

Motivating Older Workers
A Lifespan Perspective on the Role
of Perceived HR Practices

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Motivating older workers: A lifespan perspective on the role of perceived HR practices

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VRIJE UNIVERSITEIT

Motivating Older Workers: A Lifespan Perspective on the Role of Perceived HR Practices

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1

Introduction

1.1 Introduction

Workforces are aging around the world. The proportion of workers aged 50 and above is projected to grow rapidly in the future, rising from about 17% in 2005 to 27% in 2050 (UN, 2007). This is attributable to increases in life expectancy, combined with falling birth rates and a drop in early retirements (Grant & Wade-Benzoni, 2009). In the Netherlands (where the studies for this thesis were conducted), life expectancy has increased from 70.3 years for men and 72.6 years for women in 1950 to 78.3 and 82.3 years respectively in 2008 (CBS Statline, 2009). At the same time, fertility rates have decreased from over 3 children in 1950 to less than 2 children in 2008. Early retirement has also declined, resulting in an increase in the proportion of adults aged 55 to 65 in some form of paid employment rising from 34% in 2001 to 45% in 2008. As a result, the proportion of people aged 55 and above within the potential Dutch workforce has increased from 14% in 1998 to 19% in 2008, and the average age of the Dutch workforce has increased from 38.3 in 2001 to 40.3 in 2008 (CBS Statline, 2009). This aging of the Dutch workforce will continue to accelerate, boosted by the Dutch government's intention to increase the official retirement age from 65 to 67.

One of the most pressing challenges for human resource managers will be to find effective strategies for encouraging older workers to remain engaged and active members of the workforce (Barnes-Farrell & Matthews, 2007). In order to develop an organizational policy and HR practices that meet the needs of this segment of the workforce, one needs to have a clear understanding of the motives of older workers and of the influence of aging. It is, therefore, not surprising that research on aging at work is expanding rapidly. For example, relevant new research has been published on the relationship between age and various dimensions of performance (Ng & Feldman, 2008), on age-stereotyping (Barnes-Farrell, 1993; Posthuma & Campion, 2009; Van der Heijden, De Lange, Demerouti, & Van der Heijde, 2009), on age and the psychological contract (Bal, De Lange, Jansen, & Van der Velde, 2008), and on successful aging at work (Abraham & Hansson, 1995). However, few studies focus on how to motivate the aging workforce. As a result, we lack knowledge on whether and how motivation changes with age, and on which types of Human Resource (HR) practices are important in eliciting desirable older worker outcomes (cf., Armstrong-Stassen & Ursel, 2009).

To fill this knowledge gap, this thesis aims to offer a more integrated perspective, taking insights from lifespan developmental theories as well as theories on the effects of HR practices, in explaining the work motivation of older workers. More precisely, lifespan theories are used to examine the direct influence of age on work motivation, and subsequently, theories on the effects of HR practices are used to examine what organizations can do to motivate their older workers

(to *continue* to work, preferably even beyond retirement age). Overall, this thesis adds to earlier research by addressing the following key issues with different study designs and methods: 1) the conceptualization and operationalization of aging at work, 2) how age influences work-related motives, 3) the conceptualization and operationalization of HR practices for aging workers, and 4) how aging influences the relationships between HR practices and worker outcomes (i.e., job satisfaction, affective commitment, and motivation to continue to work). Before discussing the four key issues in greater detail, the main concepts of aging (including lifespan theories that form the basis for the hypotheses to be later tested), work motivation, and HR practices, will be addressed.

1.2 The Concept of Aging

Aging refers to changes that occur in biological, psychological, and social functioning over time and, therefore, aging affects each individual on personal, organizational, and societal levels (De Lange, Taris, Jansen, Smulders, Houtman, & Kompier, 2006; Settersten & Mayer, 1997; Sterns & Miklos, 1995). More specifically, according to Kanfer and Ackerman (2004), aging involves four age-related changes; losses, gains, reorganization, and exchange (see also Warr, 2001). Losses occur, for example, in physical strength and in fluid intelligence, such as working memory, and processing of new information. Gains occur, for example, in crystallized intelligence, such as general knowledge, vocabulary, and verbal comprehension (Ackerman, 1996). Reorganization refers to the shift in social motives from gaining resources to obtaining affective rewards and supporting one's identity that results from changes in the perception of time (Carstensen, 1995). Finally, exchange refers to changes in the levels of certain traits: older individuals are less neurotic, less extrovert, and less open to new experiences, but have higher levels of conscientious and agreeableness than younger individuals (Warr, 2001). At the same time, generativity motives, the importance of protecting the self-image, and emotional regulation increase with age.

Considering these age-related changes, Kanfer and Ackerman (2004) noted that chronological, or calendar, age may serve as a proxy for age-related processes that can directly or indirectly influence worker outcomes. Similarly, a number of researchers have suggested that chronological age may be an insufficient operationalization of the age factor in the work setting (Kanfer & Ackerman, 2004; Settersten & Mayer, 1997; Sterns & Miklos, 1995). Sterns and Doverspike (1989) distinguished five different approaches to conceptualizing the aging of workers: 1) *Chronological age* which refers to one's calendar age, 2) *functional or performance-based age* which is related to a worker's performance, and recognizes that there is great variation in

individual abilities and functioning at different ages, 3) *psychosocial or subjective age* which is based on the self and the social perception of age, 4) *organizational age* referring to the aging of individuals in jobs and organizations, and 5) *lifespan age* which borrows from a number of the above approaches, but allows for the possibility of behavioral change at any point in the life cycle, resulting for example from unique career and life changes (see also De Lange et al., 2006; Sterns & Miklos, 1995). This thesis examines the effects of age (which refers only to chronological or calendar age) and of aging (which refers to multiple conceptualizations of aging).

In order to understand the influence of aging, several lifespan theories (see also Abraham & Hansson, 1995; Robson, Hansson, Abalos, & Booth, 2006) and career development theory are used in this thesis. Firstly, the lifespan *theory of Selection Optimization and Compensation* (SOC) (Baltes, Staudinger, & Lindenberger, 1999) proposes that, to develop successfully over one's lifespan, an individual should aim to maximize age-related gains and minimize age-related losses. The development regulation processes that aim to do this consist of selecting viable outcomes, optimizing resources to reach those desirable outcomes, and compensating for the loss of outcome-relevant means. These regulation processes are aimed at different types of life goals to which individuals can allocate their resources; namely, growth, maintenance, and regulation of loss. Since a number of specific losses, related to health for example, occur especially among older workers, SOC theory implies that resources allocated to growth will decrease with age, whereas resources for maintenance and regulation of loss will increase with age (Baltes et al., 1999). This proposition is supported by Freund (2006), who found that during young adulthood the dominant goal focus was on optimization (i.e., growth), but that older adults showed a stronger focus on compensation goals directed toward prevention of further resource loss (see also, Ebner, Freund, & Baltes, 2006; Kanfer & Ackerman, 2004).

Similarly, the *Lifespan Theory of Control* (Heckhausen & Schulz, 1995) proposes that aging brings about a shift in the strategies individuals use to control their situation. Specifically, during young adulthood, individuals are assumed to rely heavily on externally-oriented primary control strategies that aim to change the world to fit their needs and desires. In contrast, older individuals are more frequently disposed to employ secondary control strategies that involve self-directed cognitive processing. Moreover, the *Dual-Process Model of Assimilative and Accommodative Coping* (Brandstädter, Rothermund, & Schmitz, 1998) proposes that, as age-related losses occur, certain outcomes become unattainable and reactions tend to shift from assimilative persistence aimed at adjusting the situation to achieve the desired developmental outcomes, or to prevent deviations from desired courses of personal development, toward accommodative processes in which

individuals adjust personal preferences and developmental goals to meet the demands of the situation.

Further, *Socio-Emotional Selectivity Theory*, a lifespan theory of social motivation (Carstensen, 1995), proposes an age-related increase in selected social relationships as a compensatory strategy for coping with age-related physical and cognitive losses. Specifically, age-related changes in the perception of time are believed to shift the motive for social interaction away from gaining resources (instrumental) and toward the receipt of affective rewards (emotional satisfaction) and support for one's identity. According to the theory, as older people perceive their future time as more limited than younger people do, they give higher priority to emotionally meaningful social interactions and goals, such as generativity, emotional intimacy, and social embeddedness (see also Lang & Carstensen, 2002).

Finally, Super's (1957) *Career Development Model* suggests that individuals develop over their lifespan by going through a number of different career stages. Although this model does not describe how individuals cope with gains or losses, it helps us understand how career concerns change over the lifespan. In this model, individuals pass through four stages in their career. First, employees pass through the 'trial' stage, in which their primary concerns are to identify their interests and capabilities, and to define their professional role or self-image (Ornstein, Cron, & Slocum, 1989). Subsequently, in the 'establishment stage', employees are concerned with moving upward and mastering their identified area of interest. In the subsequent 'maintenance stage', employees hold on to their earlier achieved accomplishments and try to maintain their self-concept; and finally, in the 'disengagement stage', employees begin to detach from the organization and begin to develop a new self-image that is independent of career success. Thus, in line with lifespan theories, employees are particularly concerned with development and growth in younger age, and with security and maintenance in older age. These age-related changes in goal focus, control strategies, and career concerns are likely to influence work motivation and the effects of HR practices.

1.3 Work Motivation

Work motivation is commonly defined as a set of energetic forces that originate both within as well as beyond an individual's being that initiate work-related behavior, and determine its form, direction, intensity, and duration (Pinder, 1998). In this thesis, work motivation is defined as intention to (continue to) work, and is considered as a static dependent variable (Nadler & Lawler, 1989; Van Eerde & Thiery, 1996). Hence, this thesis focuses on content rather than process theories of work motivation (Steers, Mowday, & Shapiro, 2004). Many theories on work

motivation have been developed over the years (see Ambrose & Kulik, 1999; Pinder, 1998; Stajkovic, 2006). Notwithstanding all these different theories and definitions, Landy and Becker (1987) argue that there is general agreement that motivated behavior consists of any or all of the following behavioral elements: initiation, direction, persistence, intensity, and termination (see also Campbell, McCloy, Oppler, & Sager, 1993). In this thesis, the direction (i.e., work-related motives) and revised termination (i.e., motivation to continue to work) aspects of work motivation are addressed. Motivation to *continue to work* is a rather new concept, which in particular addresses the work motivation of older workers eligible for retirement because, with aging, motivation to continue to work becomes more relevant than motivation to work (see also Armstrong-Stassen, 2008; Shacklock, Brunetto, & Nelson, 2009).

1.4 Human Resource Practices

This thesis focuses on high commitment HR practices, such as training and flexible work schedules (Wood & De Menezes, 1998), and on age-related HR practices, such as additional leave and reduced workload (Remery, Henkens, Schippers, & Ekamper, 2003; Taylor & Walker, 1994; 1998a; 1998b). Wood and De Menezes (1998) conceptualize high commitment HR practices as practices that are aimed at eliciting a strong commitment to the organization, and at creating conditions in which employees will become highly involved in the organization and identify with its overall goals. Age-related HR practices are defined as HR practices that typically accommodate or ease the load on older workers (Remery et al., 2003).

Social exchange theory (Blau, 1964; Eisenberger, Huntington, Hutchison, & Sowa, 1986) and signaling theory (Casper & Harris, 2008; Ostroff & Bowen, 2000) argue that high commitment HR practices have a positive effect on employees by supporting them, or by functioning as ‘signals’ of the organization’s good intentions toward them. In this line of reasoning, the general assumption is that individual workers will view high commitment HR practices as a personalized commitment toward them, an investment in them, and as recognition of their contribution, which they will then reciprocate through correspondingly positive attitudes and behavior toward the organization (Hannah & Iverson, 2004; Shore & Shore, 1995). Previous studies have consistently shown that high commitment HR practices are indeed positively related to work-related attitudes such as affective commitment and job satisfaction (e.g., Allen, Shore, & Griffeth, 2003). Since these work-related attitudes are affected by employees’ *perceptions* of HR practices, this thesis focuses on high commitment and age-related HR practices *as perceived by* employees (Edgar & Geare, 2005; Guest, 1999).

Existing theory and empirical research on work motivation, and on the association between HR practices and worker outcomes, has not extensively considered the influence of aging (Schalk et al., in press), resulting in the following key issues to be addressed in this thesis.

1.5 Key Issues of the Thesis

Key Issue 1: Conceptualization and Operationalization of Aging at Work

As previously noted, Sterns and Doverspike (1989) conceptualize aging at work in terms of chronological age, functional age, psychosocial age, organizational age, and lifespan age. Despite this, few studies have focused on different operationalizations or alternative measures of aging at work (Birren & Birren, 1990; Birren & Cunningham, 1985; De Lange, Taris, Jansen, Kompier, Houtman, & Bongers, in press; Settersten & Mayer, 1997; Sterns & Alexander, 1987; Sterns & Miklos, 1995), or have examined the effects of different aging conceptualizations on worker outcomes (Arvey, McKay, & Wilson, 2007; Ng & Feldman, 2009). For example, Cleveland and Shore (1992) examined chronological age, employee subjective and social age, as well as self- and supervisors' perceptions of an employee's relative age, and found that these age-related factors had distinct effects on various worker outcomes.

Although these studies found that different conceptualizations of aging have different and interrelated effects on worker outcomes, there is a lack of studies that examine the effect of different conceptualizations of aging on work motivation (Kanfer & Ackerman, 2004). This thesis addresses this first issue by presenting a literature review of earlier studies reporting on different conceptualizations of aging and work motivation (Chapter 2), and by examining the influence of the age-related factors of calendar age, health, and future time perspective on motivation to continue to work with a two-wave longitudinal study (Chapter 6). This relates to our first hypothesis (Hypothesis 1): different conceptualizations and therefore operationalizations of aging have distinct effects on motivation to continue to work.

Key Issue 2: The Influence of Age on Work-related Motives

One of the earliest systematic studies on age and work motivation was provided by Rhodes in her 1983 review of age-related differences in work attitudes and behavior. Of the 185 studies she identified that explicitly addressed age, only ten studies directly examined the relationship between age and needs (e.g., Hall & Mansfield, 1975; Porter, 1963) and only four investigated the relationship between age and work values (e.g., Wright & Hamilton, 1978). Based on these studies, Rhodes (1983) concluded that the strength of security and affiliation motives tend to increase with age, that there was some support for a decrease in the strength of self-actualization

and growth motives, and that the importance of extrinsic job characteristics, such as good pay, decreases with age. Although Rhodes' review revealed important insights into the relationship between age and work-related motives, few studies were conducted before the 1980s, and her findings were difficult to interpret in the absence of an overarching theoretical framework.

Further, modern theories on work motivation do not accommodate age-related changes in motivational structures and, as such, still focus on younger workers (Kanfer & Ackerman, 2004). For example, such theories emphasize intrinsic rewards related to learning and extrinsic rewards related to pay, promotion, and recognition, which are typically of more interest to younger workers (Kanfer & Ackerman, 2004; Maehr & Kleiber, 1981). In response, Barnes-Farrell and Matthews (2007) called for the further development of work motivation theories that explicitly incorporate psychological and developmental aspects of aging (see also Kanfer & Ackerman, 2004).

This thesis answers this call, by categorizing work-related motives in terms of their content (i.e., growth, social, and security motives) based on SOC theory (Baltes et al., 1999) and Socio-Emotional Selectivity Theory (Carstensen, 1995), as well as in terms of locus (i.e., intrinsic or extrinsic motives) based on the Lifespan Theory of Control (Heckhausen & Schulz, 1995). Moreover, theoretical insights from these theories are used to explain and further examine age-related differences in work-related motives. Based on these theories, Hypothesis 2 of this thesis is formulated as: the strength of growth and extrinsic motives decrease, and those of social, security, and intrinsic motives increase with age. This hypothesis will be tested with a meta-analysis of studies reporting on associations between work-related motives and age (Chapter 3).

Key Issue 3: Conceptualization and Operationalization of HR Practices for Aging Workers

A few studies have focused on HR practices for older workers. In these studies (Armstrong-Stassen, 2008; Farr & Ringseis, 2002; Hedge, Borman, & Lammlein, 2006; Paul & Townsend, 1993; Rau & Adams, 2005; Saba & Guerin, 2005; Yeatts, Folts, & Knapp, 2000) many HR practices have been suggested as suitable for retaining older workers, particularly from an employer perspective. These include flexible work schedules, part-time work or semi-retirement, compressed working weeks, participation in company decision making, additional leave, long career breaks, age limits for irregular (shift) working, exemption from overtime work, training programs for older workers, and reduced workloads. However, these HR practices are not structured or integrated into theoretically meaningful categories or bundles, and their proposed relevance for older worker outcomes has no theoretical basis. Moreover, many of these HR

practices are not considered high commitment HR practices and, as such, are not included in studies on high commitment HR practices.

Given this situation, this thesis aims to extend the literature on HR practices for older workers as well as on high commitment HR practices by integrating these two sets of HR practices and by categorizing them into theory-based HR bundles. In line with Toh, Morgeson, and Campion (2008), different bundles of HR practices are distinguished by common goals shared by the individual HR practices. More specifically, bundles of HR practices are determined based on the various lifespan goals to which individuals can allocate their resources (Baltes et al., 1999). In Chapter 4, two high commitment HR bundles will be distinguished: development HR practices that help individual workers to achieve higher levels of functioning (e.g., training and internal promotion) and maintenance HR practices that help individual workers to maintain their current levels of functioning in the face of new challenges (such practices include job security and flexible work schedules).

Furthermore, in the qualitative study described in Chapter 5, two additional HR bundles will be identified: accommodative HR practices that enable adequate functioning at lower levels when maintenance or recovery is no longer possible (e.g., demotion) (see also Remery et al., 2003), and utilization HR practices that help individual workers to return to previous levels of functioning after a loss (e.g., lateral job movement). In Chapter 6, Hypothesis 3 of this thesis, that high commitment and age-related HR practices can be bundled into development, maintenance, utilization, and accommodative HR practices, will be tested with a confirmatory factor analysis.

Key Issue 4: The Influence of Aging on Relationships between HR Practices and Worker Outcomes

In this thesis, because lifespan theories predict that losses in older age cause a shift in an employee's goal focus and motives away from growth and toward maintenance and regulation of loss, the utility of HR practices is expected to change with aging. Therefore, the associations between HR practices and worker outcomes, such as affective commitment, are anticipated to also change with age. Although little is known about the influence of aging on the association between HR practices and individual worker outcomes, two previous studies (Conway, 2004; Finegold, Mohrman, & Spreitzer, 2002) did find that the relationship between high commitment HR practices and commitment differs for workers in different life or career stages. For example, Finegold et al. (2002) found that satisfaction with job security was most strongly linked to commitment among workers aged 45 and above, whereas satisfaction with opportunities to develop skills and having one's salary linked to individual performance had a stronger negative relationship with intention to leave among individuals aged under 30 than among older workers.

Thus, since goals and motives are likely to change with aging, it might be that certain ‘universal’ high commitment HR practices are less suitable for older workers.

Conversely, other HR practices which are not normally perceived of as high commitment HR practices could be considered as high commitment HR practices in terms of older workers. For example, age-related HR practices, such as semi-retirement or reduced workloads, are specifically aimed at retaining older workers (Remery et al., 2003). However, few studies have examined the association between such age-related, accommodative, HR practices and older worker outcomes (e.g., Armstrong-Stassen & Ursel, 2009). Furthermore, these studies largely overlook important insights obtained from lifespan theories about how older adults cope with or regulate the age-related losses they might encounter (Kanfer & Ackerman, 2004). Finally, given the cross-sectional design of these studies, it is impossible to draw reliable conclusions on the causal relation between these HR practices and employee outcomes.

In order to overcome these limitations, this thesis examines how aging influences the association between the four mentioned HR bundles and worker outcomes by: i) conducting a meta-analysis of studies reporting calendar age (mostly as a sample descriptive) as well as associations of (development and maintenance) high commitment HR practices with job satisfaction and affective commitment (Chapter 4); ii) by conducting a qualitative case study to explore HR practices for older workers, as perceived by employees, and their relation to motivation to continue to work (Chapter 5); and iii) by formulating and testing theory-based hypotheses on the relationships between HR bundles, worker outcomes, and aging using a two-wave longitudinal study (Chapter 6). These issues are reflected in the final hypothesis of this thesis: the association between development HR practices and worker outcomes weakens, and the association between maintenance and accommodative HR practices and worker outcomes strengthens, with aging (Hypothesis 4).

1.6 Thesis Outline

Table 1.1 presents an overview of the above mentioned key issues of this thesis and the accompanying hypotheses, research designs and the chapters in which the results are presented.

In Chapter 2, the conceptualizations of aging as proposed by Sterns and Doverspike (1989) - as chronological, functional, psychosocial, organizational, and lifespan age - are extended with operationalizations relevant to motivation to continue to work (see also De Lange et al., 2006). Further, since few studies have examined the work motivation of older adults (Barnes-Farrell & Matthews, 2007; Kanfer & Ackerman, 2004), and several studies reveal that the different conceptualizations and operationalizations of aging lead to different effects on worker outcomes

(Ng & Feldman, 2009; Cleveland & Shore, 1992), this chapter considers the theoretical influence of these various conceptualizations of aging on motivation to continue to work. A *literature review* of 33 studies that reported on age-related factors and work motivation is conducted.

In Chapter 3, an updated, theory-driven *meta-analysis* of 86 studies examining the relationship between calendar age and work-related motives is conducted. Since the systematic review of Rhodes in 1983, significant progress has been made in the psychology of aging. Building on these lifespan theories, and in particular on SOC theory (Baltes et al., 1999), Socio-Emotional Selectivity Theory (Carstensen, 1995), and the Lifespan Theory of Control (Heckhausen & Schulz, 1995), work-related motives are categorized in terms of their content and locus. Furthermore, based on these lifespan theories, age-related differences in work-related motives are hypothesized and then tested. Finally, these predicted relationships are extended by performing moderator analyses to differentiate between cohorts, occupations, age groups, age dispersion, and gender.

Chapter 4 presents the results of another *meta-analysis* of 83 studies that reported calendar age and examined relationships between the availability of high commitment HR practices, as perceived by employees, on the one hand, and both affective commitment and job satisfaction on the other. Based on social exchange theory (Blau, 1964; Eisenberger et al., 1986) and signaling theory (Casper & Harris, 2008; Ostroff & Bowen, 2000), high commitment HR practices are expected to be positively related to both job satisfaction and affective commitment. Furthermore, since goals and motives change with age, it is argued that the utility of HR practices, and thus, the associations between HR practices and work-related attitudes, will change with age.

In Chapter 5, the association between HR practices for older workers and their motivation to continue to work is examined. Since theory and empirical research on this association are insufficient to formulate hypotheses, an *explorative multiple case study* in the Dutch construction sector is conducted involving interviewing four HR and four line managers, and focus group discussions with 32 (21 older and 11 younger) workers. This chapter aims to extend the literature on HR practices for older workers by applying current lifespan perspectives, such as the SOC theory (Baltes et al., 1999) to, and by formulating empirically-based propositions on bundles of HR practices and their relationship to older workers' motivation to continue to work. Three research questions are examined; 1) What (bundles of) HR policies and practices are available for older workers within organizations according to employees, HR managers, and line managers?; 2) What motivates older workers to continue to work?; and 3) How does the availability of (various bundles of) HR practices, as perceived by employees, influence older workers' motivation to continue to work?

In Chapter 6, most of the concepts in this thesis come together. Here, a *two-wave longitudinal study* involving 662 employees of a Dutch university is used to examine how the association between HR bundles and worker outcomes changes with age-related factors over time. More specifically, based on SOC theory (Baltes et al., 1999), high commitment and age-related HR practices are bundled into four HR bundles, and hypotheses on the relationships between the perceived availability of these HR bundles, aging, and worker outcomes (i.e., affective commitment, job satisfaction, and motivation to continue to work) are tested in a longitudinal study. Since the SOC (Baltes et al., 1999) and the Socio-Emotional Selectivity (Carstensen, 1995) theories suggest that losses in health and future time perspective are particularly important age-related changes, aging is here operationalized as calendar age, health, and future time perspective.

In Chapter 7, the Discussion, the main conclusions of this thesis are reported with respect to the four key issues and related hypotheses. In addition, both practical and theoretical implications and limitations are assessed. Finally, some suggestions for future research are provided.

Table 1.1. Key issues, associated research questions, hypotheses, and study designs of this thesis

Key issues	Research questions	Hypotheses (H)	Study design	Chapters
Few studies have focused on different conceptualizations or alternative measures of aging at work.	1) How can aging be best conceptualized and operationalized in a work context?	H1: Different conceptualizations and operationalizations of aging have distinct effects on motivation to continue to work.	Literature review and two-wave longitudinal study	2 & 6
Few studies have focused on work-related motives of older workers. Earlier findings on the relationship between age and motives are difficult to interpret in the absence of an overarching theoretical framework.	2) How does age influence work-related motives?	H2: The strength of growth and extrinsic motives decrease with age, and the strength of intrinsic, social, and security motives increase with age.	Meta-analysis	3
The HR practices suggested in the literature as helpful for retaining older workers lack a theoretical underpinning and are neither structured nor integrated.	3) How can HR practices for aging workers be best conceptualized and operationalized?	H3: HR practices can be bundled into development, maintenance, utilization, and accommodative HR practices.	Meta-analysis, qualitative case study and two-wave longitudinal study	4, 5 & 6

Research on the association between HR practices and worker outcomes rarely focuses on age, hardly draws any insights from lifespan theories, and hardly includes accommodative HR practices.	4) How does aging influence the relationship between HR practices and worker outcomes?	H4: The association between development HR practices and worker outcomes weakens, and the association between maintenance and accommodative HR practices and worker outcomes strengthens with aging.	Meta-analysis, qualitative case study and two-wave longitudinal study	4, 5 & 6
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2

Older Workers' Motivation to Continue to Work: Five Meanings of Age. A Conceptual Review

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Abstract

Little is known about the motivation for older workers to work and to remain active in the labor market. Research on age and motivation is limited and, moreover, conceptually diverse. In this study, we address age-related factors that influence the work motivation of older workers. More specifically, we examine how various conceptualizations of the age factor affect the direction and termination of the motivation to continue to work of older workers, by conducting a literature review of age-related factors and motivation to continue to work. Results from 24 empirical and 9 conceptual studies indicate that most age-related factors can have a negative impact on the motivation to continue to work of older people. These findings suggest that age-related factors are important in understanding older workers' motivation to continue to work and that further research is needed to more fully understand the underlying processes that govern how these age-related factors influence the motivation to continue to work.

2.1 Introduction

In many developed countries the participation rate of older workers in the labor market is relatively low. At the same time, lower fertility rates and increased life expectancy cause the population of these countries to age (OECD, 2006). As a consequence, the proportion of older individuals in the population is rising and the dependency ratio (the ratio of the population aged 65 and over to the population aged 20 to 64) increases largely and rapidly (OECD, 2006). Similarly, the potential workforce is aging. As a result the potential workforce is expected to shrink by 10% in the period from 2020 up to 2050 (OECD, 2005), and the proportion of older workers in this workforce will increase; in 2050 the 50-64 age-group is expected to make up 32% of the potential workforce as compared to 25% in 2000 (UN, 2007). In order to ensure that adequate human resources continue to be available in the future, organizations will require HRM policies that match the needs of older workers and that exploit the full potential of an aging workforce.

However, few studies examine the motivation of older people to work and to remain active in the workforce. Empirical research regarding motivation has been focused on young people and the factor of age has often played only a minor or confounder role in these studies (see, for example, Eerde & Thierry, 1996; Latham & Steele, 1983; Locke & Latham, 2002; Wegge & Haslam, 2005). In an attempt to fill this knowledge gap, this explorative conceptual paper examines age-related factors that can influence the motivation to continue to work. Before addressing the specific research questions of this paper, we will discuss in more detail the conceptualization of aging, work motivation, and the relationships between these variables.

Conceptualizing Age

The term “older worker” has been used to refer to workers from the age of 40 to those aged over 75 depending on the purpose and field of study (Bourne, 1982; Warr, 2000). In studies concerning labor market participation, the term “older worker” usually refers to workers aged 50 or 55 and above. This threshold is chosen because in many countries this age range features a decline in the participation rate in the labor market (OECD, 2005). Researchers examining older people in organizations, on the other hand, often put the threshold at 40 or 45, seeing ‘old’ as referring to obsolete knowledge, skills, and attitudes (Muijnck & Zwinkels, 2002). However, a number of researchers have suggested that ‘chronological age’ may be an insufficient operationalization of the factor age in the work setting (Avolio, Barrett, & Sterns, 1984; Settersten & Mayer, 1997; Sterns & Alexander, 1987; Sterns & Miklos, 1995; Wolf, London, Casey, & Pufahl, 1995).

Aging refers to changes that occur in biological, psychological, and social functioning over time and, therefore, affects each individual on the personal, organizational, and societal levels (Lange, Taris, Jansen, Smulders, Houtman, & Kompier, 2006; Settersten & Mayer, 1997; Sterns & Miklos, 1995). Individuals with the same chronological age may differ in terms of health, career stage, and family status. Chronological or calendar age may serve as a proxy for age-related processes that can influence work outcomes directly or indirectly (Kanfer & Ackerman, 2004) and, therefore, cannot be captured within one single definition or conceptualization. Lange et al. (2006) have recently highlighted this complex operationalization of aging at work, and referred to the helpful approaches suggested by Sterns and Doverspike (1989) to conceptualize age in the workplace.

Sterns and Doverspike (1989) distinguished five different approaches to conceptualize aging of workers:

- *Chronological age* refers to one's calendar age. In this approach the distinction between older and younger workers is based on calendar age. As mentioned, the term "older worker" may refer to workers from the age of 40 to those aged over 75;
- *Functional or performance-based age* is based on a worker's performance, and recognizes that there is a great variation in individual abilities and functioning through different ages. As chronological age increases, individuals go through various biological and psychological changes. These changes may be reflected in the health, psychical capacity, cognitive abilities and performance of individuals;
- *Psychosocial or subjective age* is based on the self and the social perception of age. Subjective age (or self perception) refers to how old an individual feels, looks and acts, with which age cohort the individual identifies, and how old the person desires to be (Kaliterna, Larsen, & Brkljacic, 2002). The social perception of age involves age norms applied to an individual with respect to an occupation, company, or society. Psychosocial definitions have focused on three issues: the age at which society perceives an individual to be older, the social attitudes that are held toward older workers (or the perceived attributes and stereotypes of older workers) and the implications for personnel decisions of labeling a worker as older;
- *Organizational age* refers to the aging of individuals in jobs and organizations. The aging of individuals in jobs and organizations is more commonly discussed in the literature about seniority and job or organizational tenure. The effects of aging may often be confounded by the effects of tenure and vice versa. Nonetheless, organizational age may also refer to career stage, skill obsolescence and age norms within the company;

- the concept of *Lifespan* age borrows from a number of the above approaches, but advances the possibility for behavioral change at any point in the life cycle. This behavioral change may be affected by three sets of factors: a) normative, age-graded biological, and/or environmental determinants, which are strongly related to age; b) normative, history-graded influences, which are related to the age-cohort, and c) non-normative unique career and life changes. To capture the unique impact of the lifespan approach, lifespan age can best be measured by life stage or family status (Lange et al., 2006; Sterns & Doverspike, 1989; Sterns & Miklos, 1995).

These different approaches or conceptualizations of age are often interrelated. For example, age and organization or job tenure are interrelated; moderate to strong associations (correlations between 0.16 and 0.76) have been found between age and organization or job tenure (Chang, 2005; Gordon, Cofer, & McCullough, 1986; Ng, Butts, Vandenberg, DeJoy, & Wilson, 2006). Furthermore, some studies point to the interrelatedness of the other conceptualizations of age. For example, Wahlin, MacDonald, deFrias, Nilsson, and Dixon (2006) found that both self-rated health and objective biological age predicted cognitive variation independently of chronological age. Moor, Zimprich, Schmitt, and Kliegel (2006) have found a negative association between self-perception of aging and self-rated health. Finally, Cleveland and McFarlane Shore (1992) found positive correlations between self and social perceptions of age.

However, the different conceptualizations of age have distinct effects on work-related attitudes. For example, Cleveland and McFarlane Shore (1992) have found that the employee's chronological age, the employee's subjective age (self-perception), the employee's social age (others' perception), and the employee's relative age (compared with the employee's work group), differentially predicted job involvement, job satisfaction, and organizational commitment. Employees who perceived themselves to be older than most of the people in their work group, for example, exhibited more job involvement, job satisfaction, and organizational commitment. Further, Warr (1992) examined 13 potentially explanatory age-related factors of the positive association between age and well-being, and found that job tenure has a negative effect and having children under age 5 (family status) has a positive effect on job well-being (measured as job depression-enthusiasm). Since the different conceptualizations of age have different effects on work-related outcomes, it is valuable to distinguish them. In this paper we use the aforementioned five conceptualizations of age to distinguish age-related factors that influence the motivation to work of older people.

The Conceptualization of Work Motivation

Motivation has been viewed as both an independent and a dependent variable. As an independent variable, various theories have been put forward to explain motivation. Atkinson (1964), for example, defines motivation as the contemporary (i.e. immediate) influence on direction, vigor, and persistence of action; while Vroom (1964) defines it as a process governing the choice made by an individual among alternative forms of voluntary activity. Pinder (1998) describes work motivation as a set of energetic forces that originate both within as well as beyond an individual's being that initiate work-related behavior, and determine its form, direction, intensity, and duration.

As a dependent variable, motivation has been defined as 'intention to behave' (Jansen, 2002). Notwithstanding all the different theories and definitions, according to Landy and Becker (1987), there is general agreement that motivated behavior consists of any or all of the following behavioral elements: initiation, direction, persistence, intensity, and termination. In this exploratory paper, we will examine motivation as a dependent variable and define it as 'motivation to continue to work', because with aging the 'motivation to continue to work' becomes more relevant than, and starts to supersede, the 'motivation to work'. Furthermore, we focus on the behavioral elements direction and termination, because the direction (e.g. values and needs) of motivation to continue to work is likely to change with age, and the termination (e.g. retirement) of motivation to continue to work becomes a relevant option for the older worker. Initiation, on the other hand, is irrelevant with respect to the motivation to *continue* to work, intensity refers to effort and performance, which is connected to the direction of older worker motivation to continue to work (see psychological age), and persistence of the motivation to continue to work is the opposite of termination. Therefore, we have chosen to focus on direction and termination.

Aging and the Motivation to Continue to Work

As mentioned earlier, few studies examine the impact of aging on work motivation, and, in addition, there has been little research (e.g. Arvey & Warren, 1976; Heneman, 1973; Huddleston, Good, & Frazier, 2002; Linz, 2004; Lord, 2004) on age effects in expectancy motivation or in any other motivation theory. The limited research on age and work motivation does reveal that age moderates the relationship between various work characteristics and motivation to work. Warr (1997) summarized the limited empirical evidence on the motivational effects of key job features at different ages, and concluded that, over time, the importance attached to high job demands, job variety, and feedback is likely to decrease, while the importance attached to job security and

physical security is likely to increase. Various other studies have found that, with older workers, job satisfaction is more closely related to intrinsic factors or internal rewards of work compared to younger employees (Cohn, 1979; Gruenfeld, 1962; Kanfer & Ackermann, 2004; Saleh & Otis, 1964; Schwab & Heneman, 1977; Stagner, 1985; Valentine, Valentine, & Dick, 1998; Vallerand, O'Connor, & Hamel, 1995).

Furthermore, Rhodes (1983) reviewed more than 185 studies in an attempt to examine age-related differences in internal work motivation and found only a few relevant studies (Aldag & Brief, 1977; Hall & Mansfeld, 1975; Warr, Cook, & Wall, 1979). These studies reported a positive, albeit weak, relationship between age and internal work motivation. Lord (2004) examined the work motivation of older knowledge workers and found that the primary reasons for older workers to remain active in the workforce are that they enjoy working, derive satisfaction from using their skills, gain a sense of accomplishment from the job they perform, and enjoy the chance to be creative. According to Higgs, Mein, Ferrie, Hyde, & Nazroo (2003), older workers continue to work because of financial reasons, the work itself, or their traditional work ethic. Leviatan (1992) found that older kibbutz workers prefer jobs that satisfy higher order needs to jobs offering better physical conditions or convenience. Lord (2002) found that older engineers with insufficient income to retire, work to satisfy the first and second level needs in terms of Maslow's hierarchy ("hygiene factors"), whereas older engineers with sufficient income to retire are primarily motivated by needs that correspond to the third and fourth levels of Maslow's hierarchy ("motivators"). Linz (2004) examined job motivators of Russian workers and found that pay is the most important job motivator for all age groups. Overall, Linz found no major differences in the ranking of job motivators between younger and older respondents, although older workers did place higher value on pay and security and the respect and friendliness of co-workers. Finally, Paynter (2004) in a study on the motivational profiles of teachers found that teachers aged 50 and above have significantly higher combined (extrinsic, intrinsic, and moral) motivation scores than teachers aged 20 to 39. Conversely, other studies (including Mehrabian & Blum, 1996; Okun & Di Vesta, 1976; Veroff, Atkinson, Feld, & Gurin, 1960) found that achievement motivation declines with age.

Overall, it appears that age and motivation are factors in a range of theories, and as such are conceptualized in different ways. In some studies, motivation is conceptualized as need, and age is conceptualized as life stage; whereas in other studies motivation is conceptualized as intrinsic motivation, and age is conceptualized as calendar age. Given this lack of consistency, in this paper we examine the various conceptualizations of age recently proposed by Lange et al. (2006), in an attempt to distinguish specific age-related factors that influence the direction and

termination of older workers' motivation to continue to work, through the following research questions:

1. How does chronological age affect the motivation to continue to work of older workers?
2. How does functional age affect the motivation to continue to work of older workers?
3. How does psychosocial age affect the motivation to continue to work of older workers?
4. How does organizational age affect the motivation to continue to work of older workers?
5. How does lifespan age affect the motivation to continue to work of older workers? (see Figure 2.1).

2.2 Method

We aimed to answer the aforementioned research questions by carrying out a literature review of studies we could find reporting on age-related factors and work motivation as defined above. Relevant studies were identified through a database search. The databases searched were: PsycInfo (1872 – 2006), Eric (1966 – 2006), Web of science (1945 – 2006), and Picarta. We have searched these databases with the following keywords: '*motivation*' and '*work*' and '*age*', '*older worker*', '*older employee*', '*aging*', '*psychosocial age*', '*self perception*', '*age norms*', '*functional age*', '*health*', '*biological age*', '*psychological age*', '*cognitive abilities*', '*physical abilities*', '*life span*', '*life course*', '*family status*', '*marital status*', '*tenure*', '*career stage*', '*obsolescence*'. We did not limit ourselves to a particular time frame because we consider all studies potentially relevant. To expand our literature base, we also searched the references of the literature found in the keyword search, for other relevant studies which could be included.

The literature search resulted in $N = 33^1$ articles in total, including empirical ($N = 24$), and conceptual ($N = 9$) studies. Subsequently, we identified the empirical and conceptual findings and ideas contained in these studies that we could use to answer our research questions. Table 2.1 provides information on the empirical studies found, including: a) the sample and design, b) the independent variable(s), c) the dependent variable(s), d) the measurement instrument used to measure the age-related variable, and e) the results. Table 2.2 presents information from the conceptual studies found on the independent variable(s), the dependent variable(s), the theory or method behind the study, and the results. We have distinguished between studies that examine the direction of motivation and those that examine the termination of motivation to continue to work.

¹ Since some of these articles measured or addressed more than one conceptualization of age, the reported percentages in the results paragraph can add up to more than 100%

Table 2.1. Selected empirical studies

Author and journal	Sample and design	Independent variables	Dependent variables	Measurement instrument of age-related variable	Results and quality of the study (Q)
<i>Studies examining direction of motivation to continue work</i>					
Adler and Aranya (1984), <i>Journal of Vocational Behavior</i>	US professional accountants, N = 764, mean age = 41, cross-sectional survey study	Career stage	Work needs (security, social, esteem, autonomy, and self-actualization), work attitudes and vocational preferences ($\alpha = .67-.92$)	<i>Organizational age</i> with career stage as indicator operationalized as age	Needs, work attitudes, and occupation match differ significantly with career stage Q = 2
Cook and Wall (1980), <i>Journal of Occupational Psychology</i>	UK male blue-collar workers, N = 650, median age = 41, cross-sectional survey study	Organizational tenure	Intrinsic motivation ($\alpha = .82$)	<i>Organizational age</i> with self-rated organizational tenure as indicator	Positive correlation between organizational tenure and intrinsic motivation Q = 2
Cron and Slocum (1986), <i>Journal of Marketing Research</i>	US salespeople, N = 466, mean age = 39, cross-sectional survey study	Career stage	Job attitudes (psychological needs), satisfaction, performance, work environment perceptions ($\alpha = .60-.93$)	<i>Organizational age</i> : Career Concerns Inventory (CCI) (Super, Zerkowitz, & Thompson, 1981), $\alpha = .83-.90$	Attitudes, satisfaction, performance and work environment perception differ significantly with career stage Q = 2
Holahan (1988), <i>Psychology & Aging</i>	US older people (65 – 75), N = 681, mean age = 70.2, cross-sectional survey study	Life goals (autonomy, involvement and achievement ($\alpha = .82$) motivation)	Activities, health and well-being	<i>Functional age</i> with self-rated health (2 items with correlation .71) as indicator	Achievement motivation and health are positively correlated Q = 3
Kidd and Green (2006), <i>Personnel Review</i>	UK biomedical research scientist, N = 220, mean age = 35.6, longitudinal survey study	Demographic (family responsibilities) and work related factors	Career motivation and intention to leave ($\alpha = .79-.88$)	<i>Lifespan age</i> : Self-rated family status (partner and/or dependent children)	The factors explaining career motivation and intention to remain in the profession were similar for those with various types of family responsibilities Q = 2
Kuvaas (2006), <i>International Journal of Human Resource Management</i>	Norwegian bank employees, N = 593, mean age = 44, cross-sectional survey study	Organizational tenure	Intrinsic motivation ($\alpha = .83$)	<i>Organizational age</i> : self-rated organizational tenure	Positive correlation between organizational tenure and intrinsic motivation Q = 2
Lang and Carstensen (2002), <i>Psychology & Aging</i>	Germans, N = 480, mean age = 55.7, cross-sectional	Future time perspective	Social motivation	<i>Psychosocial age</i> : self perception operationalized as self-rated future time perspective (e.g.	Limited future time perspective positively related to preference for emotionally meaningful goals such as generativity

	interview study			'most of my life (still) lies ahead of me') (Carstensen & Lang, 1996), $\alpha = .92$	Q = 2
Lynn, Thi Cao, and Horn (1996), <i>Journal of Organizational Behavior</i>	US accountants, N = 718, mean age = 32.5, cross-sectional survey study	Career stage	Work commitment, intrinsic and extrinsic rewards satisfaction and turnover intention ($\alpha = .63-.93$)	<i>Organizational age</i> : career stage operationalized as professional tenure	Job involvement, organizational commitment, intrinsic and extrinsic rewards satisfaction are positively related and turnover intention is negatively related to career stage Q = 1
Morrow and McElroy (1987), <i>Journal of Vocational Behavior</i>	US public agency employees, N = 2200, mean age = 42.7, cross-sectional survey study	Career stage	Work commitment (value on work), work ethic endorsement, intention to remain and job satisfaction ($\alpha = .73-.91$)	<i>Organizational age</i> : career stage operationalized as age, organizational tenure and positional tenure	Career stage was positively related to job involvement, commitment, work ethic endorsement, and intention to remain Q = 2
Noe, Noe, and Bachhuber (1990), <i>Journal of Vocational Behavior</i>	US employees, N = 233, age: 24% 25-29, 22% 30-34, 15% 35-39, 14% 40-45, 13% 45-55, cross-sectional survey study	Career stage	Career motivation ($\alpha = .71$)	<i>Organizational age</i> : career stage operationalized as age	Career stage has a significant relation with various dimensions of career motivation Q = 1
Ornstein, Cron, and Slocum (1989), <i>Journal of Organizational Behavior</i>	US salespeople, N = 535, mean age = 39.3, cross-sectional survey study	Career stage	Job attitudes, career attitudes, satisfaction, organizational commitment and intention to leave ($\alpha = .69-.91$)	<i>Organizational age</i> : Career Concerns Inventory, $\alpha = .88-.94$	Job involvement, satisfaction and organizational commitment positively related to career stage and intention to leave negatively related to career stage Q = 2
Tamir and Antonucci (1981), <i>Journal of Marriage and the Family</i>	US national sample, N = 4724, cross-sectional survey study	Stages of family life cycle	Perception, motivation (need for affiliation, achievement and power) and social support	<i>Lifespan age</i> : self-determined family stage (single – parents of children over age 17)	Stages of family life are not so much associated with motivation Q = 1
Vallerand, O'Connor, and Hamel (1995), <i>International Journal of Aging and Human Development</i>	Canadian older people (60+), N = 77, mean age = 82.6, cross-sectional survey study	Motivation (non-self-determined extrinsic, self-determined, amotivation and intrinsic motivation ($\alpha = .72-.92$))	Well-being ($\alpha = .67-.97$)	<i>Chronological and functional age</i> : self-rated health	General health is negatively related to amotivation and positively related to self-determined extrinsic motivation, age is negatively related to self-determined extrinsic motivation Q = 0

Shearer and Steger (1975), <i>Academy of Management Journal</i>	US air force employees, $N = 451$, mean age = 36.2, cross-sectional survey study	Age and six dimensions of motivation (expectations, achievement, etc)	Obsolescence	<i>Organizational age</i> : self-rated obsolescence (rate of current knowledge (on different subjects) , versus knowledge needed, knowledge of others in the field and past knowledge)	Negative relationships between career expectations, need for achievement, perceived duty to stay up to date, future time perspective and internal orientation and obsolescence Q = 1
<i>Studies examining termination of motivation to continue work</i>					
Anderson and Burkhauser (1985), <i>Journal of Human Resources</i>	US older male workers, $N = 4878$, age = 58-63, cross-sectional survey study	Health and subsequent mortality experiment	Retirement	<i>Functional age</i> : self-rated health and mortality experiment 10 years later (death) (1 item)	Both measures of health negatively related to retirement Q = 1
Ekerdt and Deviney (1993), <i>Journals of Gerontology</i>	US older workers, $N = 1365$, mean age = 56.98, 4-wave 9-year panel study	Proximity to retirement	Job tension, fatigue	<i>Chronological age</i> : self-rated proximity to retirement (years to retirement)	Job more burdensome when drawing close to fixed retirement age, regardless of age Q = 2
Hayward, Grady, Hardy, and Sommers (1989), <i>Demography</i>	US male older workers, $N = 2816$, age = 55+, longitudinal survey study	Occupational influences (age and health as covariates)	Labor market withdrawal (retirement)	<i>Functional and lifespan age</i> : self-rated health and marital status	Health limitations and being married are positively correlated with retirement risk Q = 3
Henkens and Tazelaar (1997), <i>Research on Aging</i>	Dutch civil servants, $N = 1015$, age = 1 year from eligibility for early retirement, cross-sectional survey study	Individual and work-related factors	Retirement decision	<i>Functional and lifespan age</i> : self-rated health based on demand for medical care ($\alpha = .67$), perceptions of spouse etc.	No significant relationship between health and retirement decision. Normative context plays substantial role Q = 1
Higgs, Mein, Ferrie, Hyde, and Nazroo (2003), <i>Ageing & Society</i>	Older British civil servants, $N = 60$, age = 55+, semi-structured interview study	Individual (health, hobbies) and work-related factors (satisfaction, rewards)	Retirement decision	<i>Chronological, functional and lifespan age</i> : Interview-based eligibility to early exit arrangement, health, family stage	Third age exit, poor health and financially attractive early exit package reasons to retire Q = 1
Hwalek, Firestone, and Hoffman (1982), <i>Ageing & Work</i>	US male industrial workers, $N = 100$, mean age = 55, cross-sectional interview study	Social pressures, income, health status etc	Intention to retire	<i>Psychosocial age</i> : interview-based age norms (social pressure)	Social pressures were significant predictors of retirement intentions Q = 0

Lund and Borg, 1999, <i>Experimental Aging Research</i>	Danish employees, N = 3320, age 35-59, longitudinal interview study	Work-related variables, health, stress and musculo-skeletal problems	Remaining in work	<i>Functional age</i> : self-rated health (1 item)	For male and female employees a very good health was associated with remaining in work Q = 2
Saba and Guerin (2005), <i>Public Personnel Management</i>	Canadian older health care managers, N = 402, mean age = 53.5, cross-sectional survey study	Work related factors and individual characteristics	Extending working life vs taking early retirement	<i>Functional and lifespan age</i> : self-rated health ($\alpha = .87$) and family stage	Decisions to retire early or extend working life are largely due to individual characteristics (health, spouse's career) Q = 1
Smith and Moen (1998), <i>Journal of Marriage and the Family</i>	US retired couples, N = 228, age = 50-72, cross-sectional interview study	Perception of spousal influence	Retirement decision	<i>Lifespan age</i> : family stage = couple	Spouses influence the retirement decision Q = 0
Vries, Willemsen and Nauta (2002), <i>technical report</i>	Dutch employees in education, N = 1206, age = 45+, cross-sectional survey study	Individual, organizational and social factors	Retirement decision	<i>Chronological and lifespan age</i> : eligibility to early retirement arrangement	Educational workers retire, because they prefer more leisure time and because it's financially attainable Q = 1

Table 2.2. Selected conceptual studies

Author	Independent variables	Dependent variables	Theories or method	Results/ideas and Quality of the study (Q)
<i>Studies examining direction of motivation to continue work</i>				
Bandura (1977), <i>Psychological Review</i>	<i>Psychosocial age</i> : self efficacy	Motivation (initiation, effort and persistence)	Motivation theory	Self efficacy determines motivation Q = 1
Carstensen (1995) <i>Current Directions in Psychological Science</i>	<i>Psychosocial age</i>	Social motivation	Theories about age-related change in social behavior (based on empirical research)	Motivation for contact changes with age because a decline in available future time changes preferences Q = 1
Kanfer and Ackerman (2004), <i>Academy of Management Review</i>	<i>Functional and psychosocial age</i> : age-related changes in adult development, such as cognitive abilities and self concept	Work motivation	Lifespan theories, research on cognitive abilities, personality, affect, vocational interests, values, and self-concept, Kanfer's expectancy theory	There is theoretical nor empirical evidence that work motivation declines with age Q = 1

Korman (1970), <i>Journal of Applied Psychology</i>	<i>Psychosocial age</i> : self-concept	Work motivation (to perform) and choice of activities (direction)	Hypothesis of work behavior	Self-perceived competence for a task facilitates the choice of a task and performance for that task Q = 1
Lazear (1998), <i>John Wiley & Sons</i>	<i>Organizational age</i> : steep earning profiles	Incentives to work	Labor economics	Steep earning profiles provide positive incentives Q = 1
London (1990), <i>Journal of Organization Change Management</i>	<i>Organizational age</i> : career identity, career insight and career resilience	Career motivation		Career motivation consists of career identity, career insight and career resilience Q = 0
Rosen and Jerdee (1976), <i>Journal of Applied Psychology</i>	<i>Psychosocial age</i> : age stereotypes	Managerial decisions	In basket-exercise with business students	Stereotypes lead to discrimination, which has a potential negative impact on older worker work motivation Q = 1
<i>Studies examining termination of motivation to continue work</i>				
Hanson, De Koekoek, Neece, and Patterson (1997), <i>Journal of Vocational Behavior</i>	<i>Organizational age</i>	Retirement decision	Literature review (1992 – 1996)	The perception of career attainment influences job attachment, which in turn influences the retirement decision Q = 1
Hurd (1996), <i>University of Chicago Press</i>	<i>Lifespan age</i>	Retirement decision	Literature review to support retirement model	Tastes for work gradually shift with age towards leisure Q = 0

2.3 Results

Before discussing the relevant results for our research questions, we will discuss the descriptives of our selected empirical studies. Table 2.1 reveals that 14 studies (58%) examine variables that measure the direction of motivation, and 10 studies (42%) examine the termination of the motivation to continue to work. Further, the samples are all western and range from blue collar to white collar workers. Professionals (such as accountants) and salespeople are used mainly (in 56% of the studies) in studies examining indicators of organizational age, whereas civil servants are used often (in 33% of the studies) in studies examining indicators of functional and lifespan age. Further, 10 (42%) of the 24 empirical studies include only older workers (starting at 45+) or retirees in their samples. These studies examine particularly the chronological, functional and lifespan age.

The measurement instruments used to measure the age-related variables particularly consist of 1 or 2-item self-rated age (13%), organizational or job tenure (17%), health (25%), and family status (25%). Only 5 studies (21%) use a multi-item scale to measure the age-related variable: two studies on career stage (Cron & Slocum, 1986; Ornstein, Cron & Slocum, 1989), one study on obsolescence (Shearer & Steger, 1975), one study on health status (Saba & Guerin, 2005) and one study on self perception (Lang & Carstensen, 2002). Cronbach's alpha of these multi-item scales ranged from .83 to .94 in these studies.

In order to assess the quality of the 33 studies, we defined the following five quality criteria (based on Breslin, Day, Tompa, Irvin, Bhattacharyya, Clarke, & Wang, 2007; Lange, Taris, Kompier, Houtman, & Bongers, 2003); a) longitudinal study design; b) sample size $N > 500$; c) reliability coefficients of (in)dependent variable(s) $\alpha > .75$; d) reliability of age measurement instrument $\alpha > .75$; e) published in journal with impact factor > 2.0 (according to ISI Web of Knowledge). We added this last criterion to be able to measure the quality of the conceptual studies as well. Tables 2.1 and 2.2 reveal that most studies (49%) meet one of these criteria ($Q=1$), 30% meet two ($Q=2$), 15% meet none of the criteria, of which 6% are conceptual studies (Hurd, 1996; London, 1990) and 9% are interview-based studies (Hwalek, Firestone, and Hoffman, 1982; Smith & Moen, 1998; Vallerand, et al., 1995), and 6% (Hayward, Grady, Hardy, and Sommers, 1989; Holahan, 1988) meet three of these criteria. We will keep this in the back of our head when analyzing and interpreting our data.

Results Question 1: The Impact of Chronological Age on Motivation to Continue to Work (N = 4 relevant studies)

In the chronological age approach used in four of the 33 studies (12%), “older workers” are defined by calendar age (see Lange et al., 2006). In this approach “old age” is often defined by eligibility rules for the receipt of pension or social security benefits, or by the legal or actual retirement ages (Settersten & Mayer, 1997). Since the traditional safety net of funded (early) retirement is being withdrawn worldwide, most workers will not retire before the age of 65, providing a strong monetary incentive to work until that age.

The monetary incentive notwithstanding, Ekerdt and DeViney (1993) have suggested that as individuals approach a fixed retirement age, they may come to view their jobs as a burden and become less psychologically involved. Furthermore, having a mandatory retirement age could make older people feel less competent and more dependent on others, with potentially negative consequences for motivation (Vallerand et al., 1995).

Further, many organizations use calendar age to define older workers in their company policies. Existing HRM policies for older workers generally consist of collective measures for workers in a specified age-group - with the purpose of accommodating these ‘older workers’ (e.g. reduced workload, additional leave and pre-retirement planning) (Remery, Henkens, Schippers, Doorne-Huiskes, & Ekamper, 2001; Thunissen, 2005). These measures are often combined with a policy of reducing investment in the training and development of older workers, with most measures designed to encourage older workers to stop working, or at least to reduce their hours (OECD, 2005). As a consequence, such policies could easily be seen as having a negative effect on the motivation of the older workers involved.

Finally, calendar age determines which workers are offered generous early retirement schemes in general and other attractive exit routes in times of downsizing and reorganization. Such financially attractive arrangements clearly influence older workers in their decision to retire early (Higgs et al., 2003; Vries, Willemsen & Nauta, 2002), and thus their decision not to continue to work. To summarize, chronological age is likely to have a negative impact on the motivation to continue to work, because calendar age, although it is disputable and in many countries forbidden by age discrimination legislation, determines eligibility for a whole range of schemes such as additional leave and other accommodative measures, attractive exit arrangements and (pre)-retirement planning.

Results Question 2: The Impact of Functional Age on Motivation to Continue to Work

In using this approach, “older workers” are defined by psychological age (determined by cognitive abilities) and biological age (determined by physical health). Tables 2.1 and 2.2 show that $N = 9$ of the 33 (27%) studies examined indicators of functional age in relation to motivation to continue to work.

Psychological age. Warr (1992, 2001) and Kanfer and Ackermann (2004) reviewed literature on cognitive abilities and age, and found that cognitive abilities change with age: crystallized intellectual abilities, such as general knowledge and verbal comprehension, increase, and fluid intelligence, such as working memory, abstract reasoning, and speed of reaction, decrease. Kanfer and Ackerman (2004) propose that these changes affect motivation by changing the amount of effort required to sustain performance. However, this compensatory motivational strategy will be undermined by the negative effects on the psychological factors (e.g., self-efficacy) that normally support motivation. Furthermore, in tasks with high demands on fluid intelligence, motivation among older workers may be diminished as the discrepancy between comfortable effort level and the demands of the task increases (we will return to this point in the next paragraph). In tasks demanding both fluid and crystallized intelligence, the potential drop in work motivation can be attenuated by changing the working role to reduce the demands on fluid intelligence. Overall, previous studies are inconclusive regarding the associations between psychological age and motivation; cognitive abilities can have either a positive or a negative impact on motivation to continue to work.

Biological age. Physical abilities decline with age (Greller & Simpson, 1999; Sterns & Miklos, 1995). Furthermore, various studies have shown that physical health affects motivation. For example, Holahan (1988) found that health correlates positively with achievement motivation, and Vallerand et al. (1995) found that health correlates positively with self-determined extrinsic motivation. In addition, other research has shown that health limitations have a strong impact on the decision to retire early (Anderson & Burkhauser, 1985; Hayward et al. 1989; Higgs et al., 2003), and thus on the motivation to continue to work (Lund & Borg, 1999). Conversely, another study, among civil servants, indicated that personal health played only a modest role in retirement decisions (Henkens & Tazelaar, 1997). A possible explanation for this apparently perverse finding is that the lost physical capabilities are of less importance in such physically undemanding professions, and that minor accommodations in the work environment and compensatory personal coping strategies can overcome the effects of physical and psychological decline (Greller & Simpson, 1999). Avolio, Waldman, and McDaniel (1990) would seem to support such an argument in that they found that the type of occupation did indeed influence the relationship

between age and performance. Another study, across a wide spectrum of jobs, concluded that there was no significant difference between the job performance of older and younger workers (Warr, 1992). Finally, on this issue, it has been suggested that relative physical and psychological decline may result in negative thoughts and feelings about the self (Demo, 1992). To summarize, the overall picture that emerges is that health has a positive relationship with achievement, self-determined extrinsic motivation, and the concept of self, but a negative relationship with retirement. Therefore, biological age is likely to have a negative impact on the motivation to continue to work.

Research Question 3: The Impact of Psychosocial Age on Motivation to Continue to Work

Tables 2.1 and 2.2 show that $N = 7$ of the 33 studies examined indicators of psychosocial age (21%). Psychosocial age refers to one's own and the social perception of age.

Self perception of age. In this view, psychological aging refers to a shift in the individual's time orientation from emphasizing the "life lived from birth" (past self-image) to the "life left until death" (future sense of self) (see Neugarten, 1968). Psychological aging has a number of consequences. Firstly, one's self perception of age is likely to affect self-efficacy which, according to Bandura (1977) and Korman (1970), lies at the heart of an individual's motivation to act or perform.

Secondly, Carstensen (1995) found that with psychological aging the motivation for having contact with others shifts from gaining resources (instrumental) to obtaining affective rewards (emotional satisfaction) and supporting one's own identity. As a result, older workers face the marketplace with fewer resources than workers who are actively maintaining a network of instrumental relationships.

Thirdly, Lang and Carstensen (2002) found that generativity motives rise with psychological aging. This suggests that generative jobs or tasks, such as teaching and mentoring (Farr, Tesluk, & Klein, 1998; Pratt, Norris, Arnold, & Filyer, 1999), are likely to motivate older workers (Kanfer & Ackerman, 2004).

Finally, according to Kanfer and Ackerman (2004), as workers age, preference for activities that support positive affect, one's self-concept (see also Gecas, 1982; Korman, 1970; Leonard, Beauvais, & Scholl, 1999; Maurer, 2001) and identity increases. This suggests that older people will be more motivated in jobs that offer opportunities for positive events or a strengthened sense of identity, but will have a lowered motivation when it comes to performing new tasks. Moreover, the utility of effort can be expected to decline with age because expending effort is more likely to be associated with emotional exhaustion, stress, and negative affect. Overall, since

a self-perception of being 'old' (past self-image) has a negative effect on motivation to act and perform, on motivation to perform new tasks, and on the utility of effort, a self-perception of aging is likely to have a negative impact on motivation to continue to work.

Social perception of age. Social perception involves concepts such as age norms and stereotypes. Age norms are described by Lawrence (1988) as widely-shared beliefs about the standard or typical age considered appropriate for individuals in a certain role or with a certain status. There is ample evidence in the literature for the existence of normative age groups within organizations. Several studies (Finkelstein, Burke, & Raju, 1995; Martin & Strauss, 1956; Panek, Staats, & Hiles, 2006; Sofer, 1970) found shared beliefs about age-related career timetables and about typical jobs for 'older people' versus 'younger people'.

These age norms appear to affect a wide range of employment decisions. Employees who are lagging behind age-based career patterns are less likely to receive future promotions and good performance evaluations (Cleveland & McFarlane Shore, 1992; Lawrence, 1988; Martin & Strauss, 1956). Further, Hwalek et al. (1982) have argued that the social pressure resulting from age norms is the strongest factor in the aging process and the decision to retire (see McCann & Giles, 2002).

In addition, managers may hold stereotypical views of older workers (e.g. strong work ethic, unwilling or unable to learn new skills, and unable to change or adapt) (Lord, 2004; Greller, & Simpson, 1999; Sterns & Miklos, 1995; Visser, Henkens, & Schipper, 2003). Rosen and Jerdee (1976) examined the influence of age stereotypes on managerial decisions and found that stereotyping of older employees leads to discriminatory decisions about these workers (Chiu, Chan, Snape, & Redman, 2001). The perception of older employees that their actions are no longer instrumental for achieving career advancement as a result of this managerial bias, can have a negative influence on their motivation to continue to work. Limited opportunities for training and development (Greller & Simpson, 1999; OECD, 2005) and a lack of feedback on performance can further reduce the motivation of older employees, thereby validating the stereotypes held by managers. Eventually, such stereotyping could affect older workers' self-perception or self-efficacy if they start to believe these stereotypes.

Overall, it seems that a social perception of being 'old' increases the social pressure to retire, and decreases the likelihood of being promoted, having your performance highly evaluated, and being offered opportunities for training and development. These effects are likely to have a negative impact on one's motivation to continue to work.

Results Question 4: The Impact of Organizational Age on Motivation to Continue to Work

Tables 2.1 and 2.2 shows that $N = 12$ of the 33 studies (36%) examined indicators of organizational age. Organizational age is used to refer to variables like the years of service (tenure) and career stage.

Tenure. The primary incentive mechanism in organizations is that of tournament promotion. In economic models, employees are seen as competing to secure promotions to increasingly more highly compensated jobs with greater authority and autonomy (Carmichael, 1983; Lazear & Rosen, 1981). However, the opportunities for such tournament promotions have largely disappeared for older workers, who have reached a point where there are reduced prospects of further promotion. As a consequence, steep age-earnings profiles in which younger workers are paid less than they are worth, and older workers more, are used to provide positive incentives to continue to work for those tenured workers who would otherwise have reached a plateau in earning potential (Lazear, 1998; and for other reasons, see Hutchens, 1989).

Our search revealed that few studies have examined the relationship between organizational tenure and work motivation. Cook and Wall (1980) and Kuvaas (2006), for example, found a positive relationship between organizational tenure and intrinsic motivation. However, we have found insufficient data to enable us to draw firm conclusions as to which effect is the strongest; the positive effect resulting from steep earning profiles or the negative effect resulting from career plateaus.

Career stage. Individuals progress through distinct occupational stages in their organizational careers (Hall & Nougaim, 1968; Super, 1984). Super (1984) proposed a career model with a sequence of stages, starting with one labeled trial (with an emphasis on identifying interests, capabilities, fit, and professional self-image), through establishment (with an emphasis on growth, advancement, and stabilization), to maintenance (emphasis on accomplishments achieved earlier and maintaining one's self-concept), and finally to decline (emphasis on developing a new self-image independent of career success). The model predicts that job attitudes should vary with career stage accordingly (Super, 1984).

Many studies have shown that job attitudes, such as psychological needs and vocational preferences, do indeed differ with career stage and have generally found positive relationships between career stage and work commitment, job involvement, job and rewards satisfaction, and negative relationships between career stage and turnover intentions (e.g., Adler & Aranya, 1984; Cron & Slocum, 1986; Lynn, Thi Cao, & Horn, 1996; Morrow & McElroy, 1987; Ornstein et al. 1989).

However, we found no studies which explicitly examined the impact of career stage on work motivation. London (1990) did describe a model for understanding career motivation in later career in which it was argued that career motivation includes three dimensions: career identity, career insight, and career resilience. Career identity is the extent to which people identify themselves with their work role. Career insight is how realistic people are about themselves and their careers. Career resilience is the extent to which people resist career barriers and this determines an employee's persistence in attaining career goals. Noe, Noe, and Bachhuber (1990) examined the model proposed by London and found that career resilience is significantly higher in the later stages of a career than in the early stages, implying higher career motivation in later career stages.

Finally, according to Hansson, DeKoekkoek, Neece, and Patterson (1997), the accomplishment of one's late career goals can result in detachment from a career. To support a worker in remaining psychologically young through a continued sense of 'becoming' (future sense of self, see previous paragraph), an open career path should be stimulated (Raynor, 1982). However, we have found insufficient information with respect to career stage and motivation to draw firm conclusions about the nature of this relation.

Skills obsolescence. According to Fossum, Arvey, Paradise, and Robbins (1986), obsolescence can be the result of a deterioration in present skills or the failure to acquire new ones as job requirements change. Older workers tend to have longer work histories, over which skills and knowledge can deteriorate. In addition, older workers may not have had, or failed to take, opportunities to acquire the new skills necessary to meet changing job requirements, and they may also have lowered expectations that the acquisition of new skills will result in valued rewards (Fossum et al., 1986; Gist, Rosen, & Schwoerer, 1988). Therefore, skills obsolescence can be expected to increase with age. This view is to some extent supported by earlier research (Dalton & Thompson, 1971; Shearer & Steger, 1975).

Unfortunately, no studies have been found that have examined the impact of obsolescence on work motivation. However, Shearer and Steger (1975), albeit with a cross-sectional research design, did find a negative relationship between five chosen dimensions of motivation, such as career expectancy and need for achievement, and obsolescence.

Results Question 5: The Impact of Lifespan Age on Motivation to Continue to Work

Tables 2.1 and 2.2 show that $N = 9$ of the 33 studies (27%) examined indicators of lifespan age. According to the lifespan approach, the age of a worker can be defined by their life stage and family status. Levinson's (1986) life stage model sees adult life as characterized by a linear

succession of stages, such as early, middle, and late adulthood, divided into various sub-stages associated with specific tasks to be accomplished, many of which are concerned with career development (comparable to the career stage model of Super (1984)). However, in applying the model, life stage is often operationalized by chronological age in earlier research (e.g. Alderfer & Guzzo, 1979).

Tamir and Antonucci (1981) examined differences in motivation through seven stages of the family life cycle, ranging from single, unmarried adults to parents of grown-up children and found that motivational choices (based on a need for achievement or a need for affiliation) appeared to be remarkably similar and stable throughout the family life cycle. Similarly, Kidd and Green (2006) found that, among their sample of biomedical research scientists, family responsibilities did not have an impact on career commitment and intention to remain in the profession.

On the other hand, the wages, savings, pensions, and benefits, as well as the health and personal desires of a partner, did appear to have a great influence on the retirement decision (see, for example, Hayward et al., 1989; Henkens & Tazelaar, 1997; Saba & Guerin, 2005; Smith & Moen, 1998). Several of these studies also found that individuals were less likely to retire if their spouses were working.

Finally, according to economic research, the basis for retirement (and thus the related older worker motivation) is that there is a change in the relative value associated with earnings and leisure; specifically, leisure becomes more highly valued as workers age (e.g., Hurd, 1996). The explanation offered for this shift in indifference curves, is that work becomes tougher for older workers as their functional abilities deteriorate (Hurd, 1996), although this explanation is not universally accepted (see biological age above). Alternative explanations include social influences as to the roles one should fill as one ages (i.e., age norms), and within-market discrimination (Parnes, 1988). Higgs et al. (2003) examined the retirement decision and found that indeed one of the reasons to retire is the desire for more leisure time for hobbies and relaxation (referred to as third age exit) (see also, Vries et al., 2002). Overall, the reviewed publications show that the status and views of a partner have a large impact on the decision to retire, and that the increasing value attached to leisure time as one ages can have a negative impact on the motivation to continue to work.

2.4 Discussion

Earlier research on aging and motivation is limited and conceptually diverse. This study addressed five conceptualizations of age outlined by Lange et al. (2006) in an attempt to distinguish specific age-related factors that influence the direction and termination of older workers' motivation to continue to work. The literature review revealed 24 relevant empirical and 9 conceptual studies. In Figure 2.1, we summarize the results found in this literature review and focus on the relationships between age-related factors and motivation to continue to work.

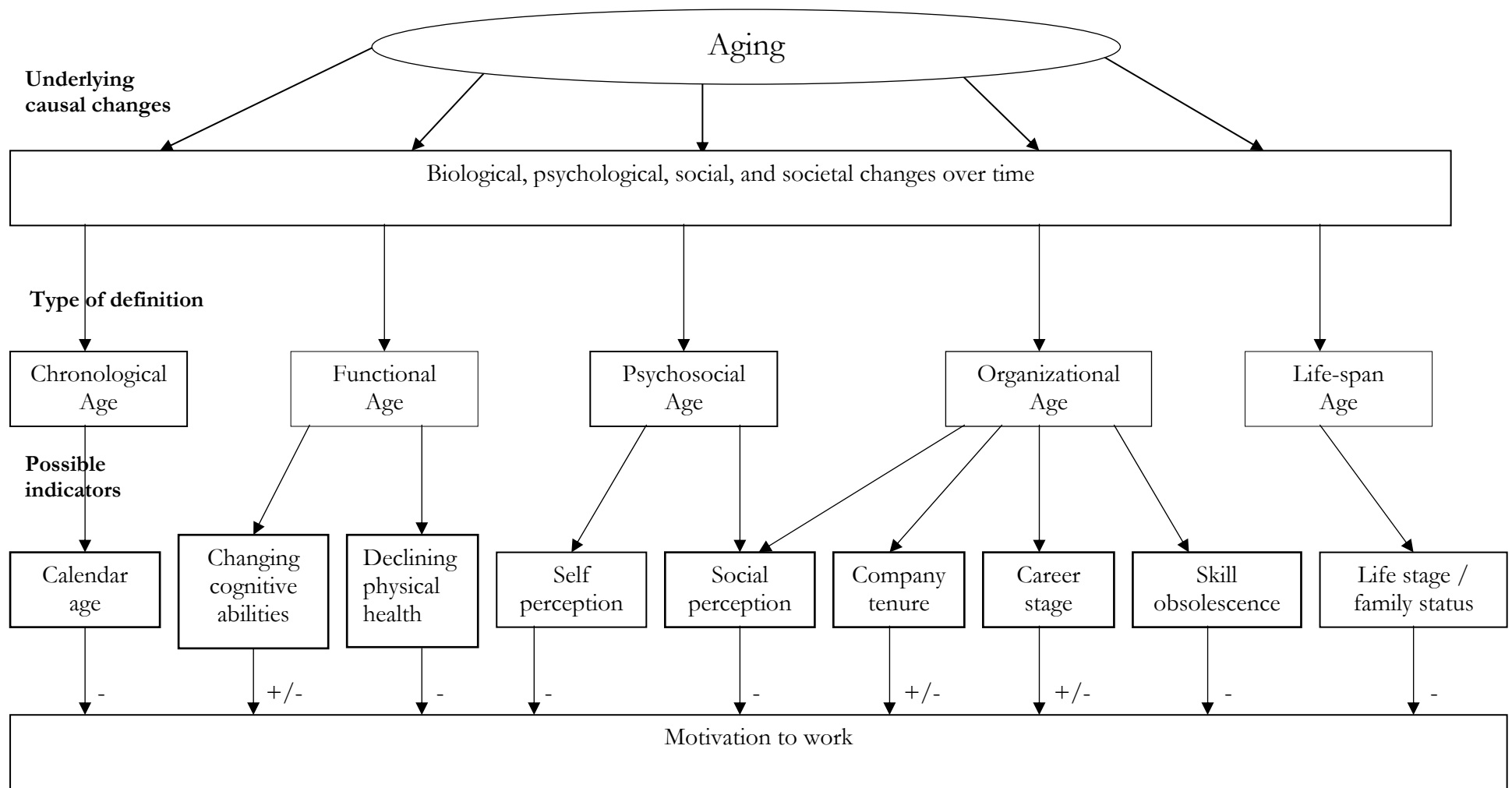


Figure 2.1. Summary of the impact of the various age concepts on motivation to work based on literature review

Figure 2.1 shows that most age-related factors seem to have a negative impact on the motivation of older workers to continue to work: 1) Chronological age determines eligibility to retirement, financially attractive exit arrangements or reduced workload, regardless of good health, a progressing career, or the value attached to work. This can give older workers a sense of being ‘redundant’, with potential negative effects on motivation to continue to work. Furthermore, financially attractive exit arrangements encourage the decision to retire; 2) Functional age consists of biological age and psychological age. Biological age is negatively associated with motivation and affects the retirement decision; i.e. poor health increases the likelihood of retirement. Psychological aging (in the functional and in the psychosocial approach) has some important implications for the motivation to continue to work: self-efficacy is likely to decrease, and the direction of motivation to continue to work shifts and focuses on different tasks - as workers age psychologically they seem to prefer tasks demanding general knowledge and verbal comprehension, generative tasks and tasks that support positive affect and the self concept (and avoid new tasks and tasks with high demands); 3) Psychosocial age can further affect the motivation to continue to work through age norms and stereotypes. Age norms and stereotypes can influence management decisions, resulting in a self-fulfilling prophecy: limited opportunities for promotion, training, and development reduce skills (leading to obsolescence), motivation, and the employability of older workers, thereby validating the age norms and stereotypes held by managers. Furthermore, age norms affect the retirement decision; 4) Organizational age has an ambiguous effect on motivation to continue to work. On the one hand, organizational aging results in skill obsolescence, with potentially negative effects on the motivation to continue to work, and increased likelihood to encounter a career plateau or to accomplish one’s career goals resulting in the detachment from a career. On the other hand, organizational aging results in monetary incentives because of steep earning profiles, changing needs, and increased work commitment and career resilience; 5) Lifespan age influences motivation to continue to work in that the partner’s wishes and increased value placed on leisure time encourage the decision to retire.

Overall, the above findings suggest that age-related factors are important in understanding the motivation to continue to work of older workers. According to the aforementioned studies, 6 age-related factors are related negatively, and 3 factors are related ambiguously to motivation to continue to work (see Figure 2.1). Furthermore, since in the 33 studies, cognitive abilities, self perception, and organizational age mainly affect the direction of motivation to continue to work, we propose that these age-related factors have an influence on continuing work, while calendar age, physical health, social perception, and lifespan age mainly affect the termination of the

motivation to continue to work, and thus, are proposed to have an influence on the termination of work. Finally, our findings provide some support for the aforementioned interrelatedness of the five different meanings of age; for example, declining health can result in a deterioration of the self concept or increased value placed on leisure time. Perceptions, resulting in age discrimination, fulfill an important role within this interrelatedness; stereotypes lead to discriminatory management decisions, which can result in skill obsolescence, career plateaus, increased value on leisure time, and in deterioration of the self concept if older workers believe these stereotypes apply to them. Consequently, the influence of aging on motivational outcomes may be more complex than earlier research or theory seems to convey. In addition, no motivation theory focuses on or addresses specific issues for aging (Stajkovic, 2006). Our results emphasize the importance of including age-related factors in conceptualizations and theories about the motivation of workers to continue to work.

Limitations

Before addressing the research agenda and practical implications of our review, we first need to address three important limitations of our study. First, only few empirical and relevant conceptual studies were found, and we are therefore not able to draw strong conclusions on the impact of the various conceptualizations of age on motivation to continue to work. Furthermore, the review is inconclusive as to how the age-related factors affect the work motivation of older workers; in other words, few studies pay attention to the underlying mechanisms explaining the relationship between age and motivation to work. As a consequence, we cannot explain the mixed (and partly contradictory) results in research on age and motivation, such as why intrinsic motivation increases with age, while achievement motivation decreases. Further empirical research on age and motivation is therefore needed (see research agenda below).

Furthermore, from the literature review, it appears that several factors may intervene in the relationships between the different conceptualizations of age and the motivation to continue to work; for example, health is more likely to have an impact on the retirement decision in physically heavy professions (see biological age), and stereotypes are more likely to have an impact on motivation when affecting management or supervisor decisions (see social perception). Finally, the operationalizations of motivation to continue to work differ across the studies reviewed, reducing our ability to compare the results found in these studies.

Research Agenda

Despite of the aforementioned limitations, the strengths of this study are: a) that it is the first conceptual review to examine relevant age-related factors in relation to motivational outcomes for aging workers, and b) that it reveals an important overview of unresolved issues. We can use these unresolved issues to formulate a more specific research agenda for future studies examining motivational factors of older workers:

1. A meta-analysis on age and motivation is needed to determine actual effect sizes and intervening factors between age and motivational constructs, such as goal commitment, expectancy, and achievement and intrinsic motivation.
2. Additional theoretical attention should be given to the underlying age-related processes. How can we explain the influence of, for example, social perceptions of managers on motivation to continue to work? In this context, social developmental psychologists also refer to *age schemas* (Montepare and colleagues, 1996; 1998; 2001). According to these theorists, age is a fundamental dimension along which we organize and process information about ourselves and others. Research on subjective age also points to the existence of these age schemas. Since there is no appropriate, systematically-designed, alternative index (Montepare, 1996, p. 117), there have been few studies on the effects of age schemas or other indicators of psychosocial age (Montepare & Clements, 2001). Consequently, more (and preferably experimental) research should be conducted to examine these underlying causal processes in the relation between psychosocial age and motivation to continue to work.

Further, coping style seems to play an important role in the motivation to continue to work. Coping theories distinguish between two different coping responses; responses aimed at changing the stressful situation itself and responses aimed at reframing the problem to fit with external demands or managing the negative emotions aroused by the stressful event (Sorkin & Rook, 2006). However, older workers that are financially dependent upon their work have little options to change the situation. Therefore, their coping style and motivational profile will differ from older workers that are financially independent from their work (see also Lord, 2002). Consequently, future research could also examine older workers' coping style, and its effect on their motivation to continue to work, taking into consideration the extent to which these older workers have alternative options.

Finally, according to Greller and Simpson (1999), with age, individual differences increase because older workers have lived longer and therefore experienced more.

However, research on personality, adult development, and aging (e.g. Caprara, Caprara, & Steca, 2003) seems to disagree with this statement, showing that personality changes across the lifespan (Srivastava, John, Gosling, & Potter, 2003). Such intra- and inter-individual differences should be incorporated in motivation theories.

3. Additional empirical research is needed on the effects of age-related variables on motivation to continue to work. In our explorative review, only 9 of the 33 (27%) selected studies focused on functional age; the same holds for lifespan age (see Tables 2.1 and 2.2).
4. Further attention should be given to the operationalization and measurement of especially functional, psychosocial, organizational, and lifespan age. Psychometric studies on the (relations between) indicators of the different approaches to measure aging at work are still lacking. Furthermore, Tables 2.1 and 2.2 reveal few measurement instruments that can be used to measure the various conceptualizations of age. A systematic and concise measurement tool to measure all indicators of aging at work remains to be developed.
5. Table 2.1 reveals that the selected studies only include western samples. However, the meaning of age and aging differs across cultures. For example, Keith, Fry, Glascock, Ikels, Dickerson-Putman et al. (1994) found that chronological age has the strongest salience in communities that are part of modern industrialized societies. Therefore, researchers must be sensitive to cross-cultural differences in how the life course is conceptualized, and more research is needed on the impact of these different cultural values on the motivation to continue work.
6. New theory-based research is needed to build a more focused theoretical framework. Several theoretical perspectives may guide this future research. For example, the Selection, Optimization, and Compensation (SOC) theory (Baltes, Staudinger, & Lindenberger, 1999) posits that successful development across the lifespan entails processes geared at maximizing gains, such as experience or seniority, and processes directed at minimizing losses, such as declining physical health. Since losses are more salient in old age, the allocation of resources for so-called “growth or promotion” goals, such as new tasks and tasks with high demands, will decrease with age, whereas maintenance and regulation of “loss or prevention” goals, such as generative tasks and tasks that support positive affect and the self concept, will increase with age (Ebner & Freund, & Baltes, 2006). Furthermore, the Socioemotional selectivity theory (Carstensen, 1995) focuses on the motivational consequences of a changing temporal perspective, and

proposes that individuals will select goals in accordance to their perceptions of the future as being limited or open-ended (self perception).

A final relevant theoretical perspective is expectancy theory, in which expectancy motivation is determined by the extent to which an individual expects that his or her effort will lead to performance (expectancy), the degree to which an individual believes that this performance will lead to the attainment of a desired outcome (instrumentality) and the attractiveness of that outcome (valence) (Vroom, 1964). While the aforementioned changing goals affect the valence component, and physical health and thoughts and feelings about oneself may affect the expectancy component, the instrumentality component is more context-oriented and affected by age norms, stereotypes and discriminatory management decisions. In this respect, we would also like to point to Steel and Konig's (2006) temporal motivational theory, which introduces the factor time in expectancy theory.

Practical Implications

Our findings have important practical implications for HRM policies and practices. We have identified relevant age-related factors that influence the motivation of older workers to continue to work, that can be addressed in HRM policies. HRM practices that could encourage older people to work longer could involve ergonomic adjustments (e.g. in the work place), job redesign (e.g. mentoring), and continuing career development. These practices have also been recommended (e.g. by CED, 1999; Paul & Townsend, 1993) as part of an age-aware HRM policy, aimed at avoiding age-specific work-related problems by dealing with risks in earlier phases of work life. However, little research has so far been conducted on the impact of these and other HRM policies and practices on the motivation of older workers to remain in employment.

We hope the results of our review will inspire more practical as well as theoretical attention to motivational issues of the older worker.

2.5 References

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3

Age and Work-related Motives: Results of a Meta-analysis

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Abstract

An updated literature review was conducted and a meta-analysis was performed to investigate the relationship between age and work-related motives. Building on theorizing in lifespan psychology, we hypothesized the existence of age-related differences in work-related motives. Specifically, we proposed an age-related increase in the strength of security and social motives, and an age-related decrease in the strength of growth motives. To investigate lifespan developmental theory predictions about age-related differences in control strategies, we also examined the relationship between age and intrinsic and extrinsic motives. Consistent with our predictions, meta-analytic results showed a significant positive relationship between age and intrinsic motives, and a significant negative relationship between age and strength of growth and extrinsic motives. The predicted positive relation between age and strength of social and security motives was only found among certain subgroups. Implications of these findings for work motivation and lifespan theories and future research are discussed.

3.1 Introduction

As evidence for the aging and rejuvenation of workforces across the developed world grows (OECD, 2005), organizational researchers and practitioners have focused greater attention on the characteristics, expectations, needs, and performance of mature, or older workers (Kanfer & Ackerman, 2004; Peterson & Spiker, 2005; Warr, 2001). Research on the relationship between age and dimensions of performance (Ng & Feldman, 2008), on age-stereotyping (Barnes-Farrell, 1993; Cleveland & Landy, 1983; Van der Heijden, 2006; Van der Heijden, De Lange, Demerouti, & Van der Heijde, 2009), on the person and situation determinants of older worker decisions on bridge employment (Wang, Zhan, Liu, & Shultz, 2008), and on successful aging at work (Abraham & Hansson, 1995) represent only a few of the many approaches that have been taken to understanding the complex effects of adult development on workplace behaviors (also see, Kooij, De Lange, Jansen, & Dijkers, 2008; Greller & Stroh, 1995; Warr, 2007).

For human resource managers, the influence of aging on employee motivation represents one of the most pressing challenges to arise in this decade. In many occupational sectors, ranging from nursing to engineering, the aging workforce portends a potential perfect workforce storm over the next decade. As a growing number of senior employees (that form part of the Baby Boomer cohort) retire from their jobs, organizations face strong challenges in terms of finding sufficient replacement workers and preventing knowledge loss. Recognizing this problem, several large organizations have implemented incentive and work redesign plans to discourage retirement-related turnover among older workers (see, e.g., Dychtwald, Erickson, & Morison, 2006). To date, however, most interventions have been based on informal surveys and economically-guided assumptions about the primacy of compensation as the key determinant of work motivation among older workers. Although compensation and health clearly represent two key influences on the employee decision to remain on the job, scattered survey results and empirical findings also suggest that other factors, such as motives, play a non-trivial role in retirement-related turnover (Hansson, DeKoekkoek, Neece, & Patterson, 1997; Rau & Adams, 2005; Zappalà et al., 2008). The purpose of this study is to begin to address this gap in the literature by organizing and empirically evaluating the scientific evidence on the relationship between age and work-related motives.

Age and Motive-related Factors

Most organizational scientists agree that needs, motives and values are importantly influenced by adult development and work experiences across the lifespan. What is less clear, however, is whether and how these determinants of work behavior differ in strength across the lifespan. One

of the earliest systematic attempts to address this question in the organizational literature was provided by Rhodes, in her 1983 review of age-related differences in work attitudes and behavior. Of the 185 studies she identified that explicitly addressed age, only ten studies directly examined the relationship between age and needs (e.g., Hall & Mansfield, 1975; Porter, 1963). Based on these studies, Rhodes (1983) concluded that security and affiliation need strength tends to increase with age, and that there was some support for a decrease in the strength of self-actualization and growth needs. Rhodes (1983) also reported four studies investigating the relationship between age and changing work values (e.g., Wright & Hamilton, 1978). Results of these studies indicated that preferences for extrinsic job characteristics, such as good pay, and having friendly co-workers and supervisors increased with age, whereas preferences for opportunities for growth decreased with age. Although Rhodes' review revealed important insights about the relation between age, needs and work values, the few studies conducted through the 1980s were largely descriptive and difficult to interpret in the absence of an overarching theoretical framework.

In the 25 years since Rhodes' (1983) review, significant progress has been made in the psychology of aging (see, e.g., Baltes, Reese, & Lipsitt, 1980; Ebner, Freund, & Baltes, 2006). Several prominent theories of adult development have emerged, including Selection, Optimization, and Compensation (SOC) theory (Baltes, Staudinger, & Lindenberger, 1999), Socio-Emotional Selectivity Theory (Carstensen, 1995), and the Life Span Theory of Control (Heckhausen & Schultz, 1995). Building upon these theoretical models, Kanfer and Ackerman (2004) and Warr (2001) have recently proposed complementary work-specific formulations for how age-related changes in motives influence work motivation (see also Baltes and Dickson, 2001). In this paper we employ these work-oriented models to organize the empirical literature and conduct an updated, theory-driven meta-analytic review of the relationship between age and work-related motives.

Aging refers to all possible changes that occur in biological, psychological, social and even societal functioning at various points in the life cycle (Baltes et al., 1999; De Lange, Taris, Jansen, Smulders, Houtman & Kompier, 2006; Sterns & Doverspike, 1989). Although other important indicators of age may be useful, most organizational studies of age-related influences on work behavior have used chronological age. The use of chronological age also facilitates translation of findings to the organizational environment, where chronological age is the principal indicator of aging in the workplace. Consequently, we focus our review of the literature on the relationships between work-related motives and chronological age.

In the following section we address three issues that provide the foundation for our meta-analytic review. First, we discuss the conceptual rationale for extending our review to include need and value measures as well as motive measures. Second, we discuss the rationale for the taxonomic structure of motives used in the meta-analysis. Third, we present the theoretical rationale for each of our hypotheses about the relationship between age and work-related motive class.

The scope and content of work-related motives. The first foundational issue to be confronted in our analysis of age-related differences in motives pertains to how motives are conceptualized and measured. At the broadest level, motives refer to an individual's propensity or preference for a particular class of outcomes, such as high performance, high pay, and friendly co-workers (Sagie, Elizur, & Koslowsky, 1996). Individual differences in motives are typically assessed by asking persons to indicate the importance or value they attach to attainment of specific work outcomes, such as pay, promotions, and interesting work (Hattrup, Mueller, & Aguirre, 2007). Within individuals, motive structures indicate the relative prominence or salience of different classes of motives. Age-related changes in motive structures are thus reflected in age-related changes in salient or preferred work conditions or job characteristics.

In organizational psychology, individual differences in motives have been measured in a number of ways. Although most motive measures are self-report and thus presume explicit knowledge of preferred work characteristics and outcomes, motives may also arise from non-conscious sources and influence preferences without explicit awareness (Baard, Deci & Ryan, 2004). Early work motivation theories and research (e.g., Maslow, 1943; Alderfer, 1969) emphasized needs, or the partially non-conscious drivers of preferences for particular job characteristics and work outcomes. However, the self-report measures used to assess work-related needs are closely related and often share item content with measures used to assess consciously-mediated motives and values [e.g., compare the Growth need strength scale by Hackman and Oldham (1974) and the Minnesota Importance Questionnaire by Rounds et al. (1981)]. As such, work-related measures of needs, motives, and values tend to be used interchangeably in the work motivation literature.

Nonetheless, as Baard et al. (2004), Dose (1997), Macnab and Fittsimmons (1987), Pryor (1982) and others have noted, work-related needs and values can be distinguished conceptually. In contrast to needs, work values operate as secondary drivers of action that are determined by needs as well as socialization, cognition, and experience (Kalleberg, 1977; Latham & Pinder, 2005; Steel & Konig, 2006; Ronen, 1994). As such, work values, representing in part the expression of needs, are closely related to but not identical to needs (Ronen, 1994). In the

organizational psychology literature, the conceptual distinction between needs as unconscious forces that promote preferences for particular job conditions and outcomes, and values as secondary drivers of those preferences, is often blurred by the use of need and value measures that contain the same items (e.g., Mesner Andolsek & Stebe, 2004 and Phillips & Bedeian, 1994).

Needs and values have also been studied independently for different purposes. Work values, for example, may refer to importance of work outcomes (e.g., Super, 1973) or to a system of ethics which determines what is good or what ought to be done (e.g., Wollack, Goodale, Witjing, & Smith, 1971). Dose (1997) proposed that work values be conceptualized in two dimensions: (1) whether the values are held personally or socially; and (2) whether the values represent a preference or a moral element. From a motivational perspective, work values that relate to motives pertain to personally held preferences for job characteristics or work outcomes (e.g., Sagie et al., 1996; Loscocco & Kalleberg, 1988).

Modern approaches tend to emphasize individual differences in motives that encompass the strength of unconscious needs, motivational orientations, and conscious values that an individual maintains with respect to particular job characteristics and work outcomes (e.g., see Latham & Pinder, 2005; and Sagie et al., 1996). Consistent with this perspective, we include all studies in our meta-analysis that assess the relationship between age and work-related needs, personally-held work values, and work-related motives.

The taxonomy of work-related motives in terms of content. The taxonomic structure of motives has long been a topic of lively controversy in work motivation (see Campbell & Pritchard, 1976; Kanfer, 1990). Different work motivation theories posit different motive structures, such as Maslow's (1943) five motive classes, Alderfer's (1969) three motive classes, Deci's (1975) two motive classes, and Barrick, Stewart, and Piotrowski's (2002) three motivational orientation classes. Similarly, Ronen (1994) has found that work values can be grouped to reflect many of these same motive classes. In their review of the work motivation literature, Campbell and Pritchard (1976) argued for a basic distinction between lower-order and higher-order motives. Lower order motives refer to activated concerns regarding features of the work environment that affect the individual's welfare, including for example job security, pay, and safe working conditions. In contrast, higher-order motives pertain to activated concerns for features of the work environment that affect the individual's attainment of psychological needs, such as achievement and affiliation.

Recent conceptualizations of motive organization tend to decompose higher-level motives into two categories; namely, motives related to opportunities in the workplace for personal growth and motives related to affiliation and communion with others (e.g., Barrick et al., 2002).

Consistent with theories of aging described below, we organize work-related motive measures into three broad categories: growth-related motives, social/affiliative motives, and security/maintenance motives. According to humanistic work motivation theories and theories of achievement motivation, growth-related motive measures assess the perceived importance or preference for job characteristics and work outcomes that relate broadly to achievement and mastery (Dweck, 1999). However, consistent with theories of aging, growth-related motives in this study are more narrowly defined in terms of measures that assess growth motives pertaining to the self and attainment of higher levels of functioning. Social motive measures assess the importance or preference for job characteristics and work outcomes that pertain to affiliation and collaboration with others in the workplace, including co-workers, subordinates, and clients. The third motive category, security motives, includes measures that assess the importance or preference for job features and work outcomes that satisfy material and physiological desires related to one's general welfare, such as pay and security.

The taxonomy of work-related motives in terms of locus. A second prominent organization of motives in the work motivation literature distinguishes between intrinsic and extrinsic motives (Deci, 1975). Intrinsic motives refer to job characteristics and work outcomes that provide expression and attainment of psychological motives, such as accomplishment, connection with others, and autonomy. In contrast, extrinsic motives refer to the strength of preferences for job features and outcomes that occur as a consequence of work, rather than as an integral part of the work process. Examples of extrinsic motives include compensation, benefits, and promotion (see Chang, Choi, & Kim, 2008; Johnson, 2001; Taris, Fey, & Van Vianen, 2005; Van der Velde, Fey, & Van Emmerik, 1998).

Although the intrinsic/extrinsic motive scheme exhibits partial overlap with the growth, social, security motive structure described previously, it may be that age is differentially related to motives as organized by each scheme. For example, Rhodes (1983) found that age was positively related to internal motivation, but found support for a decrease in strength of growth motives (largely an intrinsic motive) as well. Hence, it may be that age is positively related to other intrinsic motives such as affiliation or job autonomy. To investigate the impact of motive organization on the relationship between work-related motives and age, we conduct the meta-analyses using both motivation structures (i.e., growth, social and security motives and intrinsic and extrinsic motives).

Growth and intrinsic work-related motives and age. One of the most controversial notions about age and work pertains to the popular belief that there is a normative age-related decline in work-related growth motivation and intrinsic motivation. In other words, older workers are less

interested in learning and less concerned about job enjoyment than younger workers. Indeed, developmental lifespan theories, such as SOC theory provide a theoretical account that supports the notion of normative age-related decline in growth related motives over the life course. In SOC theory (Baltes et al., 1999), successful development is defined as the conjoint maximization of gains and the minimization of losses. Across the lifespan, Baltes et al. (1999) suggest that maximization is achieved by a process of selecting viable outcomes, optimizing resources, and compensating for resource losses. As individuals age, this regulation process will change to accommodate age-related changes in resource gains and losses. Specifically, as individuals enter late adulthood, SOC theory predicts that growth-related work motives (i.e., aimed at reaching higher levels of functioning) will decline and motives related to maintenance and regulation of work-related losses (i.e., security) will increase.

Research findings by Freund (2006), investigating age-related differences in life goal focus, provide empirical support for this prediction. Freund (2006) found that during young adulthood the dominant goal focus was on optimization, but that older adults showed a stronger focus on compensation goals directed toward prevention of further resource loss (see also Ebner et al., 2006). Consistent findings were also obtained in a cross-sectional study of work-related motives by Kanfer and Ackerman (2000). They found that desire to learn was significantly lower among older adults compared to younger adults. Extending SOC to the work context, and based on prior findings, we thus propose the following:

Hypothesis 1a: Age will be negatively related to the strength of growth motives related to work features and outcomes aimed at reaching higher levels of functioning, such as those that provide opportunities for advancement and continuous learning.

The proposed age-related decline in growth motives, however, does not necessarily mean that aging is negatively related to all intrinsic motives. The Life Span Theory of Control (Heckhausen & Schulz, 1995), for example, proposes that aging brings about a shift from the strategies an individual uses to control their situation. Specifically, during young adulthood, individuals are proposed to rely more heavily on externally oriented primary control strategies that emphasize extrinsic outcomes. In contrast, older individuals are posited to employ secondary control strategies that involve self-directed cognitive processing more frequently. The greater reliance on secondary control strategies, in turn, can be expected to amplify preferences for intrinsically rewarding features of the job, such as enjoyment and interest. Similarly, Kanfer and Ackerman (2004) propose that age-related shifts in the perceived utility of performance operate to increase

the salience of intrinsic job features related to the work itself relative to extrinsic job characteristics. Findings by Rhodes (1983) provide tentative support for this notion as they indicated an age-related increase in internal work motivation. Accordingly, we propose:

Hypothesis 1b: Age will be positively related to the strength of intrinsic motives for work features and outcomes that provide for attainment of attractive outcomes (e.g., enjoyment and achievement).

Social work-related motives and age. Although resources for job-related growth may decrease with age, older adults may still experience room for growth in other life domains, such as social relations (Freund, 2006). Socio-Emotional Selectivity Theory is a lifespan theory of social motivation (Carstensen, 1995) that proposes an age-related increase in selected social relationships as a compensatory strategy for coping with age-related physical and cognitive losses. Specifically, age-related changes in the perception of time are proposed to concomitant changes in social 'goals' or 'motives' that shift the motive for social interaction away from gaining resources (instrumental) and toward the receipt of affective rewards (emotional satisfaction) and support for one's identity. According to the theory, as older people perceive their future time as more limited than younger people, they give higher priority to emotionally meaningful social interactions and goals, such as generativity, emotional intimacy, and social embeddedness (see Lang & Carstensen, 2002). Findings by Carstensen and her colleagues (e.g., 1999) provide support for age-related prioritization of social interaction goals, and findings by McAdams, de St. Aubin and their colleagues (1998) provide support for an age-related increase in social interactions for the purpose of generative and knowledge transmission to others.

Building on these findings, Kanfer and Ackerman (2004) proposed a similar age-related shift in the primacy of work-related motives for social interaction. They suggest that generativity motives and the importance of protecting one's work self-concept increases with age. Consistent with these expectations, Warr (2001, 2007) also found that older individuals were more agreeable than younger individuals and Maehr and Kleiber (1981) found evidence for age-related increases in generativity and affiliation motives. These findings provide the foundation for the following hypothesis:

Hypothesis 2: Age will show a positive relation to work-related social motives.

Security and extrinsic work-related motives and age. SOC theory posits that, as individuals age, there is greater attention to compensation for age-related losses and maintenance of remaining resources. Kanfer and Ackerman (2004) posit a similar age-related shift toward motives that support positive affect and protection of the self-concept. Similarly, Warr (1997) found that older workers showed high levels of interest in security and monetary outcomes of work. In line with this reasoning and descriptive evidence, we propose the following hypothesis:

Hypothesis 3: Age will be positively related to security motives.

The Life Span Theory of Control (Heckhausen & Schulz, 1995) posits an age-related shift in control strategies toward lesser use of primary control strategies (i.e., directed toward actions that modify external circumstances, such as job resignation). Since older individuals are more dependent on the external world for the satisfaction of extrinsic motives, extrinsic motives are likely to decrease with age. Similarly, Kanfer and Ackerman (2004) posit an age-related decline in the salience of extrinsic work-related outcomes, such as pay increases and promotion. They suggest that the age-related shift in temporal perspective reduces the salience and attractiveness of these job features among older workers. This line of reasoning leads to our fourth and final hypothesis:

Hypothesis 4: Age will be negatively related to extrinsic work-related motives.

In sum, we propose that psychological theories and related research on age-related changes in motive orientations may be extended to the work context and permit differential predictions of the relations between work-related motives and age.

Moderator Analyses

In addition, we seek to extend these predictions and update Rhodes' (1983) review by performing moderator analyses to differentiate among cohorts, occupations, age groups, age dispersion, and gender. As Kanfer and Ackerman (2004) note, job demands and occupation, gender, and cohort effects may also influence the relationship of age to different work-related motives. For example, earlier studies (Hall & Nougaim, 1968; Rhodes, 1983; Smola & Sutton, 2002) found that the higher order needs of scientists and engineers do not change with age, while self-actualization needs of managers increase with age, and that Generation Xers have a stronger desire to be promoted more quickly than Baby Boomers. Furthermore, similar to Ng and

Feldman (2008), we include age groups as a moderator to examine possible curvilinear effects of age, and age dispersion to examine whether the age–motive relationship varies across samples with different degrees of age homogeneity. Consequently, we will examine the influence of occupation, mean age, age dispersion, gender, and cohort as potential moderators of the age and work-related motive relationship. However, we offer no formal hypotheses regarding the impact these moderating variables may have on the relation between age and work-related motives.

3.2 Method

Literature Search

We used multiple search strategies to identify relevant published and unpublished studies. Since the first relevant work-related need questionnaire was developed in 1961 (i.e., the Porter Need Satisfaction Questionnaire, 1961), we choose 1961 as the starting date for our literature search, and reviewed the literature from the period 1961–2009. To identify relevant studies, we began by performing database searches using the keywords: ‘*need(s)*’, ‘*work value(s)*’, ‘*valence*’, and using keywords ‘*importance*’, ‘*preference*’ or ‘*desirability*’ together with ‘*work outcomes*’, ‘*job characteristics*’ or ‘*job attributes*’, using the Academic ProQuest (which includes dissertation abstracts), Blackwell Synergy, Emerald fulltext, IngentaConnect, Psycinfo, Science Direct, Web of Science, and Wiley Interscience databases. These searches yielded 70 studies. Second, we identified 3 additional studies by reviewing the references for all studies found in the database searches and through review of all references reported in review and meta-analytic articles. Third, we identified 1 additional, unpublished study with two samples through our review of all papers presented at the Annual Society for Industrial and Organizational Psychology (SIOP) Conference and the Annual Meeting of the Academy of Management from the period 2000 to 2008 (except for the years 2001 and 2005, for which we were unable to obtain the Academy of Management conference schedule). Fourth, we emailed the authors of all relevant studies obtained that did not report correlations and were published less than 10 or fewer years ago, and requested these correlations and copies of correlations from any additional unpublished studies that assessed age and work-related motives. This resulted in the inclusion of an additional 8 published studies, 2 unpublished studies, and 1 study that was in press at the time of our search.

For study findings to be included in the meta-analysis, the study had to meet all of the following criteria: a) include work-related motives that fit our conceptualization; namely that included the measurement of motives related to an individual’s propensity or preference for a particular class of outcomes (i.e., the protestant work ethic, intrinsic or internal motivation, and the Survey of Work Values (Wollack et al., 1971) are not included), and that fell within one of our

11 motive classes, b) report results of an empirical study, c) report the raw correlation between age and at least one work-related motive, d) employ a field sample (employees working either full- or part-time), e) report findings in the English language. Our search yielded a final total of $k = 86$ studies (samples) from 66 articles (denoted with * in the literature references), with a total of 230 effect sizes and a total sample size of $N = 48,447$ respondents. The 86 studies consisted primarily of empirical peer-reviewed articles (96.5%) published between 1970 and 2009 (51% after 2000). Fifty-six percent of all studies included in the meta-analysis were conducted in the United States, 27% in Europe, 3% in Asia, and 14% in other parts of the world. The study sites included a range of venues, including government departments (in 15% of the samples), manufacturing plants (13%), professional service companies (11%), and health care companies (in 6% of the samples). Fifty-five percent of the samples included miscellaneous companies or did not report study site. The mean age of the total sample was 38.2 (based on 73 studies that reported mean age, $SD = 6.2$), with a standard deviation of 9.4 (based on 52 studies that reported the standard deviation of age, $SD = 2.3$), and with *mean* age ranging from 18.7 to 62.3. In the 22 studies that reported age range, age ranged from 17 to 77.

Work-related Motive Measures

Table 3.1 displays a list of the 10 work-related motive measures used in the studies that were included in the meta-analysis, including for each measure their average reliability coefficient and example items. Overall, the two most frequent work-related motive measures used were the Manifest Needs Questionnaire (MNQ; Steers & Braunstein, 1976) and the Growth Need Strength scale (GNS; Hackman & Oldham, 1974). With the exception of the MNQ ($\alpha = .58$), the reliability of all other motive measures were acceptable (α ranging from .69 to .86).

Table 3.1. Motive measures

Measurement instruments measuring needs and work values	Example item(s)
Adjective Check List (Gough & Heilbrun, 1965) ($N = 1$)	'Check relevant adjectives'
Growth need strength (Hackman & Oldham, 1974) ($N = 12$; $\alpha = .73$)	'Indicate the extent to which you prefer one or the other of a pair of jobs' (one relevant to fulfilment of needs for achievement, recognition or growth, the others to fulfilment of pay, security, supervision or working conditions).
Higher order need strength (Warr, Cook, & Wall, 1979) ($N = 3$; $\alpha = .86$)	'How important is each job characteristic, such as using your skills to the maximum or challenging work, when you think about jobs you would like to have'
Manifest Needs Questionnaire (Steers & Braunstein, 1976) ($N = 21$; $\alpha = .58$)	'I do my best work when my job assignments are fairly difficult', 'When I have a choice, I try to work in a group instead of by myself, 'I seek an active role in the leadership of a group'
Minnesota Importance Questionnaire (Rounds et al., 1981) ($N = 1$)	'Choose the statement, such as 'on my ideal job I could plan my work with little supervision', from each pair that best describes your 'ideal' job'.
Porter's Need Satisfaction Questionnaire (Porter, 1961) ($N = 6$; $\alpha = .73$)	'How important is this position characteristic to you?'
Valence (Vroom, 1964) ($N = 6$; $\alpha = .73$)	'What importance do you give to your fixed pay?'
Meaning of Work Scale (Mor-Barak, 1995) ($N = 1$, $\alpha = .86$)	'For me, paid work gives me a feeling of pride in my work and in myself'
Motivational Trait Questionnaire (Kanfer & Ackerman, 2000) ($N = 2$, $\alpha = .81$)	'I prefer activities that provide me the opportunity to learn something new', 'I set high standards for myself and work toward achieving them'
Other scales measuring importance of outcomes and desirability ($N = 33$; $\alpha = .69$)	

Table 3.2 displays the categorization of motives according to motive class with the number of studies including this single motive and the average reliability coefficient. Three researchers were responsible for the coding of the motive measures into one of the 11 motive classes. The coders agreed upon the 11 motive classes as presented in this meta-analysis. The first author coded all 86 studies, and the third and fifth author each coded 20 different studies. Interrater agreement

between the coders was 92% to 98%. In the few (1 to 3) instances in which there was disagreement, discussion between the coders was used to reach consensus.

Next, we rationally categorized the 11 motives into three broad groups on the basis of motive content; namely growth, social, and security motives as indicated on the rows in Table 3.2. As mentioned, Baltes et al. (1999) defined growth as behaviors aimed at reaching higher levels of functioning. Therefore, development or challenge (including the construct Growth Need Strength) and advancement or promotion motives that also refer to action propensities with respect to reaching higher levels of functioning were all classified as growth motives. Building upon Barrick et al. (2002), who identified communion striving (i.e., working with or helping people) and status striving (i.e., prestige and status) as broad goals associated with social interactions, we categorized these motives as social motives (see also Chiaburu, Marinova, & Lim, 2007; Wiggins 1979). Finally, following Ronen's (1994) recommendation, we categorized motives related to job security, benefits, and earnings as existence or security motives.

The columns in Table 3.2 refer to motive categories in terms of their locus of effect (i.e., intrinsic and extrinsic motives). Intrinsic motives refer to job characteristics and work outcomes that provide expression and attainment of psychological motives, such as accomplishment, connection with others, and autonomy. In contrast, extrinsic motives refer to the strength of preferences for job features and outcomes that occur as a consequence of work, rather than as an integral part of the work process (Deci, 1975). Based on this distinction and the motive organization schemes used by Chang et al. (2008), Johnson (2001), Taris et al. (2005), and Van der Velde et al. (1998), we operationalized intrinsic work motives as including motives for autonomy, achievement, development or challenging work assignments, interesting work, working with or helping people, and job security. We operationalized extrinsic motives as motives for factors such as salary, benefits, career advancement, recognition and organizational status.

Table 3.2. Operationalization of dependent variables

Content of work-related motives	Locus	
	<i>Intrinsic</i>	<i>Extrinsic</i>
<i>Growth (aimed at higher levels of functioning)</i>	Development or challenge (including growth need strength) ($N = 26, \alpha = .76$)	Advancement or promotion ($N = 13, \alpha = .71$)
<i>Social</i>	Working with people (including need for affiliation) ($N = 25, \alpha = .53$) Helping people or contributing to society ($N = 15, \alpha = .72$)	Recognition ($N = 9, \alpha = .68$) Prestige and status ($N = 12, \alpha = .70$)
<i>Security</i>	Job security (including need for security) ($N = 17, \alpha = .90$)	Compensation and benefits ($N = 24, \alpha = .78$)
	Accomplishment or achievement (including need for achievement) ($N = 41, \alpha = .64$) Use of skills, interesting work (including need for self-actualization) ($N = 14, \alpha = .70$) Autonomy (including need for autonomy) ($N = 34, \alpha = .68$)	

Moderator Variables

Gender. Gender was operationalized as the percentage of male workers in each sample. Gender was reported in 71 studies, yielding a mean of 55% across studies.

Occupation. Most studies included in the meta-analysis provided a description of the occupational composition of the sample. Thirty-seven studies reported a sample comprised of a single occupational group. We classified each study that investigated a single occupational group into one of five broad occupational categories. Non-managerial white-collar workers composed the largest occupational category (i.e., 19% of all study samples), and included engineers, accountants, government employees, scientists and politicians. The second largest occupational category represented was managers, including assembly line supervisors, and general managers (8% of all study samples). The third occupational group consisted of studies using samples of persons engaged in sales (6%). The fourth occupational category consisted of samples of persons engaged in health care services, and was comprised entirely of nurses (6% of all study samples). The fifth occupational category was comprised of samples of persons engaged in traditionally blue-collar occupations, including tobacco packers, factory workers, and electricians (5% of all study samples).

Chronological age groups. Following Ng and Feldman (2008), we categorized the chronological age of each sample into three groups based on the distribution of mean ages for all study samples included in the meta-analysis. Mean age less than 36 years (23 studies); mean age between 36 – 40 years (22 studies), and mean age over 40 years (28 studies).

Age dispersion. Age dispersion was operationalized as the standard deviation of age in each sample (Ng & Feldman, 2008). Standard deviations of age across samples ranged from 2.0 to 14.2.

Cohort. Since studies included in the meta-analysis span a period of nearly four decades, the organization of samples into cohort categories cannot be accomplished using the mean age of the sample alone, but must also take into account when the study was conducted. For example, a study conducted in 1985 and reporting a mean age of 50 years old for the sample would involve persons typically considered to be members of the Traditional cohort (born before 1945). In contrast, a study conducted in 2005 and reporting a mean age of 50 years old for the sample would involve persons typically considered members of the Baby Boomer cohort (born 1946-1964).

To establish the correct cohort group for each study sample, we calculated the mean year of birth for each sample by subtracting the mean age of the sample from the year of data collection of the study (i.e., $1985 - 50 = 1935$). For studies that did not report the year in which the data were collected, we calculated an estimated year of data collection by using the mean number of years between year of publication and year of data collection as calculated from the 21 studies that reported year of data collection. Using the typical boundaries established for age cohorts (see Kupperschmidt, 2000; Smola and Sutton, 2002), we then coded each study sample into one of three age cohorts on the basis of mean year of birth; (1) Traditionals (mean year of birth before 1945), (2) Baby Boomers (mean year of birth between 1946 and 1964), and (3) Generation Xers (mean year of birth after 1965). Eighteen samples (21% of all samples) were classified as comprised of members belonging to the Traditional cohort (Mean age = 37.62; SD age = 8.4), 44 samples (51% of all samples) were classified as comprised of members belonging to the Baby Boomer cohort (Mean age = 39.53; SD age = 10), and 11 samples (13% of all samples) were classified as comprised of members belonging to the Generation X cohort (Mean age = 33.69; SD age = 7.18).

Finally, we examined whether the moderator variables were interrelated. These analyses revealed that only gender and occupation were significantly related; the occupational category of nurses had a significantly lower proportion of male workers than the occupational category of sales agents.

Analyses

We used Hunter and Schmidt's (2004) meta-analytic techniques and related software (Schmidt & Le, 2004) to conduct our meta-analysis, with the correlation between age and work-related

motives as effect size. We employed the following procedure: 1) wherever correlations were not reported (e.g., Lord, 2004), correlations were computed using the meta-analysis calculator²; 2) correlations of work-related motives derived from one study that referred to the same category (e.g., growth motives) were aggregated since average correlations do not violate the assumption of independence (Hunter & Schmidt, 2004); 3) each correlation was corrected for the statistical artifact of measurement error. Since there is no theoretical reason to believe the measurement of age would contain measurement error, we only corrected for unreliability in the criterion and did not correct for measurement error of age (see also Ng & Feldman, 2008). Wherever reliability was not reported, the average reliability for that variable across all samples that were included in the meta-analysis was used; 4) each correlation was corrected for the statistical artifact of sampling error; 5) each correlation was corrected for range restriction, i.e., the standard deviation (SD) of age in the study relative to the SD of age in the working population (which was estimated at 11 based on the assumption that 95% of the working population is between the ages of 18 and 62; Warr, 2008). This resulted in a mean true score correlation (ρ); 6) we used confidence intervals to interpret validity generalization results (see Cohen, 1993); that is, the confidence interval of a *significant* mean correlation does not include zero, and finally; 7) we interpreted the magnitude of the mean correlation based on the guidelines proposed by Cohen (1992): 0.1 is interpreted as a small effect, 0.3 as a medium effect, and 0.5 as a large effect.

Moderator Analyses

We used two approaches to perform moderator analyses. First, in accord with the recommendation by Aguinis, Sturman, and Pierce (2008) for analysis of the moderating effect of *categorical* variables in the absence of strong theory-based hypotheses, we used the Hunter and Schmidt (2004) procedure in which the mean effect sizes are compared across groups using a *t* statistic. We used this procedure to examine the potential moderating influence of occupation, age groups, and cohort group (based on reported mean age of the sample and year of data collection). When subgroups contained fewer than three original studies ($k < 3$), these subgroups were not reported.

We also tested for a moderating effect of the continuous variables age dispersion and proportion of male workers by performing a weighted least squared (WLS) multiple regression analysis, since this approach is seen as providing the most accurate results (Steel & Kammeyer-Mueller, 2002). In this analysis, age dispersion and proportion of male workers are the independent variables, and the correlation coefficient between age and work-related motives

² <http://www.lyonsmorris.com/lyons/metaAnalysis/index.cfm>.

(corrected for measurement error and range restriction, transformed to Fisher's Z , and then weighted based on N , the criterion reliability and range restriction) is the dependent variable. We used Lipsey and Wilson's (2001) SPSS macros to perform these analyses.

3.3 Results

Meta-analytic results for the relations between age and work-related motives are presented in Table 3.3. As shown, the results provide support for Hypotheses 1a, 1b, and 4. Specifically, age was significantly negatively related to the strength of work-related growth motives (H1a; $\rho = -.15$), but significantly, positively related to self-reported importance of work-related intrinsic motives (H1b; $\rho = .07$). Relative to younger workers, older workers reported lower motive strength for job characteristics related to new learning and advancement, but higher motive strength for job characteristics and outcomes related to accomplishment, job enjoyment, and existing skill utilization.

Table 3.3. Meta-analytic results for the hypothesized relationships between work-related motives and age

	Motives	N	k	r	ρ	$SD\rho$	95% LCI	95% UCI	Var. expl.
H1a	Growth motives*	31,469	31	-.10	-.14	.13	-.18	-.09	9.80
H1b	Intrinsic motives*	48,141	84	.05	.07	.10	.05	.09	26.59
H2	Social motives	29,300	35	-.02	-.02	.10	-.05	.01	20.69
H3	Security motives*	35,233	31	-.06	-.08	.12	-.12	-.03	9.23
H4	Extrinsic motives*	37,054	35	-.07	-.10	.11	-.13	-.06	13.01

Note. N = the number of individuals in the k samples, k = the number of studies/samples, r = sample-size weighted uncorrected correlation, ρ = mean true score correlation, $SD\rho$ = standard deviation of ρ , 95% LCI = lower bound of confidence interval, 95% UCI = upper bound of confidence interval, var. expl. = percentage variance in corrected correlations attributable to all artifacts, * = significant mean correlation, interval does not include zero

In contrast to our Hypothesis 2 and 3, however, age was unrelated to social motives (the confidence interval includes zero), and age was significantly, but *negatively* related to work-related security motives ($\rho = -.08$). Finally, as hypothesized (H4), age was significantly negatively related to work-related extrinsic motives ($\rho = -.10$). Relative to younger workers, older workers reported lower motive strength for job characteristics related to prestige and financial compensation.

In addition, Table 3.4 provides information about specific work-related motives. This table reveals that the motive strength for job characteristics related to accomplishment or achievement

($q = .06$), use of skills or interesting work ($q = .10$), autonomy ($q = .27$), helping people or contributing to society ($q = .09$), and job security ($q = .06$) increased with age, that the motive strength for job characteristics related to development or challenge ($q = -.08$), advancement or promotion ($q = -.23$), working with people ($q = -.07$), recognition ($q = -.13$), and compensation and benefits ($q = -.10$), decreased with age, and that the motive strength for job characteristics related to prestige or status was not significantly related to age. The effect sizes were small to medium (Cohen, 1992).

Table 3.4. Meta-analytic results for the relationships between the individual work-related motives and age

Motives	<i>N</i>	<i>k</i>	<i>r</i>	<i>q</i>	SD <i>q</i>	95% LCI	95% UCI	Var expl
Development or challenge*	22,298	26	-.05	-.07	.12	-.12	-.03	15.39
Accomplishment or achievement*	15,862	41	.04	.06	.12	.02	.09	28.62
Use of skills (self-actualization), interesting work*	22,512	14	.07	.10	.13	.03	.17	6.43
Autonomy*	28,384	34	.19	.27	.19	.21	.33	5.90
Advancement or promotion*	27,282	13	-.16	-.23	.14	-.30	-.15	4.30
Working with people (affiliation)*	23,555	25	-.05	-.07	.09	-.11	-.03	21.23
Helping people or contributing to society*	7,897	15	.07	.09	.04	.07	.11	70.48
Recognition*	19,168	9	-.08	-.13	.05	-.16	-.09	32.25
Prestige and status	20,707	12	-.01	-.02	.07	-.06	.02	21.07
Job security*	13,341	17	.05	.06	.06	.03	.09	33.71
Compensation and benefits*	33,191	24	-.08	-.10	.10	-.14	-.06	10.63

Note. *N* = the number of individuals in the *k* samples, *k* = the number of studies/samples, *r* = sample-size weighted uncorrected correlation, *q* = mean true score correlation, SD*q* = standard deviation of *q*, 95% LCI = lower bound of confidence interval, 95% UCI = upper bound of confidence interval, var. expl. = percentage variance in corrected correlations attributable to all artifacts, * = significant mean correlation, confidence interval does not include zero

Moderator Analyses

Since at least 25% of the variance in the observed mean correlations remained unexplained after accounting for statistical artifacts (last column of Table 3.3), moderators or covariates may exist (Hunter & Schmidt, 2004). In fact, the large residual variances (the variances explained range from 9.23% to 26.59%) suggest that moderator analyses are an important element of our study. Therefore, we examined the moderating effect of different subgroups (i.e., occupation, age group, and cohorts) and sample characteristics (i.e., age dispersion and proportion of male

workers). Table 3.5 reveals that the relation between age and growth and intrinsic motives was significantly different for workers in different occupational groups. Specifically, the relationship between age and growth motives was positive among blue collar workers ($q = .21$), but negative among white collar workers ($q = -.24$) and unrelated among managers. The results of the moderator analysis also showed a significant difference between blue collar workers and other occupational groups in the age-intrinsic motive relationship. Although there was a significant positive relationship between age and intrinsic motives among blue collar workers, sales agents, and white collar workers, the magnitude of this positive relation was significantly more positive among blue collar workers ($q = .23$), followed by white collar workers ($q = .08$), and sales agents ($q = .04$). Finally, although the relation between age and security motives was not significantly moderated by occupation, the hypothesized, positive relationship between age and security motives was obtained for white collar workers ($q = .09$).

Results of moderator analyses by cohort revealed that cohort significantly moderated the relationship between age and all motive classes (see Table 3.5). The age-growth motive relation was negative for all cohorts, but the magnitude of the negative relation was significantly greater for the Generation X cohort ($q = -.23$) than the Baby Boomer cohort ($q = -.08$). In a similar vein, the age-intrinsic motive relation was positive for all cohorts, but the magnitude of the positive relation was significantly greater for the Traditionals cohort ($q = .11$) than the Baby Boomer cohort ($q = .05$). Further, the age-social work motive relationship was positive for the Traditional ($q = .11$) and Baby Boomer ($q = .06$) cohorts, but negative for the Generation X cohort ($q = -.09$). With respect to the relationship between age and security work motives, moderator analyses showed that the relationship was significant and positive in Traditional cohort samples ($q = .14$), but non-significant in samples comprised of members of the Baby Boomer cohort, and significant but negatively related in samples comprised of members of the Generation X cohort ($q = -.18$). Finally, moderator analyses on the impact of cohort on the relationship between age and extrinsic work motives showed a significant negative relationship for Baby Boomer ($q = -.06$) and Generation X cohort samples ($q = -.19$), but no significant relationship between age and extrinsic work motives for the Traditional cohort.

Results of moderator analyses by age group revealed that age group also significantly moderated the relationship between age and all motive classes (see Table 3.5). The age-growth motive and age-extrinsic motive relation was significantly negative among all age groups, but the magnitude of the age-growth motive relation was significantly more negative among employees aged 40 years or older, and the age-extrinsic motive was significantly more negative among younger workers aged 36 or younger. In a similar vein, the age intrinsic-growth relation was

significantly positive among all age groups, but the magnitude of this relation was significantly less positive among older workers. With respect to the relationship between age and social work motives, moderator analyses showed that the relationship was significant and negative among younger workers ($\beta = -.13$), significant but positively related in samples comprised of middle aged workers ($\beta = .08$), but non-significant in samples comprised of older workers. The age-security motive relation was significantly and negative among younger and older workers, but unrelated among middle aged workers.

Table 3.5. Subgroup moderator analyses for the relationships between work-related motives and age

Motives	Subgroup	<i>N</i>	<i>k</i>	<i>r</i>	ρ	SD ρ	95% LCI	95% UCI	<i>t</i> -test
Growth	Age < 36*	10,644	9	-.11	-.16	.03	-.18	-.14	<i>t</i> -age group 2 = 2.26* / <i>t</i> -age group 3 = 7.37*
Growth	Age 36 – 40*	9,420	8	-.07	-.08	.09	-.14	-.02	<i>t</i> -age group 3 = 5.73*
Growth	Age > 40*	8,459	6	-.18	-.27	.03	-.29	-.25	
Growth	White collar workers*	1,458	4	-.17	-.24	.16	-.40	-.09	<i>t</i> -managers = 1.39 / <i>t</i> -sales agents = 1.78 / <i>t</i> -blue collar = 3.47* / <i>t</i> -nurses = 3.28*
Growth	Managers	809	3	-.06	-.10	.11	-.23	.03	<i>t</i> -sales agents = .81 / <i>t</i> -blue collar = 2.52* / <i>t</i> -nurses = 2.12
Growth	Sales agents	335	3	.01	.01	.21	-.22	.24	<i>t</i> -blue collar = 1.27 / <i>t</i> -nurses = .70
Growth	Blue collar workers*	947	3	.18	.21	.18	.01	.42	<i>t</i> -nurses = .81
Growth	Nurses	565	3	.09	.11	.13	-.03	.25	
Growth	Traditionals*	1,381	7	-.16	-.20	.18	-.33	-.07	<i>t</i> -Baby Boomers = 1.68 / <i>t</i> -gen Xers = .51
Growth	Baby Boomers*	9,660	12	-.06	-.08	.06	-.12	-.05	<i>t</i> -gen Xers = 5.84*
Growth	Generation Xers*	17,482	4	-.14	-.23	.04	-.27	-.19	
Intrinsic	Age < 36*	14,283	23	.06	.10	.10	.06	.14	<i>t</i> -age group 2 = .85 / <i>t</i> -age group 3 = 2.95*
Intrinsic	Age 36 – 40*	13,625	21	.06	.08	.06	.06	.11	<i>t</i> -age group 3 = 2.69*
Intrinsic	Age > 40*	14,801	27	.02	.03	.07	.00	.06	
Intrinsic	White collar workers*	5,246	16	.05	.08	.08	.04	.12	<i>t</i> -managers = .78 / <i>t</i> -sales agents = 1.63 / <i>t</i> -blue collar = 1.40 / <i>t</i> -nurses = .27
Intrinsic	Managers	1,500	7	.00	-.01	.12	-.11	.08	<i>t</i> -sales agents = 1.21 / <i>t</i> -blue collar = 2.11* / <i>t</i> -nurses = 1.44
Intrinsic	Sales agents*	335	3	.04	.04	0	.04	.04	<i>t</i> -blue collar = 1.76 / <i>t</i> -nurses = .87
Intrinsic	Blue collar workers*	1,028	4	.16	.23	.21	.02	.43	<i>t</i> -nurses = 1.11
Intrinsic	Nurses*	1,106	5	.10	.13	.08	.05	.20	
Intrinsic	Traditionals*	3,467	17	.07	.11	.13	.05	.17	<i>t</i> -Baby Boomers = 1.81* / <i>t</i> -gen Xers = .45
Intrinsic	Baby Boomers*	19,606	45	.03	.05	.07	.03	.07	<i>t</i> -Generation Xers = 1.42
Intrinsic	Generation Xers*	19,636	9	.05	.09	.08	.04	.14	

Social	Age < 36*	12,076	11	-.07	-.13	.07	-.17	-.09	t -age group 2 = 6.32* / t -age group 3 = 5.12*
Social	Age 36 – 40*	2,905	6	.07	.08	.06	.03	.13	t -age group 3 = 1.92*
Social	Age > 40	12,823	14	.00	.02	.07	-.02	.05	
Social	White collar workers	3,371	10	.03	.04	.10	-.02	.10	
Social	Traditionals*	1,539	5	.08	.11	.09	.04	.19	t -Baby Boomers = 1.08 / t -gen Xers = 4.04*
Social	Baby Boomers*	7,335	20	.04	.06	.08	.03	.10	t -gen Xers = 4.22*
Social	Generation Xers*	18,930	6	-.05	-.09	.08	-.16	-.03	
Security	Age < 36*	11,942	8	-.12	-.17	.13	-.26	-.08	t -age group 2 = 3.38* / t -age group 3 = 1.44
Security	Age 36 – 40	10,541	10	-.00	-.00	.06	-.04	.04	t -age group 3 = 1.96*
Security	Age > 40*	11,548	10	-.06	-.08	.12	-.16	-.01	
Security	White collar workers*	2,262	7	.08	.09	.11	.01	.18	t -sales agents = .21
Security	Sales agents	641	5	.09	.12	.30	-.15	.39	
Security	Traditionals*	1,847	8	.10	.14	.19	.00	.27	t -Baby Boomers = 2.16* / t -gen Xers = 4.04*
Security	Baby Boomers	13,288	15	-.01	-.01	.08	-.06	.03	t -Generation Xers = 3.63*
Security	Generation Xers*	18,896	5	-.11	-.18	.09	-.26	-.10	
Extrinsic	Age < 36*	12,082	9	-.10	-.18	.11	-.25	-.11	t -age group 2 = 2.48* / t -age group 3 = 1.60
Extrinsic	Age 36 – 40*	11,298	11	-.06	-.07	.08	-.12	-.02	t -age group 3 = .63
Extrinsic	Age > 40*	12,178	11	-.07	-.10	.12	-.17	-.03	
Extrinsic	White collar workers	3,943	10	-.04	-.06	.18	-.17	.05	t -sales agents = 1.12
Extrinsic	Sales agents	641	5	.09	.12	.32	-.17	.40	
Extrinsic	Traditionals	2,604	9	-.04	-.07	.24	-.23	.08	t -Baby Boomers = .12 / t -gen Xers = 1.29
Extrinsic	Baby Boomers*	13,918	16	-.05	-.06	.06	-.09	-.03	t -Generation Xers = 2.86*
Extrinsic	Generation Xers*	19,036	6	-.10	-.19	.10	-.27	-.11	

Note. N = the number of individuals in the k samples, k = the number of studies/samples, r = sample-size weighted uncorrected correlation, ρ = mean true score correlation, $SD\rho$ = standard deviation of ρ , 95% LCI = lower bound of confidence interval, 95% UCI = upper bound of confidence interval, t -test = t statistic to test moderating effect, * = significant mean correlation (confidence interval does not include zero) or significant t

Table 3.6 reports the results for the moderator (regression) analyses with the age-motive relations as dependent and age dispersion and proportion of male workers in the sample as independent variables. This table reveals that age dispersion had a positive influence on the age-social motive relationship.

Table 3.6. Moderator regression analyses for the relationships between work-related motives and age

Relationship	<i>k</i>	β	<i>R</i> ²
Age – growth motives			
Age dispersion	12	-.14	.02
Proportion male workers	22	.16	.03
Age – intrinsic motives			
Age dispersion	51	.21	.04
Proportion male workers	69	-.01	.00
Age – social motives			
Age dispersion	24	.41*	.16
Proportion male workers	29	.19	.04
Age – security motives			
Age dispersion	17	-.22	.05
Proportion male workers	26	.04	.00
Age – extrinsic motives			
Age dispersion	20	-.23	.05
Proportion male workers	29	.21	.04

Note. *k* = the number of studies/samples, β = standardized beta weight, *R*² = variance explained

3.4 Discussion

An updated literature review was conducted and a meta-analysis was performed to investigate the relationship between age and work-related motives. Using chronological age as our indicator of aging, we organized needs, values, and motive measures into a common structure that permitted meta-analyses of the relationship between age and different motive classes. Similar to other meta-analytic studies, on the relation between age and performance for example (Ng & Feldman, 2008), our effect sizes were small to medium (Cohen, 1992).

Growth and intrinsic work-related motives and age. As proposed by both SOC theory and Kanfer and Ackerman (2004), we found an age-related decrease in growth motives related to work features such as training and advancement. Although the data do not allow for a clear causal explanation of these findings, it may be that since fluid intelligence and learning abilities are likely to decline with age (see Ackerman, 1996), the strength of motives that impose strong demands on these abilities might also decline. In contrast, the strength of intrinsic work-related motives that do not require these abilities was positively associated with age, reflecting a compensatory

strategy for age-related resources losses as proposed by the Life Span Theory of Control. Since modern theories of work motivation still focus on younger workers by emphasizing intrinsic rewards related to learning (Kanfer & Ackerman, 2004), these findings suggest that we should rethink our understanding of these motives from a lifespan perspective.

Social work-related motives and age. Contrary to our hypothesis based on Socio-Emotional Selectivity Theory, we found that social work-related motives were unrelated to age. Since intrinsic social motives related to communion striving (i.e., working with or helping others) are different than extrinsic social motives related to status striving (i.e., recognition and prestige), we conducted post-hoc analyses to learn about potential how these two dimensions of social motives might change with age. The post-hoc analyses reveal that social motives related to communion striving are unrelated to age, and that social motives related to status striving decrease with age ($\beta = -.07$). This latter finding supports Kanfer and Ackerman's (2004) suggestion that the strength of achievement motives related to the demonstration of mastery and excellence compared to others declines with age.

Further examination of the motives comprising this motive class revealed an unexpected negative relationship between age and the strength of motives associated with relationships with other people including co-workers. Socio-Emotional Selectivity Theory predicts that older workers prefer social partners who are familiar to them and who provide a social climate in which they feel validated and loved. In the work context, however, social interactions with other people might be more superficial. In addition, the emphasis on a shorter future with the organization may reduce the attractiveness of developing emotionally satisfying interactions with co-workers (e.g., Carstensen, 1998).

The social motives of Baby Boomers and Traditionals, on the other hand, were found to increase with age as expected. These findings suggest that Socio-Emotional Selectivity Theory needs to be extended to the (work) context. In addition, the motive strength related to helping other people and contributing to society was positively related to age. This finding supports Socio-Emotional Selectivity Theory's prediction that older workers prioritize emotionally meaningful goals, such as generativity, and suggests that we need to examine age-related differences in social motives beyond the motives examined in this study.

Security and extrinsic work-related motives and age. Contrary to our hypothesis that security motives increase with age, security motives were significantly negatively related to age. However, post-hoc analyses revealed that the strength of intrinsic security motives (i.e., job security) does increase with age ($\beta = .06$). Furthermore, the strength of security motives does increase with age among Traditionals and white collar workers. A possible explanation for this latter finding is that

the other occupations in our study are physically or psychologically more demanding than white collar work, resulting in losses in physical or psychological abilities irrespective of age. Workers in these professions may therefore use (different) coping strategies from the start of their career, whereas white collar workers do not experience loss until old age. Finally, as proposed by the Life Span Theory of Control, extrinsic work-related motives decreased with age. It seems, thus, that older workers rely less on primary control strategies directed toward actions that modify external circumstances.

Moderator analyses. Consistent with the Kanfer and Ackerman formulation, we found that occupation moderated the relationship between age and growth and intrinsic motive strength. However, in contrast to expectations, age was positively related to growth motive strength among blue-collar workers. We can only speculate about this finding at this point, but it may well be that, unlike white collar or service workers, blue collar workers are also experiencing age-related losses in physical abilities requisite for task performance. Therefore, they may have no other choice than to train for other jobs, such as for supervisory jobs. Furthermore, according to Kanfer and Ackerman (2004) and the Life Span Theory of Control, age-related losses in abilities requisite for job performance promote the use of secondary control strategies that involve self-directed cognitive processing. Consistently, the age-intrinsic motive relation is stronger among blue collar workers than among other occupational groups. Finally, the moderator analyses showed a positive relationship between age and the strength of intrinsic work-related motives for all occupations except managers. One possible explanation for this finding, related to the Life Span Theory of Control, is that these workers have more control over their environment (i.e., over subordinates) than workers in service and blue-collar jobs, and therefore do not need to rely on secondary control strategies.

Our findings also help to disentangle the impact that cohort may play in the relationship between age and person characteristics, such as motives, needs, and values. Findings obtained in moderator analyses by cohort showed that, contrary to our hypotheses, security and social motives decrease with age among Generation Xers. It might be that, since jobs and working conditions have improved in the last 5 decades, aging workers in the Generation X cohort experience less work-related losses, and therefore, do not need compensatory strategies, whereas aging workers in the Traditional and Baby Boom cohorts do. Although Generation Xers are 44 years old at most, and may be considered too young to be experiencing substantial losses, Ebner, Freund, and Baltes (2006) have found that goal focus towards maintenance and prevention already starts increasing in middle age. Another explanation is the increased flexibility of the workforce, resulting in different compensatory strategies of aging workers in the Generation X

cohort, emphasizing employability instead of job security for example. This suggests that we need more research to better define and study multiple dimensions of security. To our knowledge, these results are the first to indicate the differential impact of common experiences and environment on the trajectories of work-related motives across the lifespan.

Further, moderator analyses by age group revealed different forms of the age-motive relationships; the form of the relationship between age and social motive strength is a U-shaped curvilinear curve, although age is unrelated to social motive strength among older workers, and the form of the relationship between age and intrinsic motives is a positive, concave upward curve. Unexpectedly, the biggest 'shift' from extrinsic towards intrinsic motives occurs among younger workers. It seems that younger workers already start shifting their control strategies as they age in the work place. However, as expected, the sharpest decline in growth motives occurs among older workers. Finally, age-motive relationships are hardly influenced by the degree of age homogeneity or proportion of male employees in the samples. Age dispersion only has a positive influence on the age-social motive relationship, and gender has no moderating effect on age-motive relations at all.

In conclusion, our meta-analytic results largely support theories of adult development (i.e., SOC theory, the Life Span Theory of Control, and Socio-Emotional Selectivity Theory). Hence, these psychological theories of aging provide an excellent way for understanding the complexities of what work features are attractive to older workers. However, taxonomies that organize motives along content lines (i.e., growth, social and security) rather than in terms of the motive locus (i.e., intrinsic and extrinsic) may provide an incomplete picture. Therefore, these motives need to be reconsidered from a lifespan perspective. In addition, the moderator analyses revealed that the work context (e.g., occupation and cohort) should be taken into account as well. These findings permit more precise prediction of which work features are more likely to appeal to older workers.

Limitations

Sagie et al. (1996) argue that, since individual preferences are largely learned from parents, teachers, peers, and significant others and modified on the basis of experience, age does not directly impact work values, and thus work motives, but is actually a substitute for societal roles, socialization and expectations. In line with this reasoning, a number of researchers have suggested that chronological age may be an insufficient operationalization of the age factor in the work setting (De Lange et al., 2006; Kooij et al., 2008; Sterns & Miklos, 1995). In this meta-analysis, we have operationalized age as chronological age, whereas other operationalizations of

age, such as career stage and life status, but in particular job or organizational tenure, are also potentially relevant (see De Lange et al., 2006; Kooij et al., 2008). These operationalizations are rarely used in our selected empirical studies, and we were therefore not able to examine the influence of these age-related variables.

Furthermore, the moderator analyses have some limitations. First of all, the number of studies in the subgroups of the moderator analyses is small. Although the number of studies is taken into account in the significance level of the effect sizes and T-statistics, this meta-analysis should be replicated when more studies are available. Second, the operationalization of the moderator variable 'occupation' is rather broad. The occupational category of managers, for example, included managers from different hierarchical levels, and the occupational category of white collar workers included a broad range of jobs, including scientists and engineers. However, scientists and executive managers might have different motives than clerical workers and assembly line supervisors. Although post-hoc analyses with different categories of white collar workers provided similar results, the results for occupation as a moderator variable should be interpreted with caution.

Another limitation of this study is that older workers tend to be underrepresented in organizations because of early retirement options and healthy worker effects, and therefore, are also underrepresented in empirical studies. Since the *mean* age in our samples ranged from 18.7 to 62.3, the effect of this selection bias will probably be small. Finally, the studies included in our meta-analysis measure needs and work values at only one point in time, which makes conclusions about intra-individual changes in needs and work values or work-related motives impossible (see also Hertzog & Nesselroade, 2003).

In spite of these limitations, we feel that the present meta-analysis does have several important theoretical and practical implications.

Theoretical Implications and Future Research

First of all, our findings suggest that we need to rethink our understanding of motives from a lifespan perspective. As mentioned by Kanfer and Ackerman (2004), modern theories of work motivation still focus on younger workers or new entrants, by emphasizing intrinsic rewards related to learning and extrinsic rewards related to pay, promotion, and recognition. Hence, an important suggestion for future research on aging and work motivation is the development of better measures of motives that are appropriate across the lifespan, as well as measures of emergent motives, such as generativity (see for example the Meaning of Work Scale developed by Mor-Barak, 1995), knowledge utilization, helping, collaboration, and enhancing positive affect

(Kanfer & Ackerman, 2004). In addition, future research should report correlations between these measures of motives and age, so that age differences in these motive measures can be examined meta-analytically.

In line with this reasoning, Maehr and Kleiber (1981) have suggested that achievement motivation should be redefined from a more extrinsic, competitive pattern of achievement (which is more typical for younger people) to a more intrinsic, mastery related pattern. Similarly, Heggstad (1997) and Kanfer and Ackerman (2000) distinguished different components of achievement, i.e., desire to learn, mastery and competitive achievement and found that age-related changes differed for each of these components of achievement. In this study we found that age-related changes differed for development (i.e., learning) and achievement (i.e., mastery) motives, but we did not distinguish between mastery and competitive achievement.

However, since achievement as measured by the MNQ includes an element of competitive achievement (e.g., “I try to perform better than my co-workers”), whereas the other measures of achievement do not, we have post-hoc analyzed the difference between mean correlations between age and achievement as measured by the MNQ and those as measured by other instruments. We found that the mean correlations differed significantly ($t=3.43$, $p<.05$); achievement measured with the MNQ is unrelated to age, whereas achievement measured by other instruments increases with age. This suggests that competitive achievement decreases with age (see also Holahan, 1988; Kanfer & Ackerman, 2004). Kanfer and Ackerman (2004) provide support for this suggestion by arguing that since generativity motives, which focus attention on the process and collaborative nature of goal accomplishments, increase with age, older workers will emphasize cooperation rather than competition. More research is needed to examine this phenomenon. For example, future research could further examine age-related differences in the achievement goal model developed by Elliot (e.g., Elliot, 1999; Elliot & McGregor, 2001), who distinguishes mastery- as well as performance-related motives.

Second, our findings suggest that SOC and Socio-Emotional Selectivity theories need to be extended to the work context (see also Abraham & Hansson, 1995; Wiese, Freund, & Baltes, 2002); although growth motives showed the expected age-related decrease, security motives and social motives only revealed the expected age-related pattern among Baby Boomers, Traditionals or white collar workers. Therefore, future research should examine age-related differences in motives in different work contexts. For example, if older individuals seek social interaction to sustain positive self-concept and affect, then you would expect to find less older workers in jobs or organizations that do not have supportive cultures or environments, but high employee competition. Furthermore, future research should study age-related versus cohort-related

differences. For example, aging Generation Xers no longer use social interactions at work to support their self-concept, but non-work social interactions (using new technologies such as email and mobile phones). Similarly, the economic history of people's childhood and early adolescence influences age-related changes in security motives. Therefore, future research needs to better define security motives in terms of employability, different benefits, employment security with respect to a particular occupation or organization etc.

Another suggestion for future research is to include unconscious motives measures. Since we did not find studies that measure unconscious motives (for example with the Thematic Apperception Test; McClelland et al., 1958), the relation between age and unconscious motives remains a gap in our knowledge. Conscious motives are also influenced by cognition and experience, caused by occupation, existing stereotypes or the supervisor's expectations for example, whereas lifespan theories are more concerned with internal regulation processes. Therefore, future research should include these measures to examine whether unconscious security and social motives do change with age as expected.

Finally, although we found some support for the Life Span Theory of Control, this theoretical idea should also be fine-tuned to the work context, by introducing more work specific age-related processes. For example, the diminishing time left in the organization (or retirement perspective) and stereotypical views about older workers might explain age-related constraints on primary control in the work setting. Another age-related constraint on primary control in the work setting, suggested by Kanfer and Ackerman (2004), is the declining attractiveness of higher levels of effort with age. Future research should also consider these work-related factors.

Practical Implications

Our meta-analysis has three important practical implications. First of all, since the importance of certain work outcomes changes with age, organizations should consider adjusting their HR policy and practices to fit the needs of workers with different ages. For example, since the importance of helping people seems to increase with age, older workers should be offered more mentor roles, and since motive strength for interesting work, autonomy, and achievement increases with age, older workers' jobs should be redesigned to include these characteristics (see also Armstrong-Stassen, 2008; Paul & Townsend, 1993). In addition, since work-related motives are influenced by the social environment, such as occupation, organizations should differentiate their HR policy and practices to fit the different needs of workers in different job types. Finally, we found that, although the motive strength related to development and challenge decreases with age, intrinsic and achievement motives are more important for older workers as compared to

younger workers. So, instead of simply offering older workers limited opportunities for training and development (Greller & Simpson, 1999), managers should assure interesting jobs for older workers in which these older workers can accomplish worthwhile tasks. Hopefully this meta-analysis will lead to the gradual adjustment of prejudices about older workers.

3.5 References (Studies used in the meta-analysis are indicated with a *)

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4

The Influence of Age on the Associations between HR Practices and both Affective Commitment and Job Satisfaction: a Meta- analysis

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Abstract

Research on the association between high commitment Human Resource practices and work-related outcomes at the individual level rarely focuses on age differences. To fill this knowledge gap, a meta-analysis has been conducted to examine how the relationships between the availability of high commitment HR practices, as perceived by employees, and affective commitment and job satisfaction change with age. Drawing on Selection, Optimization and Compensation (SOC) theory and on Regulatory Focus theory, we identify a bundle of maintenance HR practices and a bundle of development HR practices, and hypothesize that the association between maintenance HR practices and work-related attitudes strengthens with age, and that the association between development HR practices and work-related attitudes weakens with age. Our meta-analysis of 83 studies reveals that, in line with social exchange and signaling theories, employees' perceptions of HR practices are positively related to their work-related attitudes, and that calendar age influences this relationship largely as expected. These results are discussed in light of the above mentioned theories.

4.1 Introduction

Since workforces are aging across the world (OECD, 2005), and older workers can be of great value to their companies (Ng & Feldman, 2008), organizations should reconsider their organizational policies and practices in order to encourage older workers to remain engaged and active members of the workforce (Barnes-Farrell & Matthews, 2007). However, little is known about the influence of age on the association between Human Resource (HR) practices and individual worker outcomes. Only two previous studies (Conway, 2004; Finegold, Mohrman, & Spreitzer, 2002) have examined how the relationship between HR practices and commitment differs for workers in different life or career stages. This meta-analysis aims to fill this knowledge gap. In line with the lifespan approach of the Selection, Optimization and Compensation (SOC) theory (Baltes, Staudinger, & Lindenberger, 1999) and the social psychological Regulatory Focus theory (Higgins, 1997), we argue that employee needs, and thus the utility of HR practices, change with age. Therefore, we would expect the associations between HR practices and work-related attitudes to also change with age. Before presenting specific hypotheses on the moderating effect of age, we will discuss the relationship between HR practices and individual work-related outcomes.

HR Practices and Individual Work-related Outcomes

Many studies have shown that ‘High Performance Work Practices’ (HPWP), ‘High Commitment High Performance Practices’ (HCHP), or ‘Best Practices’ can have a positive impact on organizational performance (Arthur, 1994; Combs, Liu, Hall, & Ketchen, 2006; Huselid, 1995; MacDuffie, 1995). A significant shortcoming of these studies is that they focus solely on the association between HR practices and organizational performance, and thus reveal little of the processes or underlying mechanisms through which increased organizational performance can be achieved (also referred to as the ‘black box problem’ - Wright, Gardner, & Moynihan, 2003). In theorizing about the HRM-performance link, various authors (Delany & Huselid, 1996; Guest, 1997, 1999; Huselid, 1995; Macduffy, 1995; Paauwe & Richardson, 1997) have proposed that HR practices influence organizational performance through individual work-related behavior, such as turnover and productivity, and even through individual work-related attitudes, such as commitment and motivation.

In this line of reasoning, the intended HR policies (which can be measured by interviewing or surveying HR and other managers) can function as ‘signals’ of the organization’s intentions toward its employees (Den Hartog, Boselie, & Paauwe, 2004). However, intended HR policies have been found to differ significantly from HR practices as actually experienced by employees

(e.g., the HR activities implemented in the organization as measured by surveying employees) (Biemans, 1999). For example, Khilji and Wang (2006) found that HR managers described the performance evaluation process as an open discussion between employees and management, whereas employees felt that employee-goals were set without consulting them. Clearly, individual work-related outcomes are affected by employees' *perceptions* of HR practices, instead of by (written) HR policies as intended by for instance HR managers (Edgar & Geare, 2005; Guest, 1999; Huselid, 1995; Kinicki, Carson, & Bohlander, 1992; Whitener, 2001). Therefore, when we are interested in the effects of HR practices on work-related attitudes, HR practices should be measured as perceived by the individual worker.

Thus, in this study, we focus on high commitment or high involvement HR practices as perceived by employees. Based on Wood and de Menezes (1998), we define high commitment HR practices as practices that are aimed at eliciting a strong commitment to the organization, and at creating conditions in which employees will become highly involved in the organization and identify with its overall goals. How such HR practices are perceived is generally measured using items such as 'My company provides me with the opportunity to improve my skills and knowledge' (Allen, Shore, & Griffeth, 2003), 'A rigorous selection process is used to select new recruits' (Gould-Williams, 2004), and 'There is regular feedback on performance, and guidance on how performance can be improved' (Conway, 2004). These items refer to *the availability of high commitment HR practices as perceived by employees*, which we refer to as 'high commitment HR practices'.

The idea that high commitment HR practices affect work-related attitudes through employees' perceptions or experiences of them is supported by social exchange theory (Blau, 1964; Eisenberger, Huntington, Hutchison, & Sowa, 1986) and signaling theory (Casper & Harris, 2008; Ostroff & Bowen, 2000). These theories propose that high commitment HR practices have an effect on employees by supporting them, or by functioning as 'signals' of the organization's intentions toward them. More specifically, these theories propose that perceived organizational support will result in greater affective attachment and stronger feelings of obligation toward the organization (Shore & Wayne, 1993). In this line of reasoning, the general assumption is that individual workers will view high commitment HR practices as a personalized commitment to them, an investment in them, and as recognition of their contribution, which they then reciprocate through correspondingly positive attitudes and behavior toward the organization (Hannah & Iverson, 2004).

Since previous studies have shown that perceptions of organizational support are positively related to affective commitment to the organization (Eisenberger, Fasolo, & Davis-LaMastro,

1990; Shore & Wayne, 1993; Wayne, Shore, & Liden, 1997) and job satisfaction (Eisenberger, Cummings, Armelo, & Lynch, 1997), we focus on these two work-related attitudes. Affective organizational commitment (which we will refer to as ‘affective commitment’) has been defined as the emotional attachment to, identification with, and involvement in the organization (Allen & Meyer, 1990). Job satisfaction has been defined as an affective attachment to the job, or as an emotional state resulting from the evaluation or appraisal of one’s job experiences (Locke, 1976). Hence, while job satisfaction and affective commitment both refer to *affective states*, or feelings employees may have, the objects of these feelings differ: affective commitment refers to feelings toward the organization, and job satisfaction refers to affective feelings toward the job or work role (Hulin, 1991). Another distinction between affective commitment and job satisfaction, according to Porter, Steers, Mowday, and Boulian (1974), is that it takes longer for employees to determine their level of commitment to an organization than their level of job satisfaction. As a consequence, affective commitment is longer term and more stable than job satisfaction (Tett & Meyer, 1993). Although affective commitment and job satisfaction are distinct concepts, they are both expected to be positively related to high commitment HR practices.

Hypothesis 1a: High commitment HR practices are positively related to affective commitment.

Hypothesis 1b: High commitment HR practices are positively related to job satisfaction.

High Commitment HR Practices, Affective Commitment, and Job Satisfaction: Age as a Moderator

Based on both the lifespan SOC theory (Baltes et al., 1999) and Regulatory Focus theory (Higgins, 1997), we expect that employee needs, such as the need for growth or security, and thus the utility of high commitment HR practices will change with age. Furthermore, since social exchange theory proposes that employee reciprocation is related to the utility or value of high commitment HR practices to them, the associations between these high commitment HR practices and work-related attitudes will also change with age (see also Finegold et al., 2002). Adopting a similar line of reasoning, Gong, Law, Chang, and Xin (2009) proposed that the intensity of middle managers’ needs determines the nature of their commitment, as a repayment, to the firm.

Only two studies have examined this moderating role of age in similar associations. Conway (2004) studied whether the relationship between HR practices and commitment changes with career stage, and found that broad training (to support employability) was more strongly associated with affective commitment in the older age (>41) group than in the middle (31-40) and younger age (<30) groups. Finegold et al. (2002) examined whether those elements of the

employment relationship that predict commitment and the willingness to change companies varied significantly with age. They found that satisfaction with job security was most strongly linked to commitment among older workers, whereas satisfaction with opportunities to develop skills and having one's salary linked to individual performance had a stronger negative relationship with intention to leave among individuals aged under 30.

While these studies operationalized age as either life stage or career stage, our meta-analysis focuses on aging, and therefore operationalizes age as a continuous variable. Aging refers to changes that occur in biological, psychological, and social functioning over time (De Lange, Taris, Jansen, Smulders, Houtman, & Kompier, 2006; Settersten & Mayer, 1997; Sterns & Miklos, 1995). Aging involves both personal gains and losses, such as gains in general knowledge and losses in physical abilities (Kanfer & Ackerman, 2004; Warr, 2001). Since SOC and Regulatory Focus theories address how people cope with gains and losses over their lifespan, these theories seem appropriate for formulating hypotheses on the moderating role of age on the association between high commitment HR practices and work-related attitudes.

SOC theory (Baltes et al., 1999) defines successful lifespan development as the conjoint maximization of gains and minimization of losses. Further, SOC theory proposes that the processes of regulating development that aim to maximize gains and minimize losses involve *selecting* outcomes, *optimizing* resources to reach those desirable outcomes, and *compensating* for the loss of outcome-relevant means (Baltes et al., 1999). Similarly, Regulatory Focus theory is concerned with how people achieve pleasure and avoid pain in different ways (Higgins, 1997). Higgins distinguished between self-regulation with a focus on promotion, and self-regulation with a prevention focus, and proposed that aspirations and accomplishments (i.e., optimization) involve a promotion focus, whereas responsibilities and safety (i.e., compensation) involve a prevention focus. Moreover, Higgins argued that needs for growth and development induce a promotion focus, whereas security needs induce a prevention focus (see also Brockner & Higgins, 2001; Kluger, Stephan, Ganzach, & HersHKovitz, 2004).

Since the above-mentioned losses (for example in abilities) specifically occur in older age, SOC theory argues that the allocation of resources aimed at growth (i.e., optimization) will decrease with age, whereas the allocation of resources used for maintenance and regulation of loss (i.e., compensation) will increase with age (Baltes et al., 1999). This proposition is supported by Freund (2006) who found that the regulatory focus shifts from being primarily on promotion in young adulthood to one on maintenance and prevention in old adulthood (see also, Ebner, Freund, & Baltes, 2006; Kanfer & Ackerman, 2004). As a result, the needs for self-actualization or growth are likely to decrease with age, whereas security needs are likely to increase as workers

age. In a similar vein, Rhodes (1983) found that employee needs change with age: needs for security tend to increase with age, and there was also some support for a parallel decrease in the need for growth.

As already mentioned, these changing employee needs affect the utility or fit of high commitment HR practices. Kinnie, Hutchinson, Purcell, Rayton, and Swart (2005), for instance, found that workers with different needs respond differently to the HR practices they experience, and that this is linked to their affective commitment (see also needs-supplies fit; Piasentin & Chapman, 2006). Hence, the age-related changes in needs will influence the utility or fit of high commitment HR practices and, thus, the relationship of these HR practices with affective commitment and job satisfaction.

Bundles of high commitment HR practices. In order to formulate hypotheses on the effect of high commitment HR practices on employees of different ages, we categorize these practices into theoretically meaningful HR bundles. According to MacDuffie (1995), HR bundles should consist of interrelated and internally consistent HR practices built around an organizational logic (see also Guest, Conway, & Dewe, 2004). In line with Toh, Morgeson, and Campion (2008), we distinguish between bundles of HR practices by the shared goals of the specific HR practices. SOC theory (Baltes et al., 1999) proposes various goals in lifespan development to which individuals can allocate their resources. These lifespan goals are often ‘translated’ (e.g., Ebner et al., 2006) into goal orientations with a focus on either promotion or on prevention as distinguished by Regulatory Focus theory (Higgins, 1997). Drawing on these theories, we therefore distinguish two HR bundles: development (promotion) and maintenance (prevention) high commitment HR practices.

Based on the definitions of promotion and prevention in Regulatory Focus theory (Higgins, 1997), and of growth and maintenance in SOC theory (Baltes et al., 1999), we conceptualize maintenance high commitment HR practices as those related to protection, safety, and responsibility that help individual workers to maintain their current levels of functioning in the face of new challenges, or to return to previous levels after a loss (such practices include job security and flexible work schedules); and development high commitment HR practices as those related to advancement, growth, and accomplishment that help individual workers to achieve higher levels of functioning (e.g., training and internal promotion). Similarly, Gong, Law, Chang, and Xin (2009) distinguish between a performance-oriented HR subsystem, which focuses on developing HR and providing motivation and opportunities for the productive use of such resources, and a maintenance-oriented HR subsystem, which focuses on employee protection and equality. Additionally, Kuvaas (2008) defines the perception of developmental HR practices

as the degree to which employees perceive that their developmental needs are being supported by the organization's HR practices.

Since goal focus and employee needs are expected to change from a goal focus on promotion and growth needs in young adulthood to a goal focus on maintenance and prevention, and security needs as one ages, we expect the relationships between high commitment maintenance HR practices and work-related attitudes to strengthen, and the relationships between development high commitment HR practices and work-related attitudes to weaken, with age. However, some earlier studies have found curvilinear effects of age on the associations between HR practices and commitment (Conway, 2004; Finegold et al., 2002). In these studies, the rationale for curvilinear effects of age was based on Super's (1957) career stage model. In this model, employees pass through four stages in their career. First, employees pass through the 'trial' stage, in which their primary concerns are to identify their interests and capabilities and to define their professional role or self-image (Ornstein, Ornstein, Cron, & Slocum, 1989). Subsequently, in the 'establishment stage', employees are concerned with moving upward and mastering their identified area of interest. In the subsequent 'maintenance stage', employees hold on to their earlier achieved accomplishments and try to maintain their self-concept; and finally, in the 'disengagement stage', employees begin to detach from the organization and to develop a new self-image that is independent of career success. Thus, employees are most concerned with development and growth in the second, establishment, career stage, and with security and maintenance in the earlier, trial, and later, maintenance and disengagement, career stages. On this basis, development high commitment HR practices will be more important for employees in the middle career stage of establishment, and maintenance high commitment HR practices will be more important for employees in their early or late careers.

In sum, although both lifespan and career stage theories suggest that older workers are more concerned with maintenance and less with development, these theories contradict each other with respect to younger workers; lifespan theories propose that younger workers are more concerned with development and less with maintenance, whereas career stage theories propose the exact opposite. This implies that the association between maintenance high commitment HR practices and work-related attitudes may either first decrease and then increase with age (i.e., a U-shaped effect) or may increase linearly over the lifespan, and that the association between development high commitment HR practices and work-related attitudes may either first increase and then decrease with age (i.e., an inverse U-shaped effect) or decrease linearly over the lifespan. Therefore, we formulated the following hypotheses:

Hypothesis 2: The associations between high commitment HR practices that relate to the maintenance HR bundle and both affective commitment and job satisfaction will strengthen in older age.

Hypothesis 3: The associations between high commitment HR practices that relate to the development HR bundle and both affective commitment and job satisfaction will weaken in older age.

4.2 Method

Meta-analysis

We tested our hypotheses by carrying out a meta-analysis. A meta-analysis quantitatively aggregates the results of several empirical studies while correcting for various factors that might bias relationship estimates. On this basis, a meta-analysis is seen as an effective way of summarizing earlier research and identifying appropriate topics for future research (Hunter & Schmidt, 2004; Lipsey & Wilson, 2001). Although age is hardly ever a major focus in existing research on HR practices and work-related attitudes, it is sometimes included as a confounder, covariate, or sample descriptive.

Search Strategy

We used several search strategies to identify relevant published and unpublished studies. First, we searched the Psychinfo (1872 – 2009) and AbiInform (1971 – 2009) databases looking for the following keywords: ‘Human resource’, ‘HR practices’, ‘HR policies’, ‘High Commitment High Performance practices’, ‘employment practices’, ‘employment policies’, ‘personnel practices’, ‘personnel policies’, ‘organizational practices’, ‘organizational policies’, ‘selection’, ‘staffing’, ‘security’, ‘performance management’, ‘performance appraisal’, ‘performance pay’, ‘rewards’, ‘pay’, ‘benefits’, ‘training’, ‘development’, ‘promotion’, ‘participation’, ‘suggestion system’, ‘grievance system’, ‘empowerment’, ‘information sharing’, ‘communication’, ‘job design’, ‘job enrichment’, ‘teamwork’, ‘work-life’, ‘work-family’, and ‘flexible’ in combination with the keywords ‘(affective) commitment’ and ‘(job) satisfaction’.

We did not limit our time frame because we considered studies from all periods to be potentially relevant. To uncover further studies, the literature references in the studies found in this first trawl were scrutinized to identify relevant studies that had not yet been included. As a further step, the authors of the relevant studies found were emailed when needed to request additional information or help with identifying unpublished studies. This resulted in additional

information related to six studies (Edgar & Geare, 2005; Gould-Williams, 2004; Harley, Allen, & Sargent, 2007; Probst, 2003; Smeenk, Eisinga, Teelken, & Doorewaard, 2006; Sun & Pan, 2008), and one additional published study (DeCotiis & Summers, 1987).

Of the potential studies identified, we only included those that met the following criteria: a) involved empirical research; b) studied the individual level with employees as respondents (i.e., studies where the HR practices were rated by HR managers were excluded); c) the HR practice refers to the existence or availability of an HR practice rather than to an evaluation of the HR practice (so satisfaction with respect to HR practices is excluded). However, since all companies have rewards systems, the HR practice ‘rewards and benefits’ is always measured in terms of competitiveness or fairness of the rewards and benefits; d) the studies do not focus on the outcome of HR practices such as feedback, autonomy, procedural or distributive justice, psychological empowerment, and job design as for example measured with the Job Diagnostic Survey; e) age was included; and f) publications were in English.

This resulted in $k = 83$ studies (samples) contained in 69 articles (the articles providing data are identified by an * in the reference list at the end of this article), with a total sample size of $N = 52,470$ individual respondents and 247 effect sizes. These 83 studies were found in journal articles (88%) and dissertations (12%) published between 1977 and 2009. Overall, 53% of the studies were carried out in the United States, 14% in Europe, 10% in Asia, and 23% elsewhere. The studies were conducted in professional service companies (22%), manufacturers (12%), health companies (6%), government organizations (5%), and mixed or other companies (55%). In terms of work, the respondents were managers (2% of the total sample), professionals (10%), non-professionals (11%), or had other or mixed functions (77%). In 49% of the studies, less than 50% of the respondents were male and, in the remaining studies, men were in the majority. The mean age of the total sample was 37.6 years (the mean standard deviation of age in the studies that reported this statistic was 9.0) and the overall age range (again not all studies reported this) was 16 to 77. Further, in studies that use age brackets, at the highest 31% of the sample was older than 50, and 11% was older than 60, respectively. Thus, we can conclude, that many individuals in our study were well over 50 years old. The mean company tenure was 7.6 years.

Measures

High commitment HR practices. As explained earlier, we chose to focus on the availability, as perceived by employees, of high commitment practices. In line with Combs et al. (2006), we first identified HR practices that researchers describe as high commitment practices, resulting in the 12 HR practices which are listed, with example items, in Table 4.1. In many of the studies found, researchers have measured HR practices with similar items to those reported in Table 4.1, but do

not define them as high commitment practices. Since these HR practices (whether labeled as high commitment or not) are aimed at eliciting a strong commitment to the organization (Wood & de Menezes, 1998), they all qualify as high commitment practices for our purposes. Furthermore, in line with Boselie, Dietz, and Boon (2005), we have combined some of these high commitment HR practices: the HR practice of participation includes empowerment practices and suggestion/grievance schemes; the HR practice of teamwork includes cooperation; the HR practice of information sharing includes communication; the HR practice of staffing includes selection; the HR practice of rewards includes benefits; the HR practice of training includes development; the HR practice of internal promotion includes career development; and the HR practice of performance management includes both performance appraisal and performance pay. Finally, we distinguished between maintenance and development high commitment HR practices using our conceptualizations of maintenance and development high commitment HR practices: maintenance high commitment HR practices are those related to protection, safety, and responsibility that help individual workers to maintain their current levels of functioning in the face of new challenges, or to recover to previous levels after a loss (e.g., job security and flexible work schedules); and development high commitment HR practices are those related to advancement, growth, and accomplishment that help individual workers to achieve higher levels of functioning (e.g., training and internal promotion). Based on this, we categorized each of the 12 high commitment HR practices as either a maintenance or a development HR practice (see Table 4.1). This table suggests that development practices are under-represented in the sense that nine of the observed practices were classified as maintenance high commitment HR practices, and only three (training, internal promotion, and job enrichment) as development high commitment practices (see also Zaleska & de Menezes, 2007 for a similar operationalization of development HR practices).

Table 4.1. Categorization of maintenance and development HR practices

Maintenance HR practices with example items		Development HR practices with example items	
Job security	'The company has done all it can to avoid lay-offs' 'The company makes a genuine effort to keep people employed even under adverse business conditions'	Training and development	'The company provides appropriate job training' 'My employer encourages me to extend my abilities'
Staffing and selection	'The company effectively reflects situational changes by reorganizing personnel to appropriate positions' 'The organization selects the right people for jobs'	Internal promotion and career development	'My organization provides me with the opportunity to achieve my career goals' 'I have the opportunity for advancement in my company'
Rewards and benefits	'I am rewarded (or recognized) fairly for the amount of effort that I put in' 'Rewards are fair and adequately reflect one's contribution'	Job enrichment	'Jobs are clearly defined and are designed to make full use of people's skills' 'Employees' perceptions of the extent to which their jobs were challenging'
Performance management (including both performance appraisal and pay)	'Performance appraisals are based on objective and quantifiable results' 'Rewards are based on individual performance'		
Participation (including empowerment and grievance/suggestion schemes)	'I am allowed to participate in decisions regarding my job'. 'Perceived extent of individual influence over immediate work process, managerial, and institutional level decisions'		
Information sharing (including communication)	'This department keeps me informed about business issues and about how well it is doing' 'Extent to which respondents felt that they were		

	kept informed about what was going on in the company and about changes that affected their job'	
Working in teams (including cooperation)	'There is an emphasis on teamwork in the organization' 'I really feel that I belong to a team'	
Work/life policies	'An army career allows me to maintain the kind of balance I want between my work and personal life' 'My organization provides programs to assist in balancing the demands of dual career couples'	
Flexible work schemes	'I have some input into how my work hours are scheduled' 'Flexible work arrangements are offered by the organization'	

Affective commitment and job satisfaction. As previously mentioned, since both social exchange and signaling theories propose that employees' perceptions of HR practices especially influence their affective commitment and job satisfaction, we focused on these two individual worker outcomes. Affective commitment was particularly measured with Allen and Meyer's (1990) affective commitment scale (e.g., 'I enjoy discussing my organization with people outside it') and with Mowday, Steers, and Porter's (1979) Organizational Commitment Questionnaire (e.g., 'I tell my friends the organization I work for is great'). Job satisfaction was measured with different scales, such as the Hackman and Oldham's (1974) scale (e.g., 'Generally speaking, I am very satisfied with this job') or with a single item (e.g., 'Overall, how satisfied are you with your job?').

Age. Age is operationalized as the mean calendar age of the participants in a sample. When studies reported age brackets, we used the mean and percentage of each age bracket to calculate the mean age of the study.

Statistical Procedures

We used Hunter and Schmidt's (2004) meta-analytical technique, which involves corrections for both measurement and sampling errors. The effect sizes we were interested in are the correlation coefficients between HR practices and work-related attitudes. We used related software (Schmidt & Le, 2004) to conduct our meta-analysis. We employed the following procedure: 1) wherever correlations were not reported (e.g., Chen (2005) who instead reported F values), correlations were computed using the meta-analysis calculator³; 2) correlations of HR practices derived from a single study that relate to the same HR practice (e.g., rewards and benefits) were aggregated since average correlations do not violate the assumption of independence (Hunter & Schmidt, 2004); 3) each correlation was corrected for the statistical artifact of measurement error (predictor and criterion unreliability). If reliability was not reported, the average reliability for that variable across all the samples included in the meta-analysis was used; 4) each correlation was also corrected for the statistical artifact of sampling error, resulting in a mean true score correlation, which we refer to here as the mean correlation (ρ); 5) we calculated confidence intervals (Field, 2005), and used these to interpret validity generalization results (see Cohen, 1993) - that is, a *significant* mean correlation is one where the confidence interval does not include zero; and finally, 6) to determine whether it was appropriate to perform a moderator analysis, we used the 75% rule, which argues that moderators must exist when 25% or more of the variance in observed effect sizes remains after accounting for all the statistical artifacts (Hunter & Schmidt, 2004).

³ <http://www.lyonsmorris.com/lyons/metaAnalysis/index.cfm>.

We tested for a moderating effect of age (Hypotheses 2 and 3) by performing a weighted least squared (WLS) multiple regression analysis, since this approach is widely seen as providing the most accurate results (Steel & Kammeyer-Mueller, 2002, and see also, Bal, De Lange, Jansen, & Van der Velde, 2008; Wright, & Bonett, 2002). In this analysis, mean sample age is the independent variable, and the correlation coefficient between HR practices and work-related attitudes (corrected for measurement error, transformed to Fisher's Z, and then weighted based on N and on the predictor and criterion reliability) is the dependent variable. Since, apart from age, organizational tenure might also influence the relationship between HR practices and attitudes (Conway, 2004) we controlled for any moderating effect of tenure since, in this paper, the focus is on age. Although age and organizational tenure are highly correlated, WLS multiple regression analysis is unaffected by multicollinearity, giving virtually the same estimates regardless of how correlated the moderators are, even with small sample size (Steel & Kammeyer-Mueller, 2002).

To test for linear as well as curvilinear effects of age, we tested one model with age and one with age and age² terms (both controlling for tenure). In the second model, we use and report the standardized coefficients of age and age² to assure independence between these variables. If the tested model is not significant, significant betas in the model are ignored. We used Lipsey and Wilson's (2001) SPSS macros to perform these analyses. Finally, to help interpret the curvilinear effects of age, we produced illustrations using SPSS curve estimation procedures. The equation used in the curve estimation model is: $Y \text{ (effect size)} = b_0 + (b_1 * \text{age}) + (b_2 * \text{age}^2)$, where b1 is the B coefficient of age and b2 is the B coefficient of age² (for age and age² we used the model without tenure).

4.3 Results

High Commitment HR Practices and Affective Commitment and Job Satisfaction (Hypotheses 1a and 1b)

Table 4.2 reveals that Hypotheses 1a and 1b are supported: employees' perceptions of the availability of high commitment HR practices are significantly and positively related to both their affective commitment and job satisfaction (except for the relationship between work-life policies and affective commitment, where the confidence interval includes zero). Overall, the mean correlation between high commitment HR practices and affective commitment is stronger ($\rho = .42$; $t = 2.61$, $p < .05$) than the mean correlation between high commitment HR practices and job satisfaction ($\rho = .34$). More specific, most HR practices (7 out of 12) are more strongly associated with affective commitment than with job satisfaction; internal promotion (respectively $\rho = .52$ and $\rho = .43$), participation ($\rho = .52$ and $\rho = .42$), rewards ($\rho = .49$ and $\rho = .43$), staffing ($\rho = .48$

and $\rho = .43$), training ($\rho = .42$ and $\rho = .41$), information sharing ($\rho = .40$ and $\rho = .35$), and flexible work schedules (respectively $\rho = .35$ and $\rho = .18$). Four HR practices are more strongly associated with job satisfaction than with affective commitment; job enrichment (respectively $\rho = .51$ and $\rho = .48$), performance management ($\rho = .48$ and $\rho = .44$), teamwork ($\rho = .46$ and $\rho = .42$), and job security ($\rho = .37$ and $\rho = .33$). Work-life policies are only significantly related to job satisfaction ($\rho = .16$).

Table 4.2. Meta-analysis results for the relationships between HR practices and work-related attitudes

Relationship	<i>N</i>	<i>k</i>	<i>r</i>	ρ	<i>SDρ</i>	Confidence Interval	Credibility Interval	Variance explained
All HR practices – affective commitment	31,515	50	.34	.42	.14	.38 .46	.24 .61	.08
All HR practices – job satisfaction	37,261	56	.27	.34	.18	.29 .39	.11 .57	.06
Internal promotion – affective commitment	2,849	9	.43	.52	.11	.45 .60	.38 .67	.19
Training – affective commitment	19,006	22	.35	.42	.13	.37 .48	.26 .59	.07
Job enrichment – affective commitment	2,149	4	.39	.48	.12	.36 .60	.32 .63	.12
Job security – affective commitment	3,774	11	.28	.33	.05	.31 .37	.27 .39	.63
Rewards – affective commitment	2,491	11	.39	.49	.17	.39 .59	.28 .71	.15
Participation – affective commitment	8,566	19	.43	.52	.10	.47 .56	.39 .64	.19
Information sharing – affective commitment	5,749	10	.33	.40	.07	.36 .45	.31 .50	.27
Teamwork – affective commitment	1,535	6	.33	.42	.10	.34 .49	.29 .54	.33
Work-life policies – affective commitment	2,020	5	.06	.08	.17	-.07 .22	-.14 .29	.11
Flexible work schedules – affective commitment	5,677	9	.28	.35	.20	.23 .48	.10 .61	.05
Staffing – affective commitment	4,133	12	.39	.48	.14	.41 .56	.31 .66	.15
Performance management – affect commitment	8,814	17	.35	.44	.06	.41 .47	.37 .52	.41
Internal promotion – job satisfaction	1,755	4	.38	.43	.17	.26 .60	.21 .65	.07
Training – job satisfaction	14,671	17	.34	.41	.15	.34 .48	.21 .61	.05
Job enrichment – job satisfaction	2,331	3	.41	.51	.07	.43 .58	.42 .59	.24

Relationship	<i>N</i>	<i>k</i>	<i>r</i>	ϱ	SD ϱ	Confidence Interval		Credibility Interval		Variance explained
Job security – job satisfaction	3,800	11	.32	.37	.15	.28	.46	.18	.56	.13
Rewards – job satisfaction	3,408	6	.34	.43	.05	.38	.47	.36	.50	.42
Participation – job satisfaction	7,235	22	.33	.42	.22	.32	.51	.13	.70	.07
Information sharing – job satisfaction	4,972	6	.27	.35	.19	.20	.50	.11	.59	.05
Teamwork – job satisfaction	4,972	9	.38	.46	.08	.41	.52	.36	.57	.23
Work-life policies – job satisfaction	9,713	7	.11	.16	.11	.08	.24	.02	.30	.12
Flexible work schedules – job satisfaction	11,225	13	.14	.18	.07	.14	.22	.08	.27	.24
Staffing – job satisfaction	1,663	6	.36	.43	.14	.32	.54	.25	.61	.17
Performance management – job satisfaction	3,394	8	.37	.48	.15	.37	.58	.28	.67	.11

Note. *N* = the number of individuals in the *k* samples, *k* = the number of studies/samples, *r* = sample-size-weighted uncorrected correlation, ϱ = mean true score correlation, SD ϱ = standard deviation of ϱ , Confidence Interval = 95% confidence interval for ϱ , Credibility Interval = 80% credibility interval for ϱ , Variance explained = percentage of variance in corrected correlations attributable to all the artifacts considered.

Age as a Moderator in the Relationships between HR Practices and Affective Commitment and Job Satisfaction (Hypotheses 2 and 3)

Since at least 25% of the variance in all the observed mean correlations remains unexplained after taking the statistical artifacts into account (final column of Table 4.2), a moderator analysis is appropriate. We have hypothesized that age moderates the relationship between HR practices and work-related attitudes. More specifically, we hypothesized that the relationships between maintenance HR practices and both affective commitment and job satisfaction strengthen in old age (Hypothesis 2), whereas the relationships between development HR practices and both affective commitment and job satisfaction weaken in old age (Hypothesis 3).

Table 4.3 reveals that Hypothesis 2 is supported for the associations of teamwork and flexible work schedules with both affective commitment and job satisfaction and for the associations of performance management, rewards, and information sharing with job satisfaction; the associations between teamwork and affective commitment, between flexible work schedules and affective commitment, and between rewards and satisfaction first weaken and then strengthen, and the other associations increase with age. However, contrary to our hypothesis, the relationship between the maintenance HR practice of performance management and affective commitment first strengthens and then weakens with age. The moderating impact of age on the relationships between work-life policies and affective commitment and job satisfaction could not be tested due to an insufficient number of studies examining this association.

Hypothesis 3 is supported for the relationship between promotion and affective commitment; this relation first strengthens and then weakens with age. Contrary to our hypothesis, the relationship between the development HR practice of promotion and job satisfaction strengthens with age. The moderating impact of age on the associations between job enrichment and affective commitment and job satisfaction could not be tested due to an insufficient number of studies examining this relationship.

Table 4.3. Moderator analyses of age and organization tenure on the relationships between HR practices and work-related attitudes

Relationship	<i>k</i>	β_{tenure}	β_{age}	β_{age^2}	R^2
Promotion – affective commitment					
Tenure and Age	9	-.40	.14		.10
Tenure, Age, and Age ² *	9	-.23	.13**	-.92**	.56
Training – affective commitment					
Tenure and Age ***	21	-.74***	.37		.42
Tenure, Age, and Age ² **	21	-.73***	.34	-.02	.42

Job enrichment – affective commitment					
Tenure and Age	NT				
Tenure, Age, and Age ²	NT				
Security – affective commitment					
Tenure and Age	10	-.21	.33		.06
Tenure, Age, and Age ²	10	.08	.36	-.51	.09
Rewards – affective commitment					
Tenure and Age	9	-.08	-.18		.06
Tenure, Age, and Age ²	9	-.02	-.39	-.54	.17
Participation – affective commitment					
Tenure and Age	13	-.31	-.33		.31
Tenure, Age, and Age ²	13	-.43	-.24	-.42	.36
Information – affective commitment					
Tenure and Age *	9	-.30	-.49		.46
Tenure, Age, and Age ^{2*}	9	-.12	-.69	-.21	.47
Teamwork – affective commitment					
Tenure and Age	6	-.21	.13		.03
Tenure, Age, and Age ^{2*}	6	-.78*	.55**	1.43**	.62
Work/life policies – affective commitment					
Tenure and Age	NT				
Tenure, Age, and Age ²	NT				
Flexible schedules – affective commitment					
Tenure and Age ***	6	-1.16***	.41*		.88
Tenure, Age, and Age ^{2***}	6	-1.32***	.60*	.35*	.95
Staffing – affective commitment					
Tenure and Age *	11	.55*	.15		.39
Tenure, Age, and Age ²	11	.51	.24	.19	.41
Performance Mgt – affective commitment					
Tenure and Age	13	.12	-.34		.07
Tenure, Age, and Age ^{2**}	13	-.01	-.43***	-.36***	.45
Relationship	k	β tenure	β age	β age ²	R ²
Promotion – job satisfaction					
Tenure and Age ***	4	.37	.66**		1.00
Tenure, Age, and Age ²	NT				
Training – job satisfaction					
Tenure and Age **	15	-.71**	.11		.41
Tenure, Age, and Age ^{2**}	15	-.80**	.45	.43	.51
Job enrichment – job satisfaction					
Tenure and Age	NT				
Tenure, Age, and Age ²	NT				
Security – job satisfaction					
Tenure and Age ***	9	.64**	.30		.77
Tenure, Age, and Age ^{2***}	9	.67*	.25	-.01	.74
Rewards – job satisfaction					
Tenure and Age	6	.54	-1.03		.38
Tenure, Age, and Age ^{2***}	6	-.21	-.68***	.74***	.86
Participation – job satisfaction					
Tenure and Age	9	.64	-.76*		.35
Tenure, Age, and Age ²	9	.72	-2.94	1.88	.39

⁴ When the number of studies is small, the proportion of variance explained should be interpreted with caution as this proportion is optimized to this small sample of studies.

Information – job satisfaction					
Tenure and Age ***	5	-.41***	.68***		.96
Tenure, Age, and Age ² ***	5	-.79***	.30	-.22	.97
Teamwork – job satisfaction					
Tenure and Age *	8	-.50	.66*		.51
Tenure, Age, and Age ² *	8	-.55	.62	-.02	.52
Work/life policies – job satisfaction					
Tenure and Age	NT				
Tenure, Age, and Age ²	NT				
Flexible schedules – job satisfaction					
Tenure and Age *	7	.04	.71*		.54
Tenure, Age, and Age ² **	7	-.22	1.18	-.41	.65
Staffing – job satisfaction					
Tenure and Age*	5	-.98**	.58		.58
Tenure, Age, and Age ² **	5	-.90**	.64	-.53	.78
Performance Mgt – job satisfaction					
Tenure and Age**	5	-.52	.88**		.62
Tenure, Age, and Age ² ***	5	.45	3.11	2.23	.80

Note. k = the number of studies/samples, β = regression coefficient, R^2 = variance explained, NT = not tested due to an insufficient number of studies, *** $p < .001$; ** $p < .01$; * $p < .05$

To help interpret the curvilinear effects of age, we have included Figures 4.1 and 4.2 based on SPSS curve estimation procedures. In Figure 4.1, the y axis, mean ES, is the mean effect size which, in this case, is the association between the various high commitment HR practices and affective commitment. Hence, Figure 4.1 shows that the associations between the high commitment HR practices included in the index and affective commitment first weaken and then strengthen with age or first strengthen and then weaken with age. In Figure 4.2, mean ES on the y axis refers to the association between the various high commitment HR practices and job satisfaction. Hence, this figure illustrates that the associations between the high commitment HR practices included in the index and job satisfaction either strengthen with age (linearly) or first weaken and then strengthen with age (curvilinearly).

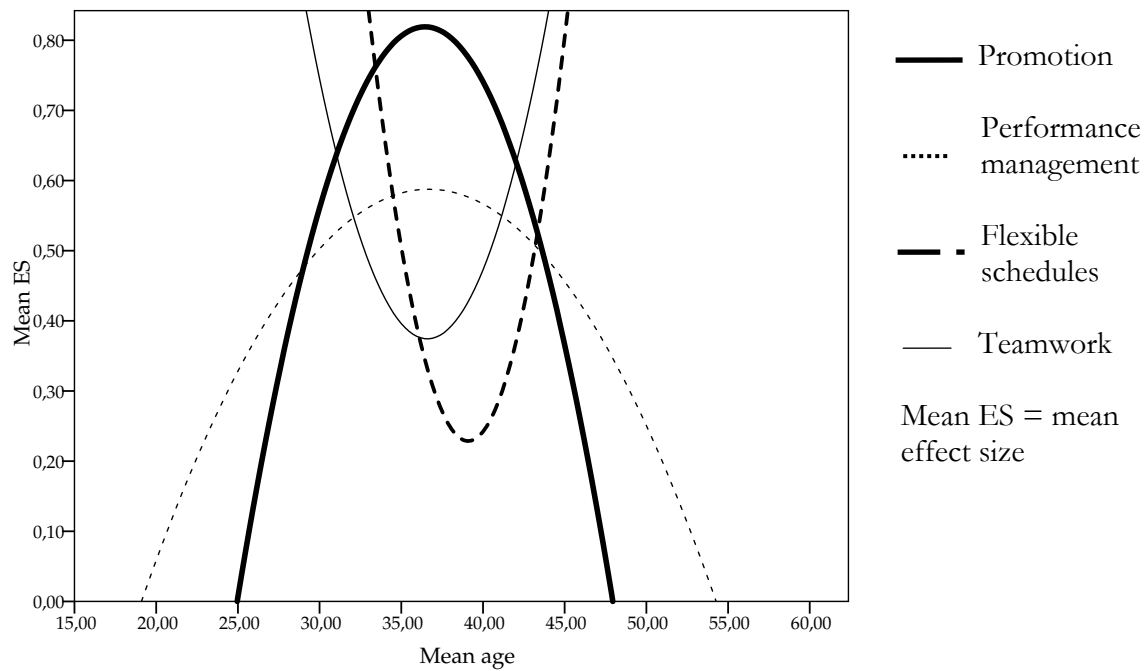


Figure 4.1. Relationships between mean age and the associations between high commitment HR practices and affective commitment

As noted earlier, we controlled for the moderating effect of organizational tenure as an alternative indicator of age. Table 4.3 reveals that tenure significantly and negatively moderates the associations between training and both affective commitment and job satisfaction, and also the associations between information sharing and job satisfaction, staffing and job satisfaction, and between flexible work schedules and affective commitment. Conversely, organizational tenure positively moderates the association between security and job satisfaction, and between staffing and affective commitment. The other associations (i.e., of promotion, security, performance management, rewards, participation, information sharing, and teamwork with affective commitment; and of teamwork, promotion, performance management, rewards, participation, and flexible work schedules with job satisfaction) are not influenced by organizational tenure.

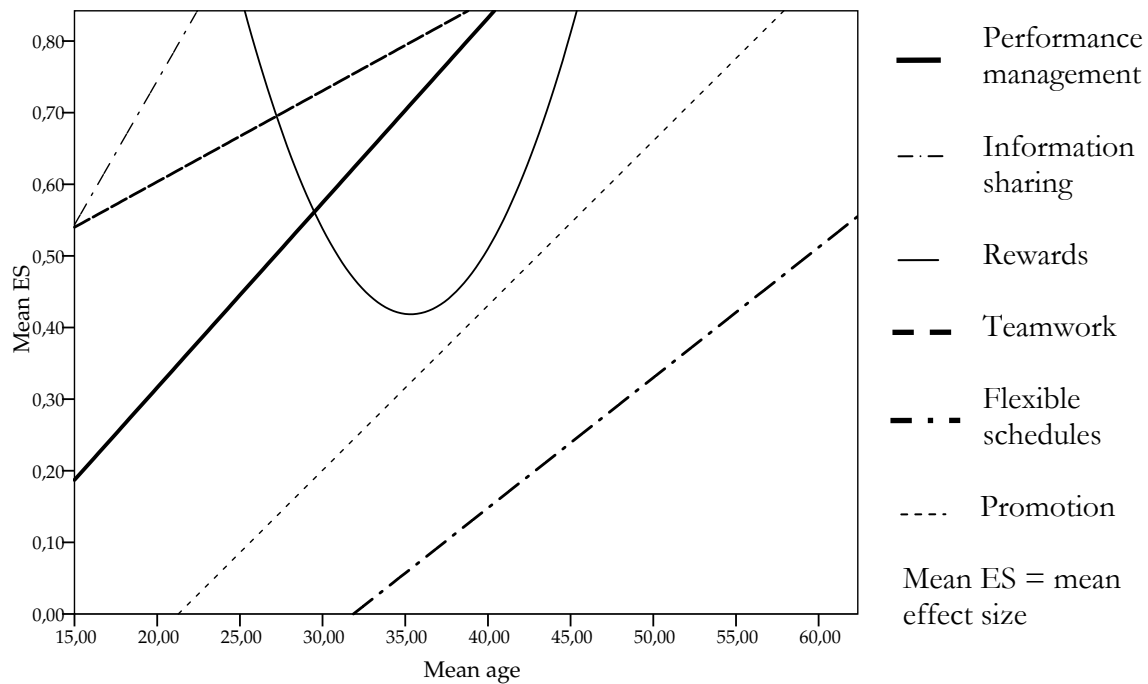


Figure 4.2. Relationships between mean age and the associations between high commitment HR practices and job satisfaction

4.4 Discussion

For this study, we conducted a meta-analysis to examine how the relationship between HR practices and individual work-related attitudes changes with age. More specifically, based on SOC and Regulatory Focus theories, we focused on the impact of calendar age on the association between the availability of maintenance and development high commitment HR practices, as perceived by employees, and affective commitment and job satisfaction. We will now discuss the meta-analysis results as they relate to each hypothesis.

The associations between high commitment HR practices and affective commitment and job satisfaction. Based on social exchange and signaling theories, we hypothesized and indeed found positive associations between employees' perceptions of the availability of high commitment HR practices and affective commitment and job satisfaction. Hence, such HR practices can elicit positive work-related attitudes. Particularly the high commitment HR practices related to promotion, job enrichment, and participation (the first two of which are considered development HR practices) were found to be positively related to affective commitment and job satisfaction. Thus, it would seem that workers' positive work attitudes stem more from HR practices aimed at their development than from those aiming to maintain their current level of functioning.

Further, we found that all the high commitment HR practices combined had a stronger association with affective commitment than with job satisfaction. As explained earlier, affective

commitment refers to affective feelings toward the *organization* in general, whereas job satisfaction refers to affective feelings toward the more specific job or work role. Since social exchange and signaling theories argue that employees view HR practices as *organizational* support, which they then reciprocate back to the *organization*, the stronger association between HR practices and affective commitment makes sense (see also Allen et al., 2003). In a similar vein, Boxall and Macky (2009) even refer to high commitment HR practices as high commitment *employment* practices as opposed to high involvement *work* practices.

Age as a moderator in the relationships between high commitment HR practices and affective commitment and job satisfaction. Based on lifespan and social psychological theories, we hypothesized that the relationships between the perceived availability of maintenance HR practices and both affective commitment and job satisfaction would strengthen in older age, whereas the relationships between the availability of development HR practices and both affective commitment and job satisfaction would weaken in older age. The results of our meta-analysis reveal that our hypothesis regarding maintenance HR practices is supported for performance management, rewards, information sharing, teamwork, and flexibility; and that our hypothesis regarding development HR practices is supported for promotion. Hence, it seems, as we had anticipated, that employee needs do change with age.

However, Figures 4.1 and 4.2 show that the associations between promotion and affective commitment (as expected) and between performance management and affective commitment weaken in older age, whereas the associations between promotion and job satisfaction and between performance management and job satisfaction (as expected) strengthen in older age. Hence, it seems that, as one ages, certain HR practices become more important to elicit job satisfaction while becoming less important in eliciting affective commitment (see also Bal et al., 2008, who found similar results for psychological contract breach). A possible explanation is that older workers are presented with fewer opportunities to change employer, and will therefore feel committed toward their existing organization irrespective of these HR practices (see also Festinger's (1957) cognitive dissonance theory), resulting in a weaker association between these high commitment HR practices and affective commitment. Ng and Feldman (2009) offer a similar explanation for the weak relationship between contract breach and negative outcomes among older workers. Although older workers' internal job mobility is also lower than that of younger workers, their work role or job content (and thus their job satisfaction) can still change (i.e., through job crafting – Wrzesniewski & Dutton, 2001). Another possible explanation is that older workers adopt a shorter time perspective than younger workers simply because they are closer to retirement age (see also Socio-Emotional Selectivity theory - Carstensen, 1995). Since

affective commitment is longer term and more stable than job satisfaction, high commitment HR practices may have limited impact on the affective commitment of older workers, but a greater impact on the shorter term and more variable job satisfaction.

A further possible explanation for the unexpected strengthening of the association between the development HR practice of promotion and job satisfaction is that older workers may continue to reap the benefits of their earlier investments in this development HR practice and that this increasingly delivers job satisfaction. Wright and Hamilton (1978) refer to this as the ‘job change’ hypothesis, which proposes that older workers are more satisfied simply because they have better jobs. Furthermore, we found that particularly the maintenance HR practices of rewards, performance management, information sharing, teamwork, and flexible work schedules become increasingly important in achieving positive work-related attitudes as one ages. Since ‘rewards’ also covers intrinsic feelings of recognition, these findings are in line with recent studies that have found that feelings of recognition and fair performance appraisal are important for older workers (Armstrong-Stassen, 2008; Rau & Adams, 2005). Furthermore, according to Socio-Emotional Selectivity theory (Carstensen, 1995), since older people perceive their future time as more limited than younger people, they give higher priority to emotionally meaningful social interactions and goals (i.e., social needs), such as generativity, emotional intimacy, and social embeddedness (see Lang & Carstensen, 2002), that result from working in teams.

With respect to younger workers, we found that the associations between maintenance HR practices and job satisfaction either strengthen in younger age (a positive linear effect of age) or weaken in younger age (a U-shaped curvilinear effect of age). The associations between maintenance HR practices and affective commitment also weaken in younger age (a U-shaped curvilinear effect of age), and the association between development HR practices and affective commitment strengthens in younger age (an inversed U-shaped effect of age). Finally, we found that most of the associations between high commitment HR practices and both affective commitment and job satisfaction were either not affected or were negatively affected by organizational tenure. That is, the longer employees work in an organization, the less their affective commitment and job satisfaction are a result of high commitment HR practices.

Limitations

Before addressing the theoretical and practical implications of our meta-analysis, we first need to recognize some important limitations of our study.

Firstly, although the distinction made between maintenance and development HR practices is innovative, the distinction between HR practices aimed at maintaining current levels of

functioning and those aimed at achieving higher levels of functioning is somewhat ambiguous. As Boselie et al. (2005) noted, there is no accepted theory for classifying various practices into different bundles or categories. For example, although Zaleska and de Menezes' (2007) operationalization of development practices (as employee satisfaction with received training, development opportunities, and career management) is similar to our operationalization of development practices, Kuvaas (2008) operationalized developmental HR practices as career development, training opportunities, *and* performance appraisal. To test whether the distinction between development and maintenance high commitment HR practices makes sense, future research could examine how employees (of different ages) perceive these various HR practices, and test whether the pathways that link these HR practices to work-related outcomes are mediated by their effect on development or maintenance of employees' functioning.

Further, in terms of HR practices, we were unable to include HR practices specifically aimed at older workers, such as additional leave and reduced workload, because we could not find sufficient studies that examined the effects of such HR practices (there were notable exceptions, namely: Armstrong-Stassen, 2008; Karazman, Kloimuller, Geissler, & Karazman-Morawetz, 1999; and Rau & Adams, 2005). Also, the results of our meta-analysis are based only on studies that include HR practices, work-related attitudes, *and* age, and thus we excluded studies that measured employees' perceptions of HR practices and work-related attitudes, but not age. Although the strongly significant positive associations between HR practices and work-related attitudes suggest that this has not affected our results, the number of studies examining some of the relationships considered in the meta-analysis is relatively small.

Additionally, one should note that older people tend to be under-represented in organizations because of early retirement options and health effects, and therefore they are also under-represented in empirical studies. The *mean* age of our total sample was 37.5. From those studies that did report individual ages, we can be certain that our sample included workers as young as 16 and as old as 77. Further, we included studies in which 31% of the sample was older than 50, and 11% was older than 60, respectively. Therefore, we believe our results are not biased by an overall lack of elderly workers in the samples analyzed.

Another limitation is the cross-sectional design of most of the studies included in our meta-analysis which makes conclusions about causality unreliable. While one might expect the perceived availability of HR practices to lead to positive work-related attitudes, the opposite causality is not impossible. Such a seemingly 'counter-intuitive' causal relationship could be created by at least two mechanisms (see also De Lange, Taris, Kompier, Houtman, & Bongers, 2005): firstly, employers may *actually* offer committed employees more, or better, HR practices

than employees who are less committed; and, secondly, employees who are more committed may have a more positive view of their work and will, therefore, *perceive* the HR practices offered more positively than employees who are less committed. This latter mechanism might especially have occurred with the HR practice of ‘rewards and benefits’ since this is measured as the competitiveness or fairness of rewards and benefits, reflecting an evaluation of this HR practice rather than simply its existence. This might also explain the relatively high mean correlations between rewards and both affective commitment and job satisfaction.

The final concern that we would like to raise here is how one conceptualizes age. Although we controlled for organizational tenure, we focused on calendar age as our sole operationalization of age. Other operationalizations of age, such as career and life stages and especially job tenure, have also been found to influence the perceptions being considered (see Kooij, De Lange, Jansen, & Dikkers, 2008; De Lange et al., 2006; Ng & Feldman, 2008). Such operationalizations are rarely used in empirical studies and therefore it was not practical to include them in our meta-analysis.

Despite these limitations, we feel that the presented meta-analysis does have several important theoretical and practical implications.

Theoretical Implications and Future Research

This meta-analysis has revealed that employees’ perceptions of high commitment HR practices are important in understanding the effects of these HR practices. The availability of high commitment HR practices, as perceived by employees, was found to be positively related to their affective commitment and to their job satisfaction. These positive associations provide support for social exchange and signaling theories, which suggest that employees view HR practices as a personalized commitment to them, an investment in them, and as recognition of their contributions - which they then reciprocate through corresponding positive attitudes. In addition, this positive association between HR practices and work-related attitudes provides additional insights into the complex relationship between HR practices and organizational performance. Therefore, we would argue that theoretical developments and future empirical research in this field should incorporate individual-level employee perceptions of HR practices rather than merely studying the association between HR practices and employee behavior at the organizational level (Den Hartog et al., 2004; Guest, 1999; Kinnie et al., 2005; Wright & Boswell, 2002).

In addition, it seems that individual characteristics can affect the association between employees’ perceptions of HR practices and work-related attitudes at the individual level:

calendar age had a significant moderating effect on almost 42% of the associations investigated between high commitment HR practices and work-related attitudes. As expected, the associations between the maintenance HR practices of performance management, rewards, information sharing, teamwork, and flexible work schedules and work-related attitudes strengthen with age, whereas the relationship between the development HR practice of promotion and affective commitment weakens with age.

The increasing importance of teamwork that we found for older workers' work-related attitudes supports Socio-Emotional Selectivity theory, which is based on SOC theory and proposes an age-related increase in selected social relationships (i.e., social needs) as a compensatory strategy for coping with age-related physical and cognitive losses. Additionally, our finding that some HR practices become more important for older workers' short-term job satisfaction, while becoming less important for their long-term affective commitment, also provides support for the idea in Socio-Emotional Selectivity theory that older people perceive their future time as more limited than younger people (see Lang & Carstensen, 2002), and are thus more likely to focus on the short term.

With respect to younger workers, our results provide support both for lifespan and career stage theories; half of the relations that support our hypotheses are curvilinear and half are linear. Furthermore, lifespan theory is particularly reflected in job satisfaction and career stage theory is particularly reflected in affective commitment. This implies that age-related losses are reflected in job satisfaction, whereas concerns with moving upward and mastering are reflected in affective commitment. Finally, our results with respect to organizational tenure provide further support for Super's (1957) career development model which proposes that in the final career stage (decline), individuals develop a new self-image which is independent of work.

On this basis, we would argue that further empirical research is needed to explore the mechanisms that underlie age effects: for example on how employee needs change with age, whether goal or regulatory foci change with age, how older workers cope with losses, and how age-related factors such as career or life stage, or future time perspective, influence the importance of HR practices in determining various work-related attitudes. In addition, most of the studies we included in our analysis concentrated on high commitment practices, whereas organizations have been found to offer their older workers accommodative practices, such as additional leave or reduced workload (Remery, Henkens, Schippers, & Ekamper, 2003). Therefore, future research on how the association between HR practices and work-related attitudes changes with age should also include such HR practices. Finally, in order to be able to

draw firm conclusions on causality, one needs longitudinal studies into the impact of HR practices on work-related attitudes.

Practical Implications

Our results reveal that employees' perceptions of HR practices and particularly those aimed at personal development (such as internal promotion) are relevant if one wishes to increase positive work-related attitudes. Overall, the HR practices concerning internal promotion, participation, and job enrichment appear to be the most useful if one wants to improve employees' work-related attitudes. HR practices do influence work-related attitudes and, thus, can also affect worker behavior. On this basis, HR managers should ensure that there is adequate implementation and equal application (for workers of all ages) of intended HR policies in their organization. The fact that development HR practices were relatively uncommon in the studies included in our meta-analysis reflects, we think, a reality in which organizations less often offer these practices as against maintenance practices. Since it is particularly these types of HR practices that elicit positive work-related attitudes, we would suggest that HR managers consider introducing additional development HR practices, such as task enrichment.

Further, we found that HR practices are particularly important in establishing certain work-related attitudes: that is, HR practices are more strongly associated with affective commitment than with job satisfaction. Thus, it seems that affective commitment is particularly influenced by high commitment HR practices, whereas other factors, such as job content or supervisory support, might also be relevant in eliciting job satisfaction.

With respect to the effects of aging, our findings provide support for the suggestion that one should tailor HR practices to reflect the age of individual workers. For example, HR practitioners should consider increasing teamwork (or mentoring roles), rewards (e.g., through increased recognition) or flexible work schedules for older workers since these HR practices seem likely to increase their positive work-related attitudes. The finding that internal promotion increasingly elicits job satisfaction as workers age, contradicts the stereotypical managerial view of older workers - that they are unwilling or unable to learn new skills (Kooij et al., 2008).

4.5 References (Studies used in the meta-analysis are indicated with a *)

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5

Motivating Older Workers: a Case Study Approach to Formulating Propositions on the Role of HR Bundles

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Abstract

This multiple case study among HR managers, line managers, and older workers in the Dutch construction sector sets out to extend the literature on HR practices for older workers, by using insights from lifespan theories (such as Selection Optimization and Compensation theory), by contrasting these with the actual work setting, and by formulating empirically-based propositions on bundles of HR practices and their relationship with older workers' motivation to continue to work. Our findings revealed four HR bundles: accommodative, maintenance, utilization, and development HR practices. Apart from maintenance practices, these HR bundles had positive associations with motivation to continue to work.

5.1 Introduction

Workers often stop working well before the official retirement age (UN, 2007). Since the workforce is aging worldwide, and older workers can be of great value to their companies (Ng & Feldman, 2008), organizations need to understand how they can motivate their older workers to continue to work (preferably even beyond retirement age). Therefore, scholars have started to focus their attention on management practices and organizational policies that would help to retain older workers. Typically, these studies take an employer perspective and propose appropriate Human Resource (HR) practices for older workers (e.g., Farr & Ringseis, 2002; Paul & Townsend, 1993), or examine available HR practices for the retention of older workers within companies (Remery, Henkens, Schippers, & Ekamper, 2003). Until now, only Armstrong-Stassen (2008) and Armstrong-Stassen and Ursel (2009) have taken an employee perspective by examining the importance of different HR practices to older workers in deciding to remain in, or return to, the workforce and the effect of HR practices on older workers' intentions to remain in the organization.

Although these studies are important first steps in fostering research in this field, they have failed to consider the theoretical rationale for an association between specific HR practices and motivation to continue to work. Therefore, in this study, we aim to extend this knowledge by applying current lifespan theories, such as the Selection Optimization and Compensation (SOC) theory (Baltes, Staudinger, & Lindenberger, 1999), and by formulating empirically-based propositions as to which bundles of HR practices may contribute to motivating older workers to continue to work. Since the literature on associations between HR practices and motivation to continue to work is insufficient to formulate hypotheses, we carry out a multiple case study to explore and explain the complex social processes involved in this relationship. We will focus on three research questions; 1) What (bundles of) HR policies and practices are available for older workers within organizations according to employees, HR managers, and line managers?; 2) What motivates older workers to continue to work?; and 3) How does the availability of (various bundles of) HR practices, as perceived by employees, influence older workers' motivation to continue to work?

Lifespan theories, such as SOC theory, provide important insights into the processes of aging. According to SOC theory (Baltes et al., 1999), in order to develop successfully over their lives, people maximize gains and minimize losses by *selecting* outcomes, *optimizing* resources to reach those desirable outcomes, and *compensating* for the loss of outcome-relevant means. These regulation processes are aimed at various life goals to which individuals can allocate their resources: growth, maintenance, and regulation of loss. Since the SOC model has a broad scope,

and requires domain- and context- contingent elaboration (Baltes et al., 1999), we apply SOC theory to the work context (see also Abraham & Hansson, 1995), and more specifically to the association between (bundles of) HR practices and motivation to continue to work.

Recently, Kooij, Jansen, Dijkers, and De Lange (in press) hypothesized, based on SOC theory, that HR practices focusing on maintaining an employee's current level of functioning would be more important, and HR practices focusing on development would be less so in eliciting positive work-related attitudes among older workers, as compared to younger workers (see also Korff, Biemann, Voelpel, Kearney, & Roßnagel, in press). However, although Kooij et al.'s (in press) meta-analysis of 83 studies largely confirmed these hypotheses, they found that the relationship between the developmental HR practice of internal promotion and satisfaction strengthens with age, and that the relation between the maintenance HR practice of performance management and affective commitment weakens with age. Hence, in addition to the lack of a theoretical rationale and little empirically-based evidence on the association between HR practices and motivation to continue to work, these mixed results support the need to conduct an explorative case study. Before turning to the case study, we will first provide an overview of the literature addressing the three issues examined in this study.

The Availability of HR Policies and Practices for Older Workers

In studies that focus on HR practices for older workers (Armstrong-Stassen, 2008; Farr & Ringseis, 2002; Hedge, Borman, & Lammlein, 2006; Paul & Townsend, 1993; Rau & Adams, 2005; Remery et al., 2003; Saba & Guerin, 2005; Yeatts, Folts, & Knapp, 2000), many HR practices have been suggested as useful in retaining older workers, particularly from an employer perspective. Among these HR practices are flexible work schedules, part-time work or semi-retirement, compressed working weeks, participation, additional leave, extended career interruptions, age limits for shift work, exemptions from working overtime, training programs for older workers, and reduced workloads.

In order to help formulate propositions on the effects of such HR practices on older workers' motivation to continue to work, we will categorize these practices into theoretically meaningful HR bundles. According to MacDuffie (1995), an HR bundle is a set of interrelated and internally consistent HR practices built around an organizational logic (see also, Guest, Conway, & Dewe, 2004). Toh, Morgeson, and Campion (2008) have identified three ways of differentiating HR bundles: a) by how much is invested in HR; b) by a specific focus on certain HR function(s); and c) by the goal or priority targeted through the HR practices. In this study, we will distinguish HR bundles by their goals.

In the previously mentioned study by Kooij et al. (in press), the authors distinguished bundles of HR practices based on the various lifespan goals to which individuals can allocate their resources (Baltes et al., 1999). These lifespan goals are often ‘translated’ (e.g., Ebner, Freund, & Baltes, 2006) into goal orientations with focuses on either promotion (i.e., aspirations and accomplishments) or on prevention (i.e., safety and responsibility), as distinguished by Regulatory Focus theory (Higgins, 1997). On this basis, Kooij et al. (in press) distinguished two HR bundles: *development* (promotion) HR practices that are related to advancement, growth, and accomplishment and help individual workers to achieve higher levels of functioning (such as training and internal promotion) and *maintenance* (prevention) HR practices that are related to protection, safety, and responsibility and help individual workers to maintain their current levels of functioning in the face of new challenges, or to return to previous levels after a loss (such practices include job security and flexible work schedules).

A third possible bundle of HR practices is deduced from studies on the availability of HR practices specifically for older workers. The few studies that have examined the availability of HR policies and practices for older workers within companies (Remery et al., 2003; Taylor & Walker, 1994; 1998a; 1998b), have found that the most widely implemented form of HR practices are *accommodative* ones that typically lower work demands on older workers, such as additional leave and demotion.

A limitation of these studies is that they focus particularly on the views of (HR) managers, thereby excluding the employees themselves (cf., Armstrong-Stassen, 2008). Social exchange theory (Blau, 1964; Eisenberger, Hungtington, Hutchison, & Sowa, 1986) and signaling theory (Bowen & Ostroff, 2004; Casper & Harris, 2008) argue that HR practices have an effect on employees by supporting them, or by functioning as ‘signals’ of the organization’s intentions toward them, suggesting that it is particularly the employees’ perceptions of HR practices that influence their work-related attitudes, and potentially their motivation to continue to work.

Another reason why it is important to examine HR practices as perceived by employees is that formal company policies, for instance on non-discrimination, and *actual* practices may differ significantly (Khilji & Wang, 2006). The implementation of actual practices for older workers is largely influenced by the attitudes of (HR) managers, who have been found to hold stereotypical views of older workers (Greller & Simpson, 1999; Taylor & Walker, 1998a). Since HR managers, line managers, and employees might perceive or experience the goals of HR practices differently, we examine the availability of HR policies and practices for older workers as perceived by HR managers, line managers, and employees.

Motivation to Continue to Work

Motivation to continue to work is a rather new concept (see Armstrong-Stassen, 2008; Kooij, De Lange, Jansen, & Dijkers, 2008; Shacklock, Brunetto, & Nelson, 2009), which in particular addresses the work motivation of older workers who are eligible for retirement. Here, work motivation is considered as a dependent variable, and is defined as the intention to (continue to) work (Nadler & Lawler, 1989; Van Eerde & Thiery, 1996). Motivated behavior consists of any or all of the following behavioral elements: initiation, direction, persistence, intensity, and termination (Campbell, McCloy, Oppler, & Sager, 1993). In addition to revised termination (i.e., motivation to continue to work), we address the direction (i.e., work-related motives to continue to work) aspect of work motivation. Shacklock et al. (2009) found that older workers' intentions to continue working were influenced by the importance of work, flexibility at work, and their interests outside of work (which are, thus, motives to continue to work).

The concept of motivation to continue to work is related to the so-called 'lottery question', which asks whether individuals would stop or continue working were there no economic reasons to continue (Snir & Harpaz, 2002). Warr (1982; 2008) referred to this form of motivation to work as non-financial employment commitment. This 'motivation to continue to work' is particularly elicited through high levels of work centrality and interesting work (Arvey, Harpaz, & Liao, 2004; Hult, 2008). Older workers' motivation to continue to work is also closely related to the retirement decision (Shacklock et al., 2009), which is found to be influenced by job satisfaction, education level, marital and health status, number of dependents, and financial rewards (e.g., Feldman, 1994; Gobeski & Beehr, 2009; Hansson, DeKoekkoek, Neece, & Patterson, 1997; Zhan, Liu, Murphy, Wang, Bodner, & Zhang, 2009). Although these studies reveal important insights into the antecedents or motives of older workers to continue to work, few studies have examined these motives (Shacklock et al., 2009) or have focused on the influence that HR practices might have on older workers' motivation to continue to work (Armstrong-Stassen, 2008).

The Impact of HR Bundles on Older Workers' Motivation to Continue to Work

The influence of aging on older workers' motivation. Aging involves both personal gains and losses, such as gains in general knowledge and losses in physical abilities (Kanfer & Ackerman, 2004; Warr, 2001). Since many losses specifically occur in old age, SOC theory proposes that the allocation of resources for growth will decrease with age, whereas resources for maintenance and regulation of loss will increase (Baltes et al., 1999). This proposition is supported by Freund (2006), who found that one's regulatory focus shifts from a stronger focus on promotion (i.e.,

growth) in young adulthood to a focus on maintenance and prevention with age (see also Ebner et al., 2006).

Similarly, the Dual-Process Model of Assimilative and Accommodative Coping (Brandtstädter, Rothermund, & Schmitz, 1998) proposes that as age-related losses occur, certain outcomes become unattainable and reactions tend to shift from assimilative persistence to achieve the desired development outcomes to accommodative flexibility in which developmental goals are adjusted to meet the reality of the situation. In a similar vein, Kanfer and Ackerman (2004) proposed a theoretical framework in which they use lifespan theories to identify age-related changes that affect work motivation. Based on this theoretical framework, they argue that interventions to reduce required efforts may be more effective for older workers than interventions that offer greater incentives for increased effort.

Finally, Super's (1957) career development model proposes that employees are most concerned with security and maintenance in the earlier and later career stages, and with development and growth in the middle career stage. In this model, employees pass through four stages in their career. First, employees pass through the 'trial' stage, in which their primary concerns are to identify their interests and capabilities, and to define their professional role or self-image (Ornstein, Cron, & Slocum, 1989). Subsequently, in the 'establishment stage', employees are concerned with moving upward and mastering their identified area of interest. In the subsequent 'maintenance stage', employees hold on to their earlier achieved accomplishments and try to maintain their self-concept. Finally, in the 'disengagement stage', employees begin to detach from the organization and to develop a new self-image that is independent of career success. To summarize, lifespan and career development theories propose that growth motives decrease, and needs for maintenance and security increase in older age.

The impact of HR practices on older workers' motivation to continue to work. Since work-related motives and career concerns change with age, we would expect that the utility of HR practices is also influenced by age. Social exchange (Blau, 1964; Eisenberger et al., 1986) and signaling theories (Bowen & Ostroff, 2004; Casper & Harris, 2008) argue that individual workers view HR practices as a personalized commitment to them, an investment in them, and as recognition of their contribution, which they reciprocate through positive attitudes and behaviors toward the organization (Hannah & Iverson, 2004). Since this reciprocation is related to the value that HR practices have for employees, lifespan and career stage theories suggest that developmental HR practices are less important, and that accommodative HR practices are more important in eliciting positive work outcomes among older workers.

However, some scholars (notably, Armstrong-Stassen & Ursel, 2009; Farr & Ringseis, 2002; Maurer, 2001) argue that the availability of HR practices aiming at development is particularly important in retaining older workers. Farr and Ringseis (2002), for example, argue that training and development activities aimed at learning new skills are important for preventing obsolescence and constriction, which particularly occurs among older workers. Furthermore, enriched job tasks (such as opportunities to serve as mentors or specialized technical experts) might motivate those older workers for whom hierarchical advancement is no longer likely. Despite these arguments, Armstrong Stassen and Ursel (2009) only found an indirect relationship between developmental HR practices and older workers' intention to remain in the organization through perceived organizational support.

A few other studies have examined whether those HR practices suggested as helpful in retaining older workers do influence their motivation to continue to work. Armstrong-Stassen (2008), for example, asked older people to indicate the importance of seven HR practices (i.e., flexible working options, training and development opportunities, job design, recognition and respect, performance evaluation, compensation, and pre- and post- retirement options) in influencing their decision to remain in, or return to, the workforce. She found that recognition and respect and fair performance evaluation procedures had the greatest influence on older workers' decision to remain in or return to the workforce, followed by job design and compensation. In addition, Saba and Guerin (2005) found that HR practices such as promotion opportunities and flexible hours are able to reduce the desire to take early retirement through their impact on expectations.

Although these studies provide important insights into the role of HR practices in motivating older workers to continue to work, they do not focus on the widely offered accommodative HR practices, and they largely ignore the changes in goal focus suggested by lifespan theories. Furthermore, they are inconclusive as to the effects of developmental HR practices on older worker outcomes. For example, whereas Finegold, Mohrman, and Spreitzer (2002) found that satisfaction with opportunities to develop are more important for younger than for older workers, Armstrong-Stassen and Ursel (2009) found that older employees with opportunities to acquire new skills perceived their organization as more supportive. Therefore, in this study, we aim to use SOC theory and the empirical results of a qualitative case study to formulate propositions on the relationships between various bundles of HR practices and older workers' motivation to continue to work.

5.2 Method

We conducted an explorative multiple case study in order to explore the impact of HR practices on older workers' motivation to continue to work. According to Eisenhardt (1989; Eisenhardt & Graebner, 2007), *case study* research is especially appropriate if one wants to generate theory when the existing theory is not sufficiently formulated to allow explicit hypotheses to be drawn (Ridder, Hoon, & McCandless, 2009). Our interest, the association between (bundles of) HR practices and motivation to continue to work, comes within this category. Furthermore, Yin (1984) argues that a case study is the most suitable approach for answering 'how' and 'what' research questions. In addition, a *multiple* case study design allows for replication logic (Yin, 1984), in which each case serves to confirm or reject the inferences drawn from previous ones. Further, we adopted an *explorative* approach by asking 'What HR policies and practices for older workers do successful companies have?' and 'How are these policies perceived by employees?' (see also Truss, 2001).

Eisenhardt (1989; Eisenhardt & Graebner, 2007) has proposed a framework to build or extend theory from case study research. Since our primary aim is to formulate propositions, her framework is appropriate for our study. This process of extending theory from case study research involves the following steps:

1. *Getting started*: research questions and a priori constructs are defined (this was described in our introduction).

2. *Selecting appropriate cases*: Eisenhardt (1989) advises to select cases representing extreme situations and polar types, and so we selected four companies in total from within the construction sector (including the electrical sector). Extreme cases are desirable when extending theory because the dynamics being studied are more visible than they would be in another context (Eisenhardt, 1989). We selected the construction sector as a source for our cases because this sector is characterized by physically heavy work, and an aging workforce and reduced inflow resulting in a tight labor market, thus representing an extreme situation. Consequently, companies in this sector are more likely to have implemented HR policies and practices aimed at retaining their older workers. For replication purposes and contrary replication logic, polar types were represented by two companies with successful HR policies and practices for older workers (i.e., Cases 1 and 3 which were identified as 'best practices' by the 'Senior Power' taskforce set up by the Dutch government) and two companies with no specific HR policies and practices for older workers (Cases 2 and 4).

3. *Crafting instruments and protocols*: we developed and used a case study protocol, including interview questions and a focus group interview guide (see appendix 1).

4. *Entering the field*: to reveal different perspectives, the data for each case were collected using face-to-face interviews with an HR manager and a line manager, through focus group discussions with employees (in Case 1 we included five focus groups) and from studying documents on HR policies. The interviews and focus groups were conducted in the period from July 2007 to January 2008. In total, we interviewed 4 HR managers and 4 line managers and conducted focus group discussions involving 32 employees (11 younger (mean age = 39.2) and 21 older (mean age = 58.2) than age 50). Participants were selected by the HR manager or, as in two cases, consisted of the company's work council. The semi-structured face-to-face interviews and focus groups consisted of open questions and lasted from about one to one and a half hours. In two companies, the interviews and focus groups were conducted by two people; one researcher handling the interview questions, and the other recording and taking observations (Eisenhardt, 1989). Two interviews plus all the focus groups were tape-recorded, transcribed, and imported into *Atlas.ti*, together with the notes from the other interviews. *Atlas* is a computer program designed for qualitative data analysis, and was used to structure the dataset (i.e., data reduction, classification, and counting).

5. *Analyzing data*: we used different data analysis approaches to answer our research questions. To identify bundles of HR policies and practices for older workers and older workers' motives to continue to work in their company (research questions 1 and 2), we used a within case analysis, which involves developing detailed descriptions for each case study (for example, descriptions of the common goals of the HR practices for older workers as mentioned by HR managers, line managers, and employees) (Eisenhardt, 1989). After this, to associate the different bundles of HR practices, as perceived by employees, with older workers' motivation to continue to work, we used a cross case analysis.

To compare the perceived bundles of HR practices and the motivation to continue to work in the various companies, we used Mill's (1974) joint method of difference and agreement (see also Van Overwalle, 1997) and method of concomitant variation. Mill's joint method of difference and agreement argues that if two or more instances in which a phenomenon occurs have only one circumstance in common, while there are two or more instances in which it does not occur and these have nothing in common but the absence of that circumstance; then the circumstance by which the two sets of instances differ is the effect, or cause, or a necessary part of the cause of that phenomenon. Mill's method of concomitant variation proposes that whatever phenomena vary in any manner whenever another phenomenon varies in some particular manner, must be either causes or effects of that phenomenon, or connected with it through some fact of causation. The data analysis is reported next in the results section.

After these five steps, we progress to Step 6: *Shaping propositions*, Step 7: *Enfolding literature*, and Step 8: *Reaching closure*. These issues are addressed in the discussion section.

5.3 Results

Research Question 1; What (Bundles of) HR Policies and Practices are Available for Older Workers within Organizations according to HR Managers, Line Managers, and Employees?

The study of company documents revealed that Companies 1 and 3 have developed formalized HR policies for older workers (particularly based on life stages). The most prominent is the ‘on-time’ policy in Company 1, in which older workers are encouraged to remain with the company (on a part-time basis) in order to transfer their knowledge to younger workers. Further, the collective labor agreement contains some HR policies that offer special accommodation for older workers including the 55+ policy through which workers aged 55 and over can work 4 days a week, additional leave, and exemption from working overtime or shift work. Nevertheless, overall, younger and older workers are treated fairly similarly. As one employee (aged 58) noted, “I’m not spared, but I don’t want to be either. Work has to be lively and I can handle the pressure” (Company 1). Another employee (age 61) at the same company noted, “I think that we [older workers] just go with the crowd, or at least I do”.

Despite these positive aspects, we found that older workers are usually no longer evaluated or offered further training. This is illustrated by the following quotes:

“Development of older workers is not a consideration. The company focuses much more attention on the development of younger workers.” (employee, age 57, Case 2)

“They don’t ask me to do courses anymore.” (employee, age 59, Case 4)

“Career planning is more for younger workers. Older workers advance hierarchically through their experience.” (HR manager, Case 4)

This finding is in line with earlier research (e.g., Greller & Simpson, 1999) which also found that older workers have fewer opportunities for training and performance evaluation than younger workers. A possible explanation for these diminished opportunities is to be found in the stereotypical views that managers hold about older workers (Rosen & Jerdee, 1976; Taylor & Walker, 1998b; Van der Heijden, De Lange, Demerouti, & Van der Heijde, 2009). However, it

seems that HR, and particularly line, managers if anything hold even stronger stereotypical views about younger workers, as is illustrated by the following quotes:

“Older workers have been around much longer and are more motivated than younger workers. ... Older workers can deal with the environment and have more commonsense.”
(Line manager, Case 3)

“No [stereotypes on older workers], it’s the other way around. Younger workers have a totally different mentality.” (HR manager, Case 4)

Another reason why older workers have fewer opportunities for formal performance evaluations was expressed by a line manager, “... if they [older workers] have a problem, they’ll come to see you anyway. Older workers don’t need evaluations anymore. They’ve been with this company for 30 years, so if there’s something wrong [with their performance], they would have known by now. So they don’t want to be bothered with an evaluation.”

Table 5.1 summarizes the HR practices according to the HR manager, line manager, and employees in each case company. The table shows that there is some consensus concerning existing HR practices for older workers within the companies. More specifically, two or more types of respondents (i.e., the HR manager, the line manager, and the employees) agree on the availability of 38%, 36%, 70%, and 30% of the HR practices in Companies 1, 2, 3, and 4 respectively. Furthermore, it is interesting to note that the employees in Companies 1 and 3 mentioned more HR practices for older workers than either the HR manager or the line manager, whereas in Companies 2 and 4 the line manager and HR manager, respectively, mentioned more HR practices. This finding suggests that Companies 1 and 3 have a greater number of actual HR practices than official HR policies.

Table 5.1. HR policies and practices as perceived by HR managers (HR), line managers (LM), and employees (E) for each case company

Case Company	1			2			3			4		
HR practices	HR	LM	E	HR	LM	E	HR	LM	E	HR	LM	E
Additional leave			√	√					√	√		
Adjusted planning		√	√				√	√	√	√	√	√
Courses (update)			√		√							√
Demotion				√	√							
Development on job			√									
Early retirement				√						√		
Exemption from working overtime	√		√									
Health check			√	√			√	√		√		
Job movement		√	√	√	√	√	√	√	√	√		
Job redesign			√									
Mentor role	√		√		√	√	√		√	√	√	√
On time policy	√		√									
Participation									√			
Part-time work / 55+ policy			√	√	√	√	√		√	√	√	√
Performance appraisal						√						
Reduced workload					√			√	√			√
Safety or health training			√				√	√	√			√
Training			√		√				√	√		

Note. √ = HR practice is offered by this company

Comparing the found HR practices to those suggested in the literature, the practices of taking employees' physical limitations into account in work planning (i.e., adjusted planning), offering health checks, and the on-time policy were additional to those mentioned in the literature.

With respect to the usage of these 'available' HR practices, some of the older workers indicated that this is not always possible. One employee (age 60) noted, "We don't have the sort

of job where you can leave if the job is still unfinished; overtime has to be done” (Case 1). Another employee (age 60) noted, “We don’t have time to transfer knowledge to younger workers” (Case 1). Further, these practices are not always implemented or applied appropriately, as reflected in the following quotes:

“That’s weird. I was talking to X about this [on-time policy] and I asked him what he was going to do, but he said that this wasn’t offered to him.” (employee, age 60, Case 1)

“And who do you think is doing the work? The mentor! Because if something goes wrong, he’s the one who has to fix it. So, you’re basically working for two.” (employee, age 59, Case 4)

Further, within Companies 2 and 4, there was some inconsistency between the HR manager (and also the line manager in Case 4) on the one hand, and the employees on the other concerning the usage of HR practices. The HR (and line) managers claimed that older workers do not want to use accommodative HR practices, whereas the employees did indicate that they used the few accommodative practices that existed within their company. As the HR managers of Cases 2 and 4 put it:

“Older workers do not want to use all these practices. They don’t want to sit at home. Their work is their life.” (Case 2)

“Older workers do not take additional leave; they are the ones with many unused vacation days.” (Case 4)

Finally, it seems that the formalized HR policies as for example described in the company documents in Case 3, such as training on how to manage older workers, have not actually been implemented; neither HR and line managers nor employees mentioned these policies (the exception being the on-time policy).

Bundling of HR Practices for Older Workers

Table 5.2 shows evidence of the existence of various bundles of HR practices for older workers. This table reveals that HR managers, line managers, and employees distinguish between four approaches towards older workers in their companies. First, they talk about sparing, protecting, and accommodating older workers when they mention practices such as reduced

working hours, exemption from shift working, reduced workloads, and demotion. Then, they talk about developing older workers when they mention practices such as training and on-the-job development. Further, they mention practices aimed at maintenance (particularly of health), such as health checks, health training, and courses to update skills. Finally, they talk about utilizing the existing experience, know-how, and competences of older workers when they mention HR practices such as job movements (to jobs that better utilize older workers' skills) and mentoring roles.

Table 5.2. Quotes illustrating the various HR bundles

Accommodative HR practices	Maintenance HR practices	Development HR practices	Utilization HR practices
<p>Additional leave <i>"...and that [additional leave] refreshes me mentally and physically"</i> (employee, age 56, Case 3)</p>	<p>Courses <i>"...because of the changing technology, employees need courses to update their knowledge"</i> (HR manager, Case 1)</p>	<p>Development on the job <i>"Every project requires different things [competences]. If I'm not experienced in those things, I keep developing"</i> (employee, age 60, Case 1)</p>	<p>Job movement <i>"Nowadays I do back-office work; I'm assisting the general manager and I support and coach the project managers. I know all this from 36 years of experience. Now, I no longer feel unappreciated, because I'm doing a useful job"</i> (employee, age 59, Case 1)</p>
<p>Adjusted work planning <i>"When the burden is too heavy (which is often the case for older workers), we respond immediately; such workers (with back problems for example) no longer work on the heavy foundations, but more on completion tasks"</i> (HR manager, Case 3)</p>	<p>Health check <i>"We carry out preventive health checks on our employees"</i> (HR manager, Case 2)</p>	<p>Training <i>"To give an example; in a few months we will start building solar panels for the US market. This is something really different, so I have already attended a few courses to learn all about this"</i> (employee, age 60, Case 1)</p>	<p>Job redesign <i>"They have taken a lot of work out of my hands, I don't need to make offers or check invoices anymore, I can concentrate on visiting customers"</i> (employee, age 61, Case 1)</p>
<p>Demotion <i>"Demotions are applied to reduce the demands on older workers"</i> (HR manager, Case 2)</p>	<p>Performance appraisal <i>"Every year your performance is evaluated and they ask you what you want"</i> (employee, age 57, Case 2)</p>		<p>Mentor role <i>"I like it that they give you the role of coach as you age ... I like being utilized like that, it's a sort of appreciation, I guess"</i> (employee, age 58, Case 1)</p>
<p>Early retirement <i>"Employees can stop working at 60"</i> (HR manager, Case 4)</p>	<p>Safety and health training <i>"We also have other courses, such as a course on ergonomics, which focuses solely on the physical aspects. Very sustainable"</i> (employee, age 35, Case 3)</p>		<p>On-time policy <i>"If you continue to work, you get a few vacation days extra, and a mentoring or coaching task"</i> (employee, age 60, Case 1)</p>

Exemption from working
overtime and shift work

"We shouldn't have to work overtime anymore, but it still happens. You are not protected" (employee, age 60, Case 1)

Semi-retirement / 55+ policy

"Workers use the 55+ policy to protect themselves" (HR manager, Case 3)

"You begin to realize that you're at the end of the line and that was my motive to accept the offer [working part-time], to protect myself" (employee, age 60, Case 1)

Reduced workload

"When the employee is physically impaired, the physical burden should be reduced, by looking at the type of job and possible adjustment" (line manager, Case 3)

Participation

"They want to involve older workers. We have a lot of knowledge. You should use that" (employee, age 59, Case 1)

Therefore, in addition to the three earlier mentioned HR bundles - accommodative, development, and maintenance - we are able to distinguish a fourth - *utilization*. Table 5.3 summarizes these four HR bundles, and reveals that, in line with earlier studies (e.g., Remery et al., 2003), most of the HR practices mentioned for older workers are accommodative.

Table 5.3. Four bundles of HR practices

Accommodative	Maintenance	Development	Utilization
Additional leave	Courses	Development on-the-job	Job movement
Demotion	Health checks	Training	Job redesign
Reduced workload	Performance appraisal		Mentoring role
Exemption from working overtime	Safety and health training		On-time policy
Early retirement			Participation
Semi-retirement			
Adjusted work planning			

Overall, employees and both line and HR managers seem to agree on these HR bundles. However, one HR manager stated, “The mentor role has two goals; developing the younger workers and accommodating the older workers” (Case 3). Further, other HR managers noted concerning lateral job movements, “There are job positions in reprography in which we can place older workers” (Case 4), and “At the lowest job level a demotion is not possible. Therefore, street layers become gatekeepers or move to the maintenance department if they are no longer able to do physically heavy work” (Case 2). These quotes reveal that HR managers view utilization HR practices as more of a means to accommodate older workers than to really utilize their existing skills and knowledge (the exception being the HR manager in Case 1). Although this is not the view offered by line managers and employees, the following quotes illustrate that older employees do agree to some extent with this view of accommodation and utilization.

“I’m doing a useful job ... I’m not accommodated at all, on the contrary.”

(employee 1)

“You’ve changed job positions so, in that respect, you’ve been accommodated, is my impression.” (employee 2)

“Well, if you look at it that way, then I’m accommodated. I used to work as a project manager and now I do something different.” (employee 1)

“As a project manager you had completely different tasks and your workload was much higher.” (employee 2)

These quotes reveal that employees who are both accommodated and utilized at the same time, respond particularly to the utilization HR practices, and seem to forget about the accommodative ones (see also Festinger's, 1957, cognitive dissonance theory).

Research Question 2; What Motivates Older Workers to Continue to Work?

One-third of the older workers in our case study could have already retired, but had decided to remain part of the workforce. Of those still below retirement age just over one-third intended to continue to work beyond retirement age, a similar number intended to retire when they reach retirement age, and the remainder would retire sooner if possible.

Table 5.4 summarizes older workers' motives to continue to work, with clarifying quotes (particularly based on the older workers in Company 1 since this company motivates its workers to continue to work). This table reveals that enjoying work, or one's job, is the most important motive to stay in the workforce. The work itself is followed by money, social interaction, appreciation, health (including physical abilities), and one's subjective age (i.e., how old one feels).

Table 5.4. Older workers' work-related motives for continuing to work

Motives / reasons to remain	Clarifying quotes
Work itself / the job (9)	"I like work and my profession", "Every day is different", "My hobby is my work"
Money (7)	"Retirement payments continue as well, and this is quite attractive at the end of your working life"
Social interaction (5)	"I work with so many people, customers and colleagues, I would miss that"
Appreciation / Recognition (4)	"I feel that the company would like me to remain in the workforce", "The company has asked me to remain in the workforce, that's nice"
Health (3)	"If I collapse, physically, than I want to retire immediately"
Subjective age (2)	"I think I will live to 90, so there's plenty of time to work"
Other (5)	"I would like to finish my project", "I would like to withdraw gradually", "I like transferring knowledge"

Comparing our findings to the antecedents of motivation to continue to work and related concepts discussed in the literature (e.g., Gobeski & Beehr, 2009; Shacklock et al, 2009), reveals the additional motive of appreciation.

The older workers who did not intend to continue to work particularly mentioned financial independence and health as motives for stopping work. These two factors are also the most prominent in the retirement literature (Hansson et al., 1997).

Research Question 3; How Does the Availability of (Various Bundles of) HR Practices as Perceived by Employees Influence Older Workers' Motivation to Continue to Work?

To explore the association between the availability of bundles of HR practices on the one hand and motivation to continue to work on the other, we have compared the perceptions of HR practices and the motivation to continue to work of employees in the different companies. Table 5.5 details the number of utilization, accommodative, maintenance, and development HR practices perceived by employees, and the older workers' motivation to continue to work. We have ordered the cases based on the older workers' motivation to continue to work. In Company 1 (one of the best practice cases) half of the older participants could have retired already, but had decided to remain in the workforce, and almost 40% of the rest intended to work on beyond retirement age. It is interesting to note that so many workers wanted to remain in this company's workforce despite the fact that two years earlier its attitudes towards older workers had been very negative. As an employee (age 60) stated, "Two years ago, they just said adamantly that older workers had to go". Another employee (age 59) described it as follows, "At that time, workers aged 50 didn't count, and when you turned 55, you were living between death and lethargy".

Table 5.5. Perceived availability of HR practices (by employees) and older workers' motivation to continue to work at each company

	Company 1	Company 3	Company 2	Company 4
Available HR practices (as perceived by employees)	4 utilization practices 4 accommoda- tive practices 3 maintenance practices 2 development practices	3 utilization practices 4 accommoda- tive practices 1 maintenance practice 1 development practice	2 utilization practices 1 accommoda- tive practice 1 maintenance practice	1 utilization practice 3 accommoda-tive practices 2 maintenance practices
Motivation to continue to work	75% of older participants has decided to or intend to stay	No older participants definitely intend to stay, but it's possible	No older participants intend to stay	No older participants intend to stay, because it is impossible

In Company 3 (the other best practice case), the older participating employees did not share this desire to remain in the workforce. However, they did feel that the HR practices for older workers result in healthier employees, and that these practices will support today's younger workers, who will have to work longer in the future. As one employee (age 56) put it, "I think that it is very important that we coach the youth, so that they can grow old in construction ... because in the future you will have to work until you are 65". In Company 2, the older

participating employees also did not want to remain as part of the workforce and, in Case 4, the older participating employees feel that it would simply be physically impossible to remain part of the workforce: no matter what the organization did, they would be worn out by 61. One employee (age 59) stated, “You won’t make it physically”.

Thus, it seems that the four cases represent different points on a continuum from high to low motivation to continue to work. Since Table 5.5 reveals that the motivation to continue to work decreases as the number of utilization HR practices available decreases, Mill’s (1974) method of concomitant variation proposes that, on this basis, these variables must be connected: the perceived availability of utilization HR practices is positively associated with motivation to continue to work. Further, we have compared two cases in which the motivation to continue to work is high or moderate (the best practice cases) with two cases where the motivation to continue work is low or non-existent. Since both the best practice cases have development HR practices for older workers, while the other two cases do not, and both best practice cases have more accommodative HR practices than the other two cases, Mill’s (1974) joint method of difference and agreement proposes that both development and accommodative HR practices are the cause, or at least a necessary part of the cause, of older workers’ motivation to continue to work. To sum up, these results suggest that a relationship exists between employees’ perceptions of the accommodative, utilization and development HR bundles and older workers’ motivation to continue to work.

5.4 Discussion

Conclusions and Research Propositions

Through this explorative multiple case study, we have built on existing theories to provide insights into the potential impact of various bundles of HR practices on older workers’ motivation to continue to work. First of all, we found that the participating companies have few formalized HR policies for older workers: only two companies had company documents containing HR policies targeting older workers, and such a policy was hardly mentioned by HR and line managers, or by employees. However, HR and line managers and employees consistently indicated that HR practices specially aimed at older workers did exist within their companies. Moreover, the employees of the two best practice companies mentioned more HR practices for older workers than either the HR or the line manager. These findings suggest that the best practice companies in particular have more actual HR practices than the officially stated ones. This situation may reflect a supportive climate toward older workers within the companies concerned (Reichners & Schneider, 1990).

While earlier studies measured HR practices for older workers by asking (HR) managers about them, in measuring these HR practices we also asked employees. Although HR managers, line managers, and employees did largely agree about HR practices for older workers within their companies, there were some discrepancies. As mentioned earlier, the employees of the two best practice companies referred to more HR practices for older workers than their HR and line managers. Despite the small number of cases in our study, these findings suggest that organizations that put effort into retaining their older workers, signal to these older workers that they are valued, and this results in positive perceptions of an organization's HR practices.

Additionally, by asking employees, we found that HR practices for older workers are not always applied properly (e.g., no time to transfer knowledge) or fairly (e.g., older workers have less training opportunities than younger workers; see also Greller & Simpson, 1999). Thus we would argue that HR practices within a company can be best measured by involving the employees who are (supposed to be) affected by these practices.

In seeking to categorize HR practices for older workers, we were able to identify four sets. Each HR bundle was distinguished by the common goals of the HR practices placed within them (Toh et al., 2008): namely, developing, maintaining, utilizing, and accommodating older employees. These HR bundles can be related to SOC theory, in which Baltes et al. (1999) distinguish four life goals to which individuals allocate their resources: growth, maintenance, recovery, and regulation of loss. Based on their definitions of these different life goals, we can conceptualize *development* HR practices as ones that help individual workers to reach higher levels of functioning (e.g., training); *maintenance* HR practices as ones that help individual workers to maintain their current levels of functioning in the face of new challenges (e.g., flexible work schedules); *utilization* HR practices as those that help individual workers to return to previous levels of functioning after a loss (e.g., lateral job movement); and *accommodative* practices as HR practices that organize adequate functioning at lower levels when maintenance or recovery is no longer possible (e.g., less physically-demanding posts) (see also Remery et al., 2003).

In line with this conceptualization, Robson, Hansson, Abalos, & Booth (2006) built upon the Dual-Process Model of Assimilative and Accommodative Coping (Brandtstädter et al., 1998) and proposed that accommodative strategies in the workplace (i.e., accommodative HR practices) would be characterized by increasing disengagement from challenging work assignments, decreased investment in training, and a redirection of effort toward retirement preparation; whereas assimilative strategies (i.e., development HR practices) would be characterized by activities directed toward learning new skills. Similarly, Yeatts et al. (2000) distinguished two approaches or HR philosophies toward older workers: depreciation, which implies that

individuals' value to an organization peaks early in their careers, reaches a plateau some time in mid-career, and then steadily declines as the worker approaches retirement (which would logically stimulate accommodative HR practices); and conservation, which views all employees, regardless of their age, as renewable assets that can continue to deliver a high rate of return over a long period provided they are adequately educated, trained, and managed (logically stimulating development and utilization HR practices).

According to the SOC lifespan model, changes in resources and demands also lead individuals to adjust their regulation strategies (Baltes et al., 1999). In order to extend the SOC model to the domain of the work setting, we need to explain the HR bundles in terms of job resources (i.e., those physical, psychological, social, or organizational aspects of a job that may have a function in achieving work goals; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and job demands (i.e., those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs; Demerouti et al., 2001).

Subsequently, accommodative HR practices are aimed at *reducing* job demands (“...no longer working on the foundations, but more on completing...”), helping workers to function adequately at lower levels; maintenance HR practices are aimed at *increasing* job resources (“...courses to update knowledge...”), helping workers to maintain their current level of performance in the face of new challenges; utilization HR practices are aimed at *changing* job demands (“...now I’m doing a useful job...”), helping workers to return to the previous level of performance after a loss. Here, job demands that have become unachievable for an employee are removed from the job and replaced with other job demands that *utilize* already existing, but not yet necessarily applied, individual resources. Finally, development HR practices stimulate workers to reach higher levels of functioning *by increasing* both job demands and job resources (“...something really different, so I have already attended a few courses to learn all this...”). Based on this assessment, we have formulated the following proposition:

Proposition 1. HR practices for older workers can be bundled into accommodative, maintenance, utilization, and development HR practices.

Of these HR bundles, utilization, accommodative and development HR practices were found to be the most important for the motivation to continue to work of older workers. In addition, we found that older workers' most important motives to continue to work were related to the job (see also Hult, 2008; Arvey et al., 2004). Since the job or the work itself can be influenced by job

redesign, such as job expansion to incorporate a mentoring role, or by lateral job movements, this finding reaffirms that utilization HR practices are important for the motivation of older workers. These findings resulted in a second proposition:

Proposition 2. Accommodative, utilization, and development HR bundles are positively related to older workers' motivation to continue to work.

This proposition is in line with Farr and Ringseis' (2002) and Armstrong-Stassen and Ursel's (2009) argument that development HR practices are important for retaining older workers. However, many older workers indicated that they no longer wished to follow training courses, but that they felt similarly treated to younger workers despite the fact that their opportunities for training and development had decreased. This suggests that the positive effect of development HR practices is due to the resulting feeling of being appreciated and recognized when asked to attend a course or start a new project. Thus, although older workers might not grab these opportunities, they value being given the choice. Further, our results offer some explanation for the mixed findings with respect to the effects of development HR practices. In our study, we examined development HR practices *for older workers*. These development HR practices might be significantly different from those targeting younger workers. This view is supported by a recent study in which Armstrong-Stassen and Ursel (2009) found that older employees in organizations which adjust training methods to accommodate the learning needs of older workers perceive their organization to be more supportive than respondents whose organizations do not follow this strategy. Furthermore, their finding that job content plateauing had a strong relationship with career satisfaction, whereas hierarchical plateauing did not, suggests that older workers are particularly focused on job development rather than on climbing the hierarchy.

In addition to development HR practices, utilization HR practices also signal to older workers that they are valued by the company. Company 1 in our study was the only one in which older workers remained with the company in significant numbers once retirement became an option. This company has formalized a utilization policy of asking older workers to stay with the company, thereby recognizing and signaling the value they place on older workers, and that older workers remain important for the company. Since older workers are now willing to stay with the company, even though only two years ago the signals given by the company were in the opposite direction, we think that appreciation and recognition have a strong positive influence on older workers' motivation to continue to work. Similarly, earlier research (Armstrong-Stassen, 2008;

Rau & Adams, 2005) revealed that older workers prefer organizations that explicitly value older workers and signal this through HR practices that reflect the needs and desires of older workers.

These feelings of appreciation and recognition, which were also mentioned as one of the motives to continue to work, can thus be linked to the utilization HR bundle. In a similar vein, the motives of work itself and social interaction can also be linked to the utilization HR bundle. The utilization HR practices of job redesign focuses on the job itself, and the utilization practices of fulfilling a mentoring role and participating in decision-making stimulate social interaction. Further, accommodative HR practices contribute to good health and reducing one's subjective age, and these aspects are probably most salient for those older workers who only work longer for the money (e.g., additional pension).

Finally, maintenance HR practices had no influence on older workers' motivation to continue to work. A possible explanation for this is that older workers might view these fairly standard HR practices as self-evident, and view these practices as hygiene factors rather than motivators (Herzberg, 1966).

Limitations and Future Research

Inevitably, this study has some limitations. Firstly, we have limited ourselves to one sector. Although we deliberately selected the construction sector as 'an extreme case' (Eisenhardt, 1989), employees in other sectors, with less physically-demanding jobs, might respond differently to HR practices. Furthermore, the construction sector had a tight labor market at the time this study was conducted which could have influenced the results. Another potentially relevant factor is that workers in the construction sector usually start their careers at a relatively young age. As a consequence, workers aged 30 already have a high organizational tenure, and therefore 'belong to' the same group as workers aged 50. This might explain why the participants (including the younger ones with relatively high tenure) held more stereotypical views of younger (relatively low tenured) workers than of older workers (see social identity theory: e.g., Hogg & Terry, 2000). Further, since this group of 'older' workers is the dominant group, this might have influenced our findings. Therefore, future research should consider other sectors with different career paths and labor markets. Moreover, the fact that we only used a small number of cases may have influenced our results, so future studies should preferably include more cases.

Second, we included only a limited number of HR and line managers in our study. Since we found that the experience of HR bundles differed somewhat between employees and both HR and line managers, future research should include both managers and employees in a more balanced sample. HR managers seemed to experience utilization HR practices more as a means to

accommodate older workers than to utilize their skills and knowledge. Employees and line managers, on the other hand, did experience these practices as utilization. Future research should examine whether and how these different experiences of HR practices influence older workers. Are older workers who only experience accommodative HR practice less motivated? To what extent do employees use cognitive dissonance strategies to cope with accommodative HR practices (and thus think of these as utilization HR practices)? Or, perhaps, line managers communicate or enact accommodative practices as utilization practices?

Finally, in this study, we did not test the proposed bundling of HR practices and their effects. Nevertheless, future research could build on this explorative study by quantitatively testing the HR bundles as well as their effects on older workers (see also Guest et al., 2004, who have reviewed various methods by which such bundles might be identified).

In spite of these limitations, we feel that our case study does have several important theoretical and practical implications.

Theoretical Implications

Our case study results may serve to extend existing lifespan and HR-related theories and research. First, our new categorization of HR practices for older workers into four HR bundles (i.e., accommodative, utilization, maintenance, and development) provides a means to structure and integrate research on HR practices for older workers. This was necessary because so many HR practices have been suggested as helpful in retaining older workers in the literature. This categorization also extends HR research in general because researchers increasingly recognize the limitations of studying isolated HR practices and point to the importance of studying HR bundles in a specific context (Toh et al., 2008). Rather than bundling HR practices according to an organizational logic (MacDuffie, 1995; Lepak & Snell, 2002) or by HR function (Bailey, Berg, & Sandy, 2001), we bundled our HR practices according to a worker-specific characteristic (i.e., perceived goals). Further, researchers (Hong, Kim, Winkler, Jiang, Kim, & Han, 2009) increasingly realize that HR systems can be either general or targeted toward specific objectives or goals, as with the HR bundles we proposed. These organizational goals can also be linked to worker goals or motives (e.g., to continue to work).

Secondly, the suggestion put forward by this study that older workers benefit from different HR bundles provides some support for the contingency perspective on HRM. The contingency perspective (Delery & Doty, 1996) argues that factors at the organizational and individual levels, such as employee age (e.g., Guest, 1999), influence the effects of HR practices. In particular, we hypothesize that utilization, development and accommodative HR bundles have a positive

influence on older workers. This also contributes to social exchange and signaling theories, which propose that employees' perceptions of high commitment HR practices in particular are positively associated with work-related attitudes. Wood and de Menezes (1998) define high commitment HR practices as practices that aim to elicit a strong commitment to the organization, and at creating conditions in which employees will become highly involved in the organization and identify with its overall goals. Although none of the accommodative HR practices we considered are seen as high commitment HR practices in the literature (e.g., Gould-Williams, 2004), this bundle of practices did have a positive association with older workers' motivation to continue work. Therefore, it seems likely that what counts as a high commitment HR practice differs for workers in different age groups.

Thirdly, our case study extends lifespan theories to the work setting and offers supporting evidence. Although, contrary to lifespan theories, development HR practices were found to be important for older workers, accommodative and utilization HR practices were also found to be important for older workers, and the goals of the four HR bundles did correspond with the lifespan goals proposed by lifespan theories. This suggests that the age-related regulating processes proposed by lifespan theories might also be relevant in coping with losses in the work setting (see also Abraham & Hansson, 1995).

Fourthly, the four HR bundles correspond with the four age-related changes identified by Kanfer and Ackerman (2004). As already noted, aging involves both personal gains and losses. In addition, Kanfer and Ackerman (2004) identified age-related changes labeled 'reorganization' and 'exchange'. Reorganization refers to a shift in social motives, from gaining resources to obtaining affective rewards and supporting one's identity, that are linked to changes in the perception of time (Socio-Emotional Selectivity theory; Carstensen, 1995). The logic is that since older people perceive their future time as more limited than younger people, they will prioritize emotionally meaningful goals, such as generativity, emotional intimacy, and social embeddedness. Exchange refers to changes in the levels of certain traits: older individuals are seen as less neurotic, less extrovert, and less open to new experiences, but more conscientious and agreeable, than younger individuals (Warr, 2001). Whereas accommodative and maintenance HR practices respond to age-related losses, and development HR practices respond to age-related gains, utilization HR practices respond to reorganization and exchange by utilizing these resources, for example by adding a mentoring role to older workers' jobs.

Fifthly, although accommodative, development and utilization HR practices all elicit motivation to continue to work among older workers, we found that accommodative HR practices were most frequently offered to older workers within companies. Earlier research has

revealed that the stereotypical views that managers hold of older workers lead to discriminatory decisions (Rosen & Jerdee, 1976; Taylor & Walker, 1998a). However, in our qualitative study, HR and line managers held more stereotypical views of younger workers than of older workers. Nevertheless, given that accommodative HR practices were dominant in the companies investigated, it seems that managers make discriminatory decisions affecting older workers even if they do not hold stereotypical views. Although it might be that these managers unconsciously have prejudices against older workers, these findings reveal just how embedded these accommodative HR practices are in our society. Along similar lines, Taylor and Walker (1998a) argue that discrimination against older workers is a social construct that is institutionalized within the labor market.

Finally, we feel that this study adds to retirement research. Our results reveal that the job itself is the most important motive for older workers to remain in the workforce (and, thus, not to retire) (see also Beehr, 1986). However, it seems that research on the retirement decision (e.g., Feldman, 1994; Hansson et al., 1997) rarely focuses on this important work-related factor (cf. Gobeski & Beehr, 2009). The same is true for social interaction with colleagues and feelings of appreciation or recognition.

Practical Implications

This study provides some preliminary insights into how to manage older workers effectively. First, this paper offers managers an overview of available HR practices that potentially help to retain older workers. Although we did not test the strength of the impact of these HR practices, the results of our study do indicate that certain HR practices (e.g., the on-time policy) or HR bundles (e.g., utilization HR practices) are able to increase older workers' motivation to continue to work for their company. Further, our findings provide some support for the suggestion of tailoring HR practices to workers in different age groups. For example, HR practitioners should consider job redesign (e.g., job rotation or mentoring roles) to increase the motivation of older workers to continue to work. Currently, it seems that practitioners mainly tend to restrict themselves to offering accommodative HR practices to older workers.

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6

A Lifespan Perspective on Relations between HR Bundles and Worker Outcomes

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Abstract

Through a two-wave longitudinal study, based on lifespan development theories such as Selection Optimization and Compensation theory, we distinguish four HR bundles made up of development, maintenance, utilization, and accommodative HR practices, and examined their relationships with age-related factors (i.e., calendar age, health, and future time perspective) and worker outcomes (i.e., affective commitment, job satisfaction, and motivation to continue to work) across time. Based on lifespan theories, we expected and found that the perceived availability of accommodative HR practices increases with age and that the perceived availability of development HR practices increases with future time perspective. In addition, we found that the association of the perceived availability of accommodative HR practices with commitment and satisfaction increases with age and also with a shortening future time perspective among the more highly educated and male workers, suggesting that the previously mentioned theories are particularly applicable to this group. Further, we found that the perceived availability of HR development practices have an indirect influence on motivation to continue to work, through affective commitment. The implications of these findings are discussed in light of the above mentioned theories.

6.1 Introduction

Due to increasing life expectancy and falling fertility rates, the populations and workforces of developed countries are aging rapidly (UN, 2007). Older workers are already seen as valuable to organizations (Peterson & Spiker, 2005), and will become indispensable in the near future. One of the most pressing challenges for human resource managers is to find effective strategies for encouraging older workers to remain engaged and active members of the workforce (Barnes-Farrell & Matthews, 2007). Lifespan theories (such as the Selection Optimization and Compensation (SOC) theory; Baltes, Staudinger, & Lindenberger, 1999) address how individual adults cope with age-related losses, such as declining health. Based on these theories, and results of a recent meta-analysis on how work-related motives change with age (Kooij, De Lange, Jansen, Kanfer, & Dikkers, in press a), we expect the utility of HR practices to change with age. As a result, it might be that certain ‘universal’ high commitment HR practices are not that appropriate for older workers. Indeed, several studies (Conway, 2004; Finegold, Mohrman, & Spreitzer, 2002; Kooij, Jansen, Dikkers and De Lange, in press b) found that the association between high commitment HR practices on the one hand, and job satisfaction and affective commitment, on the other, changes with age or with life stage.

Conversely, other HR practices which are not normally perceived of as high commitment HR practices could be considered as high commitment HR practices in terms of older workers. For example, age-related HR practices, such as semi-retirement or reduced workloads, are specifically aimed at retaining older workers (Remery, Henkens, Schippers, & Ekamper, 2003). However, few studies have examined the association between such age-related, accommodative, HR practices and older worker outcomes (e.g., Armstrong-Stassen & Ursel, 2009). Furthermore, these studies have largely overlooked important insights obtained from lifespan theories about how older adults cope with or regulate the age-related losses they might encounter (Kanfer & Ackerman, 2004; Kooij et al., in press b). Finally, since these studies use a cross-sectional study design, it is impossible to draw conclusions on the causal effect, if any, of these HR practices on aging workers.

Therefore, in this study, we set out to fill these knowledge gaps: i) by adding age-related (i.e., more accommodative) HR practices to the high commitment HR practices, ii) by categorizing these HR practices into HR bundles, iii) by formulating hypotheses based on lifespan theory, on how the associations between the perceived availability of these HR bundles and worker outcomes change with aging (i.e., increasing calendar age, declining health, and shortening future time perspective), and iv) by testing these hypotheses in a two-wave longitudinal study.

HR Bundles: Development, Maintenance, Utilization, and Accommodative HR Practices

In order to formulate hypotheses on the effects of HR practices on worker outcomes, we need to categorize these HR practices into theoretically meaningful HR bundles. According to MacDuffie (1995), an HR bundle is a set of interrelated and internally consistent HR practices built around an organizational logic (see also, Guest, Conway, & Dewe, 2004). However, whereas MacDuffie (1995) bundled HR practices based on the external contingency of business strategy (i.e., manufacturing practices), and Lepak and Snell (2002) bundled HR practices based on an organizational contingency of employee modes (e.g., knowledge-based employment), we bundle HR practices based on the *worker-specific* characteristic of perceived goals. In line with Toh, Morgeson, and Campion (2008), we determine various HR bundles based on the goals of the individual HR practices. To identify relevant goals, we use the lifespan developmental SOC theory (Baltes et al., 1999) which addresses various goals in lifespan development to which individuals can allocate their resources: namely goals related to growth, maintenance, recovery, and regulation of loss. Corresponding to these four lifespan goals, we can distinguish four HR bundles: development, maintenance, utilization, and accommodative HR practices.

Based on Baltes et al.'s (1999) definition of these different lifespan goals, we conceptualize development HR practices as those that help individual workers to reach higher levels of functioning (e.g., training); maintenance HR practices as those that help individual workers to maintain their current levels of functioning in the face of new challenges (e.g., flexible work schedules); utilization HR practices as those that help individual workers to return to previous levels after a loss (e.g., lateral job movement); and accommodative HR practices as those that enable adequate functioning at lower levels when maintenance or recovery is no longer possible (e.g., demotion) (see also Remery et al., 2003).

Since the SOC lifespan model suggests that changes in resources and demands cause individuals to adjust their regulation strategies to cope with age-related losses (Baltes et al., 1999), we further explain the HR bundles in terms of job resources (i.e., those physical, psychological, social, or organizational aspects of the job that may be functional in achieving work goals; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) and job demands (i.e., those physical, social, or organizational aspects of the job that require sustained physical or mental effort and are therefore associated with certain physiological and psychological costs; Demerouti et al., 2001).

In terms of job resources and demands, accommodative HR practices are aimed at *reducing job demands*, helping workers to function adequately at lower levels, maintenance HR practices are aimed at *increasing job resources*, helping workers to maintain their current performance levels in the face of new challenges, utilization HR practices are aimed at *changing job demands*, helping workers

to return to their previous level of performance after a loss. Here, job demands that have become unattainable for an employee are removed from the job and replaced with other job demands that *utilize* already existing, but not necessarily applied, individual resources. Finally, development HR practices stimulate workers to reach higher levels of functioning *by both increasing job demands and job resources*. Based on these arguments, we have formulated the following hypothesis:

Hypothesis 1: HR practices can be bundled into development, maintenance, utilization, and accommodative HR practices.

The Perceived Availability of HR Bundles and Worker Outcomes

Many studies (e.g., Allen, 2001; Allen, Shore, & Griffeth, 2003; Edgar, & Geare, 2005) focus on the relationship between high commitment HR practices and worker outcomes. In general, these studies have found positive links between the perceived availability of high commitment HR practices and individual work-related outcomes. Social exchange theory (Blau, 1964; Cropanzano & Mitchell, 2005; Eisenberger, Huntington, Hutchison, & Sowa, 1986) and signaling theory (Casper & Harris, 2008; Ostroff & Bowen, 2000) explain this positive association by arguing that the availability of high commitment HR practices has a positive effect on employees by supporting them or by functioning as ‘signals’ of the organization’s favorable intentions toward them. More specifically, these theories propose that individual workers view HR practices as a personalized commitment to them, as an investment in them, and as recognition of their contribution, which they then reciprocate through positive attitudes and behaviors toward the organization (Hannah & Iverson, 2004; Shore & Shore, 1995).

Since these work-related attitudes and behaviors are affected by employees’ perceptions of HR practices, we focus on HR practices *as perceived by* employees. More specifically, we focus on employees’ perceptions of the availability of high commitment and age-related HR practices, which we will refer to from here on as HR practices. High commitment HR practices mentioned in the literature include flexible work schedules, training, participation, and performance appraisal (Becker & Gerhart, 1996; Combs, Liu, Hall, & Ketchen, 2006; Gould-Williams, 2004). Age-related HR practices mentioned in the literature include additional leave allowances and exemption from overtime working (Remery et al., 2003).

Further, we are interested in examining the effects of HR practices on worker outcomes. Since we want to include attitudes toward the job and the organization, and motivation to continue to work in general, we include affective commitment, job satisfaction, and motivation to continue to work as employee outcomes. Affective commitment has been defined as the

emotional attachment to, identification with, and involvement in the organization (Allen & Meyer, 1990). Satisfaction has been defined as an affective attachment to the job, or as an emotional state resulting from an evaluation or appraisal of one's job experiences (Locke, 1976). Finally, motivation to continue to work has been defined as an older worker's desire or intention to continue to work (Armstrong-Stassen, 2008; Kooij, De Lange, Jansen, & Dijkers, 2008; Shacklock, Brunetto, & Nelson, 2009). Although affective commitment, satisfaction, and motivation to continue to work are distinct concepts, social exchange and signaling theories suggest that they will all be positively influenced by high commitment HR practices. Age-related HR practices aimed at lowering job demands, such as demotion and semi-retirement, are only supposed to increase commitment among older workers, and therefore, are only considered high commitment HR practices when applied to older workers. In this study, development, maintenance and utilization HR practices are considered high commitment HR practices in general. On this basis, we have formulated our next hypothesis:

Hypothesis 2: The perceived availability of development, maintenance, and utilization HR practices is positively related to worker outcomes.

However, since work-related attitudes have been found to influence the intention to retire (Hanisch & Hulin, 1990), high commitment HR practices could also influence motivation to continue to work indirectly. Armstrong-Stassen and Ursel (2009) have indeed found an indirect relationship between HR practices and motivation to continue to work through perceived organizational support. On this basis, we have formulated the following hypothesis:

Hypothesis 3: The perceived availability of development, maintenance, and utilization HR practices is indirectly positively related to motivation to continue to work, through job satisfaction and affective commitment.

The Perceived Availability of HR Bundles and Worker Outcomes; The Influence of Aging

Aging refers to changes that occur in biological, psychological, and social functioning over time and, therefore, it affects each individual on personal, organizational, and societal levels (De Lange, Taris, Jansen, Smulders, Houtman, & Kompier, 2006; Settersten & Mayer, 1997; Sterns & Miklos, 1995). Aging involves both personal gains, such as gains in general knowledge, and losses, for example in physical abilities or health (Kanfer & Ackerman, 2004; Warr, 2001). On this basis, a number of researchers have argued that chronological age may be an insufficient

operationalization of the age factor in the work setting (De Lange et al., 2006; Kooij et al., 2008; Sterns & Miklos, 1995). Kanfer and Ackerman (2004), for example, argue that age may serve as a proxy for age-related processes that directly or indirectly influence worker outcomes. Using similar reasoning, Sterns and Doverspike (1989) distinguished five conceptualizations of aging (i.e., chronological, functional, psychosocial, organizational and lifespan age) (see also De Lange et al., 2006), which have been found to have different effects on worker outcomes (Cleveland & Shore, 1992; Kooij et al., 2008).

Since SOC theory specifically addresses functional or biological losses, we operationalize aging, in addition to calendar age, as declining health. Further, building on the Socio-Emotional Selectivity Theory, we also operationalize age as future time perspective, which we define as individuals' perceptions of their remaining lifetime (Lang & Carstensen, 2002). Socio-Emotional Selectivity Theory is a lifespan theory of social motivation (Carstensen, 1995) that proposes an age-related increase in selected social relationships as a compensatory strategy for coping with age-related physical and cognitive losses. According to this theory, older people, because they perceive their future time as more limited than younger people, have different social goals and motives. More specifically, individuals with a shorter time perspective give higher priority to emotionally meaningful social interactions and goals, such as generativity, emotional intimacy, and social embeddedness (see Lang & Carstensen, 2002). In this line of reasoning, aging is related to losses in time perspective.

With respect to the influence of aging on motivation to continue to work, Kooij et al. (2008) have found that different age-related factors all have negative, but distinct, effects on motivation to continue to work. Therefore, we have formulated the following hypothesis:

Hypothesis 4: Aging (i.e., increasing calendar age, declining health, and shortening future time perspective) is negatively related to motivation to continue to work.

Since the age-related losses specifically occur among older workers, SOC theory argues that individuals will allocate fewer resources towards growth, and more resources towards maintenance and the regulation of loss as they age (Baltes et al., 1999). This proposition is supported by Freund (2006), who found that goal focus shifts from emphasizing promotion (i.e., growth) in young adulthood to an emphasis on maintenance and prevention in later adulthood (see also, Ebner, Freund, & Baltes, 2006; Higgins, 1997; Kanfer & Ackerman, 2004). As a result, growth motives are likely to decrease with age, whereas motives for maintenance and security are likely to become more important as workers age. This is supported by Rhodes (1983) and Kooij

et al. (in press a). Since these changing motives affect the utility of HR practices (Kinnie, Hutchinson, Purcell, Rayton, & Swart, 2005), older workers will search for other HR practices which are more salient for them (i.e. selective perception; Celsi & Olson, 1988; Taylor, Franke, & Bang, 2006). Therefore, we would expect the perceived availability of HR practices to change with age as workers seek different practices.

Further, SOC theory proposes that goal focus changes in young and later adulthood, but does not address middle adulthood. Since development HR practices (i.e., growth) are highly salient for younger workers, and accommodative HR practices (i.e., security and regulation of loss) are more relevant for older workers, we expect that the experience of these ‘extreme’ HR practices in particular will change with calendar age, health, and future time perspective. On this basis, we have formulated the following hypotheses:

Hypothesis 5: The perceived availability of development HR practices decreases with aging.

Hypothesis 6: The perceived availability of accommodative HR practices increases with aging.

Further, since social exchange theory proposes that employee reciprocation is related to the utility or value of HR practices to these employees (Kinnie et al., 2005), we would expect that the association between HR practices and worker outcomes will also change with age (see also Finegold et al., 2002). Adopting a similar line of reasoning, Gong, Law, Chang, and Xin (2009) proposed that the intensity of middle managers’ needs determines the nature of their commitment, as a repayment, to the firm. On this basis we have formulated the following hypotheses:

Hypothesis 7: The association between the perceived availability of development HR practices and worker outcomes weakens with aging.

Hypothesis 8: The association between the perceived availability of accommodative HR practices and worker outcomes strengthens with aging.

Thus, Hypothesis 8 implies that the in general non-existent association between the perceived availability of accommodative HR practices and worker outcomes becomes positive with aging.

Finally, we seek to extend these predicted relationships by performing subgroup analyses to differentiate among workers with different occupations, gender, and educational level. As Kanfer

and Ackerman (2004) also observed, occupation, gender, and education may influence the relationship between age and various work-related motives, and thus with the utility of HR practices. Kooij et al. (in press a) have indeed found the expected age-related shift from growth towards security motives among white collar workers, whereas growth motives continued to increase with age for blue collar workers (presumably with lower educational levels). Further, Kinnie et al. (2005) found that the association between HR practices and commitment differs for professionals, line managers, and workers. Consequently, we will perform subgroup analyses for workers from different occupational groups (i.e., scientific versus administrative staff), gender (i.e., male versus female workers), and educational level (i.e., low versus highly (bachelor degree or above) educated workers). However, we offer no formal hypotheses regarding these subgroup analyses.

6.2 Method

Participants

In 2008, a link to a web-based survey was sent via email to all employees of a Dutch university. In total 1,429 respondents completed the on-line questionnaire (a response rate of 37%). A year later, a second survey was sent to these respondents, of whom 765 completed and returned the new questionnaire (a response rate of 54%). However, after listwise deletion, the complete panel consisted of $N = 662$ respondents who had answered all the key questions in both rounds. Non-response analysis revealed that those who failed to answer the second questionnaire tended to be younger employees who reported relatively low levels of perceived availability of HR practices and of satisfaction. This phenomenon is quite common in longitudinal research (Taris, 2000). Half of the respondents were male workers (50.2%), slightly more were working full-time (53.6%), the majority had at least a bachelor-level degree (83.5%), and 56.6 per cent of the respondents was considered administrative staff. The average organization tenure was 11.5 years ($SD = 10.1$), the average job tenure 6.2 years ($SD = 7.2$), and the average age of the final sample was 44.2 years ($SD = 10.9$) with ages ranging from 20 to 67.

Measures

Availability of bundles of HR practices. First, we identified 21 relevant high commitment and age-related HR practices from the literature (Boselie, Dietz, & Boon, 2005; Combs et al., 2006; Paul & Townsend, 1993; Remery et al., 2003; Wood & De Menezes, 1998). We then conceptually distinguished between bundles of development, maintenance, utilization, and accommodative HR practices based on SOC theory (Baltes et al., 1999). As noted earlier, development HR practices

are aimed at stimulating workers to reach higher levels of functioning *by increasing both job demands and job resources*; maintenance HR practices are aimed at *increasing job resources*, helping workers to maintain their current level of performance in the face of new challenges; utilization HR practices are aimed at *changing job demands*, helping workers to return to the previous level of performance after a loss; and, finally, accommodative HR practices are aimed at *reducing job demands*, helping workers to function adequately at lower levels (see Table 6.1).

Table 6.1. HR bundles

Development	Maintenance	Utilization	Accommodative
Career planning	Flexible benefits	Participation	Additional leave
Continuous on-the-job development	Ergonomic adjustment	Task enrichment (knowledge transfer)	Long career break
Regular training	Performance pay	Reduced workload	Early retirement
Promotion	Compressed working week	Sideways job movement	Demotion
	Performance appraisal	Second career	Exemption from overtime working
			Part-time work / semi-retirement

The availability of the HR practices at Time 1 was measured by asking employees to indicate whether the company offered the practices listed in Table 6.1 (e.g., “Does your company offer the possibility of working part-time?”). Possible answers were yes, no, or don’t know. The total number of yes responses to practices in each hypothesized bundle constituted the perceived availability of that HR bundle (see also Casper & Harris, 2008; MacDuffie, 1995).

Affective commitment. Affective commitment was measured at Time 1 and Time 2 using the affective commitment scale (Allen & Meyer, 1990). This scale consists of eight items (e.g., “I enjoy discussing my organization with people outside it”). Possible answers, on a seven-point Likert scale, ranged from strongly disagree (1) to strongly agree (7). The reliability (Cronbach’s α) of this scale was .87 at Time 1 and .88 at Time 2.

Job satisfaction. Job satisfaction was measured at Time 1 and at Time 2 using six items (e.g., “How satisfied are you with your current job”) (Van der Sluis, 2000). This time, a five-point scale was used with answers ranging from very dissatisfied (1) to very satisfied (5). The reliability of this scale was .80 on both occasions.

Motivation to continue to work. Motivation to continue to work was measured at Time 2 using a three-item scale developed by Armstrong-Stassen (2008) (e.g., “I expect to continue to work as long as possible in this organization”). However, in order to capture workers’ more general motivation to continue to work, we deleted ‘in this organization’ from the questions. Possible

answers ranged from strongly disagree (1) to strongly agree (5). The reliability of this scale was .92.

Age-related factors. *Calendar Age* was measured by asking employees their age in years. *Future time perspective* with a focus on opportunities was measured using three items of the Future Time Perspective Scale (e.g., “Many opportunities await me in the future” (Carstensen & Lang, 1996, see also Cate & John’s, 2007; Zacher, Heusner, Schmitz, Zwierzanska, & Frese, in press; Zacher & Frese, 2009). Possible answers ranged from strongly disagree (1) to strongly agree (5). The reliability of this scale was .77. Finally, *health* was measured with a single item that asked participants to rate their general health as poor (1), average (2), good (3), very good (4), or excellent (5).

Control variables. Control variables included gender (0 = female, 1 = male), management position (0 = no, 1 = yes), educational level (ranging from (1) a basic education to (5) a university degree), part of the organization in which employed, and worker outcomes at Time 1.

Statistical Analyses

To test Hypothesis 1 (that development, maintenance, utilization, and accommodative HR bundles can be distinguished), we performed a multigroup confirmatory factor analysis in Lisrel 8.72 (CFA; Jöreskog & Sörbom, 1996). We divided our sample in three age groups of equal size (≤ 37 ; 38-50; ≥ 50). Because a CFA is not possible with dichotomous variables, we first calculated tetrachoric correlations based on the cross-tabulations between the perceived availability of all HR practices (Glöckner-Rist, & Hoiijtink, 2003; Uebersax, 2006). To test our other hypotheses, we used regression analyses, with two-way interaction effects for Hypotheses 7 and 8. Since interaction effects are harder to detect, especially in field studies, an alpha level of .10 was also interpreted as a marginally significant interaction effect (Aguinis, Beaty, Boik, & Pearce, 2005).

6.3 Results

Means, standard deviations, correlations, and reliability coefficients (on the diagonal) for the key variables are reported in Table 6.2. This table reveals that the participants’ job satisfaction and motivation to continue to work are quite high. Further, the negative correlation between age and future time perspective is very strong ($r = -.67$, $p < .001$).

Table 6.2. Means (M), standard deviations (SD), correlations and reliability coefficients (bold) of key variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Gender	.50	.50																	
2. Mgt pos	.24	.43	.20 ^a																
3. Edu	4.40	.98	.07	.08*															
4. Org part	3.15	.89	-.00	-.06	-.10*														
5. Age	44.15	10.9	.18 ^a	.27 ^a	-.17 ^a	.11**													
6. Health	3.42	.74	-.02	.03	.07	.02	-.08*												
7. FTP	2.98	.91	-.14**	-.15 ^a	.04	-.10*	-.67 ^a	.18 ^a											
8. PA Dev	2.57	1.22	-.08*	.10**	.03	.00	.01	.05	-.09*										
9. PA Main	3.71	1.03	-.08*	.14 ^a	-.11**	-.04	.17 ^a	-.03	-.04	.37 ^a									
10. PA Ut	3.29	1.54	.02	.14 ^a	.07	-.01	.12**	.06	-.03	.52 ^a	.42 ^a								
11. PA Acc	4.15	1.51	-.07	.14 ^a	-.09*	.00	.22 ^a	.04	-.08*	.28 ^a	.56 ^a	.43 ^a							
12. Com T1	4.12	1.08	.06	.12**	-.13**	.08*	.21 ^a	.02	-.07	.16 ^a	.17 ^a	.15 ^a	.14 ^a	.87					
13. Com T2	3.96	1.05	.07	.09*	-.14 ^a	.06	.24 ^a	.03	-.09*	.21 ^a	.18 ^a	.19 ^a	.15 ^a	.81 ^a	.88				
14. Sat T1	3.64	.62	.00	.20 ^a	.14 ^a	-.01	-.10*	.19 ^a	.13**	.31 ^a	.15 ^a	.25 ^a	.08*	.28 ^a	.28 ^a	.80			
15. Sat T2	3.61	.63	.07	.18 ^a	.15 ^a	.03	-.05	.20 ^a	.08*	.28 ^a	.13**	.22 ^a	.06	.20 ^a	.31 ^a	.67 ^a	.80		
16. Pref T1	64.08	3.68	.16 ^a	.02	.14 ^a	-.02	.11**	.08*	-.04	.02	-.05	.01	.03	.10*	.07	.05	.07		
17. Mot T2	3.68	1.06	-.02	-.06	.14 ^a	-.03	-.08*	.15 ^a	.17 ^a	.06	-.07	-.01	.01	.14 ^a	.18 ^a	.14 ^a	.18 ^a	.38 ^a	.92

Note. Mgt pos = management position, Edu = educational level, Org part = part of the organization, PA Dev = perceived availability of development HR practices, PA Main = perceived availability of maintenance HR practices, PA Ut = perceived availability of utilization HR practices, PA Acc = perceived availability of accommodative HR practices, Com = commitment, Sat = satisfaction, Pref = preferred retirement age, Mot = motivation to continue to work; *p < .05, **p < .01, ^ap < .001

HR Bundles: Development, Maintenance, Utilization, and Accommodative HR Practices

Hypothesis 1 (HR practices can be bundled into development, utilization, maintenance, and accommodative HR practices) is supported. Results of the Multigroup CFA (see Table 6.3) revealed that a four-factor model had a good fit for all three age groups. In Model 0, the one-, three- and four-factor model is fitted for all three age groups. We then tested models in which factor loadings (Model 1), error variances (Model 2), and factor covariances (Model 3) were subsequently set invariant across the three age groups. The chi-square values were high (normally signifying a bad fit) in all models, but this may be a consequence of the large number of observations in this study. Therefore, we followed Bollen and Long (1993) as well as Hu and Bentler's (1998) recommendation by using multiple indices of fit, including the Comparative Fit Index (CFI), the Non-Normed Fit Index (NNFI), the Goodness of Fit Index (GFI) (ideally all three would have values $\geq .90$), and the Root Mean Square Error of Approximation (RMSEA) (preferably .08 or lower) (Byrne, 2001). These fit indices confirmed a poor fit in the one-factor model but indicated a good fit in the three- and four- factor models. Further, the four-factor model was significantly better than the three-factor model ($\Delta\chi^2(3) = 19.58, p < .001$). The χ^2 difference relative to the change in the number of *df* was not statistically significant when factor loadings, error variances or factor covariances were set invariant across the three age groups. Furthermore, the other fit indices showed that these parameters were highly similar for all three age groups. This suggests that the four-factor structure of HR practices fits the data well and is robust or invariant across the age range. Additionally, all modification indices in this model are lower than 16, suggesting that this model is a good model with little room for improvement (Byrne, 2001). Thus, Hypothesis 1 is supported.

Table 6.3. Multigroup CFA testing the one-, three and four-factor model of HR practices across the three age groups

Model	χ^2	df	CFI	NNFI	GFI	RMSEA	Chi-square difference test	
							$\Delta\chi^2$	Δdf
<i>One-factor model</i>								
M0	1015.26***	567	.87	.85	.87	.07		
M1 (factor loadings equal)	1048.38***	607	.87	.86	.87	.06	33.12	40
M2 (plus error variances equal)	1056.26***	649	.88	.88	.87	.06	41.00	82
<i>Three-factor model</i>								
M0	864.52***	558	.93	.92	.90	.05		
M1 (factor loadings equal)	887.30***	594	.94	.93	.90	.04	22.78	36
M2 (plus error variances equal)	896.23***	636	.94	.94	.90	.04	31.71	78
M3 (plus factor covariances equal)	903.41***	648	.94	.94	.90	.04	38.89	90
<i>Four-factor model</i>								
M0	839.55***	549	.94	.93	.90	.05		
M1 (factor loadings equal)	861.17***	583	.94	.94	.90	.04	21.62	34
M2 (plus error variances equal)	869.35***	625	.95	.95	.90	.04	29.80	76
M3 (plus factor covariances equal)	883.83***	645	.95	.95	.90	.04	44.28	96

Note. GFI = Goodness of Fit Index; NNFI = Non-Normed Fit Index; RSMEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; *** = $p < .001$

The Perceived Availability of HR Bundles and Worker Outcomes

Tables 6.4, 6.5, and 6.6 report the results of the regression analyses with the perceived availability of different bundles of HR practices as predictors of commitment, satisfaction, and motivation to continue to work. These results reveal that Hypothesis 2 (development, maintenance and utilization HR bundles are positively related to worker outcomes) is supported for the association of the perceived availability of development HR practices with commitment and satisfaction. Further, Hypothesis 3 (the perceived availability of development, maintenance, and utilization HR practices is indirectly positively related to motivation to continue to work, through job satisfaction and affective commitment) is supported for affective commitment. Hence, the perceived availability of development HR practices is positively related to motivation to continue to work, through affective commitment.

Table 6.4. Results of the regression analyses with the perceived availability of HR bundles and their interaction effects with age, health and future time perspective as predictors of commitment

	Aging = Calendar age			Aging = Health			Aging = FTP		
	β	F	R^2	β	F	R^2	β	F	R^2
1) <i>Aging and HR bundles</i>		218.31***	.67		214.56***	.66		215.63***	.66
Aging	.07**			.01			-.04		
PA Development HR	.07*			.06*			.06*		
PA Maintenance HR	.00			.01			.01		
PA Utilization HR	.04			.04			.04		
PA Accommodative HR	-.01			.00			.00		
2) <i>Interaction effects</i>		130.91***	.67		128.45***	.66		130.18***	.67
Aging * PA Development HR	-.02			.01			.03		
Aging * PA Maintenance HR	-.03			.00			.04		
Aging * PA Utilization HR	.01			.02			-.01		
Aging * PA Accommodative HR	.03			-.04			-.05#		

Note. PA = perceived availability, #p<.10, *p < .05, **p < .01, ***p < .001

Gender, management position, part of the organization, educational level and commitment at Time 1 were controlled for in these analyses

Table 6.5. Results of the regression analyses with the perceived availability of HR bundles and their interaction effects with age, health, and future time perspective as predictors of satisfaction

	Aging = Calendar age			Aging = Health			Aging = FTP		
	β	F	R^2	β	F	R^2	β	F	R^2
1) <i>Aging and HR bundles</i>		82.12***	.47		84.41***	.48		82.12***	.47
Aging	-.00			.09**			.00		
PA Development HR	.09*			.09*			.09*		
PA Maintenance HR	.03			.03			.03		
PA Utilization HR	.02			.01			.02		
PA Accommodative HR	-.03			-.04			-.03		
2) <i>Interaction effects</i>		52.30***	.47		54.64***	.48		52.39***	.48
Aging * PA Development HR	-.03			.01			.02		
Aging * PA Maintenance HR	-.01			-.06			.01		
Aging * PA Utilization HR	-.02			.01			-.00		
Aging * PA Accommodative HR	.04			-.04			-.05		

Note. PA = perceived availability, #p<.10, *p < .05, **p < .01, ***p < .001

Gender, management position, part of the organization, educational level and satisfaction at Time 1 were controlled for in these analyses

Table 6.6. Results of the regression analyses with the perceived availability of HR bundles and their interaction effects with age, health, and future time perspective as predictors of motivation to continue to work

	Aging = Calendar age			Aging = Health			Aging = FTP		
	β	F	R^2	β	F	R^2	β	F	R^2
1) <i>Aging and HR bundles</i>		17.20***	.17		17.60***	.18		19.44***	.19
Aging	-.10**			.11**			.17***		
PA Development HR	.08			.08			.06		
PA Maintenance HR	-.07			-.07			-.07		
PA Utilization HR	-.04			-.05			-.04		
PA Accommodative HR	.06			.04			.06		
2) <i>Interaction effects</i>		11.65***	.18		11.65***	.18		13.02***	.19
Aging * PA Development HR	.02			-.04			-.01		
Aging * PA Maintenance HR	.02			-.00			.02		
Aging * PA Utilization HR	-.07			.01			.04		
Aging * PA Accommodative HR	.02			.02			-.04		
3) <i>Work-related attitudes</i>		11.73***	.20		11.41***	.20		12.80***	.22
Job satisfaction	.07			.07			.06		
Affective commitment	.14**			.12**			.13**		

Note. PA = perceived availability, #p<.10, *p < .05, **p < .01, ***p < .001

Gender, management position, part of the organization, educational level and preferred retirement age at Time 1 were controlled for in these analyses

The Influence of Aging

The influence of aging on motivation to continue to work. With respect to the direct effect of aging on motivation to continue to work, Table 6.6 shows that all three age-related factors were negatively related to motivation to continue to work, thus supporting Hypothesis 4. We also performed a post-hoc analysis to examine which of the age-related factors was most important. Table 6.7 reveals that the negative influence of calendar age on motivation to continue to work is mediated by health and future time perspective.

Table 6.7. Results of the regression analysis for the effects of age, health and future time perspective on motivation to continue to work

Motivation to continue to work		
	Step 1	Step 2
Age	-.10**	.03
Health		.08*
FTP		.17***
F	33.00***	26.24***
R ²	.17	.19

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, Gender, management position, part of the organization, educational level, and preferred retirement age at Time 1 were controlled for in these analyses

The influence of aging on the perceived availability of HR bundles. Table 6.8 reports the results of the regression analyses carried out with age, health, and future time perspective used as predictors of the perceived availability of the various bundles of HR practices. This table reveals that Hypotheses 5 and 6 are partially supported: the perceived availability of development HR practices increases with future time perspective and the perceived availability of accommodative HR practices increases with age. Further, this table also reveals that the perceived availability of maintenance HR practices increases with age and future time perspective, and that the perceived availability of utilization HR practices increases with age.

Table 6.8. Results of four regression analyses for the effects of age, health and future time perspective on the perceived availability of different bundles of HR practices

	Perceived availability of			
	Development HR	Maintenance HR	Utilization HR	Accommodative HR
Age	.10	.22***	.14*	.28***
Health	.03	-.04	.05	.04
FTP	.15**	.12*	.07	.10
F	4.84***	8.10***	5.69***	9.98***
R ²	.04	.07	.03	.08

Note. * $p < .05$, ** $p < .01$, *** $p < .001$, Gender, management position, part of the organization, and educational level were controlled for in these analyses

The influence of aging on the association between the perceived availability of HR bundles and worker outcomes. Tables 6.4, 6.5, and 6.6 also detail the results of the regression analyses where the interactions between aging and the perceived availability of the different bundles of HR practices were used as predictors of commitment, satisfaction, and motivation to continue to work. Here, the tables reveal that Hypothesis 8 is partially supported in terms of commitment: the association between the perceived availability of accommodative HR practices and affective commitment strengthens with a shortening future time perspective (see Figure 6.1). Hypothesis 7 is not supported; the association between the perceived availability of development HR practices and worker outcomes does not change with age.

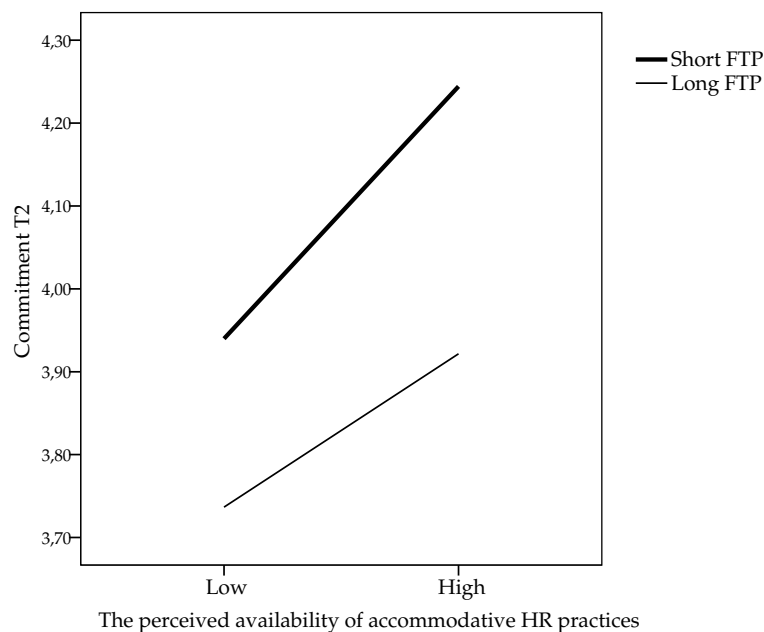


Figure 6.1. Interaction effect of the perceived availability of accommodative HR practices and future time perspective, on commitment.

Subgroup analyses. Since earlier studies (Kanfer & Ackerman, 2004; Kinnie et al., 2005; Kooij et al., in press a) suggest that the effect of aging on work-related motives, and on the utility of HR practices, is influenced by other worker characteristics, we performed further analyses to test Hypotheses 7 and 8 in different subgroups: scientific versus administrative staff, male versus female workers, and basic versus highly educated workers. These analyses (Tables 6.9, 6.10, and 6.11 in the Appendix contain the significant results) reveal that Hypothesis 7 is partly supported among scientific staff: the association between the perceived availability of development HR practices and their commitment weakens with a shortening future time perspective. However, contrary to Hypothesis 7, the association between the perceived availability of development HR practices and female workers' motivation to continue to work strengthens with failing health.

Further, Hypothesis 8 is supported with respect to age, in terms of the commitment and satisfaction of scientific staff, the commitment of male workers, and the satisfaction of highly educated workers: the association of the perceived availability of accommodative HR practices with satisfaction and commitment strengthens with age. Contrary to this hypothesis, however, the association between the perceived availability of accommodative HR practices and the satisfaction of workers with a more basic education weakens with age. Further, Hypothesis 8 is supported with respect to health, in terms of the satisfaction of male workers: the association between the perceived availability of accommodative HR practices and their satisfaction strengthens with failing health. Finally, Hypothesis 8 is also supported with respect to future time perspective, in terms of the satisfaction of scientific staff, the satisfaction and commitment of male workers, and the satisfaction of highly educated workers: the association of the perceived availability of accommodative HR practices with satisfaction and commitment strengthens with a shortening future time perspective (see Figures 6.2, 6.3, and 6.4).

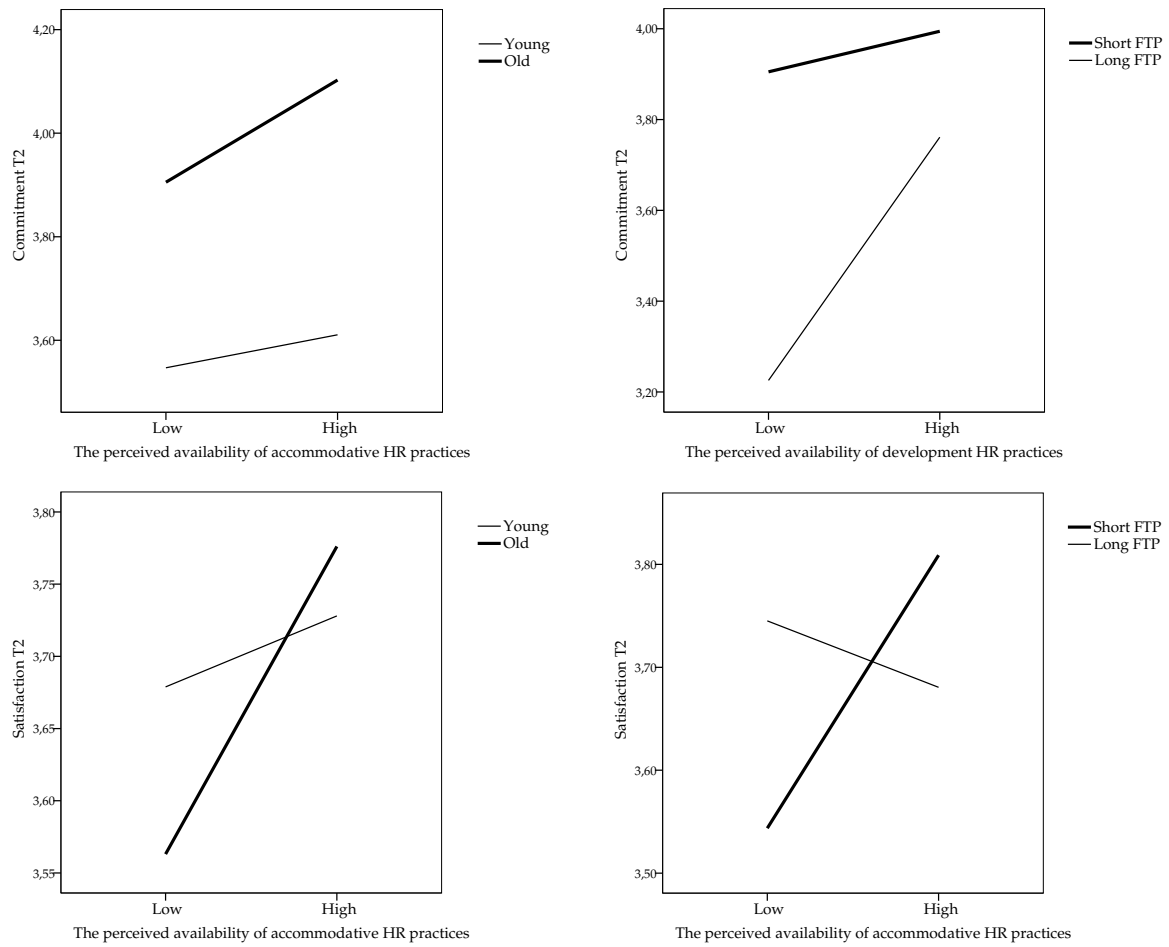


Figure 6.2a, b, c, and d. Interaction effects of the perceived availability of accommodative and development HR practices and age and future time perspective on the commitment and satisfaction of scientific staff.

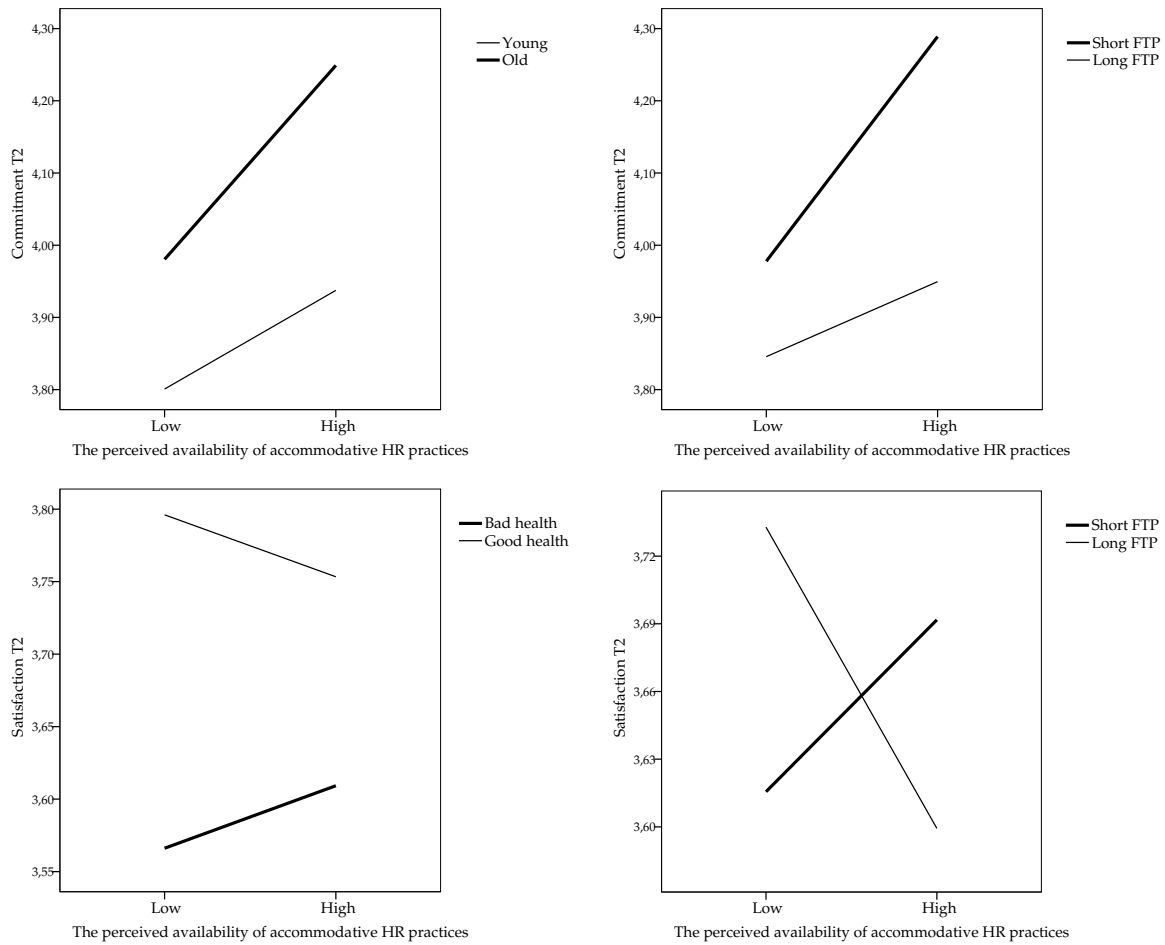


Figure 6.3a, b, c, and d. Interaction effects of the perceived availability of accommodative HR practices and age, health, and future time perspective on the commitment and satisfaction of male workers.

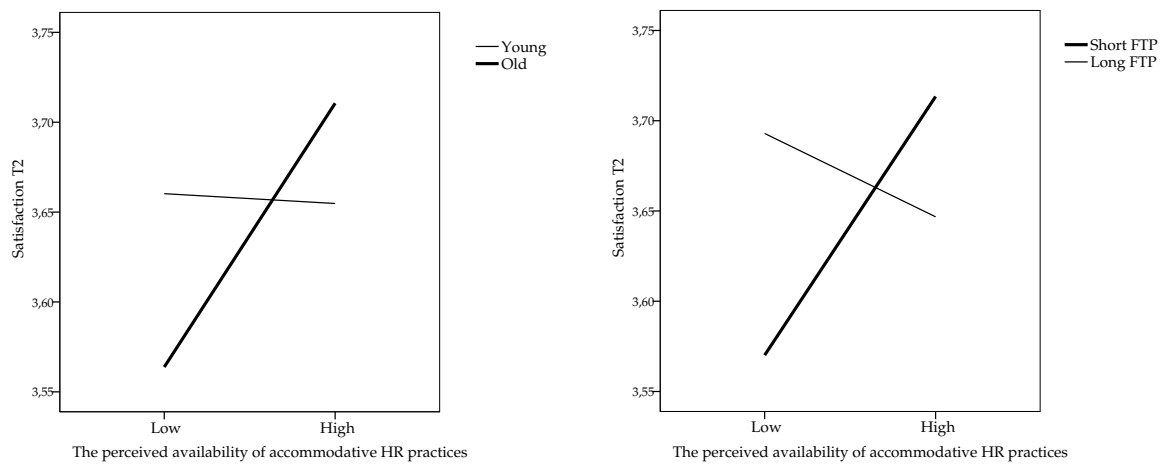


Figure 6.4a and b. Interaction effects of the perceived availability of accommodative HR practices and age and future time perspective on the satisfaction of higher educated workers.

6.4 Discussion

In this study, we allocated high commitment HR practices and age-related HR practices to four HR bundles, and tested theory-based hypotheses on the effects of the perceived availability of these HR bundles on worker outcomes as employees age, using a longitudinal research design.

HR bundles. We found that age-related HR practices, such as reduced workload, and high commitment HR practices, such as training, could indeed be categorized into four bundles, based on the four lifespan development goals described by SOC theory (Baltes et al., 1999): i) *development* HR practices, such as career planning, help individual workers to achieve higher levels of functioning; ii) *maintenance* HR practices, such as ergonomic adjustments, help individual workers to maintain their current levels of functioning in the face of new challenges; iii) *utilization* HR practices, such as a change in job characteristics, help individual workers to return to previous functioning levels after a loss; and iv) *accommodative* HR practices, such as additional leave, help individual workers to function adequately at lower levels when maintenance or recovery is no longer possible.

The perceived availability of HR bundles and worker outcomes. We found that the perceived availability of development HR practices has a direct positive effect on affective commitment and job satisfaction, and an indirect positive effect on motivation to continue to work through affective commitment. The other HR bundles had no effect on worker outcomes at all. These results suggest that, whereas maintenance, utilization, and accommodative HR practices may not be experienced as a personalized commitment or investment by the organization, development HR practices can in general be considered as high commitment HR practices.

The influence of aging on motivation to continue to work. In line with our hypotheses, we found that age, poor health, and a short future time perspective all have negative effects on motivation to continue to work. However, future time perspective and health were found to mediate the effect of age on motivation to continue to work. Thus, the influence of calendar age on motivation to continue to work is due to an age-related decline in health and a shortening of future time perspective. These findings have implications for the role of age and aging in theoretical models; maybe calendar age should be seen as a proxy for age-related processes, which influences worker outcomes indirectly (Kanfer & Ackerman, 2004). Health and future time perspective, on the other hand, were found to have distinct effects on the motivation to continue to work. This was also suggested in an earlier study (Kooij et al., 2008) in which it was found that declining health has a negative effect on the self-concept, and a positive effect on the retirement decision; and that a shorter time perspective has a negative effect on the motivation to act and perform, and on

the utility of effort. These results also stress the importance of distinguishing among the various conceptualizations and operationalizations of aging.

The influence of aging on the perceived availability of HR bundles. As expected, we found that the perceived availability of accommodative HR practices increases with age, and that the perceived availability of development HR practices increases with future time perspective. These age-related changes in the perceived availability of HR practices reflect the preferences of older workers who search for opportunities to accommodate themselves. Similarly, these changes reflect the preferences of workers with a longer future time perspective, who search for opportunities to develop themselves because they expect to still benefit from these longer term investments. As Carstensen, Isaacowitz, and Charles (1999) argue, when time is perceived as expansive, long-term goals are chosen over others because they optimize future possibilities. These findings suggest that accommodative HR practices are more, and development HR practices less, important for older workers with a shorter time perspective, supporting the idea that the goal focus of older workers shifts from growth to loss regulation.

Although we particularly expected development and accommodative HR practices to change with aging, we found that the perceived availability of maintenance and utilization HR practices also increases with age. This supports the proposition within SOC theory that resources for maintenance (maintenance HR practices), recovery (utilization HR practices), and regulation of loss (accommodative HR practices) increase with age. Further, we found that the perceived availability of maintenance HR practices increases with future time perspective. A possible explanation is that workers with a lengthy future time perspective see a long future ahead of them in which they want to cope with and control age-related challenges, and therefore search out opportunities offered by the company which can help them achieve this. Thus, it would seem that the HR bundles identified represent a form of continuum going from growth to decline (from development, through maintenance and then utilization, to accommodation). The HR practices at the decline-end of the continuum are elicited by age, whereas the HR practices at the growth-end are elicited by a lengthy future time perspective. These findings also support the distinct effects of aging.

The influence of aging on the association between the perceived availability of HR bundles and worker outcomes. In line with our hypotheses, we found that the association between the perceived availability of accommodative HR practices and commitment strengthens with a shortening future time perspective. This suggests that accommodative HR practices have greater influence on the commitment of (generally older) workers with a short future time perspective than on (usually younger) workers with a long future time perspective. However, our other hypotheses on

the age-related changes in the effects of HR practices on worker outcomes were not supported. In general, it seems that the utility of HR practices does not change with age, health, or future time perspective. Another possible explanation is that the HR practices measured in this study were not that appropriate for eliciting older worker outcomes since they were not tailored to older workers. Given that Armstrong-Stassen and Ursel (2009) only found an indirect association between training HR practices tailored to older workers and their intention to remain in the organization through perceived organizational support, more research is needed to identify appropriate HR practices for older workers. Finally, the influence of aging on the effects of HR bundles may differ for workers in different subgroups and the general analyses could have averaged out or disguised such effects.

The influence of aging on the association between the perceived availability of HR bundles and worker outcomes for different subgroups. The results of the subgroup analyses were remarkable: we found that our hypotheses were only supported for male workers, the more highly educated workers, and scientific staff (who were almost all highly educated). More specifically, the association of accommodative HR practices with affective commitment and job satisfaction strengthens with age and with a shortening future time perspective among highly educated scientific and male workers. A possible explanation is that the lifespan theories on which we based our hypotheses are more focused on highly educated male workers and, as such, are biased. In a similar vein, a meta-analysis by Kooij et al. (in press a) only found the expected age-related shift from growth towards security motives among white collar (presumably well educated) workers.

Another possible explanation is that the university where our study was conducted has adjusted their HR practices to meet the needs of highly educated scientific and male workers, who might be viewed as the university's core employees. This receives some support by the fact that none of the HR practices were found to have a positive effect on the work-related attitudes of less-educated administrative and female workers. Similarly, Lepak and Snell (2002) found that core employees are associated with a different set of HR practices than other employees because of their strategic value and uniqueness. A final remark on these findings is that although the effect of accommodative HR practices strengthens with age, the effect of development HR practices does not change with age, revealing that development HR practices remain important for older workers.

Further, the analyses revealed some other interesting results concerning the subgroups. Although we found that the perceived availability of accommodative HR practices have no effect on the work-related attitudes of the overall sample, we found that the perceived availability of accommodative HR practices does have a negative effect on the job satisfaction of workers with

a more basic education, and that this negative relationship strengthens with age. A possible explanation is that older, lower educated workers do not want to be accommodated, but prefer development HR practices so that they can advance to higher, physically less-demanding jobs. Similarly, Kooij et al. (in press a) found that the growth motives of blue-collar workers increase with age. Another explanation is that less educated workers cannot live on the lower salaries which often accompany some accommodative HR practices, such as a demotion.

Limitations

We need to recognize some important limitations in this research. Firstly, although the bundling of HR practices based on the worker characteristic of perceived goals is innovative, the distinction between the different bundles of HR practices is somewhat ambiguous. As Boselie et al. (2005) noted, there is no accepted theory for classifying various practices into different bundles or categories. So, as with other HR categorizations, one could argue that some HR practices fit more than one bundle. For example, while Zaleska and de Menezes' (2007) operationalization of development practices - as training received, development opportunities, and career management - was similar to our operationalization, Kuvaas (2008) operationalized developmental HR practices as career development, training opportunities, *and performance appraisal*. Despite these uncertainties, since all the modification indices of the CFA were less than 16, we believe that the four HR bundles do represent the best fitting model.

Second, although we did find that age, future time perspective and the control variables (i.e., gender, educational level, management position, and part of the organization) influence the perceived availability of HR bundles to some extent, there was still a very high percentage of unexplained variance (ranging from 92% - 97%) in the perceived availability of the HR bundles. Although the availability of some of the accommodative HR practices in the university is dependent upon age, most of the other HR practices are equally available to all employees. Future research could examine this variation in the perceived availability of HR practices. Alternative predictors of the perceived availability of HR practices are the actual HR policies, motives, and supervisor values and support (Liao, Toya, Lepak, & Hong, 2009; Watson, Maxwell, & Farquharson, 2007).

Third, this study has several methodological shortcomings. Although studies on the effects of job demands and job control on job strain reveal that one year seems to be the typical time lag (De Lange, Taris, Kompier, Houtman, & Bongers, 2003), it is possible that a shorter or longer time period is more appropriate when examining the causal effects of HR practices. Further, although the measurement of the predictor and criterion variables were separated by a time

interval, the data were collected from a single source (i.e., employees) using self-reporting, which might lead to common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, since this study focuses on employees' perceptions of HR practices and their work-related outcomes, it is not feasible to obtain measures of these constructs from alternative sources. Furthermore, as was also found by Spector (2006), using a self-report methodology was no guarantee of finding significant results in this study. Finally, our measurement of HR practices might be considered questionable. We deliberately measured the availability of HR practices with an objective yes/no answer scale to reduce confounding with the dependent variables (particularly with satisfaction) (Wright, Gardner, Moynihan, Park, Gerhard, & Delery, 2001). Nevertheless, five-point Likert scales (ranging from strongly disagree to strongly agree) are more common when measuring HR practices at the individual level (Kooij et al., in press b).

Despite these limitations, we would like to suggest several important theoretical and practical implications.

Theoretical Implications and Future Research

This study aims to contribute to the literature on high commitment HR practices and lifespan development in several respects. First of all, by adding age-related HR practices to the list of high commitment HR practices, and then categorizing these HR practices into HR bundles, we aimed to reinvigorate the case for bundling HR practices (see also Toh et al., 2008). Rather than bundling HR practices according to an organizational logic (MacDuffie, 1995; Lepak & Snell, 2002) or HR function (Bailey, Berg, & Sandy, 2001), we bundled our HR practices according to a worker-specific characteristic, namely perceived goals. Other worker-specific characteristics that we did not consider, such as being a parent of young children, might also be relevant.

Second, we add to the literature on high commitment HR practices by demonstrating that the perceived availability of such practices aimed at development has an impact on affective commitment and job satisfaction over time (i.e., 12 months later). Unfortunately, there are only a few comparable studies (e.g., Liao et al., 2009; Morris, Lydka, & O'Creevy, 1993) that examine the associations between high commitment HR practices and employee outcomes at the individual level using a longitudinal design. Thus, more longitudinal studies are needed to demonstrate that HR practices do influence individual worker outcomes.

A third contribution to the HR literature is that our findings support the contingency perspective (Delery & Doty, 1996). We found that although accommodative HR practices are not generally considered as high commitment HR practices, these HR practices do increase the affective commitment and job satisfaction of older highly educated scientific and male workers.

This finding, that different bundles of HR practices can be viewed as high commitment HR practices for different groups of employees, challenges the universalistic perspective (Pfeffer, 1994), which argues that the same HR practices will elicit the same employee outcomes irrespective of individual worker characteristics, and supports a contingency perspective that takes individual worker characteristics, such as age, into account.

Fourthly, we have added to the HR literature on aging at work by testing whether the HR practices proposed as suitable for older workers are indeed more effective in eliciting positive worker outcomes among older workers. We found this to be the case for accommodative HR practices among certain subgroups, but not for maintenance, utilization, and development HR practices. However, the positive association between the perceived availability of development HR practices and satisfaction and commitment does not weaken with age, suggesting that these HR practices are still important in determining older workers' work-related attitudes and, thus, their motivation to continue to work (see also Armstrong-Stassen & Ursel, 2009). However, since none of the HR bundles investigated has a direct effect on motivation to continue to work in general, and neither does this effect increase with age, more research is needed to uncover HR practices and mechanisms through which older workers become motivated to continue to work.

Fifthly, we have suggested a theoretical rationale and underlying mechanism that could explain why certain HR practices are more beneficial for older workers, while others are not. That is, because of losses in old age and a shortening future time perspective, goal focus and motives are likely to shift towards regulation of loss as employees age. This increases the utility of HR practices that help individual workers to function adequately at lower levels when recovery is no longer possible. Thus, the age-related regulating processes proposed by lifespan theories are also to some extent relevant to coping with losses in the workplace (see also Abraham & Hansson, 1995). However, these age-related regulation processes only seem to apply to highly educated and male workers, suggesting that lifespan theories need to be broadened to include the regulation processes that apply to other types of workers, such as lower educated and female workers.

Finally, we have added to research on aging at work in general, by illustrating the importance of distinguishing among various conceptualizations of aging in the work setting. As proposed by De Lange et al. (2006), Kanfer and Ackerman (2004), and Sterns and Miklos (1995), we found different effects for different age-related factors. Essentially, calendar age is not the same as aging. Furthermore, our findings have implications for the positioning of age and aging in theoretical models; calendar age has direct effects on worker outcomes, but may also serve as a proxy for age-related processes that influence worker outcomes (Kanfer & Ackerman, 2004).

Practical Implications

Our results reveal that employees' perceptions of the availability of HR practices are relevant if organizations want to increase positive work-related attitudes. In general, the perceived availability of development HR practices, such as training, has a positive effect on affective commitment, job satisfaction, and motivation to continue to work. Further, with respect to the effects of aging, our findings provide support for the suggestion that organizations should tailor HR practices to workers in different age groups. For example, HR practitioners should offer their older employees accommodative HR practices, such as additional leave, since these HR practices seem to foster positive worker outcomes. The perceived availability of development HR practices is equally important for the work-related attitudes of all employees. Therefore, HR managers should ensure the equal application of development HR practices to workers of all ages in their organization. While older workers might need accommodative HR practices to cope with age-related losses, this study reveals that this does not mean that they no longer desire development HR practices.

6.5 References

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Appendix

Table 6.9. Significant results for the regression analyses with the perceived availability of HR bundles and their interaction effects with age and future time perspective as predictors of commitment and satisfaction of scientific ($N = 287$) / administrative personnel ($N = 375$)

Commitment	Aging = Calendar age		Aging = FTP	
	β	R^2	β	R^2
<i>1) Aging and HR bundles</i>		.67 / .65		.67 / .65
Aging	.07 / .04		-.05 / -.02	
PA Development HR	.10* / .04		.10* / .04	
PA Maintenance HR	-.03 / .01		-.04 / .02	
PA Utilization HR	.00 / .07		.00 / .07	
PA Accommodative HR	.00 / -.03		.02 / -.03	
<i>2) Interaction effects</i>		.68 / .65		.68 / .65
Aging * PA Development HR	-.05 / .03		.08* / -.03	
Aging * PA Maintenance HR	-.07# / .01		.03 / .03	
Aging * PA Utilization HR	-.01 / .01		-.02 / .01	
Aging * PA Accommodative HR	.12** / -.05		-.07 / -.04	
Satisfaction				
<i>1) Aging and HR bundles</i>		.46 / .47		.46 / .47
Aging	-.01 / .02		.01 / -.01	
PA Development HR	.12* / .05		.12* / .06	
PA Maintenance HR	-.01 / .06		-.01 / .06	
PA Utilization HR	.01 / .02		.01 / .02	
PA Accommodative HR	-.01 / -.03		-.02 / -.03	
<i>2) Interaction effects</i>		.47 / .48		.47 / .47
Aging * PA Development HR	.01 / -.04		.02 / .01	
Aging * PA Maintenance HR	.00 / -.04		-.02 / .05	
Aging * PA Utilization HR	-.04 / -.00		.00 / .00	
Aging * PA Accommodative HR	.10# / -.03		-.10# / -.01	

Note. PA = perceived availability, # $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Gender, management position, part of the organization, educational level and commitment or satisfaction at Time 1 were controlled for in these analyses

Table 6.10. Significant results for the regression analyses with the perceived availability of HR bundles and their interaction effects with age, health and future time perspective as predictors of commitment and satisfaction of male ($N = 332$) / female workers ($N = 330$)

Commitment	Aging = Calendar age		Aging = FTP	
	β	R^2	β	R^2
1) <i>Aging and HR bundles</i>		.67 / .67		.67 / .66
Aging	.04 / .10**		.01 / -.08*	
PA Development HR	.10* / .04		.10* / .03	
PA Maintenance HR	.04 / -.03		.04 / -.02	
PA Utilization HR	.01 / .07		.01 / .07	
PA Accommodative HR	.00 / -.02		.01 / -.01	
2) <i>Interaction effects</i>		.68 / .67		.68 / .67
Aging * PA Development HR	-.01 / -.04		.01 / .05	
Aging * PA Maintenance HR	-.05 / -.05		.07 / .02	
Aging * PA Utilization HR	-.01 / .05		-.02 / -.03	
Aging * PA Accommodative HR	.09* / -.03		-.10* / .01	

Satisfaction	Aging = Health		Aging = FTP	
	β	R^2	β	R^2
1) <i>Aging and HR bundles</i>		.51 / .44		.51 / .43
Aging	.06 / .11*		.02 / -.01	
PA Development HR	.08 / .09		.09 / .09	
PA Maintenance HR	.01 / .05		-.00 / .05	
PA Utilization HR	-.01 / .03		-.00 / .03	
PA Accommodative HR	-.04 / -.04		-.04 / -.03	
2) <i>Interaction effects</i>		.52 / .45		.51 / .43
Aging * PA Development HR	-.00 / .03		.00 / .05	
Aging * PA Maintenance HR	-.01 / -.13*		.02 / -.01	
Aging * PA Utilization HR	.02 / .00		.00 / -.01	
Aging * PA Accommodative HR	-.10# / .03		-.10# / .00	

Note. PA = perceived availability, # $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Gender, management position, part of the organization, educational level and commitment or satisfaction at Time 1 were controlled for in these analyses

Table 6.11. Significant results for the regression analyses with the perceived availability of HR bundles and their interaction effects with age and future time perspective as predictors of satisfaction of higher ($N = 553$) / lower educated workers ($N = 109$)

	Aging = Calendar age		Aging = FTP	
	β	R^2	β	R^2
1) <i>Aging and HR bundles</i>		.46 / .53		.46 / .53
Aging	-.01 / .03		.01 / -.05	
PA Development HR	.09* / .09		.09* / .09	
PA Maintenance HR	.01 / .09		.01 / .11	
PA Utilization HR	.01 / .02		.01 / .01	
PA Accommodative HR	.00 / -.19*		.00 / -.20*	
2) <i>Interaction effects</i>		.46 / .56		.46 / .55
Aging * PA Development HR	-.04 / .15		.04 / -.12	
Aging * PA Maintenance HR	-.03 / .05		.02 / -.03	
Aging * PA Utilization HR	-.03 / .03		.01 / -.04	
Aging * PA Accommodative HR	.08# / -.23*		-.07# / .14	

Note. PA = perceived availability, # $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Gender, management position, part of the organization, educational level and satisfaction at Time 1 were controlled for in these analyses

7

Discussion

7.1 Introduction

The overall aim of this thesis was to offer a more integrated perspective, taking insights from lifespan developmental theories as well as theories on the effects of HR practices, in explaining the work motivation of older workers. More precisely, lifespan theories were used to examine the direct influence of age on work motivation, and subsequently, theories on the effects of HR practices were used to examine what organizations can do to motivate their older workers (to *continue* to work, preferably even beyond retirement age). This thesis addresses unresolved issues stemming from earlier research in this area (see Table 7.1). More specifically, the various contributions have focused on the following key issues: 1) the conceptualization and operationalization of aging at work; 2) how age influences work-related motives; 3) the conceptualization and operationalization of HR practices for aging workers; and 4) how aging influences the relationships between HR practices and worker outcomes (i.e., job satisfaction, affective commitment, and motivation to continue to work). In this chapter, the main findings related to each key issue will be summarized and discussed in terms of their theoretical as well as their practical relevance (see, for a summary, Table 7.1).

Summary of Main Findings

Key issue 1: Conceptualization and operationalization of aging at work. The conceptualizations of Sterns and Doverspike (1989), and the further operationalizations by De Lange, Taris, Jansen, Smulders, Houtman, and Kompier (2006), were used in expanding the concept of aging at work. Besides chronological age (or calendar age), the following age-related factors have been found to be potentially relevant in relation to work motivation: 1) functional age, measured as biological age (i.e., health and physical abilities) and psychological age (i.e., cognitive abilities, such as crystallized intellectual abilities); 2) psychosocial age, measured as self perception of age (i.e., the subjective age of 'how old one feels' and one's future time perspective) and social perception of age (i.e., age norms and stereotypes); 3) organizational age, measured as organization and job tenure, career stage, and skill obsolescence; and 4) lifespan age, measured as life stage and family status.

Further, it was found that most age-related factors have a negative effect on the direction (i.e., work-related motives) and revised termination (i.e., motivation to continue to work) of work motivation. However, the underlying processes leading to the effects of each age-related factor differed. For example, calendar age had a negative influence on motivation to continue to work since it may be associated with eligibility for retirement, financially attractive exit arrangements, or reduced workloads (regardless of good health or a satisfactorily progressing career), and this

can give older workers a sense of being ‘redundant’. Age norms and stereotypes, on the other hand, had a negative influence on motivation to continue to work by influencing management decisions, resulting in limited opportunities for promotion, training, and development, which reduces the relevant skills and the employability of older workers (see Chapter 2).

Although these findings support Sterns and Doverspike’s (1989) conceptualizations of aging (including calendar age) as distinct indicators of aging with direct effects on work outcomes, in Chapter 6 it was also found that the negative effect of calendar age on motivation to continue to work is due to deteriorating health and a shortening future time perspective (although age and future time perspective are highly correlated). These findings suggest that calendar age has an indirect effect on worker outcomes through age-related processes, such as declining health and a perceived shortening of future time. As such, age is an indicator of, but not the same as, aging. To summarize, Hypothesis 1 of this thesis, that different conceptualizations and therefore operationalizations of aging have distinct effects on motivation to continue to work, is supported.

Key issue 2: The influence of age on work-related motives. Building on earlier lifespan developmental theories (e.g., SOC theory; Baltes, Staudinger, & Lindenberger, 1999; Socio-Emotional Selectivity Theory; Carstensen, 1995), the expected increase in the strength of intrinsic motives, and the decrease in the strength of growth and extrinsic motives as one ages, was confirmed (see Chapter 3). However, the strength of social and security motives did not universally change with age. Although the predicted positive relationship between age and the strength of social and security motives was not found in general, the strength of motives related to helping other people and contributing to society and of motives related to intrinsic security (i.e., job security) did increase with age. Further, the predicted positive relationship between age and the strength of social and security motives was found among certain subgroups (i.e., Baby Boomers, Traditionals, and white collar workers). Finally, in Chapter 5, it was revealed that the most important motives for older workers to continue to work are the work itself, financial rewards, social interaction, and appreciation. Overall, Hypothesis 2, that the strength of growth and extrinsic motives decrease with age, and that the strength of intrinsic, social, and security motives increase with age, was partially supported; growth and extrinsic motive strength decrease, and intrinsic motive strength increases with age, but social and security motive strength only increase with age among certain groups of workers.

Key issue 3: Conceptualization and operationalization of HR practices for aging workers. An explorative case study (Chapter 5) and confirmatory factor analysis (Chapter 6) revealed that the combined set of high commitment HR practices, such as training, and more specific age-related HR practices, such as reduced workload, can be categorized into four bundles that reflect the four

lifespan goals described in SOC theory (Baltes et al., 1999): (i) *development* HR practices, such as training, help individual workers to achieve higher levels of functioning; (ii) *maintenance* HR practices, such as ergonomic adjustments, help individual workers to maintain their current levels of functioning in the face of new challenges; (iii) *utilization* HR practices, such as enabling a second career, help individual workers to return to previous levels of functioning after a loss. By this, we refer to situations where job demands that have become unachievable for an employee are removed from the job and replaced with other job demands that *utilize* already existing, but not yet applied, individual resources. Finally, (iv) *accommodative* HR practices, such as additional leave, help individual workers to function adequately at lower levels when maintenance or recovery is no longer possible. On this basis we conclude that Hypothesis 3, that HR practices can be bundled into development, maintenance, utilization, and accommodative HR practices, is supported.

Key issue 4: The influence of aging on relationships between HR practices and worker outcomes. The first important finding was that employees' perceptions of the availability of high commitment HR practices was positively related to both affective commitment and job satisfaction. Further, it was found that this association, as expected, is moderated by age. As anticipated, the associations between the maintenance HR practices of performance management, rewards, information sharing, teamwork, and flexible work schedules and work-related attitudes strengthen with age, and the association between the HR development practice of promotion and commitment weakens with age (see Chapter 4).

Next, in Chapter 5, it was found that companies (in the construction sector) have few formalized HR policies for older workers. Nevertheless, HR managers, line managers, and employees did indicate that HR practices specifically aimed at older workers did exist within their companies. However, there were some discrepancies between managers and employees on the extent of these practices (surprisingly employees mentioned more HR practices than managers did in two of the companies investigated). Moreover, HR practices were not always implemented as intended, and not all employees were given equal access. This suggests that HR practices should be measured at the level of the individual worker (see also, Liao, Toya, Lepak, & Hong, 2009).

Another important finding was that the greater the number of utilization HR practices available within a company according to employees, the greater older workers' motivation to continue to work. Further, in companies that offered their older workers development HR practices, and more accommodative HR practices, the older workers were more willing to continue to work than those working in companies that did not offer their older workers

development HR practices, and less accommodative HR practices. Based on this, it was argued that utilization, accommodative, and development HR practices are positively associated with older workers' motivation to continue to work.

In Chapter 6, it was shown that the perceived availability of development HR practices has a direct positive effect on affective commitment and job satisfaction, and an *indirect* positive effect on motivation to continue to work through its effect on affective commitment. However, maintenance, utilization, and accommodative HR practices had no effect on worker outcomes at all. Further, as expected, it was found that the perceived availability of accommodative HR practices increases with age, and that the perceived availability of development HR practices is greater with longer future time perspectives. Additionally, in line with the hypotheses, the association between the perceived availability of accommodative HR practices and commitment was found to increase with a shortening future time perspective. In other words, (usually older) employees with a relatively short future time perspective benefit more from accommodative HR practices than (younger) employees with a longer future time perspective. Finally, subgroup analyses revealed that the association of accommodative HR practices with affective commitment and job satisfaction strengthens with age and a shortening future time perspective for highly educated and male workers but not for the other subgroups considered. Thus, Hypothesis 4, that the association between development HR practices and worker outcomes weakens, and that the association between maintenance and accommodative HR practices and worker outcomes strengthens with aging, is supported for maintenance HR practices in general and for accommodative HR practices among highly educated and male workers. The association between development HR practices and worker outcomes hardly changes with aging.

Overall, the studies of this thesis have consistently shown, using various research designs and methods that, in addition to calendar age, other age-related factors, such as future time perspective, can be considered as relevant indicators of aging at work. Furthermore, aging has been found to be an important factor that influences work motivation and the association between HR bundles and worker outcomes. As a result, the findings of this thesis have a number of theoretical and practical implications.

7.2 Theoretical Implications and Contributions

This thesis contributes to the fields of aging, work motivation, and Human Resource Management by examining the influence of aging on work motivation as well as on the relationships between HR practices and worker outcomes. The results highlight the relevance of

integrating insights from lifespan developmental theories and theories on the effects of HR practices in trying to explain the work motivation of older workers.

More specifically, the age-related regulating processes proposed by lifespan theories (i.e., SOC theory; Baltes et al., 1999, the Life Span Theory of Control; Heckhausen & Schulz, 1995, Dual-Process Model of Assimilative and Accommodative Coping, Brandtstädter, Rothermund, & Schmitz, 1998, and Socio-Emotional Selectivity Theory; Carstensen, 1995) were found to be relevant in coping with losses in the workplace, and thus useful in explaining the work motivation of older workers (see also Abraham & Hansson, 1995). This suggests that lifespan theories are applicable to the work context and can help in understanding the complexities of aging at work. However, the results also reveal that the work context (e.g., occupation and cohort) is relevant and should thus explicitly be taken into account (see also Abraham & Hansson, 1995; Wiese, Freund, & Baltes, 2002). Therefore, lifespan theories need to be extended by including relevant moderators, such as type of occupation and level of education, to make them more applicable to the work setting.

In a similar vein, the results suggest that lifespan theories have a bias toward higher educated, white collar, and male workers in the sense that the predicted age-related shift from growth towards security motives was only found for (the presumably more-highly educated) white collar workers. Furthermore, the association between the perceived availability of accommodative HR practices and work-related attitudes (i.e., job satisfaction and affective commitment) strengthened with age among the more highly educated and the male workers. This suggestion of bias (or of limited applicability) is also supported by results that showed that, contrary to expectations based on lifespan theories, the strength of growth motives increases with age among blue collar workers, and the association between the perceived availability of accommodative HR practices and work-related attitudes weakens with age among the less-educated workers. Consequently, future research on aging at work should include subgroup analyses that would enable lifespan theories to be broadened to include the regulation processes of the less educated, blue collar, and female workers. For example, workers with physically-demanding jobs seem to cope with age-related losses by allocating their resources toward growth (i.e., reaching higher levels of functioning) in order to access less strenuous jobs. Additional theoretical contributions will now be presented for each of the key issues.

Conceptualization and operationalization of aging at work. This thesis is one of the first to examine the conceptualization of aging in the work setting, and has confirmed that various conceptualizations of aging have distinct effects on work motivation (De Lange et al., 2006; Kanfer & Ackerman, 2004; Sterns & Miklos, 1995). On this basis, lifespan theories, such as SOC

theory (Baltes et al., 1999), should incorporate multiple conceptualizations of aging. As an example of where this occurs, Socio-Emotional Selectivity Theory (Carstensen, 1995) incorporates future time perspective. Further, important underlying age-related processes, such as the mediating roles of functional (i.e., health) and psychosocial age (i.e., future time perspective) in the relationship between calendar age and work motivation, were highlighted. These findings have implications for the positioning of age and aging in theoretical models: calendar age does have direct effects on worker outcomes, but it also serves as a proxy for age-related processes that influence worker outcomes (Kanfer & Ackerman, 2004). Overall, this thesis shows that there is more to aging than getting older, and emphasizes the importance of including not just calendar age but also additional age-related factors in theoretical models and empirical studies. Since the various conceptualizations of aging were found to influence the motivation to continue to work through different processes, this thesis particularly emphasizes the importance of including age-related factors, other than calendar age, in theories on work motivation.

The influence of age on work-related motives. This thesis complements work motivation theories by revealing that taxonomies that organize motives in terms of locus (i.e., intrinsic or extrinsic motives) may provide a more complete picture of the influence of aging than taxonomies that organize motives along content lines (i.e., growth, social, and security motives). As such, the research findings provide support for an age-related shift in control strategy (i.e., from an externally-oriented primary control strategy toward a self-directed secondary control strategy), as proposed by the Life Span Theory of Control (Heckhausen & Schulz, 1995) and the Dual-Process Model of Assimilative and Accommodative Coping (Brandtstädter et al., 1998).

Further, these findings support Kanfer and Ackerman's (2004) claim that modern theories of work motivation continue to focus on younger workers, or new entrants, by emphasizing intrinsic rewards related to learning and extrinsic rewards related to pay, promotion, and recognition, all of which are less important for older workers. Hence, an important suggestion for future research on aging and work motivation is to adopt a lifespan perspective on work motivation by developing better constructs and corresponding measures for motives that are appropriate across the entire lifespan.

Conceptualization and operationalization of HR practices for aging workers. The newly-developed theory-based categorization of HR practices into four HR bundles (i.e., accommodative, utilization, maintenance, and development HR practices) integrates and helps structure research into high commitment and age-related HR practices. This is a valuable step because many HR practices have been suggested in the literature as helpful in retaining older workers without there being supportive theoretical arguments available. Further, by aiming to reinvigorate the case for

bundling HR practices, this thesis also extends HR research in general because researchers are increasingly recognizing the limitations of studying HR practices in isolation and point to the importance of studying HR bundles in a particular context (Toh, Morgeson, & Campion, 2008). Rather than bundling HR practices according to an organizational logic (MacDuffie, 1995; Lepak & Snell, 2002) or HR function (Bailey, Berg, & Sandy, 2001), here the HR practices were bundled according to the worker-specific characteristic of perceived goals. Since this thesis argues that HR practices should be measured at the level of the individual worker, and the perceptions of the goals of HR practices were found to differ for employees and managers, theoretical models and future empirical studies on the effects of HR practices should consider following our lead and bundling HR practices according to worker-specific characteristics.

The influence of aging on relationships between HR practices and worker outcomes. In line with HR literature in general, it was confirmed that employees' perceptions of HR practices do influence their job satisfaction and affective commitment over time. These findings are in line with social exchange theory (Blau, 1964; Eisenberger, Huntington, Hutchison, & Sowa, 1986) and signaling theory (Casper & Harris, 2008; Ostroff & Bowen, 2000) which suggest that employees view HR practices as a personalized commitment to them, an investment in them, and as recognition of their contributions - which they then reciprocate through positive attitudes. Only a few other published studies have examined the association between employees' experiences or perceptions of HR practices and their work-related attitudes using a longitudinal research design (e.g., Liao et al., 2009; Morris, Lydka, & O'Creevy, 1993).

Next, the positive causal association found between high commitment HR practices and work-related attitudes provides additional insights into the complex relationship between HR practices and organizational performance as addressed by Boselie, Dietz, and Boon (2005) among others. Our findings suggest that theoretical models and future empirical research in this field should incorporate employee perceptions of HR practices rather than merely studying the association between HR practices and employee behavior at the organizational level (Den Hartog et al., 2004; Guest, 1999; Kinnie, Hutchinson, Purcell, Rayton, & Swart, 2005; Wright & Boswell, 2002).

Further, since age was found to influence the association between high commitment HR practices and work-related attitudes, one could question the supposed universality of certain high commitment HR practices. Wood and de Menezes (1998) define high commitment HR practices as those that are aimed at eliciting a strong commitment to the organization, and at creating conditions in which employees will become highly involved in the organization and identify with its overall goals. Although none of the accommodative HR practices are considered high

commitment HR practices in the literature (e.g., Gould-Williams, 2004), our research found that this bundle of practices did have a positive association with the work-related attitudes of older highly educated and male workers. Thus, any of the various bundles of HR practices may well fit within the definition of high commitment HR practices for specific groups of employees. This implication challenges the universalistic perspective (Pfeffer, 1994), which proposes that specific HR practices will elicit similar employee outcomes irrespective of individual worker characteristics, and adds support to the contingency perspective that takes individual worker characteristics, such as age-related factors and type of job, into account (Delery & Doty, 1996; Guest, 1999).

This thesis also has some implications for the measurement of HR practices. The meta-analysis in Chapter 4 revealed that somewhat subjective Likert scales are commonly used to measure the extent to which employees *experience* HR practices at the individual level. However, in the longitudinal study reported in Chapter 6, HR practices were measured more objectively by asking as to their *availability* (yes, no, or don't know). Although the more subjective rating scales result in stronger associations between HR practices and work-related attitudes at the individual worker level than the more objective rating scales (Wright, Gardner, Moynihan, Park, Gerhard, & Delery, 2001), development HR practices were found to be significantly related to work-related attitudes through the latter approach. In other words, both measures of HR practices reveal effects of HR practices. Future research should also measure the perceived availability of the four HR bundles with a Likert scale.

Additionally, the HR literature on aging at work has been extended by testing which HR practices are most effective in eliciting positive work-related attitudes among older workers, and by offering a theoretical rationale that might explain why these HR practices are more beneficial for older workers. The argument is that losses in old age and a shortening future time perspective will lead to a shift in one's goal focus and motives toward regulation of loss. Consequently, the utility of accommodative HR practices, ones that help older workers to function adequately at a lower level when recovery is no longer possible, increases. Since this only seems to be true for highly educated, white collar, and male workers, more research is needed to determine HR practices that are suitable for less educated, blue collar, and female workers.

Further, although lifespan theories were supported in that growth motives decrease with age, the effect of development HR practices did not weaken with age. These findings reveal that development HR practices are as important for older workers as they are for younger workers. Some scholars have even argued that HR development practices are particularly important for older workers (e.g., Armstrong-Stassen & Ursel, 2009). The findings of this thesis suggest that

although older workers do not want to 'grow' anymore, they still want to invest in training and development activities to prevent obsolescence and constriction. Future research should examine to which degree these contradictory tensions cancel each other out.

Finally, this thesis provides important insights into how organizations can motivate their older workers to continue to work, and preferably even beyond retirement age. For example, development HR practices have a positive effect on motivation to continue to work through affective commitment (see also Armstrong-Stassen & Ursel, 2009). Although more research is needed on which specific HR practices can best motivate older workers to continue to work, this finding reveals that certain bundles of HR practices can contribute to motivation to continue to work.

7.3 Practical Implications

This thesis has important practical implications. Firstly, since it has been concluded that calendar age is merely one indicator of a range of age-related factors that can influence worker outcomes directly or indirectly, organizations should not only use this factor to determine eligibility for, particularly accommodative, HR practices. Given that other age-related factors, such as future time perspective, might have different effects, organizations should also take these age-related factors into account. For example, organizations could attempt to lengthen older workers' time perspective by specifically outlining their future within the company (see also, Carstensen, Isaacowitz, & Charles, 1999). In this way, organizations can motivate their older workers to remain at work.

Second, since the strength of motives related to helping people, undertaking interesting work, autonomy, and the accomplishment of worthwhile tasks increase with age, older workers' jobs should be redesigned to include these job characteristics, for example by adding a mentoring role (see also Armstrong-Stassen, 2008; Paul & Townsend, 1993). Furthermore, although the strength of motives related to development and challenge decrease with age, motives related to the use of skills and achievement are more important for older workers than their younger colleagues. These findings contradict the stereotypical managerial view of older workers - that older workers are unwilling or unable to learn new skills (Greller, & Simpson, 1999; Sterns & Miklos, 1995). So, rather than simply offering older workers limited opportunities for training and development (Greller & Simpson, 1999), managers should seek out interesting jobs for older workers in which they can accomplish worthwhile tasks and are optimally 'utilized'.

Third, although official HR policies for older workers hardly existed in the companies studied in the case study, both employees and managers were able to mention several HR practices that

were appropriate for older workers and that were practiced. HR managers should document any such good HR practices to ensure they become part of the official structured HR policy, as this would help line managers and older workers to think more positively about the future of older workers within the company. Furthermore, employees and managers were able to distinguish four approaches toward older workers, which are reflected in the four bundles of HR practices we distinguished (i.e., developing, maintaining, utilizing, and accommodating older workers). These four approaches to, or goals of, HR practices for older workers might help HR managers to think about their own HR policy, and line managers to think about which combinations of HR practices to implement.

Finally, the results of this thesis reveal that employees' perceptions of HR practices, and particularly of those aimed at personal development, are relevant if organizations wish to increase positive worker outcomes, such as affective commitment, and thus positive worker behavior (Allen, Shore, & Griffeth, 2003). Therefore, HR managers should ensure that there is an adequate implementation and fair application (for workers of all ages) of development HR policies, such as training, in their organization. However, since the effects of other types of HR practices change with aging, line managers need to apply such HR policies discriminately, taking into account workers' ages, life stages etc. For example, line managers should consider offering their older employees maintenance and accommodative HR practices, such as flexible work schedules and additional leave, because these HR practices increase positive worker outcomes among older workers.

Table 7.1. Key issues, associated hypotheses, main findings, and theoretical and practical implications of this thesis

Key issues	Hypotheses	Main findings	Theoretical implications	Practical implications
Few studies have focused on different conceptualizations or alternative measures of aging at work.	H 1: Different conceptualizations and therefore operationalizations of aging have distinct effects on motivation to continue to work.	Supported: Age-related factors negatively influence motivation to continue to work through various processes. Future time perspective and health mediate the negative influence of calendar age.	Lifespan theories help in understanding the complexities of aging in the work setting. Different conceptualizations of age should be included in theories and empirical studies.	Organizations should use more factors than calendar age in determining worker eligibility for HR practices, and should increase workers' future time perspective by outlining their future within the company.
Few studies focus on work-related motives of older workers.	H 2: Growth and extrinsic motives weaken, and intrinsic, social, and security motives strengthen with age.	Partly supported: Growth and extrinsic motives decrease, and intrinsic motives increase with age. Social and security motives only increase with age within certain subgroups.	Motives should be redefined from a lifespan perspective.	Organizations should optimally 'utilize' older workers by redesigning their jobs, for example by adding mentoring roles, service-related tasks, and advisory functions.
The HR practices suggested as suitable for older workers lack a theoretical underpinning.	H 3: HR practices can be bundled into development, maintenance, utilizations, and accommodative ones	Supported: HR practices can be bundled into development, maintenance, utilization, and accommodative HR practices.	HR practices should be bundled based on worker-specific characteristics (e.g., perceived goals).	HR managers should document those HR practices that are used for older workers in their company, and HR and line managers should be aware of the goals of these HR practices.

Research on the association between HR practices and worker outcomes rarely focuses on age, hardly draws any insights from lifespan theories, and hardly includes accommodative HR practices.	H 4: The association between development practices and worker outcomes weakens, and the association between maintenance and accommodative HR practices and worker outcomes, strengthens with aging.	Partially supported: The association of maintenance HR practices strengthens with age and the association of accommodative HR practices with worker outcomes strengthens with age and with a shortening future time perspective among highly educated and male workers.	Different HR practices can be considered as high commitment HR practices for different worker groups (the contingency perspective). Age-related factors should be taken into account when examining the association between HR practices and worker outcomes.	HR managers should ensure that employees of all ages are encouraged to develop. Although organizations should have development HR policies that are applicable to all employees, line managers should apply other policies discriminately, taking account of workers' ages etc.
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7.4 Limitations

Before making recommendations for future research, it is important to address the limitations of the studies included in this thesis. Firstly, although the bundling of HR practices based on the worker-specific characteristic of perceived goals is innovative, the dividing lines between the different bundles of HR practices are somewhat ambiguous. As Boselie et al. (2005) noted, there is no accepted theory for classifying the various practices into different bundles or categories. So, as with other categorizations of HR practices (e.g., based on Abilities, Motivations, and Opportunities for participation; Appelbaum, Bailey, Berg, & Kalleberg, 2000), one could argue that some HR practices fit more than one bundle. For example, although Zaleska and de Menezes' (2007) operationalization of development practices (as training received, development opportunities, and career management) is similar to the operationalization of development practices in this thesis, Kuvaas (2008) operationalized developmental HR practices differently (as career development, training opportunities, and performance appraisal).

This thesis also revealed that the perceptions of, or experience with, these bundles might differ for employees and for managers. For example, HR managers seemed to view utilization HR practices more as means to accommodate older workers than to utilize their skills and knowledge (see also Taylor & Walker, 1998). In addition, other worker-specific characteristics that we did not consider, such as being a parent of young children, might, in addition to age, influence the perceived goals of HR practices. Despite this concern, the confirmatory factory analysis in Chapter 6 did indicate that our model leaves little room for improvement. Moreover, the four HR bundles were found using different methods (e.g., interviews and questionnaires). This suggests that the four HR bundles represent the best fitting model with respect to aging at work.

Second, one should note that older people tend to be under-represented in organizations because of early retirement options and health effects, and that they are therefore also likely to be under-represented in empirical studies. The *mean* ages of our samples (including the meta-analyses) ranged from 37.5 to 51.7, with the ages of the individual workers included ranging from 16 up to 77. Therefore, we think it is unlikely that the results of this thesis are biased by an overall lack of elderly workers in the samples included. Nevertheless, more research that focuses specifically on older workers that are already eligible for retirement is needed (see also Bal, De Lange, Jansen, & Van der Velde, 2008).

Third, most of the studies included in this thesis used single source self-reporting measures (either directly by using self-reporting questionnaires or indirectly by using studies that used self-report questionnaires), which might result in common method bias (Podsakoff, MacKenzie, Lee,

& Podsakoff, 2003). However, since this thesis focuses on employees' perceptions of HR practices and their work-related outcomes, it would be illogical to obtain measures of these constructs in alternative ways. Further, Spector (2006) demonstrated that self-reporting does not guarantee significant results, and that mono-method correlations are not by definition higher than multi-method correlations. Nevertheless, in this thesis, we have used multiple methods (e.g., focus groups and questionnaires), and in Chapter 6, perceptions of HR practices were measured using a 'forced choice', and the measurements of the predictor and criterion variables were separated by a lengthy time interval, minimizing the potential for common method bias (Spector, 2006).

Another limitation is that this thesis focused on subjective attitudes as the outcomes, and not on objective worker behavior. While it was proposed that development, utilization, and accommodative HR practices have positive influences on older workers' motivation to continue to work, the association between motivation to continue to work and actual retirement age is unknown. According to Feldman (1994), work-related attitudes do influence the retirement decision (see also Reitzes, Mutran & Fernandez, 1998), and several studies have found that work-related attitudes, such as satisfaction, are closely linked to subsequent performance, such as organizational citizenship behavior (e.g., Harrison, Newman, & Roth, 2006; Judge, Thoresen, Bono, & Patton, 2001; Riketta, 2008). Nevertheless, since this thesis focused on 'soft' worker outcomes, such as commitment, and not on 'hard' organization outcomes, such as performance, which might be influenced differently by HR practices and aging processes, future research should focus on the relation between the four HR bundles, motivation to continue to work and actual retirement behavior.

A final limitation of this thesis is that cohort- and age-effects were not distinguished. Given that generational groups share unique historical or social life experiences, the goals, values, and experiences of various generations of workers may differ (Kanfer & Ackerman, 2004). For example, Smola and Sutton (2002) found that the work values of Generation X'ers and Baby Boomers differed significantly: Generation X'ers were less loyal to the company, wanted to be promoted more quickly, and were less likely to feel that work should be an important part of one's life as the Baby Boomers. Such generational differences might influence work-related motives and the utility of HR practices. Therefore, in Chapter 3 of this thesis, moderator analyses were performed to differentiate age-motive relationships among cohorts. The results of these moderator analyses reveal that one's cohort significantly moderates the relationship between age and all the classes of motives. Future research should disentangle age, cohort, and time effects on

work-related motives and on the effects of HR practices through a combination of cross-sequential and time-sequential strategies (Masche & Van Dulmen, 2004).

7.5 Future Research

The findings from the studies reported in this thesis suggest several directions for future research on each key issue.

Conceptualization and operationalization of aging at work. There remains a lack of studies on the different operationalizations of aging at work in relation to work outcomes, and a systematic and concise measurement tool to measure all the conceptualizations of aging in the workplace has yet to be developed. In this thesis, calendar age, health, and future time perspective were found to have different effects on satisfaction, on affective commitment, and on motivation to continue to work. For example, good health had a positive influence on satisfaction and motivation to continue to work, but not on commitment. Future studies should examine the underlying processes leading to these effects.

Second, although this thesis offers a theoretical rationale for the changing work-related motives and the parallel change in the utility and perception of HR practices for older workers, the mechanisms (e.g., changing time perspective) are not fully examined. More empirical research is needed to explore the positioning of age and aging in theoretical models. Furthermore, the various conceptualizations of aging could have interrelated effects on motives. For example, it might be that it is particularly older adults *with* a shorter time perspective that focus on preventing further losses (Ebner, Freund, & Baltes, 2006). Similarly, Socio-Emotional Selectivity Theory suggests that the perception of gains and losses is significantly influenced by an individual's temporal framework (Carstensen et al., 1999). Therefore, when setting out to enhance the inclusion of different conceptualizations of aging in work motivation theories, future studies should examine how the various age-related factors, such as future time perspective, affect work-related motives (see also Seijts, 1998). Finally, since HR practices and positive worker outcomes might lead to an increase in future time perspective, future research should study this possible feedback loop from HR practices and worker outcomes to future time perspective (Zacher, Heusner, Schmitz, Zwierzanska, & Frese, in press).

The influence of age on work-related motives. In this field, a fruitful avenue for future research would be the development of better constructs and measures for motives that would be appropriate across the lifespan, as well as measures for emergent motives, such as generativity (see for example the Meaning of Work Scale developed by Mor-Barak, 1995), knowledge utilization, helping, and enhancing positive affect (Kanfer & Ackerman, 2004). In addition, since

generational differences influence the trajectories of work-related motives across the lifespan, motivational constructs should be adjusted to fit different generations. For example, although job security is very important for Baby Boomers (Gursoy, Maier, & Chi, 2008), Generation X'ers might settle for security in a certain occupation (i.e., employability), because Generation X'ers grew up with financial and societal insecurity (Smola & Sutton, 2002), and have learned to cope with this.

Another recommendation for future research is to examine the interactions or interchangeability among the different motives. In a recent article on death awareness (which is similar to future time perspective), Grant and Wade-Benzoni (2009) developed a theoretical model of the nature, antecedents, and consequences of death awareness at work. They distinguished two approaches toward death awareness: a) terror management research, which proposes that death awareness strengthens the self-protective motive (a desire to defend one's identity and image); and b) generativity research, which proposes that death awareness strengthens prosocial motivation (a desire to give, contribute, help, benefit, make a difference, or protect and promote the welfare of other people). In other words, these researchers propose that individuals cope with age-related losses linked to time (i.e., death awareness) by either increasing their self-protective motivation (i.e., security motives) or by increasing prosocial motivation (i.e., social motives), suggesting an interaction between aging and security and social motives. Future research should examine whether security and social motives are indeed interchangeable to deal with age-related losses.

A final suggestion for future research related to this issue is the relationship between aging and motivational processes. Recently, Barnes-Farrell and Matthews (2007) reviewed the literature on age and work motivation, and found that only a few studies directly addressed the motivational processes implied by work motivation frameworks such as expectancy theory. Expectancy theory might be particularly useful to examine the effects of age. One's expectancy motivation is determined by the extent to which an individual expects that his or her effort will lead to performance (expectancy), the degree to which an individual believes that this performance will lead to the attainment of a desired outcome (instrumentality), and the attractiveness of that outcome (valence) (Vroom, 1964). While age-related changes in goals and motives affect the valence component, and physical health and thoughts and feelings about oneself may affect the expectancy component, the instrumentality component is more context-oriented and is affected by age norms, stereotypes, and discriminatory management decisions. In this respect, we should note Steel and Konig's (2006) temporal motivational theory, which introduces the time factor into expectancy theory (and also includes gains and losses).

Conceptualization and operationalization of HR practices for aging workers. As noted in the limitations section above, the bundling of HR practices is somewhat ambiguous. For example, the HR managers in our study seemed to see utilization HR practices as more of a means to accommodate older workers than to utilize their skills and knowledge. Further, older workers, who are accommodated and utilized at the same time, seem to particularly respond to the utilization HR practices, and forget about the accommodative HR practices. Therefore, future research should replicate the distinction made between the four HR bundles in this thesis, and examine how workers of different ages experience the goals of specific HR practices, and whether these experiences are stable over time. Moreover, future research should also include employees' perceptions of managers' goals when they apply HR practices (related to supervisor trust) because Nishii, Lepak, and Schneider (2009) found that employees respond to HR practices based on what they believe about management's purpose in implementing the HR practices.

Furthermore, future research could study the interactions between the various HR bundles, and their interrelated effects on worker outcomes. For example, are older workers who experience accommodative and utilization HR practices at the same time, more motivated than older workers who only experience accommodative HR practices? In addition to the perceived availability of HR practices, usage of these practices might also be relevant (Casper & Harris, 2008). For example, in Chapter 5, it was suggested that although older workers might choose not to use certain HR practices, they still value being given the choice. Future studies should, therefore, examine how the perceived availability, the perceived offers and the usage of HR practices change with age.

The influence of aging on relationships between HR practices and worker outcomes. Although an official HR policy for older workers within their organizations might be lacking, employees and managers in our study revealed that HR practices tailored to the perceived needs of older workers do exist within companies. These HR practices may reflect a supportive climate toward older workers within the company (Bowen & Ostrof, 2004; Reichners & Schneider, 1990). Armstrong-Stassen and Schlosser (2008) highlighted the benefits of a supportive development climate for older workers: they found that the job development climate was positively related to older workers' affective commitment which, in turn, was positively related to their intention to remain with the organization. Therefore, future research should examine the antecedents and effects of a supportive climate for older workers; for example, by conducting multilevel studies to examine different climates for older workers in different departments or different organizations.

Alongside this, development HR practices were found to have an indirect effect (through affective commitment) on workers' motivation to continue to work. A possible explanation for

the lack of a direct effect is that motivation to continue to work is not a unidimensional construct (Gobeski & Beehr, 2008). Similar to Gobeski and Beehr's (2008) three types of retirement, multiple types of motivation to continue to work could be distinguished (e.g., motivation to continue with the same line of work, but in another organization; or motivation to continue to work in the same organization, but in another occupation). Future research could therefore relate the four HR bundles to different forms of motivation to continue to work.

Another possible explanation for the lack of a direct effect is that the HR practices examined in this thesis are not specifically aimed at increasing motivation to continue to work. High commitment HR practices, for example, are particularly focused on eliciting affective commitment (Wood & de Menezes, 1998). One of the HR practices found in the case study in Chapter 5 was specifically aimed at motivating employees to continue to work. This involved redesigning the jobs of older workers to include mentoring or advisory roles. Although older workers responded positively to this HR practice, we lack knowledge on the sort of job that would entice older workers to continue to work. Future research could therefore study whether older workers take an active role in shaping or crafting their own environment (Frese, Garst, & Fay, 2007), and how they craft their jobs (i.e., make physical and cognitive changes in the tasks or relational boundaries of their work; Wrzesniewski & Dutton, 2001) when they continue to work beyond retirement age. This might also be determined by the types of bridge employment available to older workers as described by Gobeski and Beehr (2009).

Finally, we found an indirect association between development HR practices and motivation to continue to work via affective commitment. Armstrong-Stassen and Ursel (2009) found a similar indirect association between HR training practices and older workers' intentions to remain in the organization through perceived organizational support. Therefore, future studies could study other possible moderating and mediating variables, such as person-job or person-organization fit, in the association between HR practices and motivation to continue to work.

Overall, this thesis offers an integrated, multi-method perspective, taking insights from lifespan developmental theories as well as theories on the effects of HR practices, in explaining the work motivation of older workers. Age-related losses result in changing work-related motives, which determine the utility of HR bundles (i.e., development, maintenance, utilization, and accommodative HR practices), and thus the association between these HR bundles and worker outcomes. However, these processes differ for different groups of workers, suggesting that a *contingency* model, including additional worker characteristics, is needed. For example, if workers with limited education in physically demanding jobs experience age-related losses in the physical

abilities required to perform their tasks, they may have little choice but to train for other jobs, which will enhance their growth motives as they age. In response, line managers should motivate these older workers by offering development HR practices. On the other hand, since the motives of better educated workers, in physically less demanding jobs, shift from growth toward security, line managers should motivate these older workers through accommodative HR practices.

As always, one hopes that one's thesis will make a difference. Hopefully, the results of this thesis will lead to changes in the preconceptions of older workers, and will inspire more theoretical as well as practical attention to HR practices and motivational issues linked to older workers.

7.6 References

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Samenvatting (summary in Dutch)

Motiveren van oudere werknemers: Een levensloopperspectief op de rol van
waargenomen personeelsinstrumenten

1 Introductie

De beroepsbevolking in westerse landen vergrijst. Door het stijgen van de levensverwachting en het dalen van het aantal geboorten is het aandeel 55-plussers in de Nederlandse beroepsbevolking gestegen van 14% in 1998 naar 19% in 2008. Aangezien de Nederlandse overheid de pensioengerechtigde leeftijd wil verhogen van 65 naar 67 jaar zal de vergrijzing van de beroepsbevolking alleen maar toenemen. Voor organisaties is het dan ook belangrijk te weten hoe zij hun oudere werknemers kunnen motiveren en behouden. Er is echter weinig onderzoek gedaan naar de motivatie om (door) te werken van oudere of ouder wordende werknemers. We weten dus niet of en hoe motivatie verandert met leeftijd en welke personeelsinstrumenten belangrijk zijn voor oudere werknemers. Dit proefschrift onderzoekt de motivatie van oudere werknemers vanuit een geïntegreerd perspectief; levenslooptheorieën worden gebruikt om de directe invloed van leeftijd op werkmotivatie te onderzoeken en theorieën over de effecten van personeelsbeleid worden gebruikt om te onderzoeken wat organisaties kunnen doen om hun oudere werknemers te motiveren om langer door te werken, liefst na de pensioengerechtigde leeftijd.

Dit proefschrift draagt bij aan eerder onderzoek door de volgende onopgeloste zaken met verschillende onderzoeksontwerpen en methoden te onderzoeken: 1) hoe kan ouder worden in relatie tot werk geconceptualiseerd en geoperationaliseerd worden, 2) hoe beïnvloedt leeftijd werkgerelateerde motieven, 3) hoe kunnen personeelsinstrumenten voor ouder wordende werknemers geconceptualiseerd en geoperationaliseerd worden en 4) hoe beïnvloedt ouder worden de relatie tussen personeelsinstrumenten en werkuitkomsten (baantevredenheid, organisatiebetrokkenheid en motivatie om door te werken).

2 Resultaten

Hoe Kan Ouder Worden in Relatie tot Werk Geconceptualiseerd en Geoperationaliseerd Worden?

Aangezien kalenderleeftijd alleen een te beperkte invulling van ouder worden in de context van werk is, hebben Sterns en Doverspike in 1989 ouder worden op het werk geconceptualiseerd als chronologische leeftijd (ofwel kalenderleeftijd), functionele leeftijd (zoals fysieke capaciteiten), psychosociale leeftijd (de zelf of sociale perceptie van leeftijd), organisatie leeftijd (bijvoorbeeld het aantal dienstjaren) en levensloopleeftijd (zoals de levensfase). In Hoofdstuk 2 zijn deze conceptualisaties van leeftijd op het werk verder geoperationaliseerd en is een literatuurstudie gedaan naar de relatie tussen deze verschillende conceptualisaties en operationalisaties van leeftijd (ofwel leeftijdsgerelateerde factoren) en motivatie om door te werken.

Uit de literatuurstudie blijkt dat de meeste leeftijdsgerelateerde factoren een negatieve invloed hebben op motivatie om door te werken. Echter, zoals verwacht, verschillen de onderliggende mechanismen waardoor deze leeftijdsgerelateerde factoren motivatie om door te werken beïnvloeden. Kalenderleeftijd heeft bijvoorbeeld een negatieve invloed op motivatie om door te werken, omdat kalenderleeftijd bepaalt wanneer een werknemer met pensioen kan gaan of in aanmerking komt voor bepaalde ouderenregelingen. Dit kan oudere werknemers het gevoel geven overbodig te zijn. Aan de andere kant beïnvloeden leeftijdsnormen en stereotypering van oudere werknemers managementbeslissingen. Dit kan resulteren in beperkte mogelijkheden voor promotie, training en ontwikkeling, waardoor de benodigde vaardigheden en de inzetbaarheid van oudere werknemers afnemen. De verschillende conceptualisaties van leeftijd (inclusief kalenderleeftijd) zijn dus aparte indicatoren van ouder worden met verschillende directe effecten op werkuitskomsten.

In Hoofdstuk 6 is de invloed van de leeftijdsgerelateerde factoren kalenderleeftijd, gezondheid en toekomstperspectief (de waargenomen resterende levensduur) op motivatie om door te werken onderzocht met een longitudinale studie. Uit deze studie blijkt dat de negatieve invloed van kalenderleeftijd op motivatie om door te werken gemedieerd wordt door een verslechterende gezondheid en een korter wordend toekomstperspectief. Deze resultaten suggereren dat leeftijd een indirecte invloed op werkuitskomsten heeft door leeftijdsgerelateerde processen zoals een verslechterende gezondheid en een korter wordend toekomstperspectief. Kalenderleeftijd is dus een indicator van, maar niet hetzelfde als 'ouder worden'. Samenvattend kan geconcludeerd worden dat verschillende conceptualisaties en dus operationalisaties van leeftijd verschillende effecten op motivatie om door te werken hebben.

Hoe Beïnvloedt Leeftijd Werkgerelateerde Motieven?

Hoofdstuk 3 beschrijft een meta-analyse van 86 studies naar de relatie tussen kalenderleeftijd en werkgerelateerde motieven. Op basis van verschillende levenslooptheorieën zijn werkgerelateerde motieven in dit hoofdstuk gecategoriseerd naar inhoud (groei, sociaal of zekerheid) en naar bron (intrinsiek of extrinsiek). Zoals voorspeld op basis van deze levenslooptheorieën toont de meta-analyse aan dat groei- en extrinsieke motieven afnemen met leeftijd en dat intrinsieke motieven toenemen met leeftijd. Motieven gerelateerd aan sociale interacties en zekerheid veranderen over het algemeen niet met leeftijd, maar de sociale motieven 'helpen van anderen' en 'bijdragen aan de maatschappij' en het zekerheidsmotief 'intrinsieke (baan)zekerheid' nemen, zoals verwacht, wel toe met leeftijd. Verder is de verwachte positieve relatie tussen leeftijd en sociale en zekerheidsmotieven wel gevonden in bepaalde subgroepen

(Baby Boomers, Traditionals en 'witte boorden' beroepen). Tot slot is in de case studie van Hoofdstuk 5 aan werknemers gevraagd wat de belangrijkste motieven zijn om door te werken. Dit zijn het werk zelf, financiën, sociale interacties en waardering. Samenvattend kan geconcludeerd worden dat groei- en extrinsieke motieven afnemen met leeftijd, dat intrinsieke motieven toenemen met leeftijd en dat motieven gerelateerd aan sociale interacties en zekerheid alleen toenemen in bepaalde subgroepen werknemers.

Hoe Kunnen Personeelsinstrumenten voor Ouder Wordende Werknemers Geconceptualiseerd en Geoperationaliseerd Worden?

In dit proefschrift zijn leeftijdsgerelateerde personeelsinstrumenten (speciaal gericht op oudere werknemers), zoals taakverlichting, en zogenaamde 'high commitment' personeelsinstrumenten (gericht op het vergroten van de betrokkenheid van werknemers), zoals training, geïntegreerd en gecategoriseerd op basis van de doelen van deze personeelsinstrumenten. Deze doelen zijn ontleend aan de eerder genoemde levenslooptheorieën. Hoofdstuk 4 beschrijft een meta-analyse van 83 studies naar de modererende invloed van leeftijd op de relatie tussen personeelsinstrumenten en tevredenheid en betrokkenheid. In dit hoofdstuk zijn twee bundels 'high commitment' personeelsinstrumenten onderscheiden; ontwikkelinstrumenten, zoals training en promotie, die werknemers helpen om hogere niveaus van functioneren te behalen en behoudinstrumenten, zoals baanveiligheid en flexibele werktijden, die werknemers helpen hun huidige niveau van functioneren te behouden als zij voor nieuwe uitdagingen komen te staan.

Vervolgens zijn in de exploratieve casestudie onder personeelsmanagers, lijnmanagers en (oudere) werknemers beschreven in Hoofdstuk 5 twee extra bundels personeelsinstrumenten geïdentificeerd: ontzie-instrumenten, zoals demotie of taakverlichting, die werknemers helpen om goed te functioneren op lagere niveaus wanneer behoud of herstel niet langer mogelijk is en benutinstrumenten, zoals horizontale baanverandering of taakverrijking, die werknemers helpen terug te keren naar hun vorige niveau van functioneren na een verlies (in fysieke capaciteiten bijvoorbeeld). Taken die de werknemer door het verlies niet meer kan uitvoeren worden uit de functie gehaald en vervangen door taken die bestaande, maar nog niet eerder gebruikte kennis en vaardigheden van de werknemer benutten. Hoofdstuk 6 bevestigt door middel van een confirmatieve factor analyse dat 'high commitment' personeelsinstrumenten en leeftijdsgerelateerde personeelsinstrumenten gecategoriseerd kunnen worden in ontwikkel-, behoud-, benut- en ontzie-instrumenten.

Hoe Beïnvloedt Ouder Worden de Relatie tussen Personeelsinstrumenten en Werkuitkomsten (Baantevredenheid, Organisatiebetrokkenheid en Motivatie om Door te Werken)?

Levenslooptheorieën voorspellen dat verliezen op latere leeftijd (bijvoorbeeld in fysieke capaciteiten) een verschuiving in doelen en motieven veroorzaken van groei naar behoud en naar reguleren van verlies. Op basis van deze theorieën wordt in dit proefschrift verwacht dat het nut of de waarde van personeelsinstrumenten verandert met leeftijd. De relatie tussen personeelsinstrumenten en werkuitskomsten zal daarom ook veranderen met leeftijd; de relatie tussen ontwikkelinstrumenten en werkuitskomsten wordt zwakker als men ouder wordt en de relatie tussen behoud en ontslag-instrumenten en werkuitskomsten wordt sterker als men ouder wordt.

Het is dus mogelijk dat bepaalde universele ‘high commitment’ personeelsinstrumenten niet geschikt zijn voor oudere werknemers, maar het kan ook zo zijn dat personeelsinstrumenten die normaal gesproken niet als ‘high commitment’ personeelsinstrumenten worden beschouwd, wel als zodanig beschouwd kunnen worden voor oudere werknemers. Leeftijdsgerelateerde personeelsinstrumenten, zoals deeltijd pensioen of taakverlichting, zijn bijvoorbeeld specifiek gericht op het behouden van oudere werknemers. Echter, weinig studies hebben de relatie tussen deze leeftijdsgerelateerde, veelal oudere werknemers ‘sparende’, personeelsinstrumenten en werkuitskomsten van oudere werknemers onderzocht. Bovendien is er in bestaand onderzoek weinig aandacht voor belangrijke inzichten uit de levenslooptpsychologie over hoe ouderen omgaan met leeftijdsgerelateerde verliezen. Tot slot kunnen door het cross-sectionele ontwerp van deze studies geen conclusies worden getrokken over de causale verbanden tussen personeelsinstrumenten en werkuitskomsten (en de invloed van ouder worden daarop).

Om in deze hiaten en beperkingen van eerder onderzoek te voorzien, onderzoekt dit proefschrift hoe de relatie tussen de vier genoemde bundels personeelsinstrumenten en werkuitskomsten verandert als werknemers ouder worden. Hoofdstuk 4 onderzoekt door middel van een meta-analyse hoe relaties tussen (ontwikkel en behoud) ‘high commitment’ personeelsinstrumenten aan de ene kant en baantevredenheid en betrokkenheid aan de andere kant veranderen met leeftijd. Uit dit hoofdstuk blijkt ten eerste dat door werknemers waargenomen ‘high commitment’ personeelsinstrumenten een positieve relatie met zowel betrokkenheid als baantevredenheid hebben. Verder toont dit hoofdstuk aan dat deze relatie verandert met leeftijd. Zoals voorspeld wordt de relatie tussen de behoudinstrumenten ‘beloning’, ‘het delen van informatie’, ‘het werken in teams’ en ‘flexibele werktijden’ en tevredenheid en betrokkenheid sterker met leeftijd, en de relatie tussen het ontwikkelinstrument ‘promotie’ en betrokkenheid zwakker met leeftijd.

In Hoofdstuk 5 is vervolgens een kwalitatieve casestudie onder werknemers, personeelsmanagers en lijnmanagers gedaan om personeelsinstrumenten voor oudere werknemers, en hun relatie met motivatie om door te werken, te onderzoeken. Uit deze casestudie blijkt dat bedrijven (in de bouwsector) nauwelijks een formeel personeelsbeleid voor oudere werknemers hebben. Desondanks geven personeelsmanagers, lijnmanagers en werknemers aan dat personeelsinstrumenten voor oudere werknemers wel bestaan binnen hun organisaties. Er is wel een aantal discrepanties tussen managers en werknemers met betrekking tot de mate waarin deze personeelsinstrumenten aanwezig zijn (zo noemen werknemers meer personeelsinstrumenten dan managers in twee van de bedrijven). Bovendien worden personeelsinstrumenten niet altijd geïmplementeerd zoals beoogd, en komen niet alle werknemers in aanmerking voor alle personeelsinstrumenten. Deze bevindingen suggereren dat personeelsinstrumenten onder individuele werknemers gemeten moeten worden.

Een ander belangrijk resultaat is dat hoe meer benutinstrumenten aanwezig zijn binnen het bedrijf volgens werknemers, hoe groter de motivatie om door te werken van oudere werknemers is. Verder zijn oudere werknemers meer gemotiveerd om door te werken in bedrijven die hun oudere werknemers ontwikkelinstrumenten en relatief meer ontzie-instrumenten aanbieden dan in bedrijven die hun oudere werknemers geen ontwikkelinstrumenten en relatief minder ontzie-instrumenten aanbieden. Op basis van deze resultaten is geconcludeerd dat benut-, ontzie- en ontwikkelinstrumenten een positieve relatie met de motivatie om door te werken van oudere werknemers hebben.

Hoofdstuk 6 test tot slot een aantal hypothesen over de relaties tussen bundels personeelsinstrumenten, werkuitkomsten en ouder worden aan de hand van een longitudinale studie met twee meetmomenten onder 662 werknemers van een Nederlandse universiteit. Deze studie laat zien dat de door werknemers waargenomen aanwezigheid van ontwikkelinstrumenten, zoals training, een direct positief effect op organisatiebetrokkenheid en baantevredenheid heeft, en een indirect positief effect op motivatie om door te werken via betrokkenheid. Behoud-, benut- en ontzie-instrumenten hebben geen effect op werkuitkomsten. Verder laat deze studie, zoals verwacht, zien dat de door werknemers waargenomen aanwezigheid van ontzie-instrumenten toeneemt met leeftijd en dat de waargenomen aanwezigheid van ontwikkelinstrumenten toeneemt met toekomstperspectief. Bovendien blijkt in overeenstemming met de hypothesen dat de relatie tussen de waargenomen aanwezigheid van ontzie-instrumenten en betrokkenheid sterker wordt met een korter wordend toekomstperspectief. Met andere woorden, (meestal oudere) werknemers met een korter toekomstperspectief profiteren meer van ontzie-instrumenten dan (meestal jongere) werknemers met een langer toekomstperspectief. Tot

slot blijkt uit subgroep analyses dat de relatie tussen ontzie-instrumenten en betrokkenheid en tevredenheid sterker wordt met leeftijd en een korter wordend toekomstperspectief onder hoger opgeleide en mannelijke werknemers, maar niet onder lager opgeleide en vrouwelijke werknemers. Samenvattend kan geconcludeerd worden dat de relatie tussen ontwikkelinstrumenten en werkuitkomsten nauwelijks verandert als werknemers ouder worden, dat de relatie tussen behoudinstrumenten en werkuitkomsten over het algemeen sterker wordt met leeftijd en dat de relatie tussen ontzie-instrumenten en werkuitkomsten sterker wordt als hoger opgeleide en mannelijke werknemers ouder worden.

3 Conclusies en Implicaties

Hoofdstuk 7 vat de resultaten van dit proefschrift samen en beschrijft de theoretische en praktische implicaties ervan. Dit proefschrift laat zien dat naast kalenderleeftijd andere leeftijdsgerelateerde factoren zoals toekomstperspectief beschouwd kunnen worden als relevante indicatoren van ouder worden op het werk. Bovendien blijkt ouder worden een belangrijke factor die zowel motivatie om door te werken als de relatie tussen bundels personeelinstrumenten en werkuitkomsten beïnvloedt. Deze conclusies hebben een aantal theoretische en praktische implicaties.

Theoretische Implicaties

Ten eerste tonen de resultaten van dit proefschrift aan dat levenslooptheorieën helpen om ‘ouder worden op het werk’ te begrijpen; processen om verliezen te reguleren die worden voorgesteld door levenslooptheorieën zijn relevant in het omgaan met verliezen op het werk en dus bruikbaar in het verklaren van de motivatie van oudere werknemers. Verder blijkt uit dit proefschrift dat verschillende conceptualisaties van leeftijd meegenomen moeten worden in theorieën en empirische studies, omdat ouder worden op het werk meer is dan alleen een (kalender)jaar erbij. Ten derde ondersteunen de resultaten van dit proefschrift een eerdere opmerking van Kanfer en Ackerman dat motivatietheorieën meer gericht zijn op jongere werknemers, omdat ze de nadruk leggen op intrinsieke motieven gerelateerd aan leren en extrinsieke motieven gerelateerd aan beloning, promotie en erkenning, wat minder belangrijke motieven zijn voor oudere werknemers. Daarom zouden motieven geherdefinieerd moeten worden vanuit een levensloopperspectief.

Ten vierde toont dit proefschrift aan dat de impact van personeelsinstrumenten gemeten moet worden onder individuele werknemers en dat de waargenomen doelen van personeelsinstrumenten verschillen tussen werknemers en managers. Een suggestie voor

theoretische modellen en toekomstig empirisch onderzoek naar het effect van personeelsinstrumenten is dan ook om personeelsinstrumenten te categoriseren op basis van individuele karakteristieken van werknemers. Ten vijfde toont dit proefschrift aan dat verschillende personeelsinstrumenten als ‘high commitment’ personeelsinstrumenten beschouwd kunnen worden voor verschillende groepen werknemers en dat leeftijdsgerelateerde factoren relevant zijn in de relatie tussen personeelsinstrumenten en werkuitkomsten.

Tot slot draagt dit proefschrift bij aan de literatuur over personeelsbeleid voor oudere werknemers door te onderzoeken welke personeelsinstrumenten resulteren in positieve werkuitkomsten onder oudere werknemers en door een theoretische verklaring te geven waarom juist deze personeelsinstrumenten effectief zijn voor oudere werknemers. Verliezen op latere leeftijd en een korter wordend toekomstperspectief leiden ertoe dat doelen en motieven verschuiven naar het reguleren van verlies. Daarom wordt het nut van ontzie-instrumenten, die oudere werknemers helpen om beter te functioneren op een lager niveau, groter. Omdat dit alleen lijkt te gelden voor hoger opgeleide en mannelijke werknemers is meer onderzoek nodig om te bepalen welke personeelsinstrumenten geschikt zijn voor andere groepen oudere werknemers, zoals minder hoog opgeleiden en vrouwen.

Praktische Implicaties

Dit proefschrift heeft belangrijke praktische implicaties. Ten eerste, gezien de conclusie dat kalenderleeftijd slechts een indicator is van een aantal leeftijdsgerelateerde factoren dat werknemers direct of indirect kan beïnvloeden, zouden organisaties niet alleen kalenderleeftijd moeten gebruiken om bijvoorbeeld te bepalen welke werknemers in aanmerking komen voor ontzie-instrumenten. Andere leeftijdsgerelateerde factoren, zoals toekomstperspectief, hebben andere effecten en zouden dus ook in beschouwing genomen moeten worden. Organisaties kunnen het toekomstperspectief van hun oudere werknemers bovendien verlengen door oudere werknemers binnen de organisatie een heldere toekomst te bieden. Op deze manier kunnen organisaties hun oudere werknemers motiveren om aan het werk te blijven.

Ten tweede kunnen organisaties de functies van oudere werknemers herontwerpen door deze te verrijken met bijvoorbeeld een mentorrol, meer diensverlenende taken en adviestaken. Ondanks dat motieven gerelateerd aan ontwikkeling en uitdaging afnemen met leeftijd, zijn motieven gerelateerd aan het helpen van mensen, interessant werk, autonomie, het uitvoeren van zinvolle taken en het gebruiken van vaardigheden belangrijker voor oudere werknemers dan voor hun jongere collega's. Organisaties zouden hun oudere werknemers dus kunnen motiveren met

interessante functies waarin oudere werknemers zinvol werk doen en gebruik kunnen maken van hun vaardigheden. Op deze manier 'benutten' organisaties hun oudere werknemers optimaal.

Ten derde zouden HR managers 'good practices' voor oudere werknemers binnen hun organisatie in kaart moeten brengen. Hoewel veel bedrijven nauwelijks een officieel personeelsbeleid voor oudere werknemers hebben, blijken meerdere personeelsinstrumenten met succes te worden toegepast op oudere werknemers. Deze personeelsinstrumenten zouden onderdeel van het officiële personeelsbeleid kunnen worden. De vier doelen of aanpakken van personeelsinstrumenten (ontwikkelen, behouden, benutten en ontzien) kunnen HR managers helpen om na te denken over het doel en de aanpak van het personeelsbeleid en de personeelsinstrumenten binnen hun organisatie om deze vervolgens ook zo te communiceren aan lijnmanagers en oudere werknemers.

Tot slot zouden HR managers ervoor moeten zorgen dat ontwikkelinstrumenten, zoals training, adequaat geïmplementeerd en eerlijk toegepast worden binnen de organisatie, omdat met name deze instrumenten tot tevredenheid en betrokkenheid van werknemers leiden en dus tot motivatie om door te werken. Aangezien het effect van andere typen personeelsinstrumenten verandert als werknemers ouder worden, zouden lijnmanagers deze personeelsinstrumenten op individuele basis moeten toepassen, afhankelijk van leeftijdsgerelateerde factoren zoals de kalenderleeftijd en het toekomstperspectief van werknemers. Lijnmanagers kunnen hun oudere werknemers bijvoorbeeld meer ontzie- en behoudinstrumenten, zoals flexibele werktijden en extra verlof, aanbieden omdat deze instrumenten de werkuitkomsten van oudere werknemers positief beïnvloeden.

Appendices

Appendix 1 Case study protocol (Chapter 5)

Instruments:

- Documents on HR policies and collective labor agreements;
- Interview with HR manager to measure intended HR policy for older workers;
- Interview with line manager to measure implemented HR practices for older workers;
- Focus group(s) with employees to measure actual HR practices as perceived by (older) employees, and their effect on employees' motivation to continue to work and employees' other motives to continue to work.

Interview questions HR manager

1. Is there an explicit HR vision or strategy within your company? Please describe this strategy. Is this strategy different for different groups of workers (with different jobs, ages etc.)?
2. Is there a different HR policy for older workers within your company? Please describe this policy and explain why your company has formulated a different HR policy for older workers. Would you say this policy emphasizes the accommodation of older workers or the development of older workers? Please explain.
3. Which HR practices are developed for older workers? Do older workers use these HR practices? Please give some examples.
4. What is the effect of these HR practices on older workers, for example in terms of their mobility, employability, and motivation?
5. Which other measures are taken to motivate and retain the older workers in your company?
6. Who is responsible for the implementation of HR policy and practices?
7. Do line managers and employees hold stereotypical views about older workers? Please give examples.

Interview questions line manager

1. Is there a different HR policy for older workers within your company? Please describe this policy. Would you say this policy emphasizes the accommodation of older workers or the development of older workers? Please explain.
2. Which HR practices can you as a line manager implement for your older workers?

3. Are these HR practices appropriate for older workers? Please explain why or which HR practices you would like to implement for your older workers.
4. Which HR practices do you apply to your older workers? Please give examples. Which HR practices would older workers themselves like to use?
5. How can HR practices contribute to the motivation and retention of older workers?
6. Do you encourage your older workers to take it easy, for example to work less hours or to reduce their workload, or do you encourage your older workers to develop, for example to develop their skills or to move to another job? Please give examples.
7. Are your older workers as productive and flexible as your younger workers? Please give examples.
8. In general, what are the strengths and weaknesses of older workers? How do you manage these?

Focus group questions employees

1. What is your opinion about the HR policy and practices within your company?
2. Do you think your company has a different HR policy for older workers? Which HR practices are applied to older versus younger workers? Do you feel treated differently than younger workers? Please explain why.
3. Which HR practices do you use yourselves? How satisfied are you with the HR practices within your company? Which HR practices would you like to use? Please explain why.
4. Are older workers in your company encouraged to take it easy, for example to work less hours or to reduce their workload, or are older workers encouraged to develop themselves, for example to develop their skills or to move to another job? Can you give examples?
5. What motivates you to work for this company? Which HR practices affect your motivation? How do these HR practices affect your motivation?
6. Until what age would you like to continue working? What are your motives to continue working until that age? Which HR practices affect your motivation to continue working until that age? How do these HR practices affect your motivation to continue working until that age?
7. Do managers and employees within your company hold stereotypical views about older workers? Have you ever felt discriminated against? Can you give examples?
8. Do you have any additional comments or remarks about the questions asked?

Appendix 2 Questionnaire in English (Chapter 6)

1. Background information

1	What is your gender?	<input type="checkbox"/> Female <input type="checkbox"/> Male
2	What is your age?	... years
3	What is your highest completed education?	<input type="checkbox"/> Lower vocational education <input type="checkbox"/> High school <input type="checkbox"/> Vocational education <input type="checkbox"/> Higher vocational education <input type="checkbox"/> University <input type="checkbox"/> Other education:
4	How would you rate your health in general?	<input type="checkbox"/> Poor <input type="checkbox"/> Average <input type="checkbox"/> Good <input type="checkbox"/> Very good <input type="checkbox"/> Excellent
5	What is your tenure in this organization?	... years
6	What is your tenure in your current position in this organization?	... years
7	Do your work part-time or fulltime?	<input type="checkbox"/> Part-time <input type="checkbox"/> Fulltime
8	In which occupational field do you work?	<input type="checkbox"/> Administrative support <input type="checkbox"/> Working conditions and environment <input type="checkbox"/> Facilities <input type="checkbox"/> ICT <input type="checkbox"/> Management and staff <input type="checkbox"/> Education and research <input type="checkbox"/> Education and research support <input type="checkbox"/> PR, marketing and communication <input type="checkbox"/> Human resource management <input type="checkbox"/> Student support
9	Do you have a management position?	<input type="checkbox"/> Yes <input type="checkbox"/> No
10	In which part of the organization do you work?	<input type="checkbox"/> Board of directors <input type="checkbox"/> Staff <input type="checkbox"/> Faculty <input type="checkbox"/> University library <input type="checkbox"/> Other part: ...

2. Future time perspective

The following questions are about your future time perspective. Please indicate for each statement to what extent you agree with the statement.

		Strongly disagree Strongly agree				
1	Most of my life lies ahead of me	1	2	3	4	5
2	My future seems infinite to me	1	2	3	4	5
3	Many opportunities await me in the future	1	2	3	4	5

3. HR practices

Below is a list of HR practices that organizations can offer to their employees. Please indicate whether your company offers these HR practices.

		Yes	No	Don't know
1	Part-time work			
2	A compressed working week			
3	Additional leave			
4	Exemption from overtime working			
5	Semi-retirement			
6	Early retirement			
7	Long career break			
8	Performance pay			
9	Flexible benefits (for example the possibility to buy or sell your vacation days)			
10	Ergonomic adjustment			
11	Performance appraisal (once every year)			
12	Career planning			
13	Continuous on-the-job development			
14	Regular training (once every year)			
15	Promotion			
16	Demotion			
17	Sideways job movement			
18	Task enrichment (for example with a mentor role)			
19	Reduced workload			
20	Second career			
21	Participation in decision-making in the organization			

4. Satisfaction

The following questions are about your satisfaction with your work.

1	2	3	4	5
Very dissatisfied	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Very satisfied

1	How satisfied are you with your current job?	1	2	3	4	5
2	How satisfied are you with your work environment?	1	2	3	4	5
3	How satisfied are you with your career until now?	1	2	3	4	5
4	How satisfied are you with your salary?	1	2	3	4	5
5	How satisfied are you with your learning opportunities?	1	2	3	4	5
6	How satisfied are you with your career opportunities?	1	2	3	4	5

5. Commitment

The following statements are about your commitment to the organizations. Please indicate to what extent you agree with the statements.

		Strongly disagree			Strongly agree			
1	I enjoy discussing my organization with people outside it	1	2	3	4	5	6	7
2	This organization has a great deal of personal meaning for me	1	2	3	4	5	6	7
3	I feel emotionally attached to this organization	1	2	3	4	5	6	7
4	I would be very happy to spend the rest of my career with this organization	1	2	3	4	5	6	7
5	I think that I could easily become as attached to another organization as I am to this one	1	2	3	4	5	6	7
6	I feel a strong sense of belonging to my organization	1	2	3	4	5	6	7
7	I feel like ‘part of the family’ at my organization	1	2	3	4	5	6	7
8	I really feel as if this organization’s problems are my own	1	2	3	4	5	6	7

6. Motivation to continue to work

Please indicate to what extent you agree with the statements below.

		Strongly disagree			Strongly agree		
1	Barring unforeseen circumstances, I would continue working indefinitely	1	2	3	4	5	
2	If I were completely free to choose, I would prefer to continue working	1	2	3	4	5	
3	I expect to continue working as long as possible	1	2	3	4	5	

Appendix 3 Questionnaire in Dutch (Chapter 6)

1. Demografische gegevens

1	Wat is uw geslacht?	<input type="checkbox"/> Vrouw <input type="checkbox"/> Man
2	Wat is uw leeftijd?	... jaar
3	Wat is uw hoogst afgeronde opleiding?	<input type="checkbox"/> Lager (beroeps)onderwijs <input type="checkbox"/> Middelbaar onderwijs (Mavo, Havo, Vwo, HBS, MMS, Mulo) <input type="checkbox"/> Middelbaar Beroeps Onderwijs <input type="checkbox"/> Hoger Beroeps Onderwijs <input type="checkbox"/> Wetenschappelijk onderwijs <input type="checkbox"/> Anders, namelijk
4	Hoe zou u over het algemeen uw gezondheid noemen?	<input type="checkbox"/> Slecht <input type="checkbox"/> Matig <input type="checkbox"/> Goed <input type="checkbox"/> Zeer goed <input type="checkbox"/> Uitstekend
5	Vanaf wanneer bent u bij deze organisatie in dienst? (jaartal)
6	Hoeveel jaar bent u werkzaam in uw huidige functie binnen deze organisatie?	... jaar
7	Werkt u parttime of fulltime?	<input type="checkbox"/> Parttime <input type="checkbox"/> Fulltime
8	In welk functiegebied bent u op dit moment werkzaam?	<input type="checkbox"/> Administratieve en secretariële ondersteuning <input type="checkbox"/> Arbo en Milieu <input type="checkbox"/> Facilitaire Zaken <input type="checkbox"/> ICT <input type="checkbox"/> Management en bestuursondersteuning <input type="checkbox"/> Onderwijs en onderzoek <input type="checkbox"/> Onderwijs- en onderzoeksondersteuning <input type="checkbox"/> PR, voorlichting en communicatie <input type="checkbox"/> Personeel en organisatie <input type="checkbox"/> Studentgerichte ondersteuning
9	Heeft u op dit moment een leidinggevende positie binnen deze organisatie?	<input type="checkbox"/> Ja <input type="checkbox"/> Nee
10	Bij welk organisatieonderdeel van deze organisatie werkt u op dit moment?	<input type="checkbox"/> College van Bestuur <input type="checkbox"/> Bureau van de Universiteit <input type="checkbox"/> Faculteit <input type="checkbox"/> Universiteitsbibliotheek <input type="checkbox"/> Anders, namelijk ...

2. Toekomstperspectief

De volgende vragen gaan over uw toekomstperspectief. Wilt u voor de volgende stellingen aangeven in hoeverre u het eens bent met de stellingen door het best passende cijfer (1 = helemaal niet mee eens tot 5 = helemaal mee eens) te omcirkelen?

		Helemaal niet mee eens			Helemaal mee eens	
1	Het grootste deel van mijn leven ligt voor mij	1	2	3	4	5
2	Mijn toekomst ligt nog oneindig voor mij	1	2	3	4	5
3	Veel kansen wachten mij in de toekomst	1	2	3	4	5

3. Personeelsbeleid

Hieronder staan verschillende personeelsregelingen, -instrumenten en mogelijkheden die onderdeel uit kunnen maken van het personeelsbeleid. Wij vragen u per regeling, instrument en/of mogelijkheid aan te geven of deze aanwezig is binnen uw organisatie.

		Ja	Nee	Weet niet
1	Parttime werk			
2	4 x 9 werkweek (ingekorte werkweek)			
3	Extra verlof / vakantie (bijvoorbeeld leeftijdsdagen of -uren)			
4	Vrijstelling van werken tijdens onregelmatige uren, overwerk			
5	Pre-pensioen (vervroegd met pensioen)			
6	Deeltijd pensioen			
7	Langdurige loopbaanonderbreking (sabbatical, levensloop)			
8	Variabele beloning gebonden aan persoonlijk functioneren			
9	Flexibele arbeidsvoorwaarden (bijv. mogelijkheid om vakantiedagen te kopen of verkopen)			
10	Aangepaste arbeidsomstandigheden (bijv. aangepaste werkplek)			
11	Functionerings- en/of beoordelingsgesprek (minimaal een keer per jaar)			
12	Loopbaanbegeleiding			
13	Permanente ontwikkeling in de functie			
14	Regelmatige training of scholing (minimaal een keer per jaar)			
15	Het maken van promotie			
16	Demotie (functieverlaging)			
17	Horizontale functieverandering (functieniveau verandert niet)			
18	Taakverrijking (functie-uitbreiding met nieuwe uitdagende taken, zoals mentortaken)			
19	Taakverlichting (belastende taken worden uit het takenpakket gehaald)			
20	Start nieuwe loopbaan (en dus omscholing) binnen de organisatie			
21	De mogelijkheid om deel te nemen aan de besluitvorming in de organisatie			

4. *Tevredenheid*

De volgende vragen gaan over uw tevredenheid met het werk.

1	2	3	4	5
Zeer ontevreden	Ontevreden	Neutraal	Tevreden	Zeer tevreden

1	Hoe tevreden bent u met uw huidige baan?	1	2	3	4	5
2	Hoe tevreden bent u met uw werkomgeving?	1	2	3	4	5
3	Hoe tevreden bent u met uw loopbaan tot nu toe?	1	2	3	4	5
4	Hoe tevreden bent u met salaris?	1	2	3	4	5
5	Hoe tevreden bent u met uw leermogelijkheden?	1	2	3	4	5
6	Hoe tevreden bent u met uw loopbaankansen?	1	2	3	4	5

5. *Betrokkenheid*

De volgende stellingen gaan over uw betrokkenheid bij uw organisatie. Wilt u bij elke stelling het best passende cijfer (1 = beslist niet tot 7 = zeker wel) omcirkelen?

		Beslist niet		Zeker wel				
1	Ik vind het leuk om over deze organisatie te praten met mensen van buiten de organisatie	1	2	3	4	5	6	7
2	Deze organisatie betekent veel voor mij	1	2	3	4	5	6	7
3	Ik voel mij emotioneel gehecht aan deze organisatie	1	2	3	4	5	6	7
4	Ik zou graag de rest van mijn loopbaan bij deze organisatie blijven werken	1	2	3	4	5	6	7
5	Ik denk dat ik me aan een andere organisatie net zo makkelijk zou kunnen hechten als aan deze organisatie	1	2	3	4	5	6	7
6	Ik voel mij thuis bij deze organisatie	1	2	3	4	5	6	7
7	Ik voel mij als 'een deel van de familie' bij deze organisatie	1	2	3	4	5	6	7
8	Ik ervaar problemen van deze organisatie als mijn eigen problemen	1	2	3	4	5	6	7

6. *Motivatie om te blijven werken*

Wilt u aangeven in welke mate u het met onderstaande stellingen eens bent door het best passende cijfer te omcirkelen?

		Helemaal niet mee eens			Helemaal mee eens	
1	Onvoorziene omstandigheden daargelaten, blijf ik doorwerken zo lang als ik kan	1	2	3	4	5
2	Als ik geheel vrij was om te kiezen, zou het mijn voorkeur hebben om te blijven werken	1	2	3	4	5
3	Ik verwacht zo lang als mogelijk te blijven werken	1	2	3	4	5

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About the Author

Dorien Kooij graduated cum laude in Business Economics (specialization Strategic Management and Organization) and completed the Minor Labor at the University of Amsterdam in 2002. After working a few years in practice as junior HR consultant, HR advisor and policy officer HRM, she started her PhD-project at the VU University, Department of Management and Organization in 2006, based on her own research proposal. She presented her research at international conferences, including the Academy of Management annual meeting, the EAWOP conference, and the International Workshop on HRM. In 2009, one of her papers was chosen as a highly commended award winner for the Emerald Literati Network Awards for Excellence and one of her papers was published in the best paper proceedings of the Academy of Management. During her PhD-project she co-organized two conferences in the Netherlands, the PREBEM conference 2008 and the Dutch HRM Network conference 2009, respectively as chair and as secretary, and she spent two months at Kings College London as a visiting scholar, funded by the C. Willems Foundation. She currently works as an assistant professor at Tilburg University, Department of Human Resource Studies.



Publications

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