Human Resource Management Systems and Workforce Age –
The Macro Leverage of Micro Phenomena

by

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# Table of Contents

Acknowledgments ........................................................................................................ v

Summary ......................................................................................................................... vii

**General Introduction** .................................................................................................. 1

  Thesis Goals ............................................................................................................... 4

  Thesis Outline ............................................................................................................ 5

  References .................................................................................................................. 7

**Chapter 1**

**HR Management for an Aging Workforce – A Lifespan Psychology Perspective** .......... 11

  Abstract ..................................................................................................................... 12

  Introduction ............................................................................................................... 13


  Central Tenets of Lifespan Psychology .................................................................... 19

    Age-Related Changes in Cognition ........................................................................ 21

    Age-Related Changes in Personality and Affect .................................................... 22

  Work-Related Attitudes: Job Satisfaction and Organizational Commitment ............. 24

  Work Motivation ........................................................................................................ 30

  Summary and Conclusion ......................................................................................... 33

  References .................................................................................................................. 36

  List of Figures ............................................................................................................. 47
Chapter 2

Attenuating HRM’s Impact: Moderating Effects of Age and Maintenance-Enhancing HR Practices on Work Outcomes ........................................ 48

Abstract ........................................................................................................ 49

Introduction .................................................................................................... 50

Theoretical Framework and Hypotheses ....................................................... 52
  Bundles of HR Practices Reflecting Lifespan Developmental Principals ........ 52
  Relationships between Bundles of HR Practices, Work Outcomes, and Employee Age .................................................................................................. 57

Method ........................................................................................................ 61

Participants .................................................................................................... 61

Procedure ....................................................................................................... 62

Measures ....................................................................................................... 64
  Human resource practices ........................................................................... 65
  In-role behavior .......................................................................................... 66
  Affective organizational commitment ........................................................ 66
  Control variables ........................................................................................ 67

Level of Analysis .......................................................................................... 67

Analysis Strategy .......................................................................................... 68

Results ........................................................................................................ 69

Main Effects .................................................................................................. 70

Moderation Effects ......................................................................................... 71

Discussion ..................................................................................................... 72

Limitations .................................................................................................... 77

Conclusion .................................................................................................... 78
# Table of Contents

References ................................................................................................................. 79

Appendices ................................................................................................................ 96

List of Tables ............................................................................................................. 100

List of Figures ............................................................................................................ 103

## Chapter 3

**From HR Management to Work-Related Attitudes: The Mediating Role of**

**Future Time Perspective** ......................................................................................... 107

Abstract ....................................................................................................................... 108

Introduction .................................................................................................................. 109

Theoretical Framework and Hypotheses ..................................................................... 111
  Future Time Perspective ............................................................................................. 111
  HR Practices and Future Time Perspective ................................................................ 117
  The Mediating Role of Future Time Perspective ....................................................... 120

Method ......................................................................................................................... 122

Participants ................................................................................................................... 122

Procedure ..................................................................................................................... 123

Measures ....................................................................................................................... 124
  Human resource practices ......................................................................................... 125
  Future time perspective ............................................................................................ 127
  Job satisfaction .......................................................................................................... 127
  Organizational commitment ...................................................................................... 127

Control Variables ........................................................................................................ 128

Level of Analysis ......................................................................................................... 128

Analysis Strategy ......................................................................................................... 129
Results ................................................................................................................................. 130

Main Effects ...................................................................................................................... 131

Indirect Effects .................................................................................................................. 131

Discussion .......................................................................................................................... 133

Limitation ........................................................................................................................... 136

Conclusion .......................................................................................................................... 137

References ......................................................................................................................... 138

Appendix .............................................................................................................................. 153

List of Tables ...................................................................................................................... 156

List of Figures .................................................................................................................... 163

General Discussion ........................................................................................................... 165

Limitations .......................................................................................................................... 169

References .......................................................................................................................... 171

Declaration ............................................................................................................................ 173
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Summary

This thesis focuses on the links between organizations’ HR systems and the developmental dynamics of aging workforces and their consequences for behavioral and attitudinal work outcomes, which precede organizational performance. Building on tenets and central findings of lifespan developmental psychology, a research model is conceptually developed, that integrates age-contingent individual-level processes as mediators between HR systems and organizational outcomes. According propositions are derived that address essential facets of the framework for the age-related alignment of HR practices.

Next, two distinct bundles, i.e. growth and maintenance-enhancing HR practices, are conceptually developed. Combining macro and micro perspectives of strategic human resource management and applied psychology, we draw on social exchange theory and emotion regulation processes to hypothesize (a) a main effect of growth-enhancing practices on affective organizational commitment, (b) main effects of both bundles of HR practices on in-role behavior, and (c) moderating effects of age and maintenance-enhancing practices on work outcomes such that increasing employees’ age attenuates the HR practices’ positive impact. The results of a multilevel study comprising 600 employees and their direct supervisors of 59 business units provide evidence for the hypothesized main effects on affective commitment and the interaction between age and maintenance-enhancing practices on work outcomes.

Furthermore, this thesis examines the role of employees’ future time perspective for the association between HR systems and work-related attitudes. Drawing on socioemotional selectivity theory and emotion regulation processes, indirect effects of bundles of HR practices on job satisfaction and organizational commitment through future time perspective were hypothesized and empirically tested. The results of a multilevel study comprising 1,540 employees of 75 business units provide evidence for (a) direct effects of HR practices on
workforce’s future time perspective and (b) indirect effects demonstrating the mediation of bundles of HR practices on job satisfaction and organizational commitment through future time perspective.

The results, theoretical contributions, future research directions, and practical implications are discussed.
General Introduction
People play a fundamental and inevitable role for organizations. Organizations are made by humans, for humans, and from humans. In a work context, humans constitute a resource that is actively managed to achieve organizational goals (Beer, Spector, Lawrence, Mills, & Walton, 1984). Modern research in scholarly disciplines, such as industrial-organizational psychology, industrial and labor relations, management, and organizational behavior, has accumulated an enormous body of knowledge capturing the underlying principles and dynamics of organizations’ efforts to purposefully govern their human resources (HR; e.g., Locke, 2009; Muchinsky, 2008). Mirroring operating HR managers’ perspectives and according empirically collected evidence and their corresponding theoretical underpinnings will eventually result in particular functional HR practices, such as personnel selection, training and development, promotion, participation, performance management, and remuneration (Mahoney & Deckop, 1986). More recently, this classic view of human resource management (HRM) has been complemented with a broader perspective that is fueled by the growing interest in gaining a more complete picture predominantly reflecting HR executives’ stances. In this perspective, HRM is seen as a system whose elements, for example HR practices, can relate to one another in both beneficial or detrimental ways (Delery, 1998). These systems are considered to correspond with an organization’s strategies (Wright & McMahan, 1992) and so ultimately contribute to its competitive ability (Barney, 1991; Pfeffer, 1994). HRM’s functional properties are so extended by strategic aspects that increasingly focus on organizations’ superior goals, such as organizational effectiveness or financial performance (Fisher, 1989). Over the past two decades, both perspectives – oftentimes referred to as micro and macro research – have led to distinctive HRM literatures that diverge across pursued goals, methods, schools, and even publishing outlets (Aguinis, Boyd, Pierce, & Short, 2011; Wright & Boswell, 2002).
In spite of the dissimilarities between micro and macro approaches, HRM research currently faces a fundamental shift of labor market structures in the developed world, characterized by increasing workers’ mean age and growing the proportion of older workers (e.g., OECD, 2006). Owing to continuously rising life expectancies and either stagnating or declining birth rates, organizations are, and in future times increasingly will be, provided with commensurately aging workforces (Kyogoku, 2008; Toossi, 2009; Vaupel & Loichinger, 2006). As a consequence of this structural shift, theoretical and empirical research suggest that personnel’s work-values (Warr, 2008), work-related attitudes (Ng & Feldman, 2010), and work-motivation (Kanfer & Ackerman, 2004) will change correspondingly. Although detrimental effects of age on job performance have repeatedly been refuted (Avolio & Waldman, 1990; Ng & Feldman, 2008), organizations will increasingly be confronted with negative age-related stereotypes (Posthuma & Campion, 2009), altered outcomes of particular HR practices (Kooij, Jansen, Dikkers, & De Lange, 2010), and practical problems, such as knowledge loss and talent shortages (Strack, Baier, & Fahlander, 2008). In addition to preparing organizations to appropriately respond to these changes, HRM will have opportunities to proactively shape their aging workforces. With regards to the trajectories of fundamental human capabilities that are relevant for organizations’ pools of knowledge, skill, and abilities (KSA), there is ample evidence of substantial intra-individual variability, referred to as plasticity (e.g., Baltes, Staudinger, & Lindenberger, 1999; Green & Bavelier, 2008; Mercado, 2008). For example, aging employees’ cognitive performance is positively shapeable to some extent (Colcombe & Kramer, 2003; Colcombe et al., 2004), their memory performance can be boosted (Verhaeghen & Marcoen, 1996; Verhaeghen, Marcoen, & Goossens, 1992), and their fluid intelligence, which is closely associated with professional success (Gottfredson, 1997; Neisser et al., 1996; Rohde & Thompson, 2007), can actively be improved (Jaeggi, Buschkuehl, Jonides, & Perrig, 2008).
In sum, current changes in the labor market and, subsequently, in companies’ workforce structures, challenge and provide opportunities for HRM’s functional as well as strategic properties. Against this backdrop, this thesis is directed to conceptualize and empirically examine the relationships between organizational-level HR systems, individual-level age-related changes, and work outcomes. In combining micro-level processes and macro-level organizations’ realities, this multilevel research effort aims to achieve a more comprehensive understanding of the involved processes that model individual and organizational performance by complying with calls to overcome the micro-macro divide (Molloy, Ployhart, & Wright, 2011), gulf (Wright & Boswell, 2002), or chasm (Aguinis, et al., 2011) in HRM research.

**Thesis Goals**

The primary goal of this dissertation is to better understand the mechanisms that link organizations’ HR systems with the developmental dynamics of aging workforces and their consequences for behavioral and attitudinal work outcomes. This thesis will contribute to theory development on both strategic human resource management and lifespan development. In particular, age-related changes may exert significant moderating or mediating effects on HRM’s influence on work outcomes and consequently help to more accurately model organizational performance. Conversely, organizational practices may potentially impact individuals and therefore constitute a potential antecedent for individual development. Regarding managerial practice, a basis to derive rationales for developing and adjusting HR systems may be provided, which helps organizations to cope with an aging workforce. More specifically, this thesis addresses three cardinal issues to achieve these goals, i.e. (a) it provides a conceptual framework that incorporates individual-level processes that capture age-related developments to an organizational-level model of firm performance, (b) it
conceptualizes and empirically examines workers’ perceptions of important HR systems’ components and their age-contingent impact on work outcomes, and (c) it investigates HR systems’ influence on individuals’ global expectations of future opportunities and limitations and, in turn, their work-related attitudes.

**Thesis Outline**

First, the chapter *HR Management for an Aging Workforce* develops a conceptual research model that integrates individual and organizational-level processes. Introductorily, age-related changes in individuals’ cognition, personality, and affect are explicated and their role in employees’ person-environment fit, job satisfaction, organizational commitment, and work motivation are submitted. Next, a cross-level framework is proposed that incorporates individual-level work-related attitudes and work motivation as mediators of the association between organizational-level HR systems and organizational performance. To underpin the conceptual assumptions, empirical findings are reviewed that relate the model’s mediators with its antecedents and consequences. Age-related dynamics are suggested to exert moderating effects on the impact of HR practices and work-related outcomes. Empirically testable propositions are formulated and implications for future research directions are discussed.

Second, the chapter *Attenuating HRM’s Impact: Moderating Effects of Age and Maintenance-Enhancing HR Practices on Work Outcomes* addresses the question of how exactly, i.e. in which categories, HR systems are perceived by workers and how these perceptions – moderated by workers’ age – relate to work behaviors and attitudes. HR practices are conceptually bundled by considering developmental processes that shift patterns of basic motives, which, in turn, impinge on individuals’ goal orientations. Based on social exchange theory (Blau, 1964), affective events theory (Weiss & Cropanzano, 1996), and
emotion regulations processes’ distinctive effects, of bundles of HR practices are hypothesized and empirically tested. The findings, which shed light on the mechanisms that help HR practices unfold their effects, are discussed and their implications for theory and practice are elaborated.

Third, the chapter *From HR Management to Work-Related Attitudes: the Mediating Role of Future Time Perspective* focuses on the individual-level influences emanating from HR systems. Drawing on socioemotional selectivity theory (Carstensen, Isaacowitz, & Charles, 1999) and emotion regulation processes, the impact of the bundles of HR practices on attitudinal work outcomes is hypothesized to be mediated by individual’s future time perspective. More specifically, two of the three practice bundles that are typically deployed to enhance (a) organizations’ knowledge, skills, and abilities, (b) workers’ motivation, and (c) opportunities to exert workers’ KSA to perform are asserted to shape individuals’ global expectation of opportunities and limitation in their future life times. Consecutively, future time perspective is expected to influence job satisfaction and organizational commitment. The results that help better understand the processes that translate HR practices into work outcomes are discussed and their implications for theory and practice as well as future research directions are considered.
References


Chapter 1

HR Management for an Aging Workforce –

A Lifespan Psychology Perspective

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Abstract

Strategic human resource management (SHRM) research has provided evidence for a positive association between HR practices and organizational performance. However, theory-building has not considered developmental dynamics across the working life and its implications for the association between HR practices and organizational outcomes. We call for an extension of current SHRM approaches and suggest adopting a lifespan psychology perspective on age-related changes of cognitive capabilities, personality, and affect. Integrating the constructs of job satisfaction, organizational commitment, and work motivation establishes a conceptual framework that helps to explain the association of HR practices with performance in an age-differentiated manner. Pertinent propositions address essential facets of the framework for the age-related alignment of HR practices. We discuss directions for further research.

Key Words
- strategic human resource management
- human resource practices
- lifespan psychology
- aging workforce
- work-related attitudes
- work motivation
Introduction

In many highly developed countries, the overall population as well as the workforce of most companies is aging rapidly (Alley & Crimmins, 2007). These demographic changes entail both opportunities and risks. In the upcoming decades, it will be a major challenge for politicians, managers, HR practitioners, and social scientists to find ways of turning this increasing mean age into an asset rather than a liability (e.g., Leibold & Voelpel, 2006; McEvoy & Cascio, 1989; Shultz & Adams, 2007; Strack, Baier, & Fahlander, 2008). For example, organizations will have to develop new and better ways to cater to the needs of increasing numbers of older employees. Aside from a rising mean age of the workforce in most organizations, there will be stiff competition over attracting well-trained younger applicants.

Against this backdrop, in the present article we consider two complementary perspectives. First, strategic human resource management (SHRM) research investigates how to manage people in organizations in ways that optimize HRM outcomes and hence organizational performance. There is a voluminous literature that addresses the relevance of single or combined HR practices and their systematic implementation (e.g., Becker & Gerhart, 1996; Delery & Doty, 1996; Green, Wu, Whitten, & Medlin, 2006; Guest, 1999, 2002; Huselid, 1995; Paul & Anantharaman, 2003; Schuler & Jackson, 2007; P. M. Wright, Gardner, Moynihan, & Allen, 2005; Youndt, Snell, Dean, & Lepak, 1996). While scholars are beginning to address the HRM side of an aging workforce (e.g., Hedge, Borman, & Lammlein, 2006; Staudinger, Roßnagel, & Voelpel, 2008), there still exists a gap in the SHRM literature in that it has thus far largely ignored the question of how age affects the relationship between HR practices and important outcomes, both at the individual and at the organizational level.
Second, findings from lifespan developmental psychology have identified various systematic age-related changes in basic human functioning (e.g., Baltes, Lindenberger, & Staudinger, 2006; Barnes-Farrell & Matthews, 2007; Maurer, 2007). Other psychological research supports the assumption that trajectories of work-related attitudes and work motivation are likewise systematically tied to employees’ lifespan (e.g., Kanfer & Ackerman, 2004; Rhodes, 1983). These insights have not yet been adequately taken into account by most HR practitioners and management researchers.

Hence, we extend extant SHRM approaches to include psychological processes and help build a theoretical foundation that explains how the effectiveness of HR practices is contingent on employee age. Important theoretical approaches of SHRM research address the mediating processes between HR practices and organizational performance (Evans & Davis, 2005; Guest, 1997, 2001; Paauwe & Richardson, 1997; P. M. Wright & McMahan, 1992). We posit that job satisfaction, organizational commitment, and work motivation constitute important mediators in this regard. We will present a theoretical rationale for why we assume that these mediators fit well into a framework that includes age as a moderator of the relationship between HR practices or HR systems on the one hand and performance on the other.

We argue that an integration of the respective literatures on HR practices, age-related changes in human functioning, and workers’ attitudes and motivation is needed to explain and predict the moderating effects of age on the relationship between HR practices and individual work performance, which in turn influences organizational outcomes. We therefore aim to contribute to a more fine-grained and at the same time comprehensive understanding of how best to manage an aging workforce. In the following, we will outline SHRM approaches and subsequently discuss findings from lifespan developmental psychology. Based on these perspectives, we will then present propositions regarding what managers should do in order to successfully meet the demands and challenges engendered by the ongoing demographic

There is widespread agreement that employees – regardless of their age – constitute the most important asset for almost every organization and that the successful management of these “human resources” is critical for an organization’s performance (Coff, 1997). Organizational efforts aimed at influencing employees’ skills and behaviors in order to foster performance have a long tradition (cf. Becker & Gerhart, 1996; Schuler & Jackson, 2007).

Much evidence supports the applied aspects of the association between HR practices and organizational performance. Early research analyzed the link between isolated HR practices and organizational performance (e.g. Russell, Terborg, & Powers, 1985). Huselid (1995) published a groundbreaking study that documented how numerous HR practices – which the author referred to as High Performance Work Practices – were related to different organizational outcomes such as turnover, profits, and firm market value. He found that implementing HR practices in the areas of recruiting efforts, personnel selection, employee training, performance appraisal, incentive compensation, job design, grievance procedures, information sharing, attitude assessment, labor-management participation, and promotions criteria had a measurable impact not only on single outcome variables, but on several different important criteria simultaneously. A factor analysis of the applied HR practices identified two factors, which Huselid named “employee skills and organizational structures” and “employee motivation”. Huselid’s (1995) research was complemented, replicated, and differentiated by subsequent studies on the influence of HR practices on performance. A meta-analysis (Combs, Liu, Hall, & Ketchen, 2006) summarized empirical findings of 92 studies. According to this study, the overall correlation between HR practices and firm performance is .20.
We consider further theoretical advances in the field of SHRM to be important bases for examining the moderating role of employee age in a framework that also addresses how (i.e., through what mediators) HR practices are linked to outcomes. Becker and Gerhart (1996) provided a systematic overview of the HR practices that had been studied extensively. These authors emphasized the need to open the “black box” between the implementation of HR practices and organizational outcomes: “Unless and until researchers are able to elaborate and test more complete structural models – for example, models including key intervening variables – it will be difficult to rule out alternative causal models that explain observed associations between HR systems and firm performance” (1996, p. 793). Guest (1999) summarized the various measures of corporate performance and likewise emphasized the need to develop theory concerning the association between HR practices and performance. According to Guest (1999), the preponderance of previous research had focused on the direct relationship between HR practices and organizational performance, without taking into account possible intervening processes: “At present the studies report a promising association between HRM and outcomes, but we are not yet in a position to assert cause and effect. We need to develop theory which integrates aspects of strategy and strategic integration with something like expectancy theory to create specific hypotheses about linkages” (Guest, 1999, p. 188). Guest (1997, 2001, 2002) recommended to incorporate a worker-oriented perspective into HRM research and consider to a greater extent the role of worker attitudes such as work satisfaction and commitment as intervening variables that mediate between HR practices and performance.

Delery and Doty (1996) focused on the distinctive modes of theorizing in the field of HR research. They described and tested three different approaches of studying HR practices and identified a universalistic, a contingency and a configurational perspective. These models can most easily be distinguished by the level of complexity that they assume with respect to the
interrelations between HR practices and performance. The universalistic – and most basic –
approach addresses the association between single practices and performance and aims to
identify best practices. According to this perspective, applying such practices enhances
performance under all conceivable circumstances. Moderating influences are not considered
(see Figure 1). By contrast, the contingency perspective takes into account such linkages
among practices, performance, and third variables. This second approach posits that the
influence of HR practices on organizational performance is moderated by, for example, a
firm's strategy. Proponents of this perspective argue that the impact of an HR practice or a
combination of practices is more substantial in the case of vertical fit – that is, an appropriate
alignment of practices with an organization's strategy (e.g., with respect to cost minimization,
product differentiation, or market focus; M. E. Porter 1980). In addition to the vertical fit, the
configurational perspective also takes into account the horizontal fit – that is, the
configuration of and interrelations among all applied HR practices. This third model
emphasizes a holistic approach and defines specific patterns of multiple independent variables
and their association with a dependent variable. Such patterns of independent variables
include HR practices as well as strategies, structures, cultures, and processes forming "ideal
types that are theoretical constructs rather than empirically observable phenomena" (Delery &

On the one hand, the configurational view most appropriately captures the complexity and
uniqueness of organizations. On the other hand, however, it creates nearly intractable
challenges for managers aiming to translate the tenets of this model into action.

Each of the three theoretical perspectives describes the association between HR practices
and organizational performance as a direct relationship. Although the alignment of HR
practices is explicitly taken into account with respect to vertical (i.e. strategy) and horizontal
(i.e. internal consistency) fit, none of the three outlined perspectives differentiates HR practices with regard to variations of the human resources that they are aimed at. Indeed, Delery (1998) elaborates particularly on issues of horizontal fit – that is, various effects of additive and interactive relationships among HR practices. Not addressed, however, are mediating processes that could explain the interactive effects of HR practices and employee age on effectiveness. We argue that such mediating variables "are clearly important in that they provide the answers as to how HRM policies and practices can influence firm performance" (Delery, 1998, p. 295). Mediators which capture pertinent psychological processes provide valuable information for both the age-differentiated selection of HR practices from HR principles and policies (for a summary of levels of abstraction in the HR system cf. Colbert, 2004) and the adequate alignment of such practices. Complementary theoretical perspectives of SHRM research (cf. P. M. Wright & McMahan, 1992) have likewise emphasized the importance of studying intervening processes and suggest the integration of additional parameters such as, for example, the internal social structure (Evans & Davis, 2005) or HR outcomes such as turnover, absenteeism or employee involvement/trust or loyalty (Paauwe & Richardson, 1997).

In sum, empirical strategic human resource management research has provided compelling evidence for a generally positive association between HR practices and individual and organizational outcomes. Findings have shown this positive relationship to hold regardless of organizational size, type of organization (i.e., private versus public), qualification level of employees, and organizational culture (Combs, et al., 2006; Guest, 2002; P. M. Wright, et al., 2005). Theoretical frameworks in the field of SHRM take intervening processes into account and allow for extensions such as the incorporation of further parameters. Nevertheless, the potential moderating effect of age on the association between HR practices and performance remains largely unexplored. We argue that a lifespan
psychology perspective helps to better understand how the aging of the workforce affects the impact of HR practices on individual and organizational outcomes.

**Central Tenets of Lifespan Psychology**

Lifespan psychology investigates constancy and change in behavior throughout the life course (Baltes, 1987). Two fundamental ideas of lifespan psychology and its conceptualization of aging are particularly germane to HR practices and SHRM in general.

First, unlike earlier approaches within developmental psychology, lifespan psychology no longer views ontogenesis as development on one single dimension. The earlier notion of an individual's development as holistic and unidirectional growth has been broadened substantially (Baltes, 1987; Baltes & Baltes, 1990; Baltes, et al., 2006; Featherman & Lerner, 1985). Current perspectives define "development as selective age-related change in adaptive capacity" (Baltes, et al., 2006, p. 582) and acknowledge that an individual's development involves a wide variety of functions and various different resources. These resources, which individuals deploy to attain their goals, are subject to continuous variation. They include intellectual capabilities and psychological functions as well as social relations, economic conditions, and cultural premises. Accordingly, lifespan psychology describes human development along differential trajectories that entail gains on some dimensions of human behavior and stability and/or losses on other dimensions (Baltes, et al., 2006). Biological as well as contextual influences are described as (1) normative age-graded (e.g., memory decline, reaching retirement age), (2) normative history-graded (e.g., malnutrition after times of war, public child care), or (3) idiosyncratic (e.g., loss of a limb in an accident, career success) (Baltes, 1987; Baltes, et al., 2006). Moreover, lifespan psychology addresses individual differences that affect personal capacities, goals and strategies. In sum, lifespan
approaches regard development as *multidimensional, multidirectional, and oftentimes discontinuous*.

Second, lifespan psychology builds on the notion of *developmental regulation*: people use a variety of strategies to match their resources to external demands. Ontogenesis is conceptualized as a lifelong process of actively coordinating and allocating resources in order to adapt to ongoing processes resulting in gains and losses. In the lifespan perspective, aging is no longer primarily described as a process of decline – as, for example, in a biological sense. Instead, aging involves the active regulation of growth and development in different domains, as well as maintenance, recovery (resilience) and dealing with or compensating for losses (Baltes, 1987; Baltes, et al., 2006). The SOC model (e.g., Baltes & Baltes, 1990) posits that people Select subjectively important goals, Optimize their strategies for goal attainment, and Compensate for age-related losses.

Taking into account (1) age-related variations in cognitive abilities and personality as well as (2) the assumption of active developmental regulation has implications for the management of human resources in organizations. As discussed in more detail below, insights from lifespan psychology suggest that the effectiveness of HR practices can be improved if single practices as well as entire HR systems are tailored to the actual needs of the workforce of an organization. We argue that such an approach is more promising than either deploying the same HR practices in relation to employees of all age groups or, even worse, designing HR measures based on the by now obsolete deficit model of human aging that merely emphasizes losses without considering gains across the lifespan (cf. Ng & Feldman, 2008).

In the following, we outline age-related changes in cognition, affect, and personality. Cognitive and affective processes are the basis for the formation and activation of attitudes (e.g., Ajzen, 2001; Zajonc, 1980). Moreover, cognition and affect to a large extent determine human motivation (e.g., Latham & Pinder, 2005; Locke & Henne, 1986). Against this
backdrop, we then examine the developmental trajectories of job satisfaction, organizational commitment, and work motivation. We discuss how these variables affect the association between HR practices and organizational outcomes and what role they play as part of an age-differentiated SHRM approach.

**Age-Related Changes in Cognition**

Cognitive capacities can be separated into two distinct components - fluid intelligence (Gf), or mechanics, on the one hand, and crystallized intelligence (Gc), or pragmatics, on the other (Baltes, 1987, 1993; Cattell, 1971). The latter component primarily pertains to culture- and person-specific knowledge that is expressed in, for example, reading and writing skills, educational qualifications, and professional skills. By contrast, the former component “is indexed by the speed, accuracy, and coordination of elementary processing operations as they can be assessed in tasks measuring the quality of information input, sensory and motor memory, discrimination, categorization, and selective attention, as well as reasoning ability in highly overlearned or novel domains” (Baltes, et al., 2006, p. 597). Over the life course, these two components develop differentially. Both capacities increase in the first two and a half decades of life. Thereafter, the mechanics' component declines slowly, but continuously, whereas the pragmatics component increases slightly and remains stable into late adulthood (e.g., Li et al., 2004).

Aside from formal qualifications, the cognitive capacities of employees are critical prerequisites for organizational outcomes. Jobs vary with respect to the demands they place on the cognitive abilities of employees. When hiring new personnel, organizations oftentimes gauge candidates' cognitive abilities to achieve the best possible demands-abilities fit – that is, a close match between individuals' knowledge, skills, and abilities (KSAs) and job demands. Indeed, demands-abilities fit has been shown to be positively related to outcomes such as job
satisfaction (\(\rho = .41\)), organizational commitment (\(\rho = .31\)), turnover intentions (\(\rho = -.23\)) and overall performance (\(\rho = .12\)) (Kristof-Brown, Zimmerman, & Johnson, 2005). However, since cognitive abilities do not only vary in quantity over the life course – that is, fluid intelligence decreases – but also in quality – that is, the relationship between fluid and crystallized intelligence changes – organizations must aim to maintain a fit between an employee's KSAs, and the demands of his or her tasks. A declining fit of employees' abilities and task demands, for example, is likely to impair work motivation (Kanfer & Ackerman, 2004). Despite a need to actively establish and continually readjust this fit, pertinent HR practices such as personnel selection and personnel development are less frequently implemented in the case of older employees (Maurer, 2007). As a result, a fit between demands and abilities that deteriorates over time is generally likely to impede individual performance and increase frustration and withdrawal behaviors. Hence, we assume:

**Proposition 1:** Age-related changes in cognitive abilities continuously modify the demands-abilities fit.

An informed and active implementation of HR practices that takes age-related changes in cognitive abilities into account can help to prevent detrimental effects resulting from a deteriorating fit between demands and abilities. Practices in the domains of job design, employee training, and promotions and compensation criteria can help to ensure compatibility between employees’ cognitive resources and their task assignments. Correspondingly, planning aging employees' career development in ways that allow for adjustments of responsibilities and, concurrently, avoid social and financial demotion could help to assure a proper fit. Generally, tasks that predominantly require fluid abilities – such as air traffic controllers’ monitoring activities – are better suited for younger employees. In contrast, tasks that primarily require crystallized abilities – such as teaching or mentoring – may be better suited for older employees (Kanfer & Ackerman, 2004).
Age-Related Changes in Personality and Affect

Age-related changes have also been shown to occur in regard to personality (Jones & Meredith, 1996). With respect to the ‘Big Five’ traits, neuroticism appears to decrease in the course of adulthood (Mroczek & Spiro III, 2003), openness to new experiences seems to decline in later years, agreeableness and conscientiousness both increase during adulthood, and extraversion seems to remain fairly stable (Helson & Kwan, 2000). Staudinger and Kunzman (2005) provided an overview of the literature on personality changes over the life course, with a particular emphasis on adjustment and growth. Concerning stage-based personality models, there seems to be a curvilinear (inverted U-shaped) relationship between age and generativity (i.e., a tendency to provide emotional support to others) (Erikson, 1964), with lower levels for young and old adults and the highest levels for middle-aged persons (McAdams, de St. Aubin, & Logan, 1993). Organizations could benefit from these insights by, for example, giving their middle-aged employees the opportunity to mentor co-workers. Moreover, work-related decisions such as choice of occupation, where to apply for a job, whom to hire, as well as how to develop one’s career depend on (vocational) personality. Specific occupations such as teacher, salesperson, or police officer require certain personality traits and values if there is to be a high fit between the person and his or her job (cf. Holland, 1997).

Another important change occurs with respect to affect. Socio-emotional selectivity theory (SST) (Carstensen, 2006) predicts that the nature of subjectively important goals will change across the lifespan as people’s general sense of time shifts from “time since birth” to “time until death” around mid-life. Consequently, there are shifts concerning the goals related to the acquisition of knowledge and goals pertaining to the regulation of positive emotional states. When time is perceived as open-ended, prioritized goals relate to “investments,” focus on gathering information, on experiencing novelty, and on expanding skills and knowledge. By
contrast, when time is perceived as constrained, goals that relate to “harvesting” and can be realized in the short term become more salient. Examples include regulating emotional states to optimize psychological well-being. Thus, while younger individuals exhibit a stronger growth orientation, older persons place more emphasis on maintenance and loss prevention. Moreover, in comparison to younger adults, older persons have fewer negative emotional experiences and control their emotions to a greater extent (Carstensen, 2006; Gross et al., 1997).

Age-related changes in personality and affect are likely to affect the value system, which in turn influences work-related attitudes and motivation. The literature on person-job fit has also examined the relationship between personality and individual work-related outcomes. Conceptualizations of the person-job fit that emphasize needs, desires, and preferences (i.e., the needs-supplies fit) show an even stronger relationship with job satisfaction ($\rho = .61$), turnover intentions ($\rho = -.50$), and overall performance ($\rho = .20$) than do those conceptualizations that accentuate knowledge, skills, and abilities (i.e., the demands-abilities fit) (Kristof-Brown, et al., 2005).

Overall, implementing HR practices in ways that take age-related changes in personality and affect into account is likely to benefit important outcomes. Hence, we assume:

**Proposition 2:** Age-related changes in personality and affect continuously modify the needs-supplies fit.

Since they are important antecedents of work-related attitudes and work motivation, age-related changes in basic psychological functions such as cognitive abilities, personality and affect need to be taken into account. Next, we discuss the role of job satisfaction, organizational commitment, and work motivation as mediators of the link between HR practices and performance. We outline how these psychological predictors of performance systematically change across the lifespan.
Work-Related Attitudes: Job Satisfaction and Organizational Commitment

HR practices do not result in higher firm performance, per se, but rather shape a firms' human resources (e.g., Delery, 1998). It is these resources and employee behaviors that ultimately lead to better or worse performance (Combs, et al., 2006; P. M. Wright, McMahan, & McWilliams, 1994). In line with these insights and theoretical frameworks of SHRM research that call for a focus on intervening variables to explain how HR practices affect organizational performance, we argue that work-related attitudes and work motivation constitute such mediators. As we will outline below, we submit that each of these parameters is influenced by HR practices and at the same time predicts organizational performance. On the other hand, HR practices pertaining to personnel selection, training, and compensation level affect employees' knowledge, skills, and abilities (KSAs); practices focusing on incentive compensation and promotion policies motivate employees to leverage their KSAs for the firm's benefit; and practices comprising employment security, flexible work schedules, participation, and grievance procedures empower employees to realize the potential entailed by their respective KSAs (Combs, et al., 2006; Liu, Combs, Ketchen, & Ireland, 2007). For example, fixed or incentive compensation may be perceived as acknowledgment of individual contributions and cause a boost in job satisfaction and commitment, which in turn may result in increased individual effort and performance. Similar mechanisms might operate with respect to grievance procedures, employment security, and participation programs. Each of these may augment job satisfaction and/or organizational commitment, which in turn may engender heightened efforts. Moreover, work-related attitudes and work motivation exhibit age-related trajectories contingent on age-related changes in cognition, personality, and affect. In the following, we outline research findings that underscore the promise of the proposed integration of age as a moderator of the association between HR practices and organizational performance.
Job satisfaction is one of the most-researched and most central constructs in I/O psychology (Harter, Schmidt, & Hayes, 2002). One research focus has been on the relationship between job satisfaction and organizational outcomes. In their meta-analysis, Judge and colleagues (2001) found a robust positive association ($\rho = .30$) between overall job satisfaction and performance in 312 independent samples with more than 54,000 participants. Consistently, organizational commitment, defined as “the strength of an individual’s identification with and involvement in a particular organization” (L. W. Porter, Steers, Mowday, & Boulian, 1974, p. 604), has been shown to be linked to organizational performance. In their comprehensive meta-analysis, Cooper-Hakim, and Viswesvaran (2005) demonstrated organizational commitment to be significantly related to outcomes such as job performance ($\rho = .17$), turnover ($\rho = -.23$), and turnover intention ($\rho = -.57$). However, the association between organizational commitment and job performance seems to be moderated by tenure. This correlation is greatest for new employees and decays over time (T. A. Wright & Bonett, 2002). A corresponding meta-analysis that combined both work-related attitudes provided further evidence of their strong influence on job performance. Harrison, Newman, and Roth (2006) showed that the overall job attitude – comprising job satisfaction and organizational commitment – is associated with individual effectiveness ($r = .59$), which in turn consists of various performance measures.

Complementary evidence is available for various intrinsic job characteristics that resemble HR practices, for example skill variety, autonomy, supportiveness, participation, and task significance. These intrinsic job characteristics were likewise shown to influence both employees' job satisfaction and organizational commitment (Eby & Freeman, 1999). Accordingly, other HR practices as well as SHRM were shown to be associated with job satisfaction (Gould-Williams, 2003; Guest, 2001; Nishii, Lepak, & Schneider, 2008; Stevens, Oddou, Furuya, Bird, & Mendenhall, 2006). Rayton (2006) provided evidence that both job
satisfaction and organizational commitment are co-determined by further parameters, including HR practices. According to his study, levels of pay, job involvement, and job routinization, respectively, are associated with both commitment and satisfaction. However, managerial support and the provision of career opportunities are associated with satisfaction, but not with commitment. By contrast, peer support and job expectations enhance employee commitment, but not job satisfaction. In line with these findings, a meta-analysis of work design studies revealed that work characteristics that might be subsumed under HR practices were closely related to behavioral and attitudinal outcomes (Humphrey, Nahrgang, & Morgeson, 2007). These 14 motivational, social, and work context characteristics explained a total of 43% of the variance of workers’ attitudes and behaviors. Again, HR practices such as autonomy, skill variety, task variety, significance, task identity, feedback for the job, information processing, job complexity, specialization, and problem solving accounted for 25% of the variance in subjective performance, 34% in job satisfaction, and 24% in organizational commitment. Social characteristics such as interdependence, feedback from others, social support, and interaction outside the organization explained an incremental 9% of the variance in subjective performance, 17% in job satisfaction, and 40% in organizational commitment.

In sum, these findings underscore that the work-related attitudes of job satisfaction and organizational commitment are not only inextricably linked with performance, but also with HR practices. Consequently, we argue:

*Proposition 3: Job satisfaction mediates the association between HR practices and performance.*

*Proposition 4: Organizational commitment mediates the association between HR practices and performance.*
Concerning the relationship between age and job satisfaction as well as organizational commitment, a lifespan perspective helps to make sense of a pattern of findings that appears to be less straightforward than initially assumed. Rhodes’ (1983) early meta-analysis had shown age and job satisfaction to be positively associated. This finding has been replicated and extended several times (e.g., Cunningham & MacGregor, 2000; Kirkman & Shapiro, 2001; Schwoerer & May, 1996). At the same time, however, there have been findings showing that the relationship might actually be U-shaped (Oswald & Warr, 1996), while still other studies reported no association between age and job satisfaction at all (Cleveland & Shore, 1992; Glisson & Durick, 1988; Spreitzer, Kizilos, & Nason, 1997). On the one hand, Rhodes’ (1983) findings support a consistent positive association between age and overall job satisfaction on the basis of predominantly bivariate analyses. However, her analysis suggests that needs (see L. W. Porter, 1963) and preferences change with age. More specifically, needs for security and affiliation tend to increase with age. Also, "preferences for extrinsic job characteristics and having friendly coworkers and supervisors" (Rhodes, 1983, p. 356) increase. More limited support was found for a decrease in need for self-actualization and growth, along with a decrease in preferences for opportunity for growth. Finally, in multivariate studies, satisfaction with extrinsic facets of work, such as pay, promotions, coworkers, and supervision does not show the same consistent pattern, but yields rather mixed results. These findings are consistent with the aforementioned socio-emotional selectivity perspective (cf. Carstensen, 2006), which assumes that short-term intrinsic goals that enhance psychological well-being gain importance with age. "Taken together, findings pertinent to aging and job satisfaction suggest that although the general relationship between worker age and overall job satisfaction may be positive, there is much more to the story" (Barnes-Farrell & Matthews, 2007, p. 141). Consequently, these authors suggest that researchers take a closer look at intrinsic versus extrinsic facets of work.
Similar to job satisfaction, there exists evidence for a positive association between age and organizational commitment: 17 out of 21 studies in Rhodes’ analysis (1983) found commitment to increase with age. A meta-analysis of the association of organizational commitment and age confirmed these findings and reported a moderate positive relationship ($\rho = .19$) (Cohen, 1993). Finegold et al. (2002) showed that older workers had a higher degree of commitment and that the source of commitment differed across age groups. Whereas younger workers' commitment was predicted by their work-life balance, older workers' commitment was most strongly predicted by job security. To a greater extent than their older colleagues, younger workers demonstrated an emphasis on growth-related goals such as skill development and voiced a willingness to change companies in order to reach their goals.

The discussed age-related changes in personality, affect, and values strongly suggest that the effects of HR practices on work-related attitudes depend on workers' age. The employees' perceptions of HR practices are likely to change as they age and abilities and needs change systematically. For example, the promise of an attractive bonus in the case of extraordinary sales efforts, the prospect of being promoted to a prestigious new position, or the freedom to organize one's own work schedule might be appreciated differentially by employees depending upon, for instance, the number of family members financially dependent on them, their overall financial situation, past achievements, and expectancies concerning their individual future – all of which are partially age-related. As individuals grow older, their job-related demands, expectations, prospects, and evaluations are likely to change along with their abilities, personality, and affect. Such age-related differences in the perception of HR practices can actively be addressed by sophisticated HRM systems that appropriately distinguish among members of the workforce. Overall, an age-differentiated emphasis on extrinsic and intrinsic HR practices is more likely than is a uniform set of HR practices to prevent a decline in organizationally valued performance as employees grow older. The
former approach makes it possible to, for example, develop intrinsic practices specifically tailored to the needs of older workers. Practices pertaining to autonomy, participation, affiliation, and supportiveness are likely to enhance older employees’ job attitudes. It is yet unclear, however, to what extent extrinsic practices may likewise be suitable for age-differentiated implementation. Nevertheless, work-related attitudes such as job satisfaction and organizational commitment constitute mediators that help explain the age-differentiated association between HR practices and organizationally valued performance. Accordingly, we assume:

**Proposition 5:** Age moderates the association between HR practices and job satisfaction such that the association between intrinsic HR practices and job satisfaction increases with age.

**Proposition 6:** Age moderates the association between HR practices and organizational commitment such that the association between intrinsic HR practices and organizational commitment increases with age.

**Work Motivation**

Work motivation can be defined as the set of psychological processes governing the direction, intensity, and persistence of work-related behaviors (see Pinder, 1998). Positive relationships of work motivation with a variety of performance dimensions have long been established (for overviews, see Churchill Jr, Ford, Hartley, & Walker Jr, 1985; Fried & Ferris, 1987; Stajkovic & Luthans, 1998). In more recent studies, Millette and Gagné (2008) showed that motivation was positively associated with performance in volunteer work, and Kuvaa (2006a) demonstrated this relationship for bank employees’ performance.

The influence of HR practices on work motivation has been of interest ever since Hackman and Oldham’s (1976) classical Job Characteristics Model (JCM) was first published and
subsequently boosted work design research. Extending the JCM, Morgeson and Campion (2003) suggested that work design beyond the physical attributes of a job includes social dimensions that engender a significant incremental impact on behavioral and attitudinal outcomes (Humphrey, et al., 2007). Consistent with this approach, job design itself is considered to be a human resources practice (e.g., Paul & Anantharaman, 2003) that can be used to manage employees. Kuvaas (2006a, 2006b) showed associations between work motivation and pay administration and performance appraisal. Moreover, Dysvick and Kuvaas (2008) found training opportunities provided by an organization to positively affect motivation.

Data on age-related changes in work motivation are scarce (e.g., Rhodes, 1983), but theoretical approaches (e.g., Carstensen, Mikels, & Mather, 2006; Kanfer, in press; Kanfer & Ackerman, 2004; Warr, 2001) suggest that work motivation changes with age both in a qualitative and a quantitative way. Concerning quantitative changes, Kanfer and Ackerman (2004) suggested two routes whereby work motivation deficits might occur in older workers. In jobs placing strong demands on fluid intelligence, increased effort may only partially offset performance declines. This could lower self-efficacy and eventually motivation. By contrast, in jobs which place strong demands on crystallized intelligence, performance levels are often maintained with relatively low levels of effort. Accordingly, demands are not perceived as more difficult, performance does not diminish, and motivation remains stable. Nevertheless, in these jobs work motivation deficits may occur as a consequence of boredom and insufficient job challenge. However, motivation deficits are only one of several possibilities. Alternatively, workers might launch compensatory activities in other tasks. Indeed, in their meta-analysis of age and job performance, Ng and Feldman (2008) found a positive relationship between age and contextual performance indicators (e.g., Organizational Citizenship Behavior, OCB), whereas a null relationship emerged for age and core task
performance. They conclude that older workers might “consciously engage in discretionary behaviors to compensate for any losses in technical core performance” (p. 403). Age-related changes in work motivation might thus best be understood as outcomes of active regulation, rather than of passive responses to personal (e.g., capability declines) and environmental (e.g., altered work demands) changes (Stamov Roßnagel, in press).

Such compensatory and active regulation activities are closely related to qualitative changes in work motivation. To the extent that older workers put extra effort in certain tasks to compensate for performance decline in other tasks, they might develop an individual motivation profile with increased levels of motivation in some work tasks and stable or lower motivation in other tasks. Such a profile is likely to differ systematically from younger workers’ motivation profiles (Stamov Roßnagel, in press). Given that motivation is positively related to work conditions, which protect and promote a positive self-concept (see Kanfer & Ackerman, in press), older workers might experience high levels of motivation for “people tasks” (e.g., job roles involving advising and guiding others), but lower levels of motivation for learning-related tasks (see also Kanfer & Ackerman, 2004).

A related qualitative change in motivation might concern the locus of regulation. Gagné and Deci (2005) posit that work motivation might range from controlled motivation to autonomous motivation. Whereas in the former the level of motivation is determined by contingencies of reward and punishment, autonomous motivation results from the coherence of a worker’s goals and values and an organization’s regulations. Autonomous motivation might better suit older workers’ need for positive self-concept regulation than controlled motivation, which might influence the development of older workers’ motivation profiles. Motivation levels might rise for tasks providing autonomy, but might decrease for externally controlled tasks. Such qualitative changes suggest that work motivation might be undermined
by managerial tools – that is, HR practices which are not adequately adjusted to age-related shifts in affect regulation and work-related values (see Eby & Freeman, 1999).

Companies develop and apply single HR practices or comprehensive HR systems aimed at enhancing employees' motivation with the goal to optimize firm performance (Michie & Sheehan, 2005). Various practices such as incentive compensation, performance appraisal, and internal promotion policies "are thought to offer incentives to aid motivation" (Combs, et al., 2006, p. 503). Furthermore, "employment security, flexible work schedules, procedures for airing grievances, and high overall compensation can also increase motivation" (Combs, et al., 2006, p. 503). These HR practices typically do not acknowledge age-related changes in cognitive abilities, personality and affect as well as age-related individual life situations such as family status, economic requirements, or personal expectancies. For example, an increasing need for meaningfulness of job-related tasks (Rhodes, 1983), a changing perception of time (Carstensen, 2006), and quantitatively and qualitatively changing patterns of cognitive abilities (Li, et al., 2004) are likely to cause changes in work motivation that are relevant for the successful management of aging workforces. In sum, we therefore suggest:

Proposition 7: Work motivation mediates the association between HR practices and performance.

Proposition 8: Age-related changes moderate the association between HR practices and work motivation such that the association between intrinsic HR practices and work motivation increases with age.

Summary and Conclusion

The aging of the workforce is a major challenge for societies and organizations. HR practices aimed at improving organizational outcomes need to take into account shifts in cognitive abilities, personality, and work-related attitudes and motivation as the mean age of
workers increases. SHRM research has demonstrated the positive relationship between individual and combined HR practices and various outcomes, both at the individual and at the organizational level. With this article, we bridge two major gaps that are evident in this literature. Firstly, human development across the lifespan and attendant changes in needs and resources have thus far been mostly ignored. Secondly, there is currently no theoretical model that addresses the moderating role of age on the association between HR practices and organizational outcomes and at the same time includes mediators that help explain this moderating effect.

Lifespan developmental psychology has documented age-related changes in (1) basic human functions – for example, cognitive abilities, personality, value orientations, and emotional regulation – and (2) work-related psychological variables such as job satisfaction, organizational commitment, and work motivation. Integrating these insights into current SHRM approaches helps to fill the identified gaps. The extant literature suggests that HR practices influence work motivation, job satisfaction, and organizational commitment – and that these mediators in turn affect organizational performance. We argue that much could be gained by theoretically and empirically exploring the moderating effect of age on the HR-practices-performance relationship.

With respect to practical implications, knowledge of how age affects the impact of HR practices on different outcomes can help managers to better tailor their efforts to the specific needs of employees. The integration of such knowledge into HR management would be an important step forward in meeting the demands entailed by an aging workforce. Barnes-Farrell and Matthews (2007, p. 140) summarize: “In particular, a clearer understanding of the attitudes and motives of older workers can help to guide management practices and
organizational policy aimed at meeting the needs of an aging workforce and encouraging older workers to remain engaged and active members of the workforce.”

Future research is needed to examine the validity and practical utility of a comprehensive SHRM model that includes both moderators and mediators. Moreover, the differentiation of HR practices in terms of their intrinsic and extrinsic facets requires further empirical elaboration. In addition, research aimed at better understanding the perception and impact of extrinsic practices is needed. Finally, the proposed moderating effect of age should be afforded closer examination because age can always be only a proxy for other underlying processes of human development.
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List of Figures

➤ universalistic approach

➤ contingency approach

➤ configurational approach

Figure 1. Basic SHRM approaches

Figure 2. SHRM model regarding lifespan development perspective
Chapter 2

Attenuating HRM’s Impact:
Moderating Effects of Age and Maintenance-Enhancing
HR Practices on Work Outcomes

I am particularly grateful to Torsten Biemann and Sven Voelpel for co-authoring this manuscript.
Abstract

This paper conceptually develops two distinct bundles of growth and maintenance-enhancing HR practices guided by tenets of lifespan developmental psychology. Combining macro and micro perspectives of strategic human resource management and applied psychology, we draw on social exchange theory and emotion regulation processes to hypothesize (a) a main effect of growth-enhancing practices on affective organizational commitment, (b) main effects of both bundles of HR practices on in-role behavior, and (c) moderating effects of age and maintenance-enhancing practices on work outcomes such that increasing employees’ age attenuates the HR practices’ positive impact. The results of a multilevel study comprising 600 employees and their direct supervisors of 64 business units provide evidence for the hypothesized main effects on affective commitment and the interaction between age and maintenance-enhancing practices on work outcomes. We discuss the results, theoretical contributions, future research directions, and practical implications.

Key Words
- strategic human resource management
- social exchange theory
- multilevel
- emotion regulation
- lifespan development
**Introduction**

Organizations implement broad arrays of human resource (HR) practices to align workforces’ goals and values with their objectives and to direct corresponding workers’ discretionary efforts, creativity, and productivity (e.g., Arthur, 1994; Becker & Gerhart, 1996; Delery & Shaw, 2001; Guest, 2002; Wright & McMahan, 1992). A large body of research has provided compelling evidence of the association between HR systems and organizational performance (e.g., Arthur, 1992; Guthrie, 2001; Huselid, 1995; Ichniowski, Shaw, & Prennushi, 1997; MacDuffie, 1995; Youndt, Snell, Dean, & Lepak, 1996). It has widely been acknowledged that HR practices typically lack independence and are oftentimes intertwined (Becker, Huselid, Pickus, & Spratt, 1997; Delery, 1998; MacDuffie, 1995). Accordingly, research in the realm of strategic human resource management (SHRM) characteristically takes a systems view in its approaches to investigate the relationships between patterns of HR practices and outcome measures (Delery & Doty, 1996; Lepak, Liao, Chung, & Harden, 2006). Although the crucial role of workers’ perceptions of HR practices compared to the managerial intentions has repeatedly been emphasized (Boswell, Colvin, & Darnold, 2008; Bowen & Ostroff, 2004; Kehoe & Wright, 2010; Nishii & Wright, 2008; Wright & Boswell, 2002), the various conceptualizations of HR systems implicitly regard workforces as an organizational element that uniformly and invariably responds to human resource practices. By and large, in its endeavors to model organizational effectiveness theoretically and empirically, SHRM research has largely neglected workforce differences between and variability within organizations (Nishii & Wright, 2008). Yet, not organizations perform but rather individuals within organizations perform in ways that allow organizations to achieve the desired effectiveness and performance outcomes (Kozlowski & Klein, 2000; Wright & McMahan, 1992). Acknowledging this notion draws attention to the workforce’s centrality and variability.
Indeed, workforce structures in nearly all countries of the developed world are currently subject to fundamental changes due to increasing life expectancy and declining birth rates (e.g., Kyogoku, 2008; OECD, 2006; Toossi, 2009; Vaupel & Loichinger, 2006). As a result, organizations’ human resources will, on average, be composed of larger proportions of older employees and hence display increasing mean age. Research findings in the field of lifespan developmental psychology have provided sound evidence for developmental dynamics that impact on basic human properties, such as motivation, personality, and values and goals (e.g., Baltes, Lindenberger, & Staudinger, 2006; Baltes, Staudinger, & Lindenberger, 1999; Carstensen, Isaacowitz, & Charles, 1999; Heckhausen, Wrosch, & Schulz, 2010). Such age-related changes are considered to be substantial in work context (Grant & Wade-Benzoni, 2009; Kanfer & Ackerman, 2004) and have recently gained growing research attention in the field of HR management (e.g., Bal, de Lange, Jansen, & Van Der Velde, 2008; Kooij, Jansen, Dikkers, & De Lange, 2010; Ng & Feldman, 2008, 2010; Zacher & Frese, 2011). However, the consequences of the human assets’ (Coff, 1997) structural changes for the relationship between the HR systems and organizations’ competitive ability (Barney, 1996; Koch & McGrath, 1996; Wright, McMahan, & McWilliams, 1994) have not been addressed. There has been calls for research to overcome the chasm that divides the involved research disciplines’ macro and micro perspectives to enhance our understanding of the mechanisms that ultimately connect HR management and organizational effectiveness (Molloy, Ployhart, & Wright, 2011; Ployhart & Moliterno, 2011). One such avenue is to apply macro goals to micro research and “study multiple HR practices or systems and their impact on individuals” (Wright & Boswell, 2002, p. 263). We contend that HR systems that principally take individual workers’ age-related changes into account will contribute to both theory development and managerial practice. A better understanding of age-related moderating influences on the involved individual-level processes, such as work-related attitudes and
behaviors that have been shown to mediate the HR system—organizational performance link (e.g., Gong, Law, Chang, & Xin, 2009; Kehoe & Wright, 2010; Macky & Boxall, 2007; Nishii, Lepak, & Schneider, 2008) will help advance to theoretically model the causal chain of SHRM. Furthermore, the resultant insights will allow rationales to be derived for practitioners, who are challenged to ensure an organization’s effectiveness in times of structural workforce changes.

The present study is directed to contribute to fill this gap and extend the extant literature. First, we conceptually develop two distinct bundles of HR practices that fundamentally build on employees’ perceptions: growth-enhancing and maintenance-enhancing HR practices. Subsequently, we hypothesize and empirically examine the bundles’ relationships with attitudinal and behavioral work outcomes. Specifically, we assert that the bundle of growth-enhancing HR practices relates predominantly to the work-related attitude of affective organizational commitment. In contrast, we argue that each of the two bundles of growth and maintenance-enhancing HR practices affect in-role behavior, as well as affective organizational commitment. Building on developmental dynamics that research on lifespan psychology reports, we furthermore contend that employees’ chronological age serves as a significant moderator of the associations between the bundles of HR practices and work outcomes. Figure 1 summarizes our hypothesized research model, which we then develop in greater detail. We conclude by discussing the results, the theoretical contributions, future research directions, and practical implications.

Theoretical Framework and Hypotheses

Bundles of HR Practices Reflecting Lifespan Developmental Principals

Human resource practices can complement, substitute, or conflict with other practices (Delery, 1998; MacDuffie, 1995). Rather than to focus on the effects of single and separate
HR practices, as is typically done in pure micro research, the prevailing macro perspective in HR management involves the examination of HR practices’ contingencies and configurations (Delery & Doty, 1996; Lepak & Snell, 1999). Various conceptual and empirical approaches have been used to capture theoretically meaningful and practically beneficial patterns of practices (Wright & Boswell, 2002). For example, Huselid (1995) identified a two-factor structure subsuming 13 practices as “employee skills and organizational structures” or “employee motivation”. Lawler (1992) introduced a conceptualization of HR management on the basis of power, information sharing, rewards, and knowledge/skills (PIRK). MacDuffie (1995) linked practices to their conditions for economic performance, embracing “skill/knowledge,” “motivation/commitment,”, and “integration with production system/strategy.” In turn, this taxonomy provided the basis for the AMO framework classifying HR practices into highly comparable categories of “knowledge, skills, and abilities,” “motivation,” and “opportunities”/“empowerment” (e.g., Boxall & Purcell, 2003; Delery & Shaw, 2001; Lepak, et al., 2006).

All these examples of prevalent HR system conceptualizations concurrently aim at arranging numerous singular HR practices that jointly constitute an HR system, hence their horizontal fit (Delery & Doty, 1996). These are complemented by approaches that chiefly seize HR systems by their vertical fit (Delery & Doty, 1996) and align practices by the organization’s objectives, strategy, or contextual factors as, for example, high performance (Huselid, 1995), high commitment (Arthur, 1994), high involvement (Lawler, 1992), control (Walton, 1985), or occupational safety HR systems (Zacharatos, Barling, & Iverson, 2005).

Irrespective of variations in content and methodological foundations of extant HR system conceptualizations, it has been demonstrated that processes of social exchanges (Blau, 1964) mediate the HR system-organizational performance link (e.g., Evans & Davis, 2005; Sun, Aryee, & Law, 2007; Takeuchi, Lepak, Wang, & Takeuchi, 2007). Multilevel in nature, these
findings empirically reveal the involvement of individual-level processes affecting
organizational outcomes, in what Nishii and Wright (2008) refer to as the causal chain of HR
systems. In more detail, Blau (1964) maintains that social exchanges entail obligations. That
is, when one person does another a favor, there is an expectation of some future return,
although oftentimes it remains unclear exactly when and in what form the obligation will be
repaid. This general norm of reciprocity (Gouldner, 1960) denotes a mutually beneficial
exchange that has provided the basis for theory development explaining such processes taking
place on the individual level in workplace settings (Cropanzano & Mitchell, 2005).
Consequently, various studies have recently focused on employees’ perceptions of HR
practices and, in turn, their implications for outcomes (e.g., D. G. Allen, Shore, & Griffeth,
2003; Kinnie, Hutchinson, Purcell, Rayton, & Swart, 2005; Kuvaas, 2008; Nishii, et al., 2008;
Whitener, 2001). For example, with respect to issues of social cognition, Nishii and
colleagues (2008) argued “we can expect that not all employees will interpret HR systems
similarly. This suggests that the effect of HR practices is not likely to be automatic and
always as expected; instead, their effect will reside in the meanings that employees attach to
those practices” (p. 504). Since the alignment of organization’s and workforce’s values and
goals constitutes one of SHRM’s cardinal objectives, we believe that taking fundamental
dynamics pertaining to individuals’ goals and values into account will help conceptualize and,
in turn, adjust HR systems and support organizational effectiveness, particularly given that
workforce structures are altering in relevant ways.

Drawing on central tenets of lifespan developmental psychology, we propose two bundles
of HR practices that primarily take employees’ age-related developmental principals into
account. Indeed, individual’s goals and values are subject to lifelong changes (Baltes, et al.,
2006; Heckhausen, et al., 2010). Throughout their life course, individuals adjust to, take
advantage of, or cope with the opportunities and constraints they face, and accordingly
allocate their variably available resources, whether biological, social, or cognitive in nature (Heckhausen, et al., 2010). Over the entire lifespan, the balance of gains and losses, both of which are experienced throughout life, undergoes a fundamental shift as, on average, resources increasingly diminish (Baltes, 1987, 1997). For example, it has been demonstrated that fundamental motives, such as the desire to obtain a future positive outcome, i.e. to acquire, and the desire to avoid losing an existing positive condition, i.e. to keep, exhibit age-related trajectories (Ogilvie, Rose, & Heppen, 2001). Ogilvie and colleagues’ (2001) findings substantially support the idea that although it decreases, a general orientation toward acquiring gains remains prevailing across all age groups. In contrast, efforts to retain achievements, which are insignificant during adolescence, continuously increase, approximating in more mature life stages to measure up to the former dominating motive. As a result, personal goal orientation changes commensurately from predominantly striving for gains in younger ages to maintenance and prevention of loss in more mature ages (Ebner, Freund, & Baltes, 2006). Against this backdrop and in agreement with Whitener (1997) and Rousseau and Wade-Benzoni (1994), we assert that HR practices represent important elements in social exchange processes between organizations and employees. They embody organizational resources providing workers with chances for growth, gains, and expansion, as well as for maintenance, conservation, and prevention of losses. We argue that from an employee’s perspective, HR practices are likely to be perceived as either predominantly growth-enhancing or, alternatively, maintenance-enhancing in appearance and character. Consequently, we form two corresponding bundles of HR practices. First, we subsume training, internal promotion, participation programs, performance appraisal, incentive compensation, information sharing, grievance procedures, and selectivity in one bundle to which we refer as growth-enhancing HR practices. In detail, employees are likely to view training programs as chances to extend the own knowledge, to gain skills, and attain
competences. Internal promotion opportunities will allow employees to envision options to acquire new responsibilities and broaden their field of activities and duties, which will be supported by the perceived degree of organizations selectivity. Performance appraisals motivate individuals by reviewing and valuing present or past behaviors to develop more efficacious proceedings, which are positively reinforced when achieved. Participation programs support workers to make their own decisions in their job, to become involved in organizational decisions, and encourage improvement suggestions, thus predominantly support progressive goal orientations. Sharing job or business-related information with workers not only grants orientations, but also helps individuals increase their interest and engagement. Grievance procedures help remove barriers and facilitate work processes that enable employees do their job. Although, in principle, all these HR practices, especially with respect to grievance procedures, can also ensure that levels of former achievements are maintained to a certain degree, they will primarily be sensed as inducements (March & Simon, 1958) to drive the own work-related improvement, enlargement, development, and advancement. Second, in contrast to growth-enhancing practices, we group employment security, flexible working hours, and compensation level into another bundle, which we denote as maintenance-enhancing HR practices. HR practices, such as job security, working hour flexibility, and, largely, the level of fixed compensation, represent organizational practices that, from the individual perspective, activate motivational notions of maintenance, preservation, protection, and avoidance of loss. Employees are likely to regard the extent to which they are entitled to keep their job, to make fundamental decisions on temporal aspects of their job fulfillment, and to rely on the level of their regular income as areas that are primarily to be upheld.

Following, we elaborate on the relationships these two bundles of HR practices hold with work outcomes and workers’ chronological age.
Relationships between Bundles of HR Practices, Work Outcomes, and Employee Age

In contrast to research approaches that regard HR practices explicitly from the employer’s perspective (e.g., Shaw, Dineen, Fang, & Vellella, 2009; Tsui, Pearce, Porter, & Tripoli, 1997), various research efforts primarily take the workers’ viewpoints into consideration, thus focus on the individual level. The latter research efforts have provided concepts that help understand the processes of exchange relationships between employees and organizations, such as perceived organizational support (POS; Eisenberger, Huntington, Hutchison, & Sowa, 1986) and psychological contracts (Rousseau, 1989, 1995). Congruently, these distinct conceptualizations examine processes linking various kinds of organizational inducements to individual-level work outcomes by adopting a social exchange framework (e.g., Dulac, Coyle-Shapiro, Henderson, & Wayne, 2008; Eder & Eisenberger, 2008; Eisenberger, Armeli, Rexwinkel, Lynch, & Rhoades, 2001; Eisenberger, Cummings, Armeli, & Lynch, 1997; Settoon, Bennett, & Liden, 1996; Wayne, Shore, & Liden, 1997). In particular, POS seize employees’ “beliefs concerning the extent to which the organization values their contributions and cares about their well-being” (Eisenberger, et al., 1986, p. 500). Based on mechanisms of social exchanges (Blau, 1964) and the reciprocity norm (Gouldner, 1960), organizational support theory (Eisenberger, et al., 1997; Eisenberger, et al., 1986) puts forward that organizational inducements, for example, HR practices, elicit employees’ perceptions of organizational support, which subsequently exert their commensurate requital. Accordingly, HR practices, such as voice, pay, promotion, job security, autonomy, and training, have been shown to co-determine POS to differing extents, which, in turn, influences outcomes such as affective organizational commitment and in-role performance (Rhoades & Eisenberger, 2002). It is important to note, however, that individual work-related outcomes differ distinctly from one another considering the involvement of affective, cognitive, and behavioral aspects. With regards to work motivation processes, core affective experiences are seen to influence
judgment components that, in sum, eventually determine actual behaviors (Forgas & George, 2001; Seo, Barrett, & Bartunek, 2004). Acknowledging this notion, our expectations regarding the relationships between the bundles of HR practices and affective organizational commitment, i.e. a straight affective work outcome, as well as in-role behavior, i.e. a behavioral outcome, differ and will be explicated consecutively.

First, affective organizational commitment refers to employees’ emotional attachment to, identification with, and involvement in the organization (N. J. Allen & Meyer, 1990), thus capturing emotions and moods. The bundle of growth-enhancing HR practices seems likely to elicit in particular affect-based reactions involving emotions and moods that are associated with chances of gains, attainment, and development, as these are likely to be appraised as predominantly positive events (cf. Weiss & Cropanzano, 1996). We expect employees to respond to growth-enhancing practices with feeling obligations and positive mood. Positive mood, which involves feelings of enthusiasm, excitement, and alertness (Watson, Clark, & Tellegen, 1988), as well as felt obligations have been demonstrated to mediate the POS—affective commitment relationship (Eisenberger, et al., 2001). We therefore formulate

**Hypothesis 1:** The bundle of growth-enhancing HR practices is positively associated with affective organizational commitment.

In contrast, the involved maintenance-enhancing practices are likely to elicit motivational notions of preservation, protection, and loss avoidance. Consequently, and in line with the affective events theory (AET; Weiss & Cropanzano, 1996), we assume that the resultant appraisals will encompass a more balanced mixture of affective valences, countervailing positive affect (e.g., the sense of security of being employed, an appreciation of explicitly acknowledged extra hours, the reassurance of a reliable income) against negative affect (e.g., fear of losing one’s job, rejection of an intensive control regarding when to begin and stop
working hours, or the disappointment of not receiving a pay raise). Hence, we do not expect the bundle of maintenance-enhancing HR practices to be associated with affective organizational commitment.

Second, in-role performance refers to behavior directed toward formal tasks, duties, and responsibilities such as those included in a job description (Williams & Anderson, 1991) and primarily comprises behavioral aspects. It has been suggested that positive and negative affective experiences that result from the perception of HR practices are processed with those cognitive processes involved in making judgments, i.e. expectancy, utility, and progress judgments, to eventually generate tangible behaviors (e.g., Seo, et al., 2004). Both growth-enhancing practices such as participation, promotion, and training, as well as maintenance-enhancing practices, such as pay and job security, have been demonstrated to elicit employees’ obligations to reciprocate (D. G. Allen, et al., 2003; Rhoades & Eisenberger, 2002; Wayne, et al., 1997). Moreover and in line, it has been argued that feelings of indebtedness that come from rewards will result in the engagement of reciprocal behaviors (Greenberg, 1980). Accordingly, we assume

\textit{Hypothesis 2: The bundle of growth-enhancing HR practices is positively associated with in-role behavior.}

\textit{Hypothesis 3: The bundle of maintenance-enhancing HR practices is positively associated with in-role behavior.}

Perceived obligations resulting from social exchanges are interpretable and contingent on motivational factors, goals, and norms of the involved parties (Clark & Mills, 1979, 1993). For example, the extent to which employees’ obligation to return perceived favorable treatments by the organization is contingent on the degree of perceived discretion of the
organizational inducement in the sense that the organization is not obligated to offer the practice to everyone (Eisenberger, et al., 1986; Shore & Shore, 1995). Similarly, the extent of individuals’ beliefs that it is appropriate and useful to base their concern with the organization’s welfare and their work effort on how favorably the organization has treated them – thus the exchange ideology – moderates the felt obligations (Eisenberger, et al., 2001; Eisenberger, et al., 1986). The HR practices forming the growth-enhancing and maintenance-enhancing bundles are likely to elicit distinct types of employees’ affective reactions contingent on their idiosyncratic appraisal. Growth-enhancing practices will predominantly trigger positive affect states, emotions, and moods since they will be perceived as chances for attainments and improvements, which represent elements of a fundamental and sustaining positive motivational category (Ogilvie, et al., 2001). Job-related achievement, advancement, and growth predominantly represent positive work values (Elizur, Borg, Hunt, & Beck, 1991). In comparison, maintenance-enhancing practices will, in sum, generate more balanced affective reactions, complementing positive ones with more neutral or negative affect such as concern, fear, or strain. The threat of being laid off may, for example, cause such undesirable emotions. However, individuals are by no means limited to being passive recipient of such emotions but are rather seen to actively modulate, amplify, or attenuate emotional states (Côté, 2005; Hochschild, 1979). Such emotion regulation includes all the efforts to increase, maintain, or decrease one or more components of an emotion (Gross, 1998b). Emotion regulation is pervasive and helps individuals handle their emotions actively and appropriately with a broad array of options, including antecedent and response-focused emotion regulation (Gross, 1998a, 1999). Age-related differences in the abilities and patterns of emotion regulation have been documented (e.g., Carstensen, Fung, & Charles, 2003; Charles & Carstensen, 2007; Gross et al., 1997). Compared to their younger colleagues, older adults have been shown to engage in more downward and less upward social comparisons.
(Heckhausen & Krueger, 1993), to exhibit more flexibility pertaining to goal adjustment (Brandtstädter & Renner, 1990), to apply more positive reappraisals (Folkman, Lazarus, Pimley, & Novacek, 1987), express fewer concerns about finances (Powers, Wisocki, & Whitbourne, 1992), feel less anger (Schieman, 1999), and report less negative affect, whereas positive affect remains stable (Charles, Reynolds, & Gatz, 2001). In line, it has been suggested that older individuals can to a larger extent tolerate deviations from their psychological contract (Bal, et al., 2008; Ng & Feldman, 2009). In sum, by actively applying means of emotion regulation, more mature individuals successfully maximize gains and minimize threats and constraints and thus, in the words of Carstensen et al. (2003, p. 119), “selectively construct a social and cognitive world that maximizes emotional payoffs.” Accordingly, we expect

**Hypothesis 4:** Employees’ chronological age moderates the association between the bundle of maintenance-enhancing HR practices and organizational commitment such that the positive impact of practices on organizational commitment will be attenuated for older employees.

**Hypothesis 5:** Employees’ chronological age moderates the association between the bundle of maintenance-enhancing HR practices and in-role behavior such that the positive impact of practices on in-role behavior will be attenuated for older employees.

### Method

**Participants**

We examined our hypotheses in 64 distinct business units of 15 organizations throughout Germany and Austria representing a broad range of industries, covering retail, consumer goods and services, public administration, utilities, manufacturing, and financial services. The
business units accounted for an overall of 600 participants (86.6% full-time, 13.4% part-time) whose work performance was individually assessed by their respective direct supervisors. 30.8% of the participants were employed by public organizations, 69.2% worked for private businesses. On average, they were 41.4 years of age ($SD = 11.1$), had been with their respective organizations for 12.5 years ($SD = 10.0$), and held their current position for 7.2 years ($SD = 7.5$). 38.7% had obtained at least a Master’s degree level education, 7.4% had at most received a high school diploma. With 54.5% males and 45.5% females, the gender distribution was nearly balanced.

**Procedure**

Organizations were initially contacted either directly by the first author of this study, by the regional Chambers of Commerce and Industry, or Employer’s Associations supporting the investigation. In either case, after receiving the first general information in written form, an organization’s representative in charge was contacted by telephone and individually briefed on the details of the study. The participating organizations were rewarded with a summary of the study results. Upon the stipulation of data protection and non-disclosure agreements the organizations chose potential participants among their personnel and provided general information on the survey’s background, goals, and data security issues. To avoid self-selectivity biases (Heckman, 1979), only general information, i.e. the investigation of work-related preferences and conditions in a continuously changing work environment was yielded. The organizations were instructed to select a sample of participants as representative of their respective workforce as possible, ideally drawing a random sample covering all available business units and hierarchical levels.

After an initial trial run of 98 completed surveys, which aimed at testing the questionnaire for ease of understanding and technical operability, the wording of few items and instructions
was eventually improved. The test run was conducted in March 2009. Subsequently, the data
collection took place between June and October 2009. After receiving contact information on
the potential participants, which included their family name, first name, exact position,
business unit, gender, as well as their direct supervisor’s name and contact information,
individual invitations were issued. In a first step, invitations directed at the employees were
either distributed, preferably, by e-mail or, alternatively, by written letter, which were
delivered by the employing organization in closed envelopes. A singular organization
disseminated the survey invitations in the form of individualized, sealed, written letters
containing identical information and a URL including a personalized code that provided
access to the online questionnaire. This organization made a computer with internet access
available to employees. In a second step, upon return of the employees’ completed surveys,
each employee’s supervisor was delivered a personalized invitation to assess the respective
employee’s work performance. Superiors supervising more than one participating employee
received separate survey invitations for each staff member. The invitations as well as the
individual questionnaires provided the full name of the relevant worker who was subject to
assessment. To achieve a maximum response rate, the research group’s independence was
emphasized and the absolute anonymity of the subsequent data analyses was assured.

Normally, the employees and supervisors received personalized invitations providing
individualized links or URLs to access online questionnaires. These were allowed to be
repeatedly accessed from work or private computers within a two-week period, allowing
interruptions and resumptions. A single reminder was sent one week after the initial
invitation. Upon completion, the questionnaires were no longer accessible. Exceptionally, the
workers and supervisors of two business units (shop workers and kindergarten teachers) with
no internet access at their work place were provided with paper-and-pencil versions of the
according questionnaires each including a franked envelope addressed to university premises.
6.7% (3.2%) of the employees (supervisors) filled in a paper-and-pencil questionnaire, while 93.3% (96.8%) answered the questions online.

On average, each organization accounted for 40.0 participants ($SD = 29.4$), each business unit consisted of a mean of 9.4 employees ($SD = 10.5$). The response rates of the respective organizations ranged between 30.5% and 86.7% ($M = 60.2$). The online questionnaires addressing the employees were completed in a mean time of 29.9 minutes ($SD = 17.7$); the supervisors’ questionnaires were answered in a mean time of 1.8 minutes ($SD = .9$).

To control for common method variance (CMV; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), we obtained data of predictor and criterion variables from different sources where applicable. All predictor variables were gained by employees, whereas the criterion data comprising work performance assessments were acquired from the employees’ direct supervisors. Further, to reduce CMV the participants’ anonymity with respect to their employer was assured. With regards to the questionnaire, the online version counterbalanced the item positions within questions and the question sequence provided that disruption of the logic flow was obviated. The wording of items and instructions were kept simple, specific, and concise. The organizations’ structural and descriptive data was separately obtained from two HR managers independently each per organization with regards to measurement error issues (Gerhart, Wright, McMahan, & Snell, 2000).

**Measures**

Wherever practicable, constructs were measured by multiple-item scales. The procedures recommended by Brislin (2000) for survey translations across different languages were applied. First, the primary researcher, whose native tongue is German, created the English version of the questionnaire by adapting scales and items of previously used research projects published in English and subsequently translated them into German. The primary researcher
and another German faculty member specialized in management research and proficient in English improved the translation through an iterative process during which concerns about discrepancies between the two language versions were identified and addressed. To validate the translation, we asked two German employees who in no way were affiliated with this research project to read through the German version and test its readability and ease of comprehension. All concerns were addressed before the questionnaire was pre-tested on the basis of 98 complete surveys.

**Human resource practices.** We assessed eleven HR practices that previous research had shown to be of relevance to organizational performance (Combs, Liu, Hall, & Ketchen, 2006). With respect to each of eight HR practices (i.e. compensation level, employment security, incentive compensation, internal promotion, participation programs, performance appraisal, selectivity, and training), four separate items were adopted with which the given practices had been previously assessed (Delery & Doty, 1996; Lepak & Snell, 2002). Flexible working hours and grievance procedures were operationalized by two-item scales each. Information sharing was measured by a single item. These items were in part adapted from previous research (Becker & Huselid, 1998; Wright, Gardner, Moynihan, & Allen, 2005) or, alternatively, developed by the authors. The complete list of items is provided in appendix A.

We compounded the scales of the HR practices grievance procedures, incentive compensation, information sharing, internal promotion, participation programs, performance appraisal, selectivity, and training to form growth-enhancing practices by calculating the respective mean values. Likewise, the HR practices compensation level, employment security, and flexible working hours were compounded to form maintenance-enhancing practices. We measured the HR practices on the individual level and aggregated the values of all the analyses on the business unit level. The participants expressed their degree of agreement with the given statements on 5-point Likert-type scales ranging from 1 = *strongly disagree* to 5 =
In the present study, the internal consistency produced an alpha coefficient for the scale measuring compensation level of .65, employment security .84, incentive compensation .72, internal promotion .59, participation programs .79, performance appraisal .92, selectivity .82, training .84, flexible working hours .91, and grievance procedures .60, respectively. The compounded bundles received a reliability of alpha of .88 for growth-enhancing HR practices and .77 for maintenance-enhancing HR practices.

**In-role behavior.** We assessed employees’ in-role behavior applying four items used and factor analytically tested by Williams and Anderson (1991). The chosen items held the highest loadings on the factor in-role behavior. Items were “He/she adequately completes assigned duties,” “He/she fulfills responsibilities specified in the job description,” “He/she performs tasks that are expected of him/her,” and “He/she meets formal performance requirements of the job.” The direct supervisors rated the degree to which they agreed with each of the items on a scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. In this study, this scale measuring in-role behavior achieved a reliability level with a Cronbach’s alpha of .90.

**Affective organizational commitment.** The employees’ organizational commitment was measured with six items developed by Meyer, Allen, and Smith (1993) that reflect the affective commitment to the respective organization. The items correspond to the organizational commitment scales previously reported by Allen and Meyer (1990). Sample items included “This organization has a great deal of personal meaning for me,” “I do feel like ‘part of the family’ at my organization,” and “I do feel a strong sense of ‘belonging’ to my organization.” The German version of this scale, which had previously been validated (Schmidt, Hollmann, & Sodenkamp, 1998), was adopted for this study. The employees expressed their agreement with the specified items on a 5-point scale ranging from 1 =
strongly disagree to $5 = \text{strongly agree}$. In this study, the organizational commitment scale used achieved a reliability of alpha of .92.

**Control variables.** We included job complexity and job satisfaction as control variables in all our analyses. Prior studies have demonstrated that these variables are potential predictors of individual job performance (Iaffaldano & Muchinsky, 1985; Judge, Thoresen, Bono, & Patton, 2001; Sturman, Cheramie, & Cashen, 2005) and affective organizational commitment (Mathieu & Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). Job complexity was assessed by the 5-point job complexity scale, ranging from $1 = \text{strongly disagree}$ to $5 = \text{strongly agree}$ (alpha .83), which is part of the Work Design Questionnaire (Morgeson & Humphrey, 2006). Job satisfaction was measured with six items selected from the original 18-item index developed by Brayfield and Rothe (1951). The validity and reliability of this 6-item, global satisfaction index have been demonstrated in previous studies (Agho, Price, & Mueller, 1992; Brooke Jr, Russell, & Price, 1988). The participants expressed their degree of agreement with the given statements on a 5-point scale ranging from $1 = \text{strongly disagree}$ to $5 = \text{strongly agree}$ (alpha .89).

**Level of Analysis**

In the present study, we treated the bundles of HR practices as group level variables because we were interested in the effects of organizational practices on the business units as a whole. It has been argued that HR practices consist of actual programs, processes, and techniques that are operationalized in the unit (e.g., Boswell, et al., 2008; Kehoe & Wright, 2010; Lepak, et al., 2006). As a consequence of this translation process from HR policies to practices, measurement error accumulates at least in part due to obvious variations in practices across the organization (Gerhart, et al., 2000; Huselid & Becker, 2000). We focused on the lowest level of abstraction in the HR system (Becker & Gerhart, 1996; Boswell, et al.,
2008; Colbert, 2004), i.e. the employees’ perceived HR practices, which were aggregated on the business unit level. While we were interested in HR practices on the business unit level, we focused on in-role behavior, and affective organizational commitment on the individual level, thus investigating each as an individual-level variable. Furthermore, we investigated age with its main and moderating effects on the individual level, on the business unit level, as well as between these two levels. Our research model thus constitutes a cross-level model because we examine the relationships between HR practices, differences in average age between business units, age differences between individuals within business units and performance behaviors as well as organizational commitment, and cross-level relationships of age and HR practices.

**Analysis Strategy**

Our research design constitutes a cross-level model. Consequently, we used hierarchical linear modeling (HLM) to test our hypotheses (Raudenbush, Bryk, Yuk, & Congdon, 2004). HLM allows conducting group mean analyses that make appropriate adjustments for group size differences and accounts for dependence among individuals (Hofmann, 1997; Raudenbush, et al., 2004). We used two-level HLM models to examine main as well as interaction effects of employees age and bundles of HR practices on workers’ in-role behavior and affective organizational commitment. For each of the dependent variables, we calculated a series of multilevel models to assess the appropriateness of the modeled predictors, and hypothesized conditional effects. In order to statistically test for differences of the model’s deviances, we estimated parameters by applying full maximum likelihood technique, since the models’ fixed parts altered (Kreft & De Leeuw, 1998). Following Bauer and Curran (2005), we decomposed or “probed” the conditional effects to better understand the structure of the
relations (Aiken & West, 1991). To plot the conditional effects, we followed Preacher, Curran, and Bauer (2006).

In the present study, HR practices constitute level-2 (i.e., business unit-level) variables compared to all outcome variables, which are treated as level-1 (i.e., individual-level) variables, and age, which is introduced into the multilevel models on both the levels. In order to adequately decompose between-individual variance and between-business unit variance, age was group-centered on the individual level and grand-mean centered on the business unit level of the regression equation (Enders & Tofighi, 2007; Kreft, de Leeuw, & Aiken, 1995). All considered control variables as well as business unit-level variables were grand-mean centered. Before testing the hypotheses, we investigated whether multilevel analyses were in fact appropriate by examining the within and between-business unit variance in the variables (e.g., Bliese & Halverson, 1998). As shown in Table 1, the results indicated that a considerable proportion of the total variance in the variables was within the business units, ranging from 13.3% to 38.9%. This evidence of within-business unit variance supported proceeding with HLM, as there were both within and between-business unit variances to explain.

Insert Table 1 about here

Results

The means, standard deviations, intercorrelations, and internal consistency reliabilities of the individual and business unit-level variables are presented in Table 2. Two results are noteworthy. First, although the overall correlation between growth-enhancing and maintenance-enhancing HR practices achieves statistical significance ($r = .18, p < .01$) on the individual level, the relation between these two bundles on the between-business unit level is not significant ($r = -.21, p = .10$). This finding supports our conceptual proceeding generating
growth and maintenance-enhancing bundles of HR practices on the business unit-level.

Second, as expected, job complexity and job satisfaction are substantially related with the criterion variables of in-role behavior ($r = -.23, p < .01; r = .23, p < .01$) and affective organizational commitment ($r = -.11, p < .01; r = .54, p < .01$), emphasizing the importance of controlling for these in all subsequent analyses. The HLM results testing the hypotheses are presented in Tables 3.

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**Main Effects**

To test the main effects predicted in Hypotheses 1, 2, and 3, we conducted a series of four regressions in HLM, including the two bundles of HR practices on level 2 that predicted the according criterion variable. Hypothesis 1 predicted that one of the two bundles, i.e. growth-enhancing HR practices, would be positively related to affective organizational commitment. Given that the two bundles may not be independent of each other, we calculated all regressions including both bundles. Models 4 and 5, displayed in Table 3, provide the main effects of the bundles of HR practices on affective organizational commitment. As a result, both in model 4, which controls for job complexity and job satisfaction, and in model 5, which additionally controls for age on the individual and business unit-level, the bundle of growth-enhancing HR practices has a significant impact on the criterion. In addition, the controls job satisfaction and age also significantly predict affective organizational commitment. Maintenance-enhancing HR practices and job complexity have no relation with the criterion. A test comparing the model fit provides that model 5, although less parsimonious, fits the data significantly better. Hypothesis 1 is supported.

Hypotheses 2 and 3 predicted positive relations of growth-enhancing practices (H2) and maintenance-enhancing practices (H3) with in-role behavior. Analogous to the preceding with
respect to the criterion organizational commitment, model 1 and 2 provide the results of the regressions predicting in-role behavior. Model 1, Controlling for job complexity and job satisfaction, which both predict in-role behavior significantly, provides a significant relation between the bundle of maintenance-enhancing practices and in-role behavior, whereas no such link can be noted for growth-enhancing practices. However, additionally introducing age into the regression equation, which also significantly predicts the criterion on the individual-level and, important to notice, significantly improves the model fit, dilutes the formerly substantial relation to a non-significant level. In the more appropriate model, that is model 2, neither growth-enhancing nor maintenance-enhancing practices significantly predict in-role behavior. Thus, Hypotheses 2 and 3 are not supported.

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**Moderation Effects**

To test the hypothesized moderation effects, we entered the interaction terms into the regression in a third and final step, which is displayed in models 3 and 6 of Table 3. Tests that statistically compared the model fits with those of more parsimonious models revealed that the models comprising interaction terms fit data significantly better. Hypothesis 4 stated that age would moderate the relationship between maintenance-enhancing HR practices and organizational commitment, such that the relationship would be weaker with increasing employee age. In the regression model predicting affective organizational commitment, i.e. model 6, the cross-level interaction between maintenance-enhancing HR practices and age on the individual-level was negative and significant. No such effect could be noticed for the interaction between maintenance-enhancing practices and business unit-level age; that is, the average age of the business units. Figure 2 depicts the significant moderation effect,
demonstrating that maintenance-enhancing HR practices relate more negatively to older employees’ organizational commitment, thus supporting Hypothesis 4.

Hypothesis 5 stated that age would moderate the relationship between maintenance-enhancing HR practices and in-role behavior such that it would be weaker with increasing employee age. In the regression modeling in-role behavior, i.e. model 3, both the relevant interaction terms, the cross-level interaction between maintenance-enhancing HR practices and individual-level age as well as the interaction restricted to the business unit-level were significant and negative. Figure 3 depicts the significant cross-level moderation effect, displaying that maintenance-enhancing HR practices relate more negatively to older employees’ in-role behavior. Figure 4 shows the significant business unit-level moderation, revealing that maintenance-enhancing HR practices correlate with in-role behavior also more negatively for business units of higher average age. Hypothesis 5 is thus supported.

Discussion

Major structural changes are currently reshaping organizations’ workforces across the developed world and will provide organizations with continuously rising personnel mean age and growing shares of older employees for years to come. Recognizing resulting challenges and combining SHRM’s macro perspective with the micro views of industrial-organizational and lifespan developmental psychology, this study provides important contributions to theory
development and to the practical management of human resources. Drawing on social exchange theory (Blau, 1964; Cropanzano & Mitchell, 2005), affective events theory (Weiss & Cropanzano, 1996), and age-related differences in emotion regulation processes (Carstensen, et al., 2003; Gross, et al., 1997) our findings demonstrate the differentiated and age-contingent impact of growth and maintenance-enhancing bundles of HR practices. In particular, irrespective of individuals’ age, growth-enhancing HR practices predict employees’ affective organizational commitment but have no impact on in-role behavior. In contrast, maintenance-enhancing HR practices unfold their influence with respect to in-role behavior and affective organizational commitment, however, contingent on individuals’ age. Younger employees’ in-role behavior and organizational commitment are significantly associated with maintenance-enhancing practices. Nonetheless, no such associations can be accounted for with regard to older employees. These results help improve modeling the causal chain connecting HR systems with organizational performance and offer rationales for an informed orchestration of arrays of human resource practices to form HR systems that cater to the diverse and changing needs of organizations’ personnel. Following, we successively address three important contributions of this study’s findings.

First, the results support the notion of the imperative centrality of workforces’ perceptions for the HR system—organizational outcome link that has previously been emphasized (Bowen & Ostroff, 2004; Wright & Boswell, 2002). Workers perceive their work environment and conditions, process these by, for example, making appraisals (e.g., Wayne, et al., 1997) or attributions (e.g., Nishii, et al., 2008), and eventually exhibit work-related outcomes such as attitudes and behaviors (Rhoades & Eisenberger, 2002; Zhao, Wayne, Glibkowski, & Bravo, 2007). The resulting job performance and organizational commitment constitute critical mediators to ultimately achieve organizational performance (Gong, et al., 2009; Podsakoff, Ahearne, & MacKenzie, 1997). However, as the results of this study
propose, these processes do not occur uniformly and invariably but vary with workers’ age. Unfortunately, the bulk of approaches to predict these individual-level work outcomes has separately focused on the influence of either age (Ng & Feldman, 2008, 2010) or organizational inducements (Rhoades & Eisenberger, 2002; Zhao, et al., 2007; for few exceptions see Bal et al., 2008; Kooij et al., 2010). Extending these findings, the present results provide insights into the dynamics between these two predictors in that a certain type of HR practices, e.g. maintenance-enhancing practices, more efficaciously function with respect to particular employee groups such as younger workers. In more detail, growth-enhancing practices appear to support workers of all age groups. In contrast, maintenance-enhancing practices primarily advance younger employees’ contributions to organizational performance, which are mediated by their in-role behaviors and affective commitment.

Considering these findings, the present study suggests that theoretical models striving to accurately predict and convincingly explain organizational effectiveness not only need to take HR systems’ horizontal fit, i.e. the appropriate alignment of all operant HR practices, and their vertical fit, i.e. their match with an organization’s strategy and goals, into account. Rather, organizations’ human resources specifics need to be incorporated into according models, as the effects of deployed HR systems vary with the workforce’s age structure. An informed integration of the described age-related individual-level processes advance the theoretical understanding of organizational effectiveness in that they provide the basis to appropriately differentiate alternative configurations of HR systems contingent on workforce characteristics. In line with recent appeals calling to overcome disparities between macro and micro approaches in management research (Joshi, Liao, & Roh, 2011; Mathieu & Chen, 2011; Molloy, et al., 2011), our results confirm the important benefit of the integration of individual-level processes, i.e. workers’ perceptions of HR practices, into organizational-level models that focus on the association between HR systems and firm performance. This holds
true with respect to the increasing age of strategically important, thus more valuable, key personnel (Becker & Huselid, 2006) and, even more so, with respect to the entire organization’s workforce.

Second, social exchange theory has emerged to become an important concept in social psychology (Cook & Rice, 2006) and highly influential for explaining workforce behavior (Cropanzano & Mitchell, 2005). The examination of possible moderators impinging on exchanges in social relationships in an organizational context has, nevertheless, hitherto been limited to specific inter-individual differences such as culture (e.g., Buchan, Croson, & Dawes, 2002) and exchange ideology (e.g., Eisenberger, et al., 2001; Witt, Kacmar, Carlson, & Zivnuska, 2002). Intra-individual age-related changes, such as major shifts in an individual’s socioemotional motivation (e.g., Carstensen, et al., 1999), have been neglected to explain workforce outcomes, despite the substantial evidence for according developmental dynamics (e.g., Carstensen, 2006; Heckhausen, et al., 2010). The results of this study suggest that social exchange processes are, at least in part, contingent on such age-related alterations. More precisely, the positive effects of maintenance-enhancing HR practices on workers’ affective commitment, as well as in-role performance seem to be limited to younger age groups. As workers grow older, they experience, on average, changes in their pattern of emotion regulation, which, in turn, impair the effects of job security, flexible working hours, and compensation level on work-related attitudes and behaviors. We believe that social exchange theory’s advancement can benefit by considering and incorporating these age-related mechanisms, as they contribute to more accurate predictions.

Third, in their efforts to ensure organizational effectiveness, HR managers are increasingly challenged by labor market constraints entailing threats of knowledge loss and talent shortages (e.g., Strack, Baier, & Fahlander, 2008). Declining rates of younger workers and rising numbers of older workers change organizations’ human resources foundations and
raise questions concerning the appropriateness of existing HR systems. For example, to sustain organization’s competitive ability, HR practices such as selection, training, performance management, and compensation are seen to need readjustments (Schuler, Jackson, & Tarique, 2011). This study’s results help HR managers differentiate groups of HR practices in terms of their ability to consider demands emerging from the changing workforce’s age structure. On the one hand, the present findings suggest that growth-enhancing practices support workers’ affective organizational commitment irrespective of individuals’ age. Particularly, HR practices such as training, internal promotion, selection, and participation not only support younger employees, but just as well their older colleagues. These findings are contrary to patterns of deploying HR practices that can be portrayed by a reduction in providing older workers with growth-enhancing HR practices, such as selection, training, promotion, and participation (e.g., Maurer, 2007; Maurer & Weiss, 2010; Posthuma & Campion, 2009). Such age-related cutbacks in considering older employees for selection decisions, training programs, and promoting in their career are oftentimes based on pervasive negative age stereotypes in work context, including beliefs that older workers are characterized by low productivity, decreased learning abilities, and resistance to change (Posthuma & Campion, 2009). The results of the present study, however, suggest that such growth-enhancing HR practices support older individuals’ affective organizational commitment and, in turn, organizational performance. On the other hand, maintenance-enhancing practices such as job security, flexible working hours, and compensation level reveal an age-related pattern limiting their supporting effects to younger workers’ organizational commitment and in-role behavior.

In sum, this study suggests that the overall mixture of growth-enhancing and maintenance-enhancing HR practices provides opportunities to adapt organizations’ HR systems to changing workforce structures. These findings provide practitioners with
guidelines to develop HR systems that take the workforce’s age structure into account. For example, an emphasis of growth-enhancing practices in the organizations HR system promises to positively affect aging workforces’ commitment and, thus, organizational performance.

Limitations

This study has some limitations. It is important to recognize that inferences with respect to causality of the asserted relations are limited. The cross-sectional research design constrains the quality of the associations to theoretical argumentation. Future research applying experimental designs that longitudinally gather data is needed to strengthen our argumentations.

Further, our conceptualization of HR bundles heuristically depicts workers’ perceptions of organizational inducements, particularly paying attention to developmental dynamics. The separate contributions of Each practice to the bundle of either growth-enhancing or maintenance-enhancing HR practices, or even both, may indeed vary significantly. In addition, the application of HR practices varies by industry (e.g., Datta, Guthrie, & Wright, 2005; Toh, Morgeson, & Campion, 2008). Finally, the perception of singular HR practices may substantially co-vary with labor market culture and legal frame. For example, “… a practice such as an employee grievance procedure, which Huselid (1995) considers a high-performance indicator in the US, is simply a legal requirement in countries such as the UK and therefore is hardly something that differentiates superior performers.” (Boxall & Macky, 2009, p. 6). Hence, further research is needed to support the appropriateness of this study’s HR bundle conceptualization and its generalizability across industries, pursued strategies, and labor markets.
Conclusion

This study offers evidence for the age-contingent perception and effectiveness of HR practices that form an organization’s HR system in that growth-enhancing and maintenance-enhancing bundles of HR practices differentially impact individuals’ affective organizational commitment and in-role behaviors. We sought to contribute to management and lifespan literatures by combining macro and micro-level perspectives to a multilevel approach. Our findings suggest that an informed HR system configuration that considers age-related workforce structures will contribute to improve individual-level work outcomes and, eventually, organizational performance.
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Appendix A

Human resource practices

**Compensation level**

1. My compensation/rewards are based on the market wage (going rate).
2. Compensation/rewards are designed to ensure equity with peers.
3. My compensation/rewards place a premium on my industry experience.

**Employment security**

1. I can expect to stay in the organizations for as long as I wish.
2. In this job it is very difficult to dismiss me.
3. I am almost guaranteed job security in this job.
4. If the firm were facing economic problems, in this job I would be the last to get cut.

**Incentive compensation**

2. My compensation/rewards have a group-based incentive component (gainsharing, etc.).
3. My compensation/rewards have an individual incentive/bonus component
4. My compensation/rewards include an extensive benefits package.

**Internal promotion**

1. In this job I have clear career paths within the organization.
2. In this job I have very little future within this organization (RC).
3. My career aspirations within the company are known by my immediate supervisors.
4. If I desire promotion in this job there are more than one potential positions I could be promoted to.

---

1 All items adapted from Lepak and Snell (2002)
2 All items adapted from Delery and Doty (1996)
Participation programs².

1. In this job I am allowed to make many decisions.
2. In this job I am often asked by my supervisor to participate in decisions.
3. I am provided the opportunity to suggest improvements in the way things are done.
4. Superiors keep open communications with me.

Performance appraisal¹.

1. Performance appraisals for employees are based on objective, quantifiable results.
2. Performance appraisals assess the quality of my output.
3. Performance appraisals assess the quantity of my output.
4. Performance appraisals measure my productivity and efficiency.

Selectivity¹.

1. The selection process for employees in this job assesses their industry knowledge and experience.
2. The selection process for employees focuses on selecting the best all around candidate, regardless of the specific job.
3. The selection process for employees in this job involves screening many job candidates.
4. The selection process for employees in this job is comprehensive (uses interviews, tests, etc.).

Training².

1. In this job I am provided extensive training programs.
2. In this job I normally go through training programs every few years.
3. There are formal training programs to teach new hires the skills they need to perform their jobs.
4. I am offered formal training programs in order to increase my promotability in this organization.

¹ All items adapted from Lepak and Snell (2002)
² All items adapted from Delery and Doty (1996)
Flexible working hours.

1. I can arrange my work schedule flexibly.
2. Start and end of work are largely determined by myself.

Grievance procedures.

1. In my job I have a reasonable and fair complaint process.³
2. If employees complain circumstances are usually resolved.

Information sharing.

In this job I am provided many kinds of information (e.g., a newsletters or regular meetings) on a wide variety of topics relevant to the business and its operations.⁴

³ Item adapted from Wright et al. (2005)
⁴ Item adapted from Becker and Huselid (1998)
Appendix B

The regression equation of the HLM2 model comprising moderation effects:

Level 1 model

\[ Y = \beta_0 + \beta_1 \cdot JC + \beta_2 \cdot JS + \beta_3 \cdot AGE_I + r \]

Level 2 model

\[ \beta_0 = \gamma_{00} + \gamma_{01} \cdot GWT + \gamma_{02} \cdot MTC + \gamma_{03} \cdot AGE_{BU} + \gamma_{04} \cdot AGE_{BU} \cdot GWT + \gamma_{05} \cdot AGE_{BU} \cdot MTC + u_0 \]

\[ \beta_1 = \gamma_{10} \]

\[ \beta_2 = \gamma_{20} \]

\[ \beta_3 = \gamma_{30} + \gamma_{31} \cdot GWT + \gamma_{32} \cdot MTC \]

Note.

JC: job complexity (grand mean centered)

JS: job satisfaction (grand mean centered)

AGE_I: individual chronological age (group mean centered)

GWT: growth-enhancing HR practices (grand mean centered)

MTC: maintenance-enhancing HR practices (grand mean centered)

AGE_{BU}: chronological age (business unit average) (grand mean centered)

AGE_{BU} \cdot GWT: level 2 interaction term (uncentered)

AGE_{BU} \cdot MTC: level 2 interaction term (uncentered)
### Table 1.

**Variance Components of Null Models for Bundles of HR Practices (Growth-Enhancing and Maintenance-Enhancing), Affective Organizational Commitment, and In-Role Behavior**

| Variable                              | Within-business unit variance (level-1) | Between-business unit variance (level-2) | % variability between business units (level 2)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth-Enhancing HR practices</td>
<td>0.245</td>
<td>0.088 **</td>
<td>26.4%</td>
</tr>
<tr>
<td>Maintenance-Enhancing HR practices</td>
<td>0.359</td>
<td>0.229 **</td>
<td>38.9%</td>
</tr>
<tr>
<td>Affective Organizational Commitment</td>
<td>0.758</td>
<td>0.116 **</td>
<td>13.3%</td>
</tr>
<tr>
<td>In-Role Behavior</td>
<td>0.320</td>
<td>0.072 **</td>
<td>18.4%</td>
</tr>
<tr>
<td>Age</td>
<td>0.353</td>
<td>0.634 **</td>
<td>64.2%</td>
</tr>
</tbody>
</table>

*Note.* Percentage of variability between business units was computed by dividing the between-business unit variance by the total (between-individual + between-business unit) variance.

*a* equals ICC(1) (Bliese & Halverson, 1998)

* *p < .05  ** *p < .01
Table 2.

Means, Standard Deviations (SD), and Intercorrelations between Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business unit variables</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Growth-Enh. HR practices</td>
<td>3.18</td>
<td>.56</td>
<td>(.88)</td>
<td>- .21</td>
<td>.11</td>
<td>.45**</td>
<td>.52**</td>
<td>.14</td>
<td>- .28*</td>
</tr>
<tr>
<td>2. Maintenance-Enh. HR practices</td>
<td>3.25</td>
<td>.77</td>
<td>.18**</td>
<td>(.77)</td>
<td>- .42**</td>
<td>.04</td>
<td>.03</td>
<td>.17</td>
<td>.40**</td>
</tr>
<tr>
<td>Individual level variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Job complexity</td>
<td>2.13</td>
<td>.88</td>
<td>.03</td>
<td>- .17**</td>
<td>(.85)</td>
<td>- .37**</td>
<td>- .12</td>
<td>- .40**</td>
<td>- .36**</td>
</tr>
<tr>
<td>4. Job satisfaction</td>
<td>3.67</td>
<td>.77</td>
<td>.41**</td>
<td>.23**</td>
<td>- .23**</td>
<td>(.88)</td>
<td>.65**</td>
<td>.52**</td>
<td>.23</td>
</tr>
<tr>
<td>5. Affective organizational commitment</td>
<td>3.49</td>
<td>.93</td>
<td>.48**</td>
<td>.28**</td>
<td>- .11**</td>
<td>.54**</td>
<td>(.92)</td>
<td>.23</td>
<td>.18</td>
</tr>
<tr>
<td>6. In-role behavior</td>
<td>4.35</td>
<td>.63</td>
<td>.07</td>
<td>.18**</td>
<td>- .23**</td>
<td>.23**</td>
<td>.10*</td>
<td>(.90)</td>
<td>.26**</td>
</tr>
<tr>
<td>7. Age</td>
<td>41.42</td>
<td>11.14</td>
<td>- .09*</td>
<td>.36**</td>
<td>- .38**</td>
<td>.27**</td>
<td>.23**</td>
<td>.13**</td>
<td>--</td>
</tr>
</tbody>
</table>

*Note.* Correlations above the diagonal represent between-business unit (aggregated) scores (level 2, n = 64). Correlations below the diagonal represent between-individual scores (level 1, n = 600). Parenthetical values are reliabilities.

* p < .05  ** p < .01
<table>
<thead>
<tr>
<th>Variable</th>
<th>In-role behavior</th>
<th>Affective organizational commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Intercept</td>
<td>$\gamma_{00}$</td>
<td>0.06</td>
</tr>
<tr>
<td>Business unit variables (level 2)</td>
<td></td>
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</tr>
<tr>
<td>Growth-enh. HR practices$^a$</td>
<td>$\gamma_{01}$</td>
<td>0.07</td>
</tr>
<tr>
<td>Maintenance-enh. HR practices$^a$</td>
<td>$\gamma_{02}$</td>
<td>0.20 $^*$</td>
</tr>
<tr>
<td>Age$^a$</td>
<td>$\gamma_{03}$</td>
<td>0.11</td>
</tr>
<tr>
<td>Growth-enh. HR practices x age</td>
<td>$\gamma_{04}$</td>
<td>-0.15</td>
</tr>
<tr>
<td>Maintenance-enh. HR practices x age</td>
<td>$\gamma_{05}$</td>
<td>-0.15</td>
</tr>
<tr>
<td>Individual-level variables (level 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job complexity$^a$</td>
<td>$\gamma_{10}$</td>
<td>-0.12 $^{**}$</td>
</tr>
<tr>
<td>Job satisfaction$^a$</td>
<td>$\gamma_{20}$</td>
<td>0.16 $^{**}$</td>
</tr>
<tr>
<td>Age$^b$</td>
<td>$\gamma_{30}$</td>
<td>-0.10 $^+$</td>
</tr>
<tr>
<td>Cross-level interaction</td>
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<td></td>
</tr>
<tr>
<td>Growth-enh. HR practices (L2) x age (L1)</td>
<td>$\gamma_{31}$</td>
<td>0.09</td>
</tr>
<tr>
<td>Maintenance-enh. HR practices (L2) x age (L1)</td>
<td>$\gamma_{32}$</td>
<td>-0.18 $^*$</td>
</tr>
<tr>
<td>Degrees of freedom - level 1</td>
<td>560</td>
<td>506</td>
</tr>
<tr>
<td>Degrees of freedom - level 2</td>
<td>58</td>
<td>57</td>
</tr>
<tr>
<td>Deviance</td>
<td>1525</td>
<td>1382</td>
</tr>
<tr>
<td>Number of estimated parameters</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Chi-square$^c$</td>
<td>--</td>
<td>143.5 $^{**}$</td>
</tr>
</tbody>
</table>

*Note.* All coefficients are standardized. $^a$ grand-mean centered $^b$ group-mean centered $^c$ result of model comparison test comparing to more parsimonious model $^+$ p < .10 $^*$ p < .05 $^{**}$ p < .01
Figure 1. Hypothesized research model.
Figure 2. Maintenance-Enhancing HR Practices x Individual-Level Age effect on affective organizational behavior.
Figure 3. Maintenance-Enhancing HR Practices × Individual-Level Age effect on in-role behavior.
Figure 4. Maintenance-Enhancing HR Practices × Business Unit Average Age effect on in-role behavior.
Chapter 3

From HR Management to Work-Related Attitudes:
The Mediating Role of Future Time Perspective

I am particularly grateful to Torsten Biemann and Sven Voelpel for co-authoring this manuscript.
Abstract

This paper examines the role of employees’ future time perspective (FTP) for the association between HR systems and work-related attitudes. Drawing on socioemotional selectivity theory (Carstensen, Isaacowitz, & Charles, 1999) and emotion regulation processes, indirect effects of bundles of HR practices on job satisfaction (JS) and organizational commitment (OC) through FTP were hypothesized and empirically tested. The results of a multilevel study comprising 1,540 employees of 75 business units provide evidence for (a) direct effects of HR practices on workforce’s FTP and (b) indirect effects demonstrating the mediation of bundles of HR practices on JS and OC through FTP.

Key Words
- strategic human resource management
- future time perspective
- job satisfaction
- organizational commitment
- multilevel
Introduction

In nearly all countries of the developed world workforces are aging rapidly. The median age of the US labor force, for instance, increased from 35.9 in 1988 to 41.2 in 2008 (Toossi, 2009). In Germany, the share of workers aged 50 and older is projected to rise from 25.8% of the total labor force in 2005 to 34.9% in 2020 (Statistische Ämter des Bundes und der Länder, 2009), while the percentage of the Japanese labor force aged 55 years and above will rise from 26.8% in 2006 to 33.3% in 2030 (Kyogoku, 2008). Primarily due to the aging of the baby-boom generation born between 1946 to 1964 and the decline or variability of birthrates in subsequent years labor markets will enduringly supply growing proportions of older employees (Kyogoku, 2008; Statistische Ämter des Bundes und der Länder, 2009; Toossi, 2009). Owing to such structurally transforming environments, organizations will be experiencing changes of their human resource (HR) situations. For years to come, workforces will consequently, on average, be composed of larger proportions of older workers. Recent findings in the field of lifespan developmental psychology provide strong support for developmental dynamics that impinge on basic human properties such as cognitive abilities and personality (Baltes, Lindenberger, & Staudinger, 2006; Baltes, Staudinger, & Lindenberger, 1999). Resulting age-related changes, in turn, are seen to be of fundamental relevance in work context (e.g., Kanfer & Ackerman, 2004; Kooij, Jansen, Dikkers, & De Lange, 2010; Warr, 2001). In line, research focusing on the links between age and work outcomes such as work motivation, work-related attitudes, and performance behaviors has gained attention (Birren & Schaie, 2006; Czaja & Sharit, 2009; Shultz & Adams, 2007). Acknowledging that employees constitute human assets (Coff, 1997), organizations’ competitive ability is affected directly by the labor markets’ changing structures (Barney, 1991, 1996; Pfeffer, 1994; Wright, McMahan, & McWilliams, 1994).
Given that individuals’ aging is associated with complex patterns of basic psychological alterations and transformations, HR management’s attention to this issue is necessitated (Jackson & Schuler, 1995; Lepak & Shaw, 2008; McMahan, Bell, & Virick, 1998).

Previously, the impact of HR systems on organizational performance has been documented by an impressive body of research (e.g., Arthur, 1992, 1994; Becker & Gerhart, 1996; Combs, Liu, Hall, & Ketchen, 2006; Delery & Doty, 1996; Dyer & Reeves, 1995; Guthrie, 2001; Huselid, 1995; Ichniowski, Shaw, & Prennushi, 1997; MacDuffie, 1995; Wright, Gardner, Moynihan, & Allen, 2005; Youndt, Snell, Dean, & Lepak, 1996)—also referred to as strategic or macro research (Wright & Boswell, 2002). More recently, scholars in the field of strategic human resource management (SHRM) have complemented empirical evidence of the involvement of mediating processes in the link between HR systems and organizational performance. In particular, the degree of social exchange in organizations (Takeuchi, Lepak, Wang, & Takeuchi, 2007), organizations’ internal social structure (Evans & Davis, 2005), but also work-related attitudes such as job satisfaction (Macky & Boxall, 2007; Nishii, Lepak, & Schneider, 2008) and organizational commitment (Gong, Law, Chang, & Xin, 2009; Kehoe & Wright, 2010; Macky & Boxall, 2007; Nishii, et al., 2008) have been shown to mediate the effects of HR practices. Latter findings emphasize the involvement of individual-level processes in the course of HR practices affecting organizational outcomes, correspondingly referred to as micro research (Wright & Boswell, 2002). However, research in HR management has largely ignored age-contingent differences of employees’ requisites that become more relevant with the workforces’ global aging (see for exceptions: Finegold, Mohrman, & Spreitzer, 2002; Kooij, et al., 2010) and has called for a more differentiated development of HR management (Becker & Huselid, 2006; Lepak & Shaw, 2008). HR scholars and practitioners are challenged to develop rationales to assure organizational effectiveness that regard age-related changes in work context.
Against this backdrop, the current study is directed to achieve two goals. First, we seek to develop rationales for an age-differentiated deployment of HR programs allowing for adjustments with regard to workers’ altering age-characteristic demands. Second, we aim to better understand the processes that are involved in the association between HR practices and individual work-related attitudes. In light of these objectives we draw on socioemotional selectivity theory (SST; Carstensen, 1995; Carstensen, 2006; Carstensen, et al., 1999) and propose to incorporate future time perspective (FTP; Cate & John, 2007; Husman & Shell, 2008; Lang & Carstensen, 2002), which exhibits qualities closely related to individuals’ calendar age, as a mediator in the association between HR systems and work-related attitudes. Further, we argue that organizations can actively govern their workers’ future time perspective by an informed insertion of various HR practices. In other words, we contend that the association between HR practices, job satisfaction, and organizational commitment is mediated by future time perspective.

We begin with a review of the extant research to substantiate future time perspective’s significance, paying particular attention to its role in organizational research. Following, we consider FTP’s antecedents and consequences in work context, i.e. its relationship with HR practices and work-related attitudes. Building on the resulting hypotheses we present empirical findings reflecting the multilevel structure of organizational settings. We conclude by discussing the results, the theoretical contributions, future research directions, and practical implications.

**Theoretical Framework and Hypotheses**

**Future Time Perspective**

The aging of populations and their subgroups of interest such as the general labor force or distinct organizations’ workforces are usually detailed in terms of aggregated individuals’ age
(Day, 1996; Kyogoku, 2008; Statistische Ämter des Bundes und der Länder, 2009; Toossi, 2009). In particular, states, progression, and comparisons of personnel situations are delineated as median or mean age or proportions of various age groups (see for an exception: Shoven, 2007). In this regard, age is consistently indicated in terms of calendar time that has passed since individuals’ births. Calendar or clock time seizes time in a natural scientific sense as an absolute, linear, and continuous entity (cf., Ancona, Goodman, Lawrence, & Tushman, 2001). Age reckoned on the basis of the respective conceptualization of time, i.e. objective time, has the invaluable advantage to provide fixed reference points that permit to render relations in at least two different ways: First, the states of age as indicators of distinct units allow to be compared to one another, for example, the average age of organization A’s workforce is below or above that of organization B. Second, the progression of age in the course of time becomes observable as an indicator of the same entity, e.g. the aging of organization A’s workforce between the years 2001 and 2011.

Although supplying helpful information on structural aspects of an organization’s personnel, thus on the organizational level, chronological age has been shown to be, at best, a moderate predictor for various work-related outcomes on the individual level such as job satisfaction (Cleveland & Shore, 1992; Cunningham & MacGregor, 2000; Glisson & Durick, 1988; Kirkman & Shapiro, 2001; Ng & Feldman, 2010; Oswald & Warr, 1996; Rhodes, 1983; Schwoerer & May, 1996; Spreitzer, Kizilos, & Nason, 1997), organizational commitment (Cohen, 1993; Finegold, et al., 2002; Ng & Feldman, 2010; Rhodes, 1983), and performance indicators such as in-role behavior, organizational citizenship behaviors, absenteeism, and tardiness (McEvoy & Cascio, 1989; Ng & Feldman, 2008; Waldman & Avolio, 1986). Furthermore, calendar age per se is not considered a causal factor but primarily constitutes a proxy that is, indeed, easily available in organizational research (e.g., Sturman, 2003). Chronological age only vicariously bundles individual states of physical and mental abilities,
(job) knowledge, experience, etc., which in turn all possess intertwined temporal dynamics (Baltes, et al., 2006). Instead of constricting HR management research on chronological age, we propose to broaden views and focus on individuals’ temporal perspective, which captures central shares of individual age-related changes in work context and simultaneously provides a basis for the explanation of the involved mechanisms.

In contrast to the notion of objective time, which chronological age is based upon, various conceptual juxtapositions gradually emphasize the role of socially constructed time, hence subjective time (e.g., Ancona, et al., 2001; Butler, 1995; George & Jones, 2000; McGrath & Tschan, 2004). As opposed to objective time, latter approaches take the individuals’ perception of the passage of time into account. From this point of view, time is experienced in relation to the circumstances under which individuals live. For example, McGrath and colleagues (McGrath & Kelly, 1986; McGrath & Tschan, 2004) point to situational contexts such as persons’ lifespan or stages of developmental processes to which the reckoning of time relates. McGrath and Tschan (2004) emphasize that time is in fact subjectively experienced by humans in their lives and maintain that lived time is “epochal (i.e. some moments in time are more significant than, hence different from, other moments)” (p. 18). Accordingly, individuals attribute meaning to all special instants of time with respect to their personal experience, for example, in terms of historical or religious beliefs, their life courses, and the practices of a particular institution such as the organization they work for. Indeed, employees’ temporal conceptions are likely to be related to the surrounding conditions in work context.

The subjective perception of time constitutes the grounds for the temporal orientation that individuals hold when they relate to past experiences, present occurrences, and future expectations (Ancona, et al., 2001; Bluedorn & Denhardt, 1988; McGrath & Tschan, 2004). People reveal differences with regards to their abilities or preferences of handling temporal
perspectives. On the one hand, research has demonstrated *inter*-individual differences supporting that people have diverse trait-like temporal orientations that relate to their present attitudes and behavior (e.g., Shipp, Edwards, & Lambert, 2009; Zimbardo & Boyd, 1999; Zimbardo, Keough, & Boyd, 1997). Shipp and colleagues (2009), for instance, found that job satisfaction and organizational commitment depend on the level of future focus as individuals with high future-focus react differently to future trajectories of job characteristics as compared to those who focus less on the future. In line, the preferred planning horizon of strategically planning actors in organizational context is associated with individuals’ future orientation that, as conceptualized by Das (1987), may differ in terms of the relative cognitive dominance of the near versus the distant future. Das (1987) demonstrated that individuals with distant future time perspective preferred longer planning horizons than their colleagues with near future time perspective. In principle, a strong and long future orientation “is associated with higher levels of focused, goal-directed thoughts and actions, and a more thorough consideration of the future consequences of one’s own and others’ action” (McGrath & Tschan, 2004, p. 43).

On the other hand, and more relevant with regards to rapidly aging workforces, research findings also point out *intra*-individual differences of people’s temporal perspective. Individuals vary in their subjective experience of future time and its perceptual, attitudinal, and behavioral correlates (Carstensen, 2006; Isaacowitz, Toner, & Neupert, 2009; Lennings, 2000). As persons grow older, they incrementally change their relationship towards times ahead and perceive their own future as increasingly limited (Carstensen, et al., 1999; Fingerman & Perlmutter, 1995; Fung, Lai, & Ng, 2001; Lang & Carstensen, 2002; Lomranz, Friedman, Gitter, & Shmotkin, 1985; Rakowski, 1979). Young people typically view future time as expansive and perceive a seemingly endless temporal horizon. In contrast, time horizons are experienced as gradually more constrained as individuals age (cf., Charles &
Carstensen, 2010). According to socioemotional selectivity theory (SST), these changing future time perceptions entail a general shift in motivational priorities (Carstensen, 1995, 2006; Carstensen, et al., 1999; Lang & Carstensen, 2002): When future time is sensed as expansive, new experiences hold a high priority, goals focus on acquiring knowledge and information for future possibilities, and own skills are advanced to prepare for an unknown future. On the contrary, as time becomes limited, priorities change towards an emphasis of regulating emotional states to optimize psychological well-being. The meaning of one’s own allocation of time and the attainment of a positive emotional status, for example by enhancing familiar social contacts, become more important.

However, although substantially correlated with chronological age, i.e. time since birth, the trajectory of future time perspective is by no means merely the result of the passage of objective time. Rather, as individuals age, remaining time, i.e. time to death, becomes more salient and thus essential for current motivation, cognition, and emotion (Carstensen, 2006; Carstensen, et al., 1999). For example, a series of studies demonstrated that samples of individuals of the same age but with varying status of HIV infection (negative, HIV-positive without symptoms, and HIV-positive with symptoms) exhibited the same pattern of social preferences as samples of varying age. Both healthy as well as young individuals held a balanced ratio of pursuing either emotional or informational goals with respect to choosing social contacts. In contrast, individuals experiencing themselves closer to death, regardless of whether due to age or HIV status, unanimously pursued predominantly emotional goals, i.e. they preferably chose social contacts with an affective potential (Carstensen & Fredrickson, 1998). Complementary, a corresponding pattern appeared in the shift of social preferences as a result of the perception of a different threat to future time: Two months before Hong Kong was handed over to the People’s Republic of China in 1997, both younger and older Hong Kong Chinese exhibited preferences for familiar instead of novel social partners. One year
prior as well as one year after the handover only older Hong Kong Chinese held the same preferences (Fung, Carstensen, & Lutz, 1999). Thus, it is the anticipation of endings such as the end of life or, more general, the perception of constraints on time that drive individuals to increasingly pursue emotionally meaningful goals (Carstensen, et al., 1999).

In sum, extant research findings can contribute to handle current challenges to HR management. First, the subjective perception of time, and exceptionally of future time, plays a substantial role in the evaluation, appraisal, and selection of goals and, in turn, for attitudes and behaviors (e.g., Aspinwall, 2005; Fried & Slowik, 2004). Second, individuals vary significantly in their relation to future time both inter- and intra-individually (e.g., Lang & Carstensen, 2002; Zimbardo & Boyd, 1999). Third, future time perspective as conceptualized by socioemotional selectivity theory accounts for individuals’ perceptions of both opportunities, chances, and prospects as well as limitations, constraints and endings in life (Cate & John, 2007; Lang & Carstensen, 2002). For the remainder of this study we restrict FTP to this conceptualization.

Due to measurable structural changes of labor forces, oftentimes referred to as demographic change, commensurate developments of workforces’ temporal perspectives will become apparent. Hence, we contend that a better understanding of such individual-based age-related changes will contribute to the development of more appropriate HR systems that help organizations achieve and sustain effectiveness in the face of, on average, older workforces in the future. Following, we develop a research model (Fig. 1) that incorporates future time perspective as a mediator. We continue to specify the asserted relations between HR systems and employees’ future time perspective by focusing on basic tenets of human resource practices and their effects. Subsequently, we consider the consequences of future time perspective in work context, i.e. attitudinal work outcomes.

Insert Figure 1 about here
HR Practices and Future Time Perspective

Typically, organizations deploy systems of HR practices to align workforce’s goals and values with organization’s objectives and to direct corresponding workers’ discretionary effort, creativity, and productivity (e.g., Becker, Huselid, Pickus, & Spratt, 1997; Guest, 2002; Lepak, Liao, Chung, & Harden, 2006; MacDuffie, 1995; Wright, Dunford, & Snell, 2001; Wright & McMahan, 1992). It has been demonstrated that this process is supported by the effects of HR practices on job-related attitudes such as job satisfaction and organizational commitment (Gong, et al., 2009; Kehoe & Wright, 2010; Macky & Boxall, 2007; Nishii, et al., 2008). Building on this, we argue that systems of HR practices constitute organizational environments that substantially contribute to shape individuals’ future time perspective, which in turn eventually affects workers’ attitudes. Following, we detail this assertion:

The huge number of available single HR practices unfold their effects in distinct ways and may, under specific circumstances, have greater or lesser impact on individuals and, in turn, organizational performance (Combs, et al., 2006; Subramony, 2009; Toh, Morgeson, & Campion, 2008). In addition, SHRM research has conceptually and empirically acknowledged that these practices largely lack independence, putting forward a systems view (Delery, 1998; Delery & Doty, 1996; Lepak, et al., 2006). HR practices have been found to be intertwined and form bundles that are captured by, for example, the AMO framework (e.g., Boxall & Purcell, 2003; Lepak, et al., 2006). This conceptual approach provides a helpful basis to describe the underlying mechanisms in the association between HR practices and organizational performance with a focus on the micro perspective, thus the individual level (cf., Boselie, Dietz, & Boon, 2005). According to the AMO framework, HR practices are directed to achieve three different organizational goals: 1. ensure employees’ best possible knowledge, skills, and Abilities (KSA), 2. enhance employees’ Motivation, and 3. provide employees with Opportunities to actually deploy their KSA to perform (Becker & Huselid,
1998; Boxall & Purcell, 2003; Delery & Shaw, 2001; Huselid, 1995; Lepak, et al., 2006; Subramony, 2009; Toh, et al., 2008).

For example, to ensure an adequate level of personnel’s knowledge, skills and abilities organizations systematically select job applicants, make comprehensive training available, and provide attractive levels of compensation (e.g., Combs, et al., 2006; Lepak, et al., 2006; Subramony, 2009). Indeed, these practices improve organizations’ total stock of KSA in an objective way by attracting candidates and identifying applicants who most likely account for those qualifications and occupational experiences that best match the demands of specific tasks. However, beyond these tangible effects the same practices are likely to also shape individuals’ basic outlooks and perceptions of their future time: Comprehensive selection processes that comprise comparisons to other applicants and passing interviews and tests before entry into the organization or start a new job assignment, respectively, are likely to boost the individual awareness of the own industry knowledge and experience that, in turn, emphasizes a personal idea of future life opportunities. Similarly, attending personnel development and training programs not only impart knowledge in an objective way but also furnish employees with prospects in terms of their global future options.

In contrast, altering patterns of HR practices enforcement can of course also have detrimental effects on employees’ views of their future. For example, in their ‘contingency model of death awareness at work’ Grant and Wade-Benzoni (2009) argued that organizational life can be replete with symbolic signals that serve as reminders of time passed and highlight that time left is finite and decreasing. Individually perceived declines KSA enhancing HR practices such as training, personnel selection, and human resources development may potentially be interpreted as signals indicating the approximation of an ending. We therefore expect
Hypothesis 1: KSA enhancing HR practices are positively associated with future time perspective.

Next, to foster employees’ motivation, organizations systematically conduct performance appraisals, grant performance-related incentives such as bonuses or fringe benefits, and fortify prospects for internal promotion (e.g., Combs, et al., 2006; Lepak, et al., 2006; Subramony, 2009). These motivation enhancing HR practices are primarily targeted to affect present behaviors. However, variable remuneration as well as non-monetary benefits are proffered to enhance productive behavior by providing the outlook on attractive gratifications that can be attained in the future. Likewise, internal promotion programs point to an appealing status in future times. Performance appraisals in fact focus first and foremost on past performance which is subject of evaluation and feedback. Nevertheless, at the same time such assessments relate to the future in that they usually aim at emending behavior to improve efficiency. So, motivation enhancing HR practices encourage employees to make plans for the future, envision possibilities to come, and aim at targets lying ahead in time. In this vein, according practices not exclusively affect present behavior but also promote individuals’ confidence in future-oriented occasions. Conversely, workers also may discern decreasing occurrences of motivation enhancing HR practices such as internal promotion programs, performance appraisal, and incentive compensation and in turn interpret as indications of their advanced career stages. Thus, we expect

Hypothesis 2: Motivation enhancing HR practices are positively associated with future time perspective.

Finally, organizations may support their employees with practices such as information sharing and participation programs, grievance procedures, flexible working hours, and job
security with the objective of empowering personnel to play their part. Although the
perception of business-related information such as provided by newsletters and regular
meetings helps individuals to foresee future developments within the organization, the main
focus is their present time involvement. Similarly, participation programs provide
opportunities to actively contribute to future occurrences but chiefly aim at considering
suggestions for improvement coming from current issues. Even more clearly, grievance
procedures predominantly cure current nuisances that hinder workers to do their job. Further,
flexible working hours allow workers greater control over their current work schedules but
both less likely evoke individual awareness of issues that relate to future time. Potentially, all
these typical practices rather possess the capability to enhance employee involvement, address
existing obstacles, and provide a constructive work climate than to draw employees’ attention
to future opportunities and evoke ideas to tap future potentials. Opportunities enhancing HR
practices provide a work structure that enables workers to actually unfold their KSA and
motivation and, hence, perform. However, opportunities to perform at work are unlikely to
impact on individual perception of time (opportunities to perform vs. opportunities to exploit
lifetime). Consequently, we expect such opportunities enhancing practices, in contrast to KSA
and motivation enhancing practices, not to relate to workers’ future time perspective.

The Mediating Role of Future Time Perspective

Individuals set their goals and direct their behaviors contingent upon their perceptions of
the own future time (e.g., Lang & Carstensen, 1994, 2002; McInerney, 2004; Seijts, 1998;
Shipp, et al., 2009; Simons, Vansteenkiste, Lens, & Lacante, 2004; van Calster, Lens, &
Nuttin, 1987). Recently, Fried and Slowik (2004) argued for instance that individual time
perspective has relevant impact on basic motivational processes such as the appraisal of the
attainability of goals and, in turn, goal-setting: With a strong future perspective, lacking
success in regards to vocational engagement may be perceived as less discouraging and rather be interpreted as transitory in nature with the outlook of ultimate success.

Future time perspective encompasses individuals’ assessment of opportunities and limitations (Cate & John, 2007). Particularly, to experience future time in work context as open and expansive implies that the own work setting is perceived as filled with opportunities, chances, and prospects. Simultaneously, only few (or no) limitations, constraints, and endings are sensed, which in Western societies is normatively valued as positive. FTP should be related to affective job outcomes such as job satisfaction, i.e. the extent to which employees like their job (Agho, Price, & Mueller, 1992), and organizational commitment, i.e. the emotional attachment to, identification with, and involvement in the organization (Allen & Meyer, 1990) as individuals possess the ability to actively guide their affective outcomes by processes of emotion regulation (Gross, 1998b, 1999). Such processes include all of the individuals’ efforts to increase, maintain, or decrease their emotions. Strategies comprise, for example, antecedent emotion regulation (e.g., proactively avoiding negative emotions as, for instance, potentially negative social interchanges) as well as response-focused strategies such as coping strategies like downward comparisons and cognitive reappraisals (e.g., Carstensen, Fung, & Charles, 2003; Gross, 1998a). In work context, emotion regulation has been demonstrated to influence work attitudes such that both the amplification of positive emotions as well as the suppression of negative emotions are associated with higher degrees of job satisfaction (Côté & Morgan, 2002). Moreover, also Fried and colleagues (Fried, Grant, Levi, Hadani, & Slowik, 2007) point to the importance of temporal context for attitudinal work-related outcomes. Their analysis proposes that correlates of strong future time perspectives, i.e. early career stage, expected career advancement, and occupational advancement norms exhibit moderating influence on work-related attitudes (Fried, et al., 2007).
The positive emotional state resulting from the awareness of work conditions that allow becoming involved and envisioning possibilities at work should enable employees to have better relationships with their coworkers and supervisors, as well as greater satisfaction in their jobs. The continual presence of employees’ positive emotional states will also lead to positive affection towards the work environment and the organization. As a result, the positive experience of the job and the positive affective emotions also should make employees more committed to the organization. We formulate

*Hypothesis 3:* KSA enhancing HR practices (H3a) and motivation enhancing HR practices (H3b) will have a positive indirect relationship with job satisfaction, as mediated by future time perspective.

*Hypothesis 4:* KSA enhancing HR practices (H4a) and motivation enhancing HR practices (H4b) will have a positive indirect relationship with organizational commitment, as mediated by future time perspective.

**Method**

**Participants**

Participants were 1,540 employees (86.8% full-time, 13.2% part-time) of 19 organizations comprising 75 distinct business units throughout Germany and Austria. They represented a broad range of industries, covering retail, consumer goods and services, public administration, utilities, manufacturing, and financial services. 24.6% were employed by public organizations, 75.4% worked for private businesses. On average, participants were 41.7 years of age (SD = 10.7), had been with their respective organizations for 13.1 years (SD = 9.8), and held their current position for 6.8 years (SD = 7.0). 37.7% had obtained at least a master’s degree level education, 7.1% had at most received a high school diploma. The distribution of gender was with 55.4% males and 44.6% females nearly balanced.
Procedure

Organizations were initially contacted either directly by the first author of this study, by the regional Chambers of Commerce and Industry, or Employer’s Associations supporting the investigation. In either case, after receiving first general information in written form, an organization’s representative in charge was contacted by telephone and individually briefed on the details of the study. Participating organizations were rewarded with a summary of the results of the study. Upon the stipulation of data protection and non-disclosure agreements organizations chose potential participants among their personnel and provided general information on the survey’s background, goals, and data security issues. To avoid self-selection biases (Heckman, 1979), merely general information, i.e. the investigation of work-related preferences and conditions in a continuously changing work environment was yielded. Organizations were instructed to select a sample of participants as representative of their respective workforce as possible, ideally drawing a random sample covering all available business units and hierarchical levels.

After an initial trial run of 98 completed surveys which aimed at testing the questionnaire for ease of understanding and technical operability, the wording of few items and instructions was eventually improved. The test run was conducted in March 2009. Subsequently, the data collection took place between June and October 2009. After receiving contact information on 18 organizations’ potential participants, which included family name, first name, exact position, business unit, and gender, individual invitations were issued. Invitations were either distributed, preferably, by e-mail or, alternatively, by written letter, which were delivered by the employing organization in closed envelopes. One single organization disseminated the survey invitations in the form of individualized, sealed, written letters containing identical information and a URL including a personalized code that provided access to the online questionnaire. A computer with internet access was made available to employees by this
To achieve maximum response rate, the research group’s independence was emphasized and the absolute anonymity of the subsequent data analyses was assured.

The employees of the 17 organizations who received personalized e-mail invitations were provided with individualized links that allowed them to access the online questionnaire. Because of data protection concerns one separate organization insisted to offer a non-individualized link, only. Online questionnaires were allowed to be repeatedly accessed from work or private computers for a two week period, thus interruptions and resumptions were possible. A single reminder was sent one week after the initial invitation. Upon completion, the questionnaires were no longer accessible. The workers of two business units (shop workers and kindergarten teachers) with no internet access at their work place were provided with a paper-and-pencil version of the questionnaire including a franked envelope addressed to university premises. 4.3% of the participants filled in a paper-and-pencil questionnaire, while 95.7% answered the questions online.

On average, each organization accounted for 81.1 participants ($SD = 44.0$), each business unit consisted of a mean of 20.0 employees ($SD = 25.2$). The response rates of the respective organizations ranged between 30.5% and 86.7% ($M = 60.2$). The online questionnaires were completed within a mean time of 29.9 minutes ($SD = 17.7$).

To reduce common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), we ensured the participants’ anonymity with respect to their employer. With regards to the questionnaire, the online version counterbalanced the item positions within questions and the question sequence provided that disruption of the logic flow was obviated. The wording of items and instructions were kept simple, specific, and concise. Structural and descriptive data on the organizations was separately obtained from two HR managers independently each per organization with regards to issues of measurement error (Gerhart, Wright, McMahan, & Snell, 2000).
Measures

All constructs were measured by multiple-item scales. The procedures recommended by Brislin (2000) for survey translations across different languages were applied. First, the primary researcher, whose native tongue is German, created the English version of the questionnaire by adapting scales and items of previously used research projects published in English and subsequently translated them into German. Where ever possible validated German scales were adopted. The primary researcher and another German faculty member specialized in management research and proficient in English improved the translation through an iterative process during which concerns about discrepancies between the two language versions were identified and addressed. To validate the translation, we asked two German employees in no way affiliated with this research project to read through the German version and test its readability and ease of comprehension. All concerns were addressed before the questionnaire was pre-tested on the basis of 98 complete surveys.

**Human resource practices.** We assessed eleven HR practices that previous research had shown to be of relevance to organizational performance (Combs, et al., 2006). With respect to each of eight HR practices (i.e. compensation level, employment security, incentive compensation, internal promotion, participation programs, performance appraisal, selectivity, and training), four separate items were adopted that the given practices had been assessed with previously (Delery & Doty, 1996; Lepak & Snell, 2002). Flexible working hours and grievance procedures were operationalized by two-item scales each. Information sharing was measured by a single item. These items were in part adapted by previous research (Becker & Huselid, 1998; Wright, et al., 2005) or developed by the authors. The complete list of items is provided in the appendix.

Recently, it has been pointed out that the subjective workers’ perception rather than managers’ reported HR practice use is of central relevance since the latter may not relate in
expected ways to desired employee outcomes (Boswell, Colvin, & Darnold, 2008; Kehoe & Wright, 2010; Nishii, et al., 2008). What workers ultimately experience and the degree to which they are eventually effected by depends on the enactment of work policies into practices (cf., Bowen & Ostroff, 2004; Colbert, 2004; Nishii, et al., 2008). Line managers may often be unaware of the policies due to their organization’s size and obvious variation in practices across the firm, which may ultimately also be responsible for large amounts of measurement error leading to low interrater reliabilities (Gerhart, Wright, & McMahan, 2000; Gerhart, Wright, McMahan, et al., 2000). As a result, we measured HR practices on the individual level and aggregated values for all analyses on the business unit level. The participants expressed the degree of their agreement the given statements on 5-point Likert-type scales ranging from 1 = strongly disagree to 5 = strongly agree. In the present study, the internal consistency produced an alpha coefficient for the scale measuring compensation level of .65, employment security .84, incentive compensation .72, internal promotion .59, participation programs .79, performance appraisal .92, selectivity .82, training .84, flexible working hours .91, and grievance procedures .60, respectively. Acknowledging that single HR practices both conceptually (Boxall & Purcell, 2003; Combs, et al., 2006; Lepak, et al., 2006; Wright & Boswell, 2002) as well as empirically (Subramony, 2009; Toh, et al., 2008) form bundles of HR practices we calculated new variables representing such groups. Although no clear-cut solution has been provided to unambiguously classify exact HR practice to each of the three organizational goals accounted for by the AMO framework (Boxall & Purcell, 2003; Lepak, et al., 2006), some patterns have emerged (cf., Lepak, et al., 2006). We compounded the scales of the HR practices compensation level, selectivity, and training to form “KSA enhancing practices” by calculating the respective mean values. Similarly, the HR practices incentive compensation, internal promotion, and performance appraisal were compounded to form “motivation enhancing HR practices.” Finally, employment security, flexible working
hours, grievance procedures, information sharing, and participation programs were likewise compounded to form “opportunities enhancing practices.”

**Future time perspective.** FTP was assessed with the Future Time Perspective Scale developed by Lang and Carstensen (2002) and tested by Cate and John (2007). Participants rated the degree to which they agreed with each of 10 items on a scale from 1 = *not at all* to 5 = *very good*. The complete list of items is provided in the appendix. The internal consistency reached an alpha of .88.

**Job satisfaction.** We assessed employees’ satisfaction with their job using six items selected from the original 18-item index developed by Brayfield and Rothe (1951). The validity and reliability of this six-item, global satisfaction index have been demonstrated in previous studies (Agho, et al., 1992; Brooke Jr, Russell, & Price, 1988). Sample items include “I find real enjoyment in my job,” “I would not consider taking another kind of job,” and “Most days I am enthusiastic about my job.” Participants expressed the degree of their agreement to the given statements on a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. In this study, this satisfaction scale achieved a reliability level with a Cronbach's alpha of .89.

**Organizational commitment.** Employees’ organizational commitment was measured with six items developed by Meyer, Allen, and Smith (1993) that reflect the affective commitment to the respective organization. The items correspond to the organizational commitment scales previously reported before by Allen and Meyer (1990). Sample items included “This organization has a great deal of personal meaning for me,” “I do feel like ‘part of the family’ at my organization,” and “I do feel a strong sense of ‘belonging’ to my organization.” The German version of this scale that had previously been validated (Schmidt, Hollmann, & Sodenkamp, 1998) was adopted for this study. Employees expressed their agreement to the
specified items on a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. In this study, the used organizational commitment scale achieved a reliability of alpha of .92.

**Control Variables**

We included age, organizational tenure, and job complexity as control variables in all our analyses. Prior studies have demonstrated that these variables are potential predictors of future time perspective, job satisfaction, and organizational commitment (Cohen, 1993; Humphrey, Nahrgang, & Morgeson, 2007; Kooij, et al., 2010; Ng & Feldman, 2010; Rhodes, 1983; Zacher & Frese, in press). Job complexity was assessed by the job complexity scale that is part of the Work Design Questionnaire (Morgeson & Humphrey, 2006) on a 5-point scale ranging from 1 = *strongly disagree* to 5 = *strongly agree* (alpha .83).

**Level of Analysis**

In the present study, we treated the bundles of HR practices as group level variables because we were interested in the effects of organizational practices on the business units as a whole. It has been argued that HR practices consist of actual programs, processes, and techniques that are operationalized in the unit (e.g., Boswell, et al., 2008; Kehoe & Wright, 2010; Lepak, et al., 2006). As a consequence of this translation process from HR policies to practices measurement error accumulates at least in part due to obvious variations in practices across the organization (Gerhart, Wright, McMahan, et al., 2000; Huselid & Becker, 2000). We focused on the lowest level of abstraction in the HR system (Becker & Gerhart, 1996; Boswell, et al., 2008; Colbert, 2004), i.e. the employees’ perceived HR practices, which were aggregated on the business unit level. While we were interested in HR practices on the business unit level, we were focused on future time perspective, job satisfaction, and organizational commitment on the individual level and hence investigated each as individual-
level variable. Our research model thus constitutes a cross-level model because we examine the relationships between business-unit level HR practices and individual-level future time perspective and attitudinal work outcomes.

**Analysis Strategy**

Our research design constitutes a cross-level model. Consequently, we used hierarchical linear modeling (HLM) to test our hypotheses (Raudenbush, Bryk, Yuk, & Congdon, 2004). HLM allows conducting group mean analyses that make appropriate adjustments for group size differences and accounts for dependence among individuals (Hofmann, 1997; Raudenbush, et al., 2004). We used a two-level HLM model to examine the direct as well as the indirect effects of the bundles of HR practices on workers’ job satisfaction and organizational commitment. To test for mediation, we followed the procedure outlined by Zhang, Zyphur, and Preacher (2009) who adopt Baron and Kenny’s (1986) steps for mediation analysis to multilevel settings. According to Baron and Kenny three criteria need to be fulfilled to support full mediation. First, the independent variable (i.e., the specific bundles of HR practices in our study) needs to be related to the mediator (i.e., future time perspective). Second, the mediator needs to be associated with the dependent variable (i.e., job satisfaction and organizational commitment). Third, the previously significant relation of the independent and dependent variable is no longer significant if controlled for. However, if the coefficient between HR practices and work-related attitude after introducing future time perspective into the regression equation remains significant but is substantially reduced, there is evidence for partial mediation.

In the present study HR practices constitute level-2 (i.e., business-unit level) variables as compared to all outcome and mediator variables which are treated as level-1 (i.e., individual-level) variables. In order to adequately decompose between-individual variance and between-
business unit variance, future time perspective was group-centered on the individual level of
the regression equation (Enders & Tofighi, 2007; Zhang, et al., 2009). All considered control
variables as well as business-unit level variables were grand-mean centered. Before testing the
hypotheses, we investigated whether multilevel analyses were in fact appropriate by
examining within- and between-business unit variance in the variables (e.g., Bliese &
Halverson, 1998). As shown in Table 1, the results indicated that a considerable proportion of
the total variance in the variables was within the business units, ranging from 8.7% to 34.1%.
This evidence of within-business unit variance supported proceeding with HLM, as there was
both within- and between-business unit variance to explain.

Insert Table 1 about here

Results

The means, standard deviations, and intercorrelations are presented in Table 2. Given the
multilevel structure of the data, we provide both within-business unit and between-business
unit correlations. We note two relations in particular: First, age and future time perspective
are correlated at -.49, confirming results that have previously been reported in the literature
(Carstensen, et al., 1999; Fingerman & Perlmuter, 1995; Lang & Carstensen, 2002). Because
of this substantial relation, we point to the importance of controlling for chronological age in
all of our models. Second, although plentiful substantial correlations emerge among most of
all singular HR practices, data provides bivariate correlational patterns that support the AMO
(e.g., Boxall & Purcell, 2003) structure within the group of HR practices: The three
distinguished bundles of KSA enhancing, motivation enhancing and opportunities enhancing
HR practices are each empirically correlated highest with those HR practices that would
conceptually be expected. This holds true for both the individual and the business unit level,
with a single exception (i.e. compensation level is conceptually not expected to be covered by opportunity enhancing HR practices). The HLM results testing the hypotheses are presented in Tables 3 and 4.

Main Effects

To test the main effects predicted in Hypotheses 1 and 2, we conducted a regression in HLM with Level 2 variables including the three bundles of HR practices that predict future time perspective. The Hypotheses predicted that two of the three different bundles of HR practices, i.e. KSA enhancing HR practices and motivation enhancing HR practices each would be positively related to future time perspective. Given that the bundles of HR practices are not independent of each other we calculated one regression including all three bundles. Table 3 provides the direct effects of the three distinct bundles of HR practices on future time perspective. As the results show, the individual-level control variables age and job complexity as well as the two bundles of KSA enhancing and motivation enhancing HR practices significantly predict future time perspective. Thus, Hypotheses 1 and 2 were supported. However, no such significant main effect could be noted for opportunities enhancing HR practices.

Indirect Effects

We tested the predicted indirect effects by regressing the work-related attitudes on the bundles of HR practices and FTP, as displayed in Figure 1. In particular, we calculated one model in HLM that regressed job satisfaction on the three bundles of HR practices and future time perspective. Similarly, we also regressed organizational commitment on the three
bundles of HR practices and FTP. The conducted regressions controlled chronological age, organizational tenure, and job complexity on the individual level. To capture both individual-level and business unit-level variance, all control variables were grand mean centered (Enders & Tofighi, 2007). To adequately identify the variation in job satisfaction and organizational commitment, respectively, that is regressed on future time perspective on the business unit-level, we included group mean centered FTP on the individual-level and grand mean centered FTP on business unit-level in the regression equation (Raudenbush & Bryk, 2002; Zhang, et al., 2009). Although we did not make predictions about direct effects of bundles of HR practices on work attitudes, we modeled these effects to test for the hypothesized indirect effects through future time perspective. The relevant coefficients are displayed in Figure 2. The effects of KSA enhancing HR practices on job satisfaction and organizational commitment are partially mediated by FTP. Further, the effect of motivation enhancing HR practices on organizational commitment is fully mediated by FTP.

We calculated the mediation effect by applying the product-of-coefficients method (cf., Zhang, et al., 2009) which captures the indirect effect as the product of the independent variable-mediator link and the mediator-dependant variable link. To test for significance of the mediation effects we calculated a series of Sobel (1982) tests. The results of the Sobel tests are displayed in Table 4.

Hypothesis 3 predicted that the bundle of KSA enhancing HR practices (H3a) and the bundle of motivation enhancing HR practices (H3b) have positive indirect relationships with job satisfaction, as mediated by future time perspective. The right-hand column of Table 4 shows that the indirect effect of the KSA enhancing HR practices is statistically significant. Thus Hypotheses H3a is supported. However, no significant indirect effect on job satisfaction
could be accounted for by motivation enhancing HR practices; Hypotheses H3b is consequently rejected.

Analogously, Hypothesis 4 predicted that the bundle of KSA enhancing HR practices (H4a) and the bundle of motivation enhancing HR practices (H4b) have positive indirect relationships with organizational commitment, as mediated by future time perspective. Table 4 reveals that also the indirect effects of KSA enhancing HR practices and motivation enhancing HR practices are significant. Thus, Hypotheses H4a and H4b are supported.

Insert Table 4 about here

**Discussion**

As workforces of the developed world age it becomes increasingly important to better understand the dynamics of aging and its ramifications for the strategic management of organizations’ human resources. Although individual level processes have been acknowledged to mediate the link between HR systems and organizational outcomes, we still lack a firm understanding of the mechanisms between systems of HR practices and work-related attitudes. With this in mind, the present study links the two literatures of SHRM and lifespan developmental psychology and empirically examines the role of workers’ future time perspective, which is closely related to individuals’ calendar age, for the association between bundles of HR practices, job satisfaction, and organizational commitment. Drawing on socioemotional selectivity theory (Carstensen, et al., 1999) and processes of emotion regulation (Gross, 1998a, 1999), the presented results provide support for future time perspective’s mediating role in the link between HR systems and attitudinal work outcomes. In particular, the effects of KSA enhancing HR practices such as selectivity, training, and compensation level on job satisfaction and organizational commitment are partially mediated
by workers’ temporal prospects, i.e. their future time perspective. Also, the effects of motivation enhancing HR practices such as performance appraisal, internal promotion opportunities, and incentive compensation on organizational commitment are fully mediated by employees’ future time perspective. However, the hypothesized indirect effect of FTP on the association between motivation enhancing practices and job satisfaction (H3b) could not be verified. Although we found separate significant associations between motivation enhancing HR practices and FTP as well as between FTP and job satisfaction, no direct effect between motivation enhancing practices and job satisfaction could be substantiated that possibly could be subject of FTP-mediation when we simultaneously modeled the three bundles of HR practices. Nevertheless, both a direct and an indirect effect as mediated by FTP can be detected if KSA and opportunities enhancing practices are excluded from the regression. This finding suggests that the lack of the direct effect of the bundle of motivation enhancing practices on job satisfaction might be the result of insufficient independency among the three bundles of HR practices. In sum, however, considering all the findings as a whole, we find organizational practices contribute to shape employees’ future time perspective, which, in turn, relates to job satisfaction and organizational commitment.

This study provides three important contributions to theory and organizational practice. First, research in the realm of SHRM has just begun to incorporate employees’ perspective into theoretical models that aim to explain the link between the strategic enforcement of HR practices and organizational outcomes (e.g., Kehoe & Wright, 2010; Nishii, et al., 2008). Although researchers widely agree on the contingency of HR system’s effectiveness on contextual variables (e.g., Delery & Doty, 1996), workforce characteristics have not received much attention. The results of the present study, however, demonstrate that (1) employees’ temporal perspectives precede work-related attitudes and (2) organizations are able to actively govern workforces’ temporal perspectives and thus counterbalance undesirable age-related
dynamics. Our research underlines the importance of employees’ perceptions of HR practices and facilitates a better understanding of the processes that translate HR systems into organizational effectiveness.

Second, aging has been understood as a process of selective optimization and compensation that helps individuals adapt to age-related changes by adjusting values and goals, and finding adequate ways to achieve objectives (Baltes & Baltes, 1990). Beyond the passage of objective time, which does not explain any psychological changes per se, aging has been shown to be closely associated with the alteration in the subjective perception of temporal prospects, i.e. future time perspective, on whose consequences socioemotional selectivity theory (Carstensen, et al., 1999) focuses. However, little is known about the antecedents and moderators of future time perspective. First findings indicate that job complexity and the use of action regulation strategies affect FTP (Zacher & Frese, in press). Our research suggests that individuals relate to their own future by perceiving and interpreting their present environment, which to some extent determines the sense of future-oriented opportunities, expectations, and aspirations. In particular, this study’s results demonstrate that in work context, KSA and motivation enhancing bundles of HR practices counterbalance or at least attenuate deteriorating effects of, on average, declining future time perspective that is generally associated with calendar age. In work context, the increasing or decreasing application of HR practices may act as signals that denote approaching or retreating endings. By and large, comparing to chronological age we propose future time perspective to represent a more tangible and better operable individual-level attribute that possesses the potential to provide a theoretical explanation and thus constitutes a relevant measure for research on management and organizational behavior.

Third, structural changes on the labor market of the developed world challenge organizations to defend their competitive advantage they have gained from their human
resource assets. On the one hand, Ng and Feldman (2010) recently provided meta-analytical evidence of the positive, albeit weak, link between age and job satisfaction (.12) and organizational commitment (.17). On the other hand, while the proportion of older workers is constantly growing, employees’ perceptions of both remaining opportunities and remaining time at work decline (Zacher & Frese, 2009). The continuous rise of workforces’ average age therefore sets off a commensurate decrease of the aggregated future time perspective, which in turn impinges on attitudinal work outcomes. The results of the present study provide a basis to differentiate HR management and selectively support future time perspective by emphasizing the utilization of bundles of KSA and motivation enhancing HR practices. These HR practices have the capability to impart individuals a positive perspective to allocate their time and thus become involved. Comprehensively selecting job incumbents and conducting performance appraisals, providing extensive training and internal promotion programs as well as endowing attractive fixed and merit-based remuneration will contribute to maintain or advance employees’ future time perspective and, in turn, job satisfaction and organizational commitment. The informed deployment of singular HR practices or the development of HR systems that deliberately consider the effects on future time perspective will have a positive influence on work-related attitudes and hence on organizational effectiveness.

Limitations

We acknowledge limitations of our study. First, the cross-sectional research design limits assertions on temporal precedence or causal ordering to theoretical arguments. This study therefore indeed contributes to the burgeoning investigation of contextual factors related to enforcing different bundles of HR practices’ quantity and quality. However, additional research is needed to verify theoretically inferred assumptions with regards to the temporal order of antecedents and causes of HR practices, future time perspective, and work-related
attitudes. Second, the three separate bundles of HR practices (i.e. KSA enhancing practices, motivation enhancing practices, and opportunities enhancing practices) share a considerable amount of variance. These bundles were generated following the AMO framework (Boxall & Purcell, 2003; Lepak, et al., 2006) that classifies single HR practices by conceptually assessing goals, which organizations pursue when deploying these practices. However, the noted co-variation among the three bundles of HR practices dilutes a clear-cut distinction of each bundles’ contributions to future time perspective. Also, as Lepak and colleagues (2006, p. 236) note “… practices are not linked to a particular HR system per se, rather, their use, in combination with other HR practices, ultimately dictates their influence on the HR policy domains.” Future research may provide classification systems that more appropriately bundle types of HR practices which primarily take employees’ perceptions into account. Finally, our sample consisted of organizations representing diverse industries, occupations, and qualification levels. The deployment of HR practices, however, co-varies with industry (e.g., Datta, Guthrie, & Wright, 2005; Toh, et al., 2008). Further research is needed to investigate whether the obtained results can be generalized across all industries and pursued strategies.

Conclusion

This study considered future time perspective as both the result of work settings determined by organizational practices and antecedent for work-related attitudes, i.e. job satisfaction and organizational commitment. We sought to contribute to management and lifespan literatures by exploring the impact of individual-level age-related temporal prospects on the association between strategic HR systems and work outcomes and by relating environmental variables to the aging process. Our results suggest that individual-level processes represent contextual variables whose incorporation in SHRM theory and practice will be of beneficial value.
References


time perspective theory in a temporal perspective. *Educational Psychology Review, 16*(2), 121-139.


relationship between psychological empowerment and effectiveness, satisfaction, and


Sturman, M. C. (2003). Searching for the inverted U-shaped relationship between time and
performance: Meta-analyses of the experience-performance, tenure-performance, and


the mechanisms mediating between high-performance work systems and the

Investigating fit with the organizational context. *Journal of Applied Psychology 93*(4),
864-882.


Appendix

Human resource practices

Compensation level\(^1\).

1. My compensation/rewards are based on the market wage (going rate).
2. Compensation/rewards are designed to ensure equity with peers.
3. My compensation/rewards place a premium on my industry experience.

Employment security\(^2\).

1. I can expect to stay in the organizations for as long as I wish.
2. In this job it is very difficult to dismiss me.
3. I am almost guaranteed job security in this job.
4. If the firm were facing economic problems, in this job I would be the last to get cut.

Incentive compensation\(^1\).

2. My compensation/rewards have a group-based incentive component (gainsharing, etc.).
3. My compensation/rewards have an individual incentive/bonus component
4. My compensation/rewards include an extensive benefits package.

Internal promotion\(^2\).

1. In this job I have clear career paths within the organization.
2. In this job I have very little future within this organization (RC).
3. My career aspirations within the company are known by my immediate supervisors.
4. If I desire promotion in this job there are more than one potential positions I could be promoted to.

\(^1\) All items adapted from Lepak and Snell (2002)
\(^2\) All items adapted from Delery and Doty (1996)
Participation programs².

1. In this job I am allowed to make many decisions.
2. In this job I am often asked by my supervisor to participate in decisions.
3. I am provided the opportunity to suggest improvements in the way things are done.
4. Superiors keep open communications with me.

Performance appraisal¹.

1. Performance appraisals for employees are based on objective, quantifiable results.
2. Performance appraisals assess the quality of my output.
3. Performance appraisals assess the quantity of my output.
4. Performance appraisals measure my productivity and efficiency.

Selectivity¹.

1. The selection process for employees in this job assesses their industry knowledge and experience.
2. The selection process for employees focuses on selecting the best all around candidate, regardless of the specific job.
3. The selection process for employees in this job involves screening many job candidates.
4. The selection process for employees in this job is comprehensive (uses interviews, tests, etc.).

Training².

1. In this job I am provided extensive training programs.
2. In this job I normally go through training programs every few years.
3. There are formal training programs to teach new hires the skills they need to perform their jobs.
4. I am offered formal training programs in order to increase my promotability in this organization.

¹ All items adapted from Lepak and Snell (2002)
² All items adapted from Delery and Doty (1996)
**Flexible working hours.**

1. I can arrange my work schedule flexibly.

2. Start and end of work are largely determined by myself.

**Grievance procedures.**

1. In my job I have a reasonable and fair complaint process.\(^3\)

2. If employees complain circumstances are usually resolved.

**Information sharing.**

In this job I am provided many kinds of information (e.g., a newsletters or regular meetings) on a wide variety of topics relevant to the business and its operations.\(^4\)

**Future time perspective**

1. Many opportunities await me in the future.

2. I expect that I will set many new goals in the future.

3. My future is filled with possibilities.

4. Most of my life still lies ahead of me.

5. My future seems infinite to me.

6. I could do anything I want in the future.

7. There is plenty of time left in my life to make new plans.

8. I have the sense that time is running out. (RC)

9. There are only limited possibilities in my future. (RC)

10. As I get older, I begin to experience that time is limited. (RC)

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\(^3\) Item adapted from Wright et al. (2005)

\(^4\) Item adapted from Becker and Huselid (1998)
List of Tables

Table 1.

**Variance Components of Null Models for HR Practices (KSA Enhancing, Motivation Enhancing, and Opportunities Enhancing), Future Time Perspective, Job Satisfaction, and Organizational Commitment**

<table>
<thead>
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<th>Variable</th>
<th>Between-individual variance (level-1)</th>
<th>Between-business unit variance (level-2)</th>
<th>% variability between business units (level 2)</th>
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<td>Organizational commitment</td>
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*Note.* Percentage of variability between business units was computed by dividing the between-business unit variance by the total (between-individual + between-business unit) variance.

* *p < .05  ** * p < .01
Table 2.

Means, Standard Deviations (SD), and Intercorrelations between Study Variables

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<td>-.03</td>
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</table>

*Note.* Correlations above the diagonal represent between-business unit (aggregated) scores (level 2, $n = 76$). Correlations below the diagonal represent between-individual scores (level 1, $n = 1,540$). Paranthetical values are reliabilities.

* $p < .05$  ** $p < .01$
Table 2 (continued).

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<td>.12</td>
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<td>-.03</td>
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</tr>
<tr>
<td>20. Age</td>
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<td>*</td>
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<td>**</td>
<td>.16</td>
<td>**</td>
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Table 3.

*Regression of Future Time Perspective on HR Practices*

<table>
<thead>
<tr>
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<th>Coefficient</th>
<th>p-value</th>
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<td>Constant</td>
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<td>Level 1: Between-individual controls</td>
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<tr>
<td>Age</td>
<td>-0.46 **</td>
<td></td>
</tr>
<tr>
<td>Organizational tenure</td>
<td>-0.04</td>
<td></td>
</tr>
<tr>
<td>Job complexity</td>
<td>-0.05 *</td>
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<tr>
<td>Level 2: Bundles of HR practices</td>
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<td></td>
</tr>
<tr>
<td>Motivation enhancing</td>
<td>0.13 *</td>
<td></td>
</tr>
<tr>
<td>Opportunities enhancing</td>
<td>-0.13</td>
<td></td>
</tr>
</tbody>
</table>

*Note. Level 1, n = 1,540. Level 2, n = 75. All coefficients are standardized. Level 1 and level 2 variables were grand mean centered.*

* p < .05  ** p < .01
Table 4.

*Total and Indirect Effects Mediated by Future Time Perspective on Job Satisfaction and Organizational Commitment*

<table>
<thead>
<tr>
<th>Dependant Variable</th>
<th>Independent Variable(s)</th>
<th>Model</th>
<th>Total Effect</th>
<th>Indirect Effect</th>
</tr>
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<td>KSA Enhancing HR Practices</td>
<td>I</td>
<td>0.37 **</td>
<td>0.09 *</td>
</tr>
<tr>
<td></td>
<td>Motivation Enhancing HR Practices</td>
<td></td>
<td>0.06</td>
<td>0.04</td>
</tr>
<tr>
<td></td>
<td>Opportunities Enhancing HR Practices</td>
<td></td>
<td>-0.23 *</td>
<td>-0.04</td>
</tr>
<tr>
<td>Organizational Commitment</td>
<td>KSA Enhancing HR Practices</td>
<td>II</td>
<td>0.43 **</td>
<td>0.17 **</td>
</tr>
<tr>
<td></td>
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<td>0.07 *</td>
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<tr>
<td></td>
<td>Opportunities Enhancing HR Practices</td>
<td></td>
<td>-0.36 **</td>
<td>-0.07</td>
</tr>
</tbody>
</table>

*Note.* Level 1, \(n = 1,540\), Level 2, \(n = 75\). Each model was controlled for age, organizational tenure, and job complexity on level 1. Level 1 future time perspective was group mean centered, all other variables were grand mean centered. Reported total and indirect effects are standardized coefficients. The indirect effect was calculated by multiplying the coefficient for the independent variable-mediator link by the coefficient for the mediator-dependent variable link. The significance of the indirect effect was evaluated with a Sobel test of mediation on unstandardized coefficients.  
\( * p < .05 \)  \( ** p < .01 \)
List of Figures

**Figure 1.** Conceptual model of the relationship among HR practices, future time perspective, and work outcomes
**Figure 2.** Summary of results. Results are standardized path coefficients and were obtained from three separate models regressing (1) future time perspective on KSA enhancing, motivation enhancing, and opportunities enhancing HR practices and (2) job satisfaction as well as (3) organizational commitment each on the three distinct bundles of HR practices and future time perspective.

* $p < .05$  ** $p < .01$
General Discussion

As populations and, consequently, workforces of the developed world grow older, it becomes increasingly important to gain insights into the dynamics of aging and their consequences for the management of organizations’ personnel. Although the relation between individuals’ chronological age and work outcomes has been subject to research for some decades (Rhodes, 1983; Waldman & Avolio, 1986), we still lack a firm understanding of the interrelations between organizations’ HR systems, individuals’ age-related developmental processes, and work outcomes that contribute to organization’s effectiveness. Against this backdrop, the overarching goal of this thesis was to better understand the interdependencies between organizations’ HR systems and individuals’ age-related changes that are characteristic of aging workforces.

The first part of this thesis developed a conceptual framework modeling organizational performance by encompassing individual-level mediating processes that allow taking age-related developments into consideration. Building on tenets and central findings of lifespan developmental psychology, a research model was conceptually elaborated that integrates the age-contingent individual-level processes job satisfaction, organizational commitment, and work motivation as likely mediators between HR systems and organizational outcomes. Exhibiting typical life course-trajectories, human functions of cognition, personality, and affect are argued to govern these mediating processes, which so likely moderate the HR system—organizational performance link. The proposed research model extends extant conceptual frameworks in that it provides empirically testable propositions that account for age-related dynamics in their predictions of work outcomes and offers according theoretical explanations. Although operationalizations partially depart from the conceptual terms of the proposed research model, this thesis’s results empirically support central assertions of the model. That is, in line with these predictions, the second part of this thesis suggests that HR
systems indeed exert their impact on employees to some extent in an age-contingent manner. In particular, the impact of maintenance-enhancing HR practices on workers’ affective commitment as well as on their in-role behaviors attenuates as employees grow older. In contrast, growth-enhancing HR practices, which influence employees’ affective commitment but not, however, their in-role behavior, exert no such age-contingent pattern. Rather, in accordance with previous research (Ogilvie, Rose, & Heppen, 2001), workers’ general orientation toward acquiring gains remains the most important factor regardless of age, albeit workers’ orientation to retain the former achievements increases with age. The results of the third part suggest that HR systems unfurl their effects on attitudinal work outcomes partially mediated by individuals’ future time perspective. In particular, the effects of motivation-enhancing practices on organizational commitment are fully mediated by employee’s future time perspective. However, no such mediation effect could be noted with respect to the association between motivation-enhancing HR practices and job satisfaction—possibly due to the given lack of independence of the three HR systems’ bundles. Moreover, the impact of KSA-enhancing HR practices on both job satisfaction and organizational commitment are partially mediated by workers’ temporal prospects. These results advocate that HR systems contribute to shape workers’ expectations of their global future opportunities and limitation, and thus their future time perspective, which, in turn, relates to their job satisfaction and organizational commitment.

On the whole, this thesis makes several important contributions to theory and organizational practice. First, the results suggest that taking age-related developmental dynamics into account helps to more accurately model the causal chain that connects HR systems with organizational performance. The incorporation of individual-level mediating processes into theoretical models of organizational performance provides opportunities to better understand and explain the impact of the labor market’s global aging and thus the
commensurate structural changes of organizations’ workforces. Previous research has extended universal and best-practice approaches to model the HR system—organizational performance links, by highlighting environmental conditions (Datta, Guthrie, & Wright, 2005). In line with this notion, the presented research findings indicate that HR systems’ components exert their positive effects on work outcomes that are contingent on the workforce’s age structure. This thesis’s results strengthen the contingency approach by proposing that the direction and extent of the HR system’s effects on organizational performance depend on the organization’s context (Toh, Morgeson, & Campion, 2008). In addition to industry characteristics, such as capital intensity, growth rates, as well as product differentiation (Datta, et al., 2005) and other labor market conditions, such as unemployment rate (Sun, Aryee, & Law, 2007), this thesis’s results suggest that the labor force’s mean age or age group proportions potentially impact on labor productivity. In fact, organizations’ outcomes are unlikely to be constricted by aging workers’ individual abilities to perform their jobs (McEvoy & Cascio, 1989; Ng & Feldman, 2008; Waldman & Avolio, 1986). However, they may suffer from an unfavorable combination of HR practice bundles and workforce age as maintenance-enhancing HR practices’ effects attenuate with increasing worker age.

Furthermore, this thesis’s findings emphasize the importance of workers’ subjective experience of an organization’s HR management. Extending recent research that points to the relevance of workers’ perceptions and causal attributions of singular HR practices for work attitudes and performance (Nishii, Lepak, & Schneider, 2008) as well as age-related intra-individual changes in the association between HR practices and work outcomes (Kooij, Jansen, Dikkers, & De Lange, 2010), this thesis sheds light on the dynamics between an organization’s HR system and the workforce’s individual-level developmental functions. This study’s results suggest that workers’ perception of an HR system’s elements, i.e. HR practices, is contingent on age-related changes in goal orientation and self-regulation’s ability
to change. Thus, in addition to managerial intentions by which HR practices have been conceptualized as bundles – as captured by, for example, the AMO framework (Lepak, Liao, Chung, & Harden, 2006; Subramony, 2009) – an alternative approach which takes employees’ age-related motivational patterns into account appears to provide theoretically valuable and practically useful insights. Conceptualizations of bundles of HR practices that consider employees’ goal orientations, which build on both age-independent motivations to grow as well as age-contingent motivations to retain, more accurately predict work outcomes. The present findings emphasize the potential of a stronger integration between individual-level age-related processes and strategic HRM research efforts as organizational performance is subject to structural workforce alterations.

This thesis’s results also contribute to gaining a better understanding of individuals’ development in a work context. Individuals’ chronological age itself is not considered to theoretically explain changes (e.g., Wohlwill, 1970) but rather represents a proxy for a variety of individuals’ transformations and the adjustments that take place as time passes by (Baltes, Lindenberger, & Staudinger, 2006). The presented results suggest that environmental influences in the workplace, for instance those emanating from HR practices, affect individuals’ expectations of future opportunities and limitations and, consequently, their global future time perspective. In other words, HR practices potentially advance individuals’ aspirations and outlooks for future times and, just as well, counteract the abating effects of the future time perspective’s decline, which is generally associated with individuals’ chronological age.

Finally, this thesis offers practitioners a basis for maintaining organizations’ effectiveness and competitive advantages that are challenged by rapidly aging workforces. The adjustment of HR systems that takes workers’ age-related changes in goal orientation and emotion regulation processes into account, will have a positive impact on employees’ work-related
attitudes and behaviors and, in turn, on organizational outcomes. This thesis’s findings provide a guideline to tailor age-differentiated HR systems that improve or even substitute empirically refuted yet widespread stereotypes describing older employees as increasingly limited in terms of their productivity and learning abilities (Posthuma & Campion, 2009). In particular, this study’s results reveal that growth-enhancing HR practices such as selection, performance appraisal, training programs, promotion opportunities, and incentive compensation not only promise to support mature workers’ future time perspective as shown in Chapter 3. Moreover, the deployment of these practices provides the potential to sustain and even advance older employees’ as much as younger employees’ work-related attitudes, which precede organizational performance (cf. Chapters 2 and 3). In contrast, compared to their younger colleagues, older employees’ in-role behaviors will, to a more limited extent, benefit from maintenance-enhancing practices, such as job security, flexible working hours and pay level. Thus, an informed configuration of an organization’s HR system will contribute to maintaining its aging workforce productive and motivated by making growth-enhancing HR practices available to employees of all age groups instead of limiting these practices to younger workers. An according HR system will encourage its mature workers to stay engaged and so reduce threats of knowledge loss and talent shortage (Strack, Baier, & Fahlander, 2008) by providing a work environment that is less likely to be perceived as “replete with symbolic signals that draw attention to aging” (Grant & Wade-Benzoni, 2009, p. 610).

**Limitations**

This thesis’s results need to be interpreted in light of their limitations. First, the cross-sectional research designs of the empirical examinations limit the assertions on temporal precedence or causal ordering to theoretical arguments. This research subsequently
contributes to the burgeoning investigation of contextual factors related to enforcing different bundles of HR practices’ quantity and quality. However, additional research is needed to verify theoretically inferred assumptions with regards to the temporal order of antecedents and causes of HR practices as well as the involved outcomes. Second, the separate bundles of HR practices deployed in this thesis (i.e. KSA-enhancing practices, motivation-enhancing practices, and opportunities-enhancing practices as well as growth-enhancing and maintenance-enhancing practices) share a considerable amount of variance. These bundles were either generated following the AMO framework (Boxall & Purcell, 2003; Lepak, et al., 2006), which classifies single HR practices by conceptually assessing organizations’ goals, or, alternatively, following theoretical considerations that reflect workers’ perceptions of HR practices that take particularly developmental dynamics into account. Future research may provide empirical evidence that supports the appropriateness of the used bundles of HR practices. Finally, the samples used in this study consisted of organizations representing diverse industries, occupations, and qualification levels. The deployment of HR practices, however, co-varies with industry (e.g., Datta, et al., 2005; Toh, et al., 2008). Further research is needed to investigate whether the obtained results can be generalized comparably across all industries and pursued strategies.
References


Declaration

This Dissertation Thesis has been written independently and has not been submitted at another University for the conferral of a Degree.

April 2011

Jörg Korff