, we found support for our contention that meaning-making can positively affect adaptation to change. Meaning-making was positively related to willingness to change and in-role performance, over and above the relationships with other personal resources, coping and meaning in life (C*hapter 3*). We also found meaning-making to be positively related to work engagement (*Chapter 4*). Our research showed that employees who use meaning-making prior to change implementation, are consequently more affectively committed during change *(Chapter 5).* This is an important finding since affective commitment can deteriorate during organizational change. Employees may be disillusioned, show stress reactions and withdraw their affective identification during change (Vakola & Nikolaou, 2005). Meaning-making may help to prevent these negative effects of organizational change. Future studies may build on the direct, positive effects we found, and may study e.g. a buffer effect of meaning-making in the relationship between change demands and adaptation outcomes.

In our longitudinal studies (*Chapter 5 and 6*), we found that meaning-making had consistent positive effects on individual adaptivity. Meaning-making is thus important before the change has 'started' as well as during the change. Given the need for more studies on predictors of behavior change (Shoss et al., 2011), our findings make a contribution by showing that the degree to which employees use conscious reflection and their own personal values in order to find meaning during change, can predict adaptive behavior, both during and post-change implementation. This finding is in line with other studies that examined the positive effect of personal resources on openness to change (e.g., Avey et al., 2008; Wanberg & Banas, 2000), and we extend these findings by including adaptive behavior and attitudes to change. More specifically, similar meaning-making processes have recently been shown to be positively related to openness to change in a cross-sectional study (Sonenshein & Dholakia, 2012). Our findings extend this by showing that meaning-making can also have a positive impact on adaptation over time. In order for organizational change to be adopted by change recipients, it is important for them to see the advantages of the change (Aubert & Hamel, 2001; Greenhalgh et al., 2004). Although more work is needed to further confirm that meaning-making predicts meaning 'made' of the change (i.e. change-specific meaning-making), this thesis has found relationships that indicate that meaning-making can help employees adapt to change. We have argued that meaning-making has a resource-function in that it helps to manage feelings of uncertainty, while maintaining positive states such as work engagement. Such positive states may broaden employees' action repertoire and may therefore be linked to proactive behavior, interest in the change and learning behavior (Ainley, 2006; Fredrickson, 2001). If employees do not have to deal with negative feelings triggered by uncertainty, they have more cognitive space to focus on their work and on how to make the most of the change. This is in line with research that has shown that reflecting on personal values can keep psychological and physiological stress responses at low levels (Creswell, Welch, Taylor, Sherman, Gruenewald & Mann, 2005). Meaning-making may thus help to manage levels of anxiety during change, since employees who use meaning-making remind themselves of what they find truly important in life. This is illustrated by an example from our conversations with employees about meaning-making in relation to their work. A leader in the field of marketing indicated that meaning-making helps him to stay focused during change and turbulence at work. An important value in his personal meaning system is being a good father and husband. This gives him a sense of meaning in life. He explained that this value helps him to be motivated to perform well at his job, even when he is under pressure, as it is one of the ways in which he sees he can provide happiness and well-being for his family.

Our results show that meaning-making has a stable component, but that it also fluctuates across weeks (*Chapter 4*). We found that during weeks in which employees used more meaning-making, they were also more engaged in their work. In *Chapter 5* we showed that over time high quality LMX relationships can trigger meaning-making in employees. In *Chapter 6* we found that change information can also trigger meaning-making. These results may be further examined in future studies that focus on how meaning-making can be fostered in employees.

In relation to work engagement, there were some inconsistent results. In the cross-sectional study (*Chapter 3*), we did not find a significant relationship between meaning-making and work engagement, while in the weekly study (*Chapter 4*) we did find that during weeks in which employees used meaning-making more often, they also felt more engaged at work. In the cross-sectional study meaning-making was not uniquely related to work engagement after controlling for the impact of personal resources, coping strategies and meaning in life. This may have a statistical reason, since *meaning in life* was strongly related to work engagement and may have 'masked' the relationship between work engagement and meaning-making. When we did the analysis without meaning in life, the relationship between meaning-making and work engagement was positive and significant.

In the weekly study, we did find a relationship between weekly meaning-making and weekly work engagement and we also found a possible mediating mechanism. During weeks in which meaning-making was used, employees also used more self-management strategies to create a rewarding work environment (Natural Reward Strategies (NRS); *Chapter 4*). This strategy was positively related to work engagement during that week. This means that the awareness of personal values and reflecting on the meaningfulness of events at work, supported employees' crafting strategies to make their work(environment) intrinsically rewarding. For the context of flexible workspaces this is an interesting finding, since organizations can design flexible office space, but it is up to employees to use these designs to their advantage in terms of effective/enjoyable performing.

Meaning-making was found to positively affect LMX over time. In this reciprocal relationship, LMX also positively affected meaning-making. However, meaning-making was a stronger predictor of LMX than vice versa. Since meaning-making has been shown to foster acceptance of the change, this may translate in more enthusiasm. This enthusiasm on the side of the employee may be appreciated by the leader, and thus be reciprocated with rewarding and positive social interactions between leader and follower.

Also, meaning-making can have a mediating role between resources and adaptation outcomes. In the 3-wave study (*Chapter 6*) meaning-making was the linking mechanism between change information and adaptivity. This is an important finding that helps to explain why change-related job resources may positively affect adaptive behavior during change (cf. Sonenshein & Dholakia). Employees who receive more useful information regarding the change, have more input to stimulate their reflection process on the pending changes. Future studies may, however, further focus on effects of the *content* of the information, since framing changes either as 'something to be gained', as opposed to framing change in terms of 'the costs of not changing', may have differential effects on employees' meaning-making and consequently their willingness to change and adaptive behavior (Liberman, Idson, Camacho & Higgins, 1999).

To summarize, this thesis has argued that deliberate efforts to reflect on what happens at work and the ability to link this to broader values and life goals is a form of meaning-making that can help employees deal with organizational change. Meaning-making is viewed as a cognitive/affective personal resource that one can develop. We have uncovered some of the motivational qualities of meaning-making during change. By developing a scale to capture employee meaning-making, the concept can be included in quantitative studies. We found significant results regarding the positive effect of meaning-making on adaptation outcomes, over and above other personal resources like self-efficacy, optimism and mastery. The findings fit in with perspectives on employees as self-regulating, active agents (Bandura, 1989; Bell & Staw, 1989; Wrzesniewski & Dutton, 2001) that can construct their own meaning and motivation at work (Wrzesniewski et al., 2003). Taken together, our findings suggest there is merit in including meaning-making in research on employee adaptation to change.

Q.3. How do job resources facilitate change adjustment?

Based on the Job Demands-Resources model, this thesis has zoomed in on the motivational processes during change. Across the different (empirical) papers, we included the role of personal resources, as well as job resources during change. Our studies have found support that both personal and job resources contribute to employee adaptation. This is in line with previous work on resources during change that show the importance of resources for adjustment to organizational change (e.g., Amiot, Terry, Jimmieson & Callan, 2006; Terry & Jimmieson, 2003). Regarding job resources, we focused on the quality of two interpersonal resources (support and LMX), and one change-related resource (change information) that may facilitate employee adaptation to change. In *Chapter 4* (weekly study) we applied COR theory and the empirical evidence of its processes (as shown in studies using the JD-R model) to hypothesize about the

role of resources, work engagement and adaptation outcomes. We showed that during weeks in which employees receive more co-worker support, they are more likely to maintain their work engagement. This builds on cross-sectional and longitudinal studies with longer time-intervals that also found positive relationships between support and work engagement (e.g. Saks, 2006; Schaufeli, Bakker, Van Rhenen, 2009).

Further, it was found that co-worker support indirectly, positively affected both adaptive behavior (rated by the supervisor) and long-term positive attitudes to change. In the flexible workspace setting of our study, this meant that when the formal structure of the office-design fell away, work engagement (triggered by the continued support from colleagues) was one of the factors that helped employees to stay engaged. Instrumental support from co-workers in the new working environment may have facilitated the achievement of work-related goals. Appreciation by coworkers may have triggered positive interactions, work-related self-esteem, and thus positive affect and motivation. These processes may also explain how co-worker support may build personal resources over time. Task support has been shown to be most predictive of job satisfaction (Harris, Winskowski & Engdahl, 2007). Supportive interactions may also add motivation via the positive states that may be transferred between co-workers, a process known as emotional contagion (Barsade, 2002).

Future studies could disentangle which types of support and from who are most instrumental in flexible workspaces. For example, high quality LMX is likely to also be an important source of support (Gerstner & Day, 1997), while use of humor / fun amongst co-workers may help to alleviate potential negative effects of change on engagement (Dikkers, Doosje & De Lange, 2012; Wanzer, Booth-Butterfield, & Booth-Butterfield, 2005). Our findings point to the importance of such interpersonal resources, since they are related to sustained work engagement during change. Engaged employees showed higher levels of *short-term* positive change attitudes, which in turn predicted supervisor-ratings of adaptive behavior, as well as *long-term* positive change attitudes. This finding suggests there is a sequential process at play, which is triggered by the presence of resources. This process seems to help employees to stay positive towards their work and towards the change, which then translates into adaptive behavior.

Box 7.2 Changes in the Dutch Police Force

Chapter 5 and 6 are based on a three year research project (2009-2011) carried out within a Dutch police organization. The aim of this research was to help the organization to understand individual and environmental factors contributing to work engagement during change. The organization was preparing to implement a large reorganization including departmental merges, technological innovations, professionalization, and relocation of employees. The aim of this large change program was to create a more adaptive organization. Changes were implemented after the first measurement wave of the study (2009) and were still ongoing during the second wave (2010). All employees in the district (approximately 1800) were confronted with the implemented changes. Different planning systems were introduced, teams were split up and police officers were required to start working at different locations with different colleagues in order to increase the flexibility of the workforce. Training programs were offered to further build professionalism. Our research was carried out with the help of a key-informant who was part of the 'works council' ('*ondernemingsraad*'), which helped to build support for the research. All formal changes were implemented at the time of the third measurement in 2011. No employees were made redundant. Not long after the completion of our research, a nationwide reorganization was announced, which would affect all Dutch Police Districts. This change is most likely operational from January 1st, 2013, and means that the 25 districts currently operational in The Netherlands, are reduced to 1 national police force consisting of 10 regional districts, a national unit and a shared services center (www.politie.nl). In this case, 'change is indeed the only constant' and employee adaptivity will be a key element required to make a successful transition.

In *Chapter 5* we included the LMX relationship as a predictor of change adaptation. LMX was included as a resource related to employee identity ("*I as a follower of my leader"*). Research on leadership has shown the impact and importance of managers' behaviors on follower' behaviors and attitudes (e.g., Dirks & Ferrin, 2002; Gerstner & Day, 1997). Van Dam, Oreg and Schyns (2008) note the importance of change characteristics such as information provision, trust in management, and opportunities for participation in order to build employee acceptance of change. It is likely that the relationship with a line manager would 'channel' the change information and trust. Therefore, LMX was hypothesized to positively affect adaptation. Results showed that LMX predicted change adaptation, that is, affective commitment and adaptivity one year later. In addition, LMX and personal resources (meaning-making and organization-based self-esteem) strengthened each other over time. This indicates that high-quality LMX helps employees to adapt to the change, while staying affectively committed to the organization, even though changes were implemented that affected their work. Further, a positive cycle seems to exist between LMX and follower personal resourcefulness, where both are strengthening each other over time. Although not tested in our research, this 'resource gain process' may create a buffer against the challenges that organizational change may pose for employees. The LMX relationship has been shown to be a channel via which employees receive information regarding the changes (Van Dam et al., 2008).

In *Chapter 6* we focused on this aspect of the change-process, and included *change information* as a resource. This pertains to the quality of information received by employees. Organizational change literature has pointed to the importance of understanding how management communicates the change efforts. Although communication is a factor known to be important for change management, its role in relation to resistance to change has not been consistent (Oreg, Vakola & Armenakis, 2011). For example, Oreg (2006) found a positive relationship between information and resistance to change. In our study, however, we found a favorable influence of change information on willingness to change, which is in line with findings of Jimmieson, Terry and Callan (2004). Change information (during change implementation) positively affected willingness to change and adaptivity (after change implementation) one year later. Change information thus helped employees to see the importance of the change, which they consequently linked to their own personal meaning systems. We made a contribution to knowledge on how change information may affect adaptivity by showing that meaning-making can help employees to 'translate' the information into adaptivity.

Summarizing, we found evidence that in addition to personal resources, job resources can facilitate adaptation to change. The motivational qualities of social / interpersonal resources such as LMX and co-worker support may help employees to stay positive during change, to achieve work-related goals, and to be open to the change. Weekly co-worker support was positively related to weekly work engagement during change, which in turn predicted positive change attitudes and adaptive performance rated by supervisors. LMX predicted affective commitment and adaptivity over time, and was reciprocally related to personal resources. These findings emphasize the importance of the social / interpersonal context and its motivational potential during organizational change. In addition to interpersonal resources, change information *prior* to and *during* change was shown to predict adaptivity, while change information *during* change helped to build lasting positive change attitudes.

Q.4. How does the adaptation process unfold over time?

It has been suggested that more research is needed on the aspect of time in change processes (Pettigrew, Woodman & Cameron, 2001) and how constructs interrelate over time (Oreg et al., 2011). Since change represents a process that by definition unfolds over time, there is a need to use longitudinal designs and multiple measurements methods to better understand how the process of adaptation unfolds over time. This focus may lead to more precise information on when and how interventions may be used to facilitate employee adjustment. In this thesis we aimed to include several different longitudinal designs in order to be able to contribute to this issue.

Q 4.1 Short-term change adaptation processes

In *Chapter 4* we captured employee perceptions from the first week after change implementation (i.e. flexible workspaces) onwards**.** The change entailed the introduction of flexible workspaces, which is a substantial change in the day-to-day working life of employees (Elsbach, 2003). Taking a short-term perspective in this study, meant following employee experiences during the first 5 weeks after they first started working in the new work environment. In order to examine fluctuations over these five weeks, data were analyzed using multilevel analyses. The factors that were found to promote work engagement during change were meaning-making, self-efficacy, and co-worker support. In line with COR theory (Hobfoll, 1989, 2001), these findings indicate that during weeks in which employee resource levels were high, they were also more engaged in their work (cf. Ouweneel et al., 2012). Meaning-making may help to be reminded of what is personally important to employees and to see advantages of the changed situation, while self-efficacy is related to a sense of control and task-focus,

leading to less worries regarding the change and sustained performance during change (Stajkovic & Luthans, 1998).

Work engagement was positively related to positive attitudes towards the change during those weeks (arrow 7). In other words, when focusing on what is important from the onset of change; being able to continue one's work with dedication and energy helps employees to be open to the change. Resources are known to help employees to achieve their work-related goals and to stimulate development (see Bakker & Demerouti, 2007). Our findings indicate that this process also unfolds in shorter time intervals, i.e. over the course of weeks. Impact of change may be especially impactful during those first weeks and therefore the presence of resources may be most needed during that critical period.

In addition, our research showed that natural reward strategies may be important during the first period of change. During weeks when employees are more involved in meaning-making, they also seem to be more involved in creating a rewarding work environment for themselves (natural reward strategies) (arrow 4), which, in turn, is positively related to work engagement during that week (arrow 6). As has been shown in the three-wave study (*Chapter 6*), meaning-making may lead employees to 'reflect' before they 'act' (NRS / adaptivity), both in the short-term as well as the long-term. Regarding the short-term, we have shown that the motivational process in which both personal and job resources facilitate work engagement (arrow 1 and 11), supports employees to be more positive about the change (arrow 7). Engaged employees are vigorous, focused, dedicated and they identify with their work. Organizational change may disrupt these positive states (Callan, 1993). It is therefore important to manage resources in the psychosocial work environment, in order to reduce the risk of deteriorating work engagement. If employees feel they can continue to perform and maintain their enthusiasm about their work, they may find it easier to accept potential negative sides of the change. Our findings show that in addition to more established change-related variables, employee motivation variables (such as work engagement) may add value in the study of change adaptation, at least in the short-term. Work engagement builds employees' adaptive capacity since it is related to energy, focus and positive affect. Engaged employees may therefore be more resilient to change, in terms of staying positively focused on their core tasks and proactively shaping the new working environment in such a way that can continue to do their work (Hakanen, Perhoniemi, & Topper-Tanner, 2008). Less engaged employees may be distracted by change, lose focus or worry about the change. The energy that is part of work engagement may help employees to deal with new ways of working, by staying

positive and open to change (arrow 7), which in turn predicted supervisors ratings regarding employees' adaptive performance (arrow 13).

Q.4.b Long-term change adaptation process

Three chapters of this thesis shed some light on the longer term adaptation process. First, in the weekly study (*Chapter 4*), we combined a short-term perspective with a longer-term perspective by linking employee measures during the first five weeks to longer-term outcomes. We captured employee change attitudes six months after the introduction to change. Secondly, we asked supervisors to rate their employees during the sixth/seventh week in terms of their adaptive performance. The extent to which employees were able to maintain their work engagement during the first five weeks, was the linking mechanism predicting longer-term adaptation. This finding shows again that besides the relevance of change-related employee characteristics such as resistance to change, it is important to include variables that focus on employee work motivation when the aim is to predict adaptation to change.

Secondly, in *Chapter 5* we used a one-year follow-up design to test how identity-related resources (meaning-making, LMX and OBSE) facilitate employee adaptation to change. We argued that these resources are related to various aspects of employee identity and organizational identification, and may therefore form a source of motivation to adapt to change (Leonard, Beauvais & Scholl, 1999). The first measurement was done in a police district *before* the start of a large reorganization (see Box 7.2). The second measurement was done *during* the implementation of the various changes. Regarding the time-element, our findings show that there is merit in focusing on the presence of resources *prior* to change, since these resources had predictive value for adaptation outcomes one year later. In line with COR theory (Hobfoll, 2001), over time, these resources may have helped employees to maintain and protect other valued resources in the work environment, such as a sense of pride about their work, motivation and energy to continue to protect and serve the community, regardless of the new ways of working (Anshel, 2000). Also, via LMX, more tangible support may have been maintained, such as information, instrumental support, time-off etc. These type of processes may explain the longitudinal relationships we found, where resources predicted affective commitment and adaptivity. Furthermore, we found that identity-related resources mutually reinforced each other across time. Again, in line with COR theory, this resembles the idea of 'positive gain cycles', where the presence of resources may lead to the presence of other valued resources, as has been shown in previous work (in non-change settings) on reciprocal relations between job and personal resources (cf., Salanova et al., 2010; Xanthopoulou et al., 2009a). Since organizational change can be

perceived as threatening to employees (Vakola & Nikolaou, 2005), it is particularly important to boost resources well in advance of change implementation, in order to combat the negative effects of potential uncertainty or insecurity. In terms of mediating effects, we expected that resources would predict affective commitment, and that affective commitment, in turn, would predict adaptivity over time. However, in our study affective commitment did not mediate the positive effect of resources on adaptivity. No significant relationship was found between affective commitment and adaptivity over time. This may be because in some cases high levels of commitment may *hinder* adaptation to change (Van Dam, 2005). For example, if employees are committed to established ways of working, their affective commitment may make it more difficult to accept new structures, especially if they feel the changes fundamentally alter their role or the organization. The main finding is that resources are important in predicting both affective commitment and adaptivity when studying change processes over longer time periods. Future research should further examine the role of commitment during change processes. From an organizational point of view it makes sense to invest in the presence of personal and job resources prior to change implementation.

This also holds for the findings of *Chapter 6*, where we focused on relationships over 3 years, and aimed to apply a macro-level perspective, i.e. Lewin's 3-stage change model, while examining micro-level processes. We found that two resources (meaning-making and information) during the unfreezing period (before implementation) positively affected adaptivity (but not willingness to change) during change implementation (arrow 3 and 10). However, resources during the implementation or transition phase positively affected willingness to change after formal implementation was over. Meaning-making was the strongest predictor of adaptivity, both from the pre-change phase to the implementation phase, as well as from the implementation phase to the post-change or re-freezing phase. Interestingly, meaning-making even showed a slightly stronger relationship with adaptivity than willingness to change. It seems that finding one's own personal meaning may be a stronger motivational force to show adaptivity, than merely being willing to support the changes.

Meaning-making and change information were found to positively predict willingness to change. However, this positive effect was only found for the relationship between resources *during* the change and willingness after change-implementation (*Chapter 6*). It seems that resources may foster adaptive behavior both before and during change. However, resources can only positively affect willingness to change after the change has actually taken place. Perhaps it is necessary for employees to first

'experience' the actual changes. Resources present *during* change may have the biggest impact on change attitudes, while resources in general (at any time) may help employees to do what is expected/required (adaptivity), regardless of whether one is fully 'behind' the change in terms of attitudes. Across time, we found that change information before implementation triggered meaning-making in employees during change, which in turn predicted adaptivity. This may indicate that employees who use meaning-making 'translate' information provided by the organization. In other words, they turn the change information into something meaningful for them, which subsequently helps them to maintain adaptivity, even after formal change implementation is over. In light of our context and the continuous change they are faced with, this is an important finding, which shows that resources are crucial to build a workforce that can handle continuous change.

In sum, our studies have shown that, over time, personal and job resources can facilitate adjustment to change outcomes. In terms of the **short-term** sequence, we showed that resources, work engagement and change attitudes fluctuate on a weekly basis. Indirect effect sequences were found where resources were positively related to work engagement, which in turn was positively related to positive attitudes to changes, which in turn positively affected supervisor ratings of adaptive performance, as well as longer-term positive attitudes to change. Weekly meaning-making triggered the use of preferred working styles (natural reward strategies), which, in turn, helped employees to stay engaged during those first weeks of adjusting. With regard to a **long-term** change process (over three years), we showed that resources may function differently depending on the change phase. Resources during the *pre*-change phase predicted affective commitment (*Chapter 5*) and adaptivity (*Chapter 5 & 6*), but not willingness to change (*Chapter 6*) *during* the implementation phase. Resources present *during* implementation predicted the consolidation of change in terms of *post*-change willingness and adaptivity (*Chapter 6*). Personal resources and LMX are reciprocally related pre- and during change, (C*hapter 5*), i.e. they strengthen each other over time, which emphasizes the importance of managing the presence of resources *prior* to change since this may build employees' resilience and adaptive capacities, since resources may help the acquisition and protection of relevant change resources over time (cf. Hobfoll & Shirom, 2001).

Q.5. How can adaptation to change be conceptualized in a comprehensive way?

Adaptation or adjustment outcomes have been operationalized in the literature in various ways, including attitudinal (e.g. Oreg et al., 2011; Piderit, 2000), affective / motivational (e.g. job satisfaction; Jimmieson et al., 2004) and behavioral constructs

(turnover intentions, absenteeism, job performance; Fugate, Kinicki & Prussia, 2008; Fugate, Prussia & Kinicki, 2012). In addition, adaptation to changing environments or threatening events have also been defined as a process (Taylor, 1983; Zhou, 2008). Although these different operationalizations may cause fuzziness around the construct of adaptation, it exemplifies that it is a multifaceted construct concerned with different aspects of employee perceptions and experiences at work. A lot of emphasis in organizational change literature has been on attitudinal outcomes (see Oreg et al., 2011) and calls were made for more work on behavioral outcomes in terms of adaptive behavior (Shoss et al., 2011). One of the aims of this thesis was to predict behavioral indicators of employee adaptation to change alongside attitudinal and motivational outcomes. In line with the definition of adaptation by LePine, (2005), we therefore included behavioral adaptation outcomes (adaptivity, adaptive performance). For an organizational change to be successful, we need knowledge on what factors predict adaptive *behavior*. A positive *attitude* to change may be a good starting point, since attitudes are typically predictive of behavior. In our studies, willingness to change predicted adaptivity over time, and positive change attitudes were positively linked to adaptive performance. Still, a positive attitude towards the change may in itself not be sufficient to implement lasting change. A behavioral measure may be a more direct assessment of change adaptation on the individual level and indicative of successful change implementation.

The behavioral adaptation outcomes captured work behaviors that are expressive of the alignment between an employee's behavior and a set of novel requirements that they are faced with as an outcome of the organizational change (LePine, 2005; Van den Heuvel et al., 2010). Also, the study in *Chapter 4* used an other-rating of adaptive performance, which indicates that a behavioral adaptation outcomes can be observed by supervisors. We concur with the idea that adaptation can been seen as a process (e.g. Zhou et al., 2008), and in our studies that process was supported by the presence of resources, which predicted adaptation outcome variables, in terms of motivation, attitudes and behavior. These resources may help employees to proactively craft the changes to their advantage, which may make it easier to adapt their behavior to the change.

In line with the focus on positive constructs in the study of organizational behavior (Bakker & Schaufeli, 2008), we focused on resources and their positive impact on adaptation outcomes. Taking a broad perspective, we included motivational (work engagement, affective commitment), attitudinal (willingness to change, positive change attitudes) and behavioral outcomes (adaptivity, adaptive performance). The research questions determined which roles these variables played in the process. In some studies

these outcomes also played a mediating role, for example, work engagement in *Chapter 4* was shown to mediate the influence of resources on adaptive performance as rated by supervisors.

Building on the positive organizational behavior (POB) perspective (Schaufeli & Bakker, 2008), we have taken the viewpoint that it may not be sufficient to study adaptation to change only in terms of change-related variables. Rather, it is also important to examine broader motivational outcomes such as work engagement and commitment. Engaged employees may be better able to deal with change, since they have energy to invest, are dedicated to their work, experience positive emotions, and they show better mental and physical health (Bakker, 2009). Especially the affective aspects of work engagement may help employees to broaden their thought-action-repertoire and be open to learning in changing environments (Fredrickson, 2003). The changing environment may thus be perceived as a challenge or learning situation (LePine, 2005). We found that work engagement can explain variance both in attitudinal outcomes as well as self-rated and other-rated adaptive performance. We would like to argue that positive employee outcomes, such as work engagement, need to complement measures of change attitudes and adaptive behavior in organizational change research. Behavioral *and* motivational constructs together, may form a better indication of successful employee change adaptation, than merely focusing on change attitudes alone. It may be the underlying sustained motivation during change that gears employees to go the extra mile. Not only to 'do as they are told', but rather to proactively make a positive difference during change, using their personal and job resources to fuel their work engagement and commitment.

Taken together, we conclude that it is important to combine attitudinal, motivational and behavioral outcomes. The combined outcomes may form a better indication of successful change adaptation than a primary focus on attitudes only. Future work should link these combined individual adaptation indicators to macro-level outcomes of organizational change such as increased productivity. The extent to which employees can stay engaged is an important adaptation outcome. Engaged employees bring energy and positivity to the workplace that not only helps them to adapt and make the most of the new situation, but their enthusiasm may also influence others at work to see the positive sides of the change (cf. Bakker, Van Emmerik & Euwema, 2006). Using other-rated outcomes is a good way to complement self-report measures. These other-ratings can come from the supervisor, and since colleagues may see more of their peers' true sentiments and behavior regarding the change, it may be interesting to capture peer-ratings of change attitudes and adaptive performance as well.

7.3 Suggestions for Future research

This thesis took a micro-level perspective on adaptation to change, specifically because there is a need for more knowledge on micro-level processes leading to successful change implementation. We found evidence that individual level resources and motivation are indeed important when explaining adaptation outcomes at the individual level. One issue that deserves further attention is the role of *behavioral strategies* in explaining the positive influence of resources on adaptation outcomes. We found evidence that natural reward strategies can partially explain how meaning-making positively affects work engagement. However, the links between resources, adaptive strategies and adaptation to change should be further examined. Future research may include other strategies, for example job crafting (Petrou, Demerouti, Peeters, Schaufeli & Hetland, 2012; Tims & Bakker, 2010; Wrzesniewski & Dutton, 2001). Job crafting behavior refers to small adjustments that employees make to make their work more fulfilling. These behaviors may be an important mechanism that can explain the positive relationship between resources and adjustment outcomes during change. When faced with changes to ways of working, employees have to find the a way to adapt that suits their abilities and preferences. When resources are present, employees may see more opportunities to craft their (changed) work to their needs, which in turn predicts their enjoyment of the work, as well as their ability to live up to the requirements of the organizational change. More cognitively focused strategies such as mindfulness (Avey et al., 2008; Bond & Bunce, 2003) or thought leadership (Houghton & Neck, 2002) may complement these behavioral strategies and help employees to manage feelings of anxiety or distress. Together, these proactive behaviors may play an important role during change in protecting valued resources, work engagement and positive affect and thus maintaining a sense of control during change (Greenglass & Fiksenbaum, 2009). Personal resources may trigger the use of adaptive strategies and job resources, which, in turn, boost work engagement. Work engagement may then further build personal and job resources, which would indicate a feedback loop. Evidence of similar 'gain cycles' has been shown by previous studies on gain cycles of resources (e.g. Xanthopoulou et al., 2009a). Positive emotions play an important role in such processes (Ouweneel, Le Blanc & Schaufeli, 2011) and may be an epiphenomenon of positive states such as work engagement (Bakker, 2009). We have found some initial support for part of this type of gain cycle between resources (see *Chapter 5*), where we found reciprocal relationships between personal and job resources. However, more work needs to be done to understand the building blocks of these types of adaptive processes over time.

Building on this, future *intervention research s*hould focus on what methods and learning settings are best suited to help employees develop ways to apply these adaptive strategies and build resources. Recently, an intervention has been designed with just this purpose (Van den Heuvel, Demerouti & Peeters, 2012). The intervention was aimed at helping employees to build resources by using a self-management strategy called job crafting. Employees were invited to take part in a one-day training session, which consisted of a combination of theory and practice of the Job Demands-Resources model (Demerouti, Bakker, Nachreiner & Schaufeli, 2001; Bakker & Demerouti, 2007; 2008) and job crafting. The one-day training ended with participants drawing up an action plan to built resources and reduce demands, which they would carry out during the 4 weeks following the training. After 4 weeks, they returned for a reflection session. Results of this intervention study showed that participants had built their resources in terms of higher LMX ratings, higher opportunities for development, higher positive emotions and lower negative emotions and higher self-efficacy after the intervention when compared to the control group. Although the number of participants limited the analyses techniques, still, these findings are promising in terms of the potential benefits of resource-building group interventions.

Future studies may combine different interventions aimed specifically at change adaptation, but also the change process. For example, appreciative inquiry may be used to involve all employees in a positive change effort (Cooperrider & Sekerka, 2003). This type of intervention research in organizations is on the rise (e.g. Luthans et al., 2006; Lyubomirsky, Sousa, & Dickerhoof, 2006; Ouweneel, Schaufeli, & Le Blanc, 2009), and seems promising. These intervention studies advance knowledge on pathways to employee well-being and performance, and also make a contribution to the community in terms of leveraging scientific knowledge in practice with the aim of building thriving employees and organizations.

This brings us to the next suggestion for future research, which regards the bridges between the different *levels of analysis*. Our main focus in this thesis was on the individual level. However, future studies may broaden this focus on psychological processes at other levels. First, on the interpersonal level; how do employees influence each other during change? Work engagement has been shown to have a cross-over effect in teams (Bakker et al., 2006). What emotional and cognitive contagion processes (Barsade, 2002) are at play when an organizational change is introduced and how can we positively influence these? Secondly, future studies may combine the individual level with the team and organizational level. Can engaged employees add to the adaptive capacity of an organization as a whole? Using a multilevel approach, future studies could empirically establish the positive impact of individual resources, work

engagement etc. on team and organizational level performance outcomes. This would allow for examination of cross-level processes that predict organization success and the interplay between individual outcomes and team / organization level outcomes, which may reciprocally influence each other (Jimmieson, Rafferty & Armenakis 2012; Klein & Kozlowski, 2000). Our findings would suggest that micro-level adaptation would ultimately lead to macro-level adaptive capacity and efficiency. If employees are able to respond quickly to new change demands with adaptive behavior, for example, by serving customers according to the changed protocol, by using new systems that have been implemented to increase efficiency etc., it is likely that this will result in increased productivity on the organizational level (cf. Koys, 2001).

We have studied change processes over time and found support that both in the short-term and the long-term, the presence of resources fosters employee adjustment to change. Future studies could take this a step further by focusing on *growth over time*. Using multiple measurements research designs (e.g. possibly using social media to capture people's daily experiences with change) allow for statistical analyses such as latent growth modeling. This technique could determine how adaptation variables increase or decrease over time, and how the growth in resources may predict the growth in adaptation outcomes. Also, future studies should aim to examine the change process with more precision. For example, by capturing more objective *properties of the change,* e.g. the type and content, the level of impact on an employees' day-to-day work, and how these factors influence the adaptation process. This could be done via survey-research, but also (quasi-)experimental designs may be particularly suitable to study the make-up of adaptation processes (e.g. Chen, Thomas & Wallace, 2005; Petrou, Demerouti & Häfner, 2012). Controlling for baseline levels of knowledge, skills and abilities, may help strengthen the findings regarding the role of personal resources.

We constructed a short scale to capture *meaning-making* and showed that meaning-making fluctuates across weeks. However, more qualitative and quantitative work may add to knowledge on the situations in which meaning-making is used, the relation with personality characteristics, how often it is used and the extent of its trainability. Also, future research efforts should include more precise measures of 'meaning-made' regarding the change, for example by asking what benefits employees have found in the change. By combining the measures of meaning-making with measures of meaning made regarding the change (e.g., perceived advantages of the change), the meaning-making scale can be further validated. In addition, we found evidence that meaning-making has a beneficial effect on adaptation. However, can meaning-making be 'overdone'? In other words can meaning-making trigger rumination (cf. Trapnell & Campbell, 1999)? Excessive reflecting and thinking about events may

lead to worrying or brooding, which could prevent proactive behavior in the face of adversity. Although we did not find such effects, future studies may focus on whether there is a 'dark' side to meaning-making.

A different issue that may be addressed by future research is that although employees were faced with a large reorganization, scores did not differ greatly when comparing before and after mean scores in the longitudinal studies (although there was a trend towards less positive scores from T1 to T2). What happened in-between and which employees did change over time? Longitudinal data with long time-intervals could be supported by action research, qualitative data, or experience sampling methods during change. This way we could obtain data on what happens in between the main measurement occasions. Besides these qualitative approaches, more focus could be on moderating effects of personal resources and other individual characteristics during change. Another way of studying such patterns would be to take the approach of Maslach and Leiter (2008) in their study on change and stability in burnout. A sample could be grouped into high vs. low personal resources (baseline) groups, and compare how these groups change over time. The expectation would be that employees in the high-resource group would change more on relevant outcomes such as willingness to change, work engagement and adaptive performance.

Finally, we studied a motivational process during change, based on the JD-R model (Demerouti, et al., 2001). In times of change, resources are of particular importance for employees, since it may be easier to enhance job resources than to reduce (change) demands placed on employees. We found general support for a sequence in which resources positively affected motivational outcomes, which in turn predicted adaptive performance. However, change can be demanding and stressful and it may have a negative impact on health and motivation (e.g. Brown, Cooper & Kirkcaldy, 1996). Therefore future studies should aim to combine the motivational process with the *health impairment process* during change. This would mean to include change-related demands simultaneously (e.g. ambiguity, role conflict) and focus on the interplay of demands and resources during change. This would also allow for examination of the interaction-effects present in the JDR-model (Bakker & Demerouti, 2007, 2008).

7.4 Limitations

A number of limitations in the studies presented in this thesis need to be mentioned. The main limitations are discussed below.

7.4.1 Capturing change

Different parts of the research model were tested in different samples consisting of employees confronted with change. Since we worked with relatively large samples, it was difficult to capture *what* changes affected *which* employees at exactly what moments in time. As researchers we had little control over the changes that affected our samples, especially in the heterogeneous sample and the police samples. We did however stay relatively 'close' to the changes in our engineering sample (weekly study), where we measured on a weekly basis and where the change was easier to define, which helps the validity of the study. To draw solid conclusions, our studies need to be replicated in samples where *type*, *content*, and *timing of change* and their impact on adaptation can be closely monitored, so that more precise conclusions can be drawn regarding the adaptation process and its antecedents. This may be a problem that many researchers in the field of work psychology face nowadays, since changes tend to be introduced at different levels and often overlap (Herold, Fedor & Caldwell, 2007). With regards to studying flexible workspaces, more attention should be given to the specific adjustment demands of such office design changes, for example, noise was an important complaint in the engineering sample. In our police sample, ironically, the biggest reorganization in the Dutch Police Force since 1948 (!) was introduced just months after our last measurement. This again shows the importance of building employee resilience in terms of high levels of personal and job resources to deal with these ongoing changes.

Also, since change can be viewed as an intervention, ideally, we would have used a *control group* to compare the adaptation process in our samples to a control group in the same organization that was not exposed to change. This, however, proved to be very difficult to realize, both in the engineering sample, as well as in the police district, where the whole district was faced with change. Although challenging, future studies should aim to take such a quasi-experimental approach to allow for in-depth examination of the adaptation process.

7.4.2 Methodology

The majority of the studies used *self-report measures* to capture employee perceptions. This self-reporting may lead to measurement errors due to distortions (e.g., social desirability, acquiescence etc.) as well as common method bias, which may threaten validity of the results (Podsakoff, Mackenzie, Lee & Podsakoff, 2003). Also, in some cases we had to use *shortened scales* to avoid survey fatigue, and using short scales has also been mentioned as a source of common method bias (Podsakoff et al., 2003).

Further, the study on meaning-making in C*hapter 3* was *cross-sectional*, and therefore no causal inferences could be made. However, we managed to capture longitudinal data in three studies, which may reduce the negative impact of memory effects. In addition, we used supervisor-ratings in the weekly study and found significant relationships. Also, with the exception of behavioral or performance measure (in-role performance, adaptivity) the constructs under study are probably best rated by employees themselves, since employees are likely to be the best judges of their own states and attitudes (Demerouti, Bakker & Bulters, 2004). Finally, we used different *occupational settings*; a heterogeneous sample which consisted of a combination of workers from various, both public and private sector occupational settings (*Chapter 3*). The weekly study (*Chapter 4*) was done in an engineering company. Two studies were conducted in a police organization, which may limit generalizability to other occupations and organizations, since policing organizations may be quite unique in terms of culture and hierarchal structures (Bryant, Dunkerley & Kelland, 1985). It is therefore important to replicate the studied relationships of *Chapter 5* and *6* in other occupational and change settings. However, the studied relationships between resources, motivational outcomes and adaptation outcomes showed similar patterns in the other samples, which ameliorates this limitation.

7.4.3 Alternative processes during adaptation

The research models used in the studies could not account for all variance and this indicates that other variables may be important to include. Undoubtedly, there a numerous processes at play when employees adapt to change, which we did not include in the thesis. These third variables could stem from the context (other change-related resources / demands), the process of change implementation (e.g. fairness perceptions), or the employee (other change-related personal resources, traits, emotions, strategies or skills) and are likely to play a role in the formation of change-related attitudes and adjustment (e.g., Wanberg & Banas, 2000). The same goes for mediating variables, we examined the mediating role of natural reward strategies, work engagement and affective commitment; however, other processes and variables are likely to play a role in explaining the relationship between resources and adjustment outcomes. Especially the role of affective processes such as need fulfillment, positive emotions (Fugate et al, 2008; George & Jones, 2001), *and* behavioral mediators simultaneously may lead to a better understanding of the employee adaptation processes.

7.5 Practical implications

The findings from the studies in this thesis point to a number of practical implications. Taken together, our research shows that both personal as well as job resources can facilitate employee adjustment to change, and that this effect may be partially channeled via work engagement. How can organizations use these findings?

7.5.1 Job Resources

First, findings regarding the role of job resources, i.e. co-worker support and LMX, point to the importance of developing a work environment in which high-quality interpersonal relationships are an integral part of the culture. Our studies show that these interpersonal resources are important for successful adaptation to change, possibly due to their energizing capacity. Building such a supportive culture (even when no organizational changes are pending) will help organizations to increase its general adaptive capacity to successfully implement change (Van Dam et al., 2008). A practical starting point may be to clearly embed and communicate support as part of an organization's corporate values, and perhaps to clarify what behaviors follow from this. Leadership development, including coaching, may then be one way to ensure leaders show the desired supportive leadership style and to train their employees to do the same. In a supportive culture, change-related job resources such as change information may be more easily and effectively distributed via peer-to-peer and leader-member communications. This, according to our findings in the 3-wave study, can trigger employee meaning-making, which in turn can facilitate adaptivity. Information on the content of the change should be provided not only pre-change, but also during the change implementation, since our findings showed that this may build lasting willingness to change in employees. Given our contention that meaning-making is important during adaptation, the content of the information may be most effective when it includes the content of the change and the procedure for implementation (what? and how?). Also, information should include how change will affect (the daily work of) employees, and where possible the need for change and how it will benefit the organizations and her clients (why?).

7.5.2 Personal Resources

Our research showed that employees' personal resourcefulness is an important factor not to be overlooked when planning change implementation. Specifically, we found empirical support for the importance of self-efficacy, OBSE and meaning-making. Obviously, skills and abilities regarding the change are important, however, our

findings show that personal resources can facilitate employee adjustment to change both *during* and *before* the implementation. Personal resources may be a more fundamental aspect of our psychological make-up which –when present– may exert a positive influence on the development of employees' knowledge, skills and abilities. Besides the steps concerning communication, participation and skills training, it is important to be aware that employees are resourceful, active agents that generally don't think of themselves as resisting. Regarding the role of OBSE, our findings regarding the positive influence of OBSE on the LMX relationship suggests it is important for organizations to find ways to boost OBSE. Not only via LMX relationships, but also outside the channel of managerial relationships. Especially during change when managerial roles may change and employees may have to adjust to new managers. Communication strategies are likely to have potentially positive effects on perceived significance of the work that individuals carry out. For example, organizations may communicate key results, make the link between employee efforts and how these facilitated results, and express gratefulness or thank employees for their contribution. This may positively affect both OBSE and meaning-making.

7.5.3 Meaning-making

With regards to the role of meaning-making, our findings underline the need to facilitate and stimulate employees to reflect on organizational change and how it relates to them personally. Managing change is about managing people (Moran & Brightman, 2001). Encouraging employees to reflect on what the change means to them personally and how it could benefit personal development, could increase intrinsic task motivation (Thomas & Velthouse, 1990). Also, it may facilitate the adaptation process by creating willingness to change and maintaining performance. This task may be particularly important for leaders and change agents. This does not mean that leaders need to know everything about their employees' personal meaning system (personal goals and values etc.); however, they do need to stimulate reflection and perhaps link the change to employees' work-related strengths etc. Organizations can train leaders to take on a coaching leadership style or external coaches could be consulted. During these trainings, leaders should also be invited to reflect on their own resources and how to best develop or leverage them as leaders during change implementation. In addition, an important finding is that provision of information will trigger employees to 'digest' the information by reflecting on how the change will affect them and their (working) lives using meaning-making processes. This finding redefines the view of employees in the change process as passive change recipients or a source of resistance (Dent & Goldberg, 1999). Managers should focus on bringing personal resources and self-managing

behaviors to the fore, helping employees to see positive sides of the change, giving support to less self-efficacious employees and indicating what discretion employees have in deciding how to deal with the change. This could be done via coaching, mentoring or focus groups.

It is interesting to note that the concept of meaning-making as discussed in this thesis has drawn attention from practitioners, in that it was recently used to inform the design of a workshop on coaching for resilience, safety and well-being at work in the UK. Also, the concept has been used in therapeutic settings where the scale was used to monitor meaning-making efforts and their behavioral outcomes, in this case the integration of physical exercise into a client's life (Duignan, K., personal communication, January, 2012).

The finding that job and personal resources can help adaptation to change raises the question of how to help employees structurally to build these resources. Besides coaching, as mentioned above, group interventions can be designed that focus on helping employees to actively build resources at work (e.g., Lumb & Breazeale, 2002). Resource building interventions (e.g., Van den Heuvel et al., 2012), as well as appreciative enquiry (Cooperrider & Sekerka, 2003) focus on what works and how to strengthen resources and leverage those during change. However, even without a formal training intervention, employees and managers could jointly map the working environment in terms of job demands and resources, including both the physical and psychosocial working environment (support, task variety, etc.) during a team meeting or focus group. Based on this, they can jointly decide where and how to take action to build resources or reduce demands. Obviously, besides the interventions mentioned here, there is a plethora of intervention-techniques available to facilitate the process of organizational change at different levels, which goes outside the scope of this thesis (for an overview see: Cummings & Worley, 2009; or more practice-oriented: Holman, Devane, & Cady, 2007).

7.6 Conclusion

This thesis found evidence for the positive influence of psychological resources on employee adjustment outcomes. Results contribute to the literature on (predictors of) successful employee adjustment to change by introducing the notion of meaning-making, which functions as a personal resource. Also, self-efficacy and organization based self-esteem were shown to predict adaptation outcomes; i.e. supervisor-rated adaptive performance and adaptivity respectively. The job resources that were found to have a positive influence on adaptation outcomes were co-worker support, LMX and change information. Besides direct positive effects, we found several indirect effects,

whereby resources triggered motivational outcomes and positive change attitudes, which in turn positively related to adaptive performance. The motivational process of resources leading to work engagement, apparently translates into adaptation to change, which is visible on the work floor to managers. Meaning-making stimulated the use of natural reward strategies, which help employees to craft their work environment, and this, in turn, was positively related to work engagement. Job resources were shown to be reciprocally related to personal resources. For example, LMX predicted and was predicted by organization-based self-esteem and meaning-making. Over time, change information was shown to indirectly predict adaptivity via employee meaning-making.

Taken together, these findings expand existing knowledge on the relationship between work engagement and various behavior outcomes (e.g. Bakker & Demerouti, 2008; Demerouti & Cropanzano, 2010). Also, this thesis contributes by examining antecedents of adaptive performance in terms of observed individual behavior (Shoss, Witt & Vera, 2011). Implementing change and managing employee adaptation to change will always be a challenging, dynamic process, where different perspectives at different levels need to be taken into account. In this thesis we have made an attempt to contribute to knowledge on individual-level factors, since knowledge of micro-level factors will ultimately help to facilitate successful macro-level change implementation. Job resources, personal resources, attitudes, and strategies of employees, i.e. those who implement change, should be actively managed to foster thriving employees in thriving organizations. The interrelationships of personal resources and job resources may hold the key to further understanding successful change implementation. Particularly, the importance of employees' ability to make meaning using reflection during transitions, was shown to be an important factor that may help employees to self-regulate their motivation, adapt their behavior and stay engaged and committed during change. Going forward, we aim to further translate our findings into effective interventions that help employees and organizations to thrive during challenging times.

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Nederlandse Samenvatting

Aanpassing aan organisatieverandering
De rol van zingeving en andere
psychologische hulpbronnen

Aanpassing aan organisatieverandering: De rol van zingeving en andere psychologische hulpbronnen

Organisatieverandering vraagt veel van werknemers. Veranderingen op het werk kunnen zorgen voor onzekerheid, stressreacties en verminderde motivatie. Natuurlijk kunnen veranderingen ook leiden tot positieve gevolgen voor werknemers, en vaak zijn er gemengde reacties. Ongeacht het oordeel over de verandering, vragen veranderingen altijd aandacht en energie van werknemers. Onderzoek naar organisatieverandering richt zich vaak op werkprocessen en hun invloed op macro-uitkomsten zoals omzet en productiviteit. Toch heeft onderzoek uitgewezen dat veranderingen pas kunnen slagen als individuele werknemers 'mee-veranderen'. Alleen als individuele werknemers de verandering ondersteunen met hun gedrag, zullen de beoogde positieve effecten van veranderingsinitiatieven op het organisatieniveau gerealiseerd worden. Daarom is het nodig een beter begrip te creëren met betrekking tot de factoren op microniveau die bijdragen aan het aanpassingsvermogen van individuele werknemers.

Het proefschrift beschrijft onderzoek naar de werkbeleving en aanpassingsprocessen van werknemers die geconfronteerd worden met organisatieverandering. Op basis van bestaande theorieën richten we ons in dit proefschrift op veranderbare aspecten van de persoon en werkomgeving die bij kunnen dragen aan het aanpassingsproces. Deze aspecten worden 'hulpbronnen' genoemd. De onderzoeken beschrijven psychologische processen, relaties tussen hulpbronnen, attitudes, motivatie en gedrag.

Een belangrijk startpunt is de rol van persoonlijke hulpbronnen (bijv. zingeving en zelfvertrouwen), naast werkhulpbronnen (bijv. steun van collega's en leidinggevende). De c*onservation of resources* (COR) theorie, stelt onder andere dat mensen streven naar het behouden en uitbouwen van hun hulpbronnen. Daarnaast hebben individuen met meer hulpbronnen waarschijnlijk ook meer toegang tot andere hulpbronnen. Op basis van deze theorie, verwachten we dat als persoonlijke en werkhulpbronnen in voldoende mate aanwezig zijn, werknemers zich beter aan kunnen passen aan veranderingen. De overkoepelende onderzoeksvraag van dit proefschrift is dan ook: *Hoe dragen zingeving en andere psychologische hulpbronnen van werknemers bij aan succesvolle aanpassing aan organisatieverandering?*

Wat is zingeving en waarom is het belangrijk tijdens organisatieverandering?

De rol van zingeving tijdens veranderingsprocessen komt expliciet naar voren in dit proefschrift. Zingeving is een breed begrip en in de meeste onderzoeken richt men zich op het ervaren van zin. In dit proefschrift is zingeving gedefinieerd als een 'werkwoord

met uitkomsten', namelijk: de vaardigheid om uitdagende, lastige of onduidelijke situaties te integreren in een persoonlijk 'zin' of betekenis systeem van waarden en normen, waardoor men een gevoel van zinvolheid blijft behouden. Het 'zingeven' vindt plaats via reflectie op basis van persoonlijke waarden (Wat is echt belangrijk voor mij en hoe verhoudt dat wat er om mij heen gebeurt zich tot die persoonlijke waarden?). Op die manier kan de zin van veranderingen in de omgeving worden ervaren op een persoonlijk niveau. Als zodanig helpt zingeving dus om het positieve of waardevolle voor de persoon zelf te zien in een verandering. Het onderzoek toont aan dat zingeving zowel veranderingsbereidheid als aanpassingsgedrag van werknemers kan voorspellen. Ook bleek dat zingeving samenhangt met proactieve strategieën om de werkomgeving op een voor het individu positieve manier aan te passen. Mensen die meer met zingeving bezig zijn, zijn ook meer bevlogen en betrokken bij de organisatie. Zingeving heeft een positieve invloed op de relatie met de leidinggevende, tegelijkertijd is een goede relatie met de leidinggevende ook stimulerend voor zingeving van de werknemer. Als de organisatie zorgt voor voldoende informatie voordat de verandering geïmplementeerd is, dan zullen werknemers meer aanpassingsgedrag laten zien over de tijd heen. Dit proces wordt deels verklaard door de rol van zingeving. Dat wil zeggen, de informatie over de veranderingen *'triggert'* zingevingsprocessen in individuen, en dat leidt er toe dat ze adaptief gedrag laten zien.

Wat is de rol van andere psychologische hulpbronnen?

Andere persoonlijke hulpbronnen die we onderzochten, zijn zelfvertrouwen of 'vertrouwen in eigen kunnen' en eigenwaarde gerelateerd aan de rol binnen de organisatie. Werkhulpbronnen die onderzocht werden zijn: collegiale steun, de relatie met de leidinggevende en informatie over de organisatieverandering. Werknemers met meer vertrouwen in eigen kunnen zijn meer bevlogen en open voor veranderingen en dit vertaalt zich naar beter aanpassingsgedrag m.b.t. de verandering. Als individuen meer eigenwaarde ervaren voordat een verandering gestart is, zullen ze tijdens de verandering meer betrokkenheid en meer aanpassingsvermogen (adaptief gedrag) laten zien. Hetzelfde geldt voor zingeving, maar ook voor een goede relatie met de leidinggevende. Ook werd gevonden dat tijdens de eerste weken van een organisatieverandering steun van collega's en zelfvertrouwen een positief proces in gang zetten waarbij deze hulpbronnen positief samenhangen met bevlogenheid, wat op zijn beurt positief samenhangt met een positieve houding t.o.v. de verandering. Dit vertaalt zich in meer aanpassingsgedrag zoals beoordeeld door de leidinggevende. De aanwezigheid van hulpbronnen is belangrijk voor aanpassingsvermogen, zowel voor de invoering van de verandering als tijdens. Zingeving en informatie voorafgaand aan de verandering zullen

bijdragen aan het aanpassingsvermogen van werknemers tijdens de invoering. Zingeving en informatie tijdens de verandering helpen ook om op de langere duur een positieve houding ten opzichte van verandering te bewerkstelligen.

Bevindingen per hoofdstuk

Het proefschrift begint met een theoretisch hoofdstuk (*Hoofdstuk 2*) waarin het belang van persoonlijke hulpbronnen voor aanpassing aan verandering uiteengezet wordt. Er wordt een heuristisch onderzoeksmodel gepresenteerd waarin persoonlijke en werkhulpbronnen voorspellers zijn van zowel werkbevlogenheid als aanpassingsgedrag ten tijde van organisatie verandering. Verder wordt een aantal mediërende processen voorgesteld die de relatie tussen persoonlijke hulpbronnen en werkhulpbronnen en deze aanpassingsuitkomsten kunnen verklaren. De mediërende processen zijn attitudes ten opzichte van de verandering en zelfmanagement strategieën zoals 'zelf-leiderschap'. In *Hoofdstuk 3* wordt verder ingezoomd op de positieve rol van persoonlijke hulpbronnen. Zingeving wordt geïntroduceerd als een mogelijke persoonlijke hulpbron die vooral tijdens veranderingen een belangrijke functie zou kunnen hebben. Zingeving hangt samen met veranderingsbereidheid en zelf-gerapporteerde prestaties, en dat effect blijft bestaan naast de invloed van andere persoonlijke hulpbronnen, '*coping*'gedrag en perceptie van een zinvol leven. Ook word aangetoond dat zingeving een op zichzelf staand concept is wat wezenlijk verschilt van andere persoonlijke hulpbronnen en concepten rondom betekenisgeving. *Hoofdstuk 4* richt zich op de vraag hoe hulpbronnen bijdragen aan aanpassing aan verandering op de korte termijn, namelijk de eerste vijf weken van het werken in een flexibele werkomgeving. Dit hoofdstuk laat zien dat persoonlijke hulpbronnen wederom samenhangen met positieve werkbeleving (bevlogenheid) tijdens organisatieverandering. Tijdens weken dat werknemers meer zingeving ervaren, zijn ze geneigd meer natuurlijke beloningen in hun werk in te bouwen, wat leidt tot meer bevlogenheid. Verder blijkt dat werknemers die gedurende die eerste vijf weken in staat zijn om bevlogen aan het werk te blijven ook positiever zijn over de verandering en beter presteren met betrekking tot het aanpassen aan de verandering. Deze laatste prestatiemaat werd beoordeeld door de leidinggevende, wat de validiteit van de studie verhoogt. Al met al blijkt uit deze studie dat er een proces speelt waarbij persoonlijke hulpbronnen en sociale steun werkbevlogenheid voorspellen, wat vervolgens aanpassing aan verandering voorspelt. In *Hoofdstuk 5* beschrijven weeen longitudinaal onderzoek bij een politiekorps, waarbij we vóór de verandering en een jaar later tijdens de implementatie van verandering gemeten hebben. Hulpbronnen die samenhangen met verschillende aspecten van de identiteit van werknemers (zingeving, eigenwaarde en relatie met leidinggevende), voorspelden affectieve betrokkenheid en

aanpassingsgedrag tijdens de reorganisatie. De relatie tussen hulpbronnen en aanpassingsgedrag werd –tegen de verwachting in- niet verklaard door de mate van betrokkenheid. Echter, er werd wel een directe relatie gevonden tussen persoonlijke hulpbronnen en betrokkenheid. De mate van betrokkenheid voorspelde niet de mate van aanpassingsgedrag. Dit roept de vraag op of betrokkenheid een dubbele rol zou kunnen spelen tijdens veranderingen. Betrokkenheid zou wellicht ook weerstand tegen verandering in de hand kunnen werken, als mensen zo gehecht zijn aan de bestaande manieren van werken, dat verandering weerstand oproept. Toekomstig onderzoek zou de mechanismen in dit proces verder kunnen analyseren. Tot slot wordt in Hoofdstuk 6 onderzocht hoe hulpbronnen gedurende de invoering van een reorganisatie een rol spelen bij het voorspellen van aanpassingsgedrag. In dit hoofdstuk combineerden we het macro-perspectief van Lewin (*unfreeze –transition – refreeze*) met een micro-perspectief op individuele werkbeleving en aanpassingsgedrag. Uit eerder onderzoek is bekend, dat informatie over de veranderingen onontbeerlijk is tijdens organisatieverandering. Waar minder bekend over is, is hoe de werknemer deze informatie verwerkt, of hoe individuele factoren een rol spelen. Daarom is in dit onderzoek enerzijds informatie over veranderingen als hulpbron meegenomen en anderzijds zingeving als persoonlijke hulpbron. Deze studie liet een positief effect zien van beide hulpbronnen op veranderingsbereidheid en aanpassingsgedrag. Informatie vooraf voorspelde zingeving *tijdens* veranderingen en dat vertaalde zich naar meer aanpassingsgedrag *na* de formele implementatie-fase.

Toekomstig onderzoek

Natuurlijk zijn er aspecten die in dit onderzoek weinig of niet aan bod gekomen zijn, maar die wel interessant zijn voor toekomstig onderzoek. De rol van het zelfregulerend vermogen en zelfsturingsstrategieën van werknemers is belangrijk voor toekomstig onderzoek, aangezien zelfsturing kan helpen bij het omgaan met de nieuwe uitdagingen, die veranderingen met zich mee brengen. In ons onderzoek laten we zien dat zingeving leidt tot het gebruik van proactieve strategieën, in dit geval een aspect van zelf-leiderschap, namelijk 'natuurlijke beloningsstrategieën'. We hebben gevonden dat als Als werknemers meer zingeving ervoeren, waren ze ook beter in staat hun werkomgeving zo in te richten dat ze met plezier konden presteren, waardoor ze op die momenten ook meer bevlogen aan het werk konden zijn. Deze bevinding maakt het interessant voor toekomstig onderzoek naar aanpassingsprocessen om de rol van andere zelfsturingsstrategieën mee te nemen. Interessante begrippen zijn *'job crafting'*, oftewel de kleine aanpassingen, die werknemers maken aan hun werk en werkomgeving. Ook cognitief-gerichte strategieën zoals *'mindfulness'* (aandachttraining) en andere aspecten

van zelf-leiderschap zoals '*thought-leadership'*, kunnen onderzocht worden als voorspellers van aanpassing. *Job crafting*, de kleine aanpassingen die individuen zelf maken aan aspecten van hun werk, kan werknemers ondersteunen bij aanpassen van de werkomgeving tijdens veranderingen om te zorgen dat werk plezierig blijft. Cognitieve strategieën kunnen werknemers helpen om te gaan met de onzekerheid / spanning die vaak gepaard gaan met organisatieverandering.

Interventieonderzoek gericht op het versterken van persoonlijke en werkhulpbronnen kan verder uitzoeken of hulpbronnen en adaptieve strategieën aangeleerd kunnen worden en wat het effect hiervan is op bevlogenheid en aanpassingsvermogen. Recente interventies (o.a. door de auteur, zie Hoofdstuk 7) hebben aangetoond dat zowel persoonlijke hulpbronnen, werkhulpbronnen en positieve emoties versterkt kunnen worden. Toekomstig onderzoek kan zich verder toespitsen op interventies specifiek gericht op proactieve, zelfsturingsstrategieën en aanpassingsvermogen van werknemers tijdens organisatieverandering. Ook is het belangrijk de inter-relaties tussen het individuele niveau, het teamniveau en het organisatieniveau empirisch te onderzoeken. Op het interpersoonlijke niveau lijkt het belangrijk om de invloed van relaties tussen individuen en de 'besmettelijkheid' van verander-gerelateerde factoren te onderzoeken. Zo zou de veranderingsbereidheid van een werknemer, die van een andere werknemer positief kunnen beïnvloeden. Soortgelijke processen zijn in eerder onderzoek gevonden voor bevlogenheid in teams. Verder kan gekeken worden in hoeverre individuele uitkomsten macroniveau-uitkomsten zoals productiviteit of efficiëntie van de organisatie kunnen voorspellen. Andersom kan de ook invloed van macro-factoren (bijv. cultuur) op individuele aanpassingsprocessen verder onderzocht worden. Het is verder belangrijk dat toekomstig onderzoek meer aspecten van de verandering meeneemt, zoals het type verandering, de precieze inhoud en hoe dit verschillende werknemers en hun werk beïnvloedt. Idealiter wordt er gebruik gemaakt van een controlegroep, zodat effecten van de verandering heel precies onderzocht kunnen worden. Experimentele opzetten zouden daarbij ook behulpzaam zijn.

Aangezien zingeving een relatief nieuw begrip is, is het belangrijk om verder uit te zoeken hoe vaak het gebruikt wordt, de relatie met persoonlijkheidskenmerken en wat de best manier is om deze hulpbron te ontwikkelen. Ook is het belangrijk te onderzoeken of er een negatieve kant is aan zingeving. Bijvoorbeeld; zou te veel bezig zijn met zingeving kunnen leiden tot piekeren? Tot slot heeft dit proefschrift zich primair gericht op het motivationele proces van hulpbronnen, motivatie en aanpassingsgedrag. Aangezien organisatieveranderingen ook vaak veel eisen van

werknemers is het belangrijk dat toekomstig onderzoek dit motivationele perspectief aanvult met een focus op gezondheidsprocessen als gevolg van veranderingen.

Aanbevelingen voor de praktijk

Het onderzoek in dit proefschrift laat zien dat het de moeite waard is om te investeren in de aanwezigheid van persoonlijke hulpbronnen en werkhulpbronnen tijdens verandering. Werkhulpbronnen zoals steun van collega's en leidinggevende kan positief beïnvloedt worden door aandacht te geven aan leiderschapsontwikkeling. Leidinggevenden zijn gebaat bij steun om hun eigen hulpbronnen te ontwikkelen alsmede het ontwikkelen van een coachende leiderschapsstijl. Organisaties kunnen benadrukken dat wederzijdse steun, zowel tussen collega's als tussen leidinggevende en zijn /haar team, een kernwaarde van de organisatie is. Eventueel kan daar ook naar gekeken worden bij beoordelingen van werknemers. Ons onderzoek laat verder zien, dat het geven van informatie over de veranderingen kan helpen om werknemers aan het denken te zetten over wat de verandering voor henzelf betekent en hoe ze deze zinvol kunnen maken. Het is dus belangrijk dat er voldoende informatie beschikbaar is voor werknemers. Wellicht kan dit proces gestructureerd worden, zodat er tijdens het moment van informatieverstrekking ook meteen ruimte is om reacties te delen met elkaar en de leidinggevende. Op die manier kan de leidinggevende de vinger aan de pols houden en zijn team helpen de verandering te begrijpen. Individuele interventies zoals coaching zouden dit proces verder kunnen ondersteunen. Groepsinterventies zijn ook een mogelijkheid om werknemers te helpen om (gezamenlijk) aan hun hulpbronnen te werken. De werkomgeving kan geanalyseerd worden in termen van aanwezige hulpbronnen en stressoren via focusgroepen of teamsessies. Er kan nagedacht worden over hoe de hulpbronnen zo effectief mogelijk ingezet kunnen worden, om (1) de eventuele negatieve invloed van veranderingen op te vangen en (2) hoe de eventuele positieve aspecten gemaximaliseerd kunnen worden.

Conclusie

Dit proefschrift toont aan dat psychologische hulpbronnen bijdragen aan het succesvol aanpassen van werknemers aan organisatieverandering. De resultaten dragen bij aan de literatuur over (voorspellers van) succesvolle aanpassing aan veranderingen, mede door het meenemen van de rol van zingeving. Zingeving kan gezien worden als persoonlijke hulpbron en de resultaten laten zien dat dit begrip wezenlijk verschilt van andere persoonlijke hulpbronnen, '*coping*'gedrag en andere begrippen rondom 'zin' en 'betekenis'. Het proefschrift laat zien dat ook andere persoonlijke hulpbronnen, namelijk zelfvertrouwen en eigenwaarde, voorspellend zijn voor aanpassingsgedrag.

Hetzelfde geldt voor werkhulpbronnen, namelijk steun van collega's en een goede relatie met de leidinggevende, alsmede informatie over veranderingen. Dit proces kan deels verklaard worden door het feit dat hulpbronnen instrumenteel zijn om motivatie en bevlogenheid te bewaren tijdens veranderingen. Meer bevlogen werknemers staan meer open voor veranderingen en passen hun gedrag ook makkelijker en effectiever aan, zo blijkt uit ons onderzoek. Hulpbronnen zetten samen een positief, motivationeel proces in gang, waardoor werknemers met plezier aan het werk kunnen blijven tijdens verandering. Daardoor zullen ze ook meer positief tegenover veranderingen staan, waardoor ze ook met hun gedrag de verandering zullen ondersteunen.

Samengevat dragen de resultaten van dit proefschrift bij aan meer begrip rondom de individuele en context gerelateerde voorspellers van succesvolle implementatie van organisatieveranderingen. We hopen deze bevindingen in de toekomst verder uit te bouwen via interventiestudies, om zo een positieve bijdrage te leveren aan het aanpassingsvermogen van werknemers en organisaties.

Biography

Machteld van den Heuvel (Maggie) was born in Utrecht in 1976. After she completed her secondary education at Stedelijk Gymnasium, Den Bosch, she moved to Ireland to work as an Au Pair. After a year of minding kids and enjoying Ireland, she went back to start studying. During her Master in Work & Organizational Psychology at Utrecht University, she spent 6 months at University of California, San Diego. She completed her Master's degree in 2001. In 2002, she moved back to Dublin. There she worked as a bartender, candle-seller, sculptor, door-to-door & phone interviewer, counselor, music agent and research assistant. In 2003, she started at Vhi Healthcare as a Business Development Consultant. In 2005 she joined Pearn Kandola as an Organizational Psychologist. Late 2007, science lured Maggie back to the Netherlands, where she started her PhD in Work & Organizational Psychology at Utrecht University. Working part-time on her PhD enabled her to simultaneously set up her own business (see www.artofwork.nl). The combination of science and working in practice inspires her. Currently, Maggie works as an Assistant Professor at University of Amsterdam.