



Older workers' motivation to continue to work: five meanings of age

A conceptual review

Dorien Kooij

VU University Amsterdam, Amsterdam, The Netherlands

Annet de Lange

University of Groningen, Groningen, The Netherlands, and

Paul Jansen and Josje Dijkers

VU University Amsterdam, Amsterdam, The Netherlands

Abstract

Purpose – 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. This paper aims to address age-related factors that influence the work motivation of older workers. More specifically, it seeks to examine how various conceptualizations of the age factor affect the direction and termination of the motivation to continue to work of older workers.

Design/methodology/approach – A literature review of age-related factors and motivation to continue to work is the approach taken in the paper.

Findings – Results from 24 empirical and nine 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.

Research limitations/implications – Based on the aforementioned findings, the paper was able to formulate a research agenda for future research, such as: a need for a meta-analysis on age and motivation to determine the actual effect sizes, and additional theoretical attention to the underlying age-related processes.

Practical implications – Age-related factors identified in this study, such as declining health and career plateaus, should be addressed by HRM policies. HRM practices that could motivate older workers to continue to work include ergonomic adjustments and continuous career development.

Originality/value – Research on age and motivation is limited and conceptually diverse. This paper is one of the first studies to explore the relations between different conceptualizations of age and motivation.

Keywords Ageing (biology), Motivation (psychology), Human resource management, Older workers

Paper type Conceptual paper



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 percent 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 percent of the potential workforce as compared to 25 percent in 2000 (United Nations, 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 and Thierry, 1996; Latham and Steele, 1983; Locke and Latham, 2002; Wegge and 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 and 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 *et al.*, 1984; Settersten and Mayer, 1997; Sterns and Alexander, 1987; Sterns and Miklos, 1995; Wolf *et al.*, 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 *et al.*, 2006; Settersten and Mayer, 1997; Sterns and 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 and 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:

- (1) *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.

- (2) *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.
- (3) *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 *et al.*, 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.
- (4) *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.
- (5) *The life span concept of 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: normative, age-graded biological, and/or environmental determinants, which are strongly related to age; 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 life span approach, life span age can best be measured by life stage or family status (Lange *et al.*, 2006; Sterns and Doverspike, 1989; Sterns and 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 *et al.*, 1986; Ng *et al.*, 2006). Furthermore, some studies point to the interrelatedness of the other conceptualizations of age. For example, Wahlin *et al.* (2006) found that both self-rated health and objective biological age predicted cognitive variation independently of chronological age. Moor *et al.* (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 five (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 (Arvey and Warren, 1976; Heneman, 1973; Huddleston *et al.*, 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 and Ackermann, 2004; Saleh and Otis, 1964; Schwab and Heneman, 1977; Stagner, 1985; Valentine *et al.*, 1998; Vallerand *et al.*, 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 and Brief, 1977; Hall and Mansfeld, 1975; Warr *et al.*, 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 *et al.* (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 and Blum, 1996; Okun and Di Vesta, 1976; Veroff *et al.*, 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:

- How does chronological age affect the motivation to continue to work of older workers?
- How does functional age affect the motivation to continue to work of older workers?
- How does psychosocial age affect the motivation to continue to work of older workers?

- How does organizational age affect the motivation to continue to work of older workers?
- How does life span age affect the motivation to continue to work of older workers? (Figure 1).

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 I provides information on the empirical studies found, including:

- the sample and design;
- the independent variable(s);
- the dependent variable(s);
- the measurement instrument used to measure the age-related variable; and
- the results.

Table II 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.

Results

Before discussing the relevant results for our research questions, we will discuss the descriptives of our selected empirical studies. Table I reveals that 14 studies (58 percent) examine variables that measure the direction of motivation, and ten studies (42 percent) 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 percent of the studies) in studies examining indicators of organizational age, whereas civil servants are used often (in 33 percent of the studies) in studies examining indicators of functional and life span age. Further, ten (42 percent) of the 24 empirical studies include

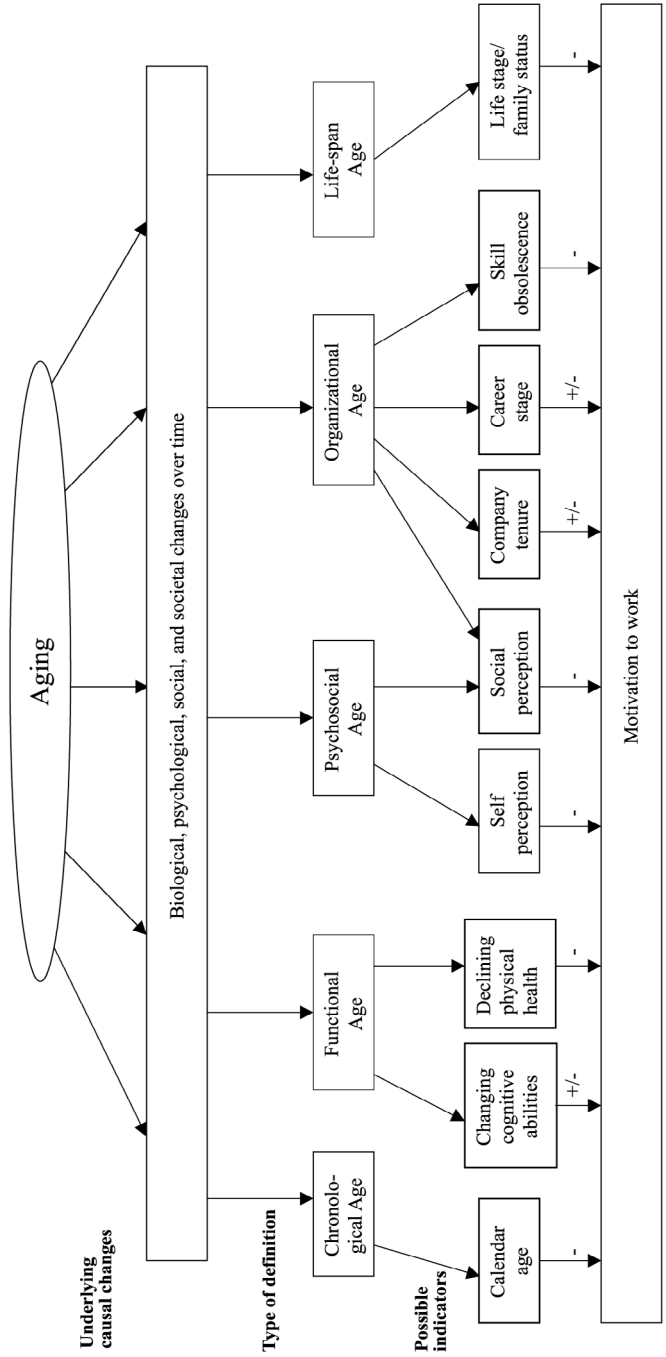


Figure 1.
Summary of the impact of the various age concepts on motivation to work based on literature review

No.	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>						
1	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 ($\alpha = 0.67 - 0.92$) Intrinsic motivation ($\alpha = 0.82$)	Organizational age with career stage as indicator operationalized as age	Needs, work attitudes, and occupation match differ significantly with career stage Q = 2
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 ($\alpha = 0.82$)	Organizational age with self-rated organizational tenure as indicator	Positive correlation between organizational tenure and intrinsic motivation Q = 2
3	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 ($\alpha = 0.60 - 0.93$) Activities, health and well-being	Organizational age: Career Concerns Inventory (CCI) (Super <i>et al.</i> , 1981), $\alpha = 0.83 - 0.90$	Attitudes, satisfaction, performance and work environment perception differ significantly with career stage Q = 2
4	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 ($\alpha = 0.82$)) Demographic (family responsibilities) and work related factors	Activities, health and well-being	Functional age with self-rated health (two items with correlation 0.71) as indicator Life span age: Self-rated family status (partner and/or dependent children)	Achievement motivation and health are positively correlated Q = 3
5	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 ($\alpha = 0.79 - 0.88$)	Life span age: 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
6	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 ($\alpha = 0.83$)	Organizational age: self-rated organizational tenure	Positive correlation between organizational tenure and intrinsic motivation Q = 2

(continued)

Table I.
Selected empirical studies

Table I.

No.	Author and journal	Sample and design	Independent variables	Dependent variables	Measurement instrument of age-related variable	Results and quality of the study (Q)
7	Lang and Carstensen (2002), <i>Psychology & Aging</i>	Germans, $n = 480$, mean age = 55.7, cross-sectional interview study	Future time perspective	Social motivation	Psychosocial age: self perception operationalized as self-rated future time perspective (e.g., "most of my life (still) lies ahead of me") (Carstensen and Lang, 1996), $\alpha = 0.92$	Limited future time perspective positively related to preference for emotionally meaningful goals such as generativity $Q = 2$
8	Lynn et al. (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 ($\alpha = 0.63 - 0.93$)	Organizational age: 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 $Q = 1$
9	Morrow and McElroy (1987), <i>Journal of Vocational Behavior</i>	US public agency employees, $n = 2,200$, mean age = 42.7, cross-sectional survey study	Career stage	Work commitment (value on work), work ethic endorsement, intention to remain and job satisfaction ($\alpha = 0.73 - 0.91$)	Organizational age: 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 $Q = 2$
10	Noe et al. (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% 45-56, cross-sectional survey study	Career stage	Career motivation ($\alpha = 0.71$)	Organizational age: career stage operationalized as age	Career stage has a significant relation with various dimensions of career motivation $Q = 1$
11	Ornstein et al. (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 ($\alpha = 0.69 - 0.91$)	Organizational age: Career Concerns Inventory, $\alpha = 0.88 - 0.94$	Job involvement, satisfaction and organizational commitment positively related to career stage and intention to leave negatively related to career stage $Q = 2$

(continued)

No.	Author and journal	Sample and design	Independent variables	Dependent variables	Measurement instrument of age-related variable	Results and quality of the study (Q)
12	Tamir and Antonucci (1981), <i>Journal of Marriage and the Family</i>	US national sample, $n = 4,724$, cross-sectional survey study	Stages of family life cycle	Perception, motivation (need for affiliation, achievement and power) and social support Well-being ($\alpha = 0.67 - 0.97$)	Life span age: self-determined family stage (single - parents of children over age 17) Chronological and functional age: self-rated health	Stages of family life are not so much associated with motivation $Q = 1$ General health is negatively related to amotivation and positively related to self-determined extrinsic motivation, age is negatively related to self-determined extrinsic motivation $Q = 0$
13	Vallerand et al. (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 ($\alpha = 0.72 - 0.92$))			Organizational age: self-rated obsolescence (rate of current knowledge (on different subjects), versus knowledge needed, knowledge of others in the field and past knowledge) $Q = 0$ Negative relationships between career expectations, need for achievement, perceived duty to stay up to date, future time perspective and internal orientation and obsolescence $Q = 1$
14	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>Studies examining termination of motivation to continue work</i>						
15	Anderson and Burkhauser (1985), <i>Journal of Human Resources</i>	US older male workers, $n = 4,878$, age = 58 - 63, cross-sectional survey study	Health and subsequent mortality experiment	Retirement	Functional age: self-rated health and mortality experiment ten years later (death) (one item) Chronological age: self-rated proximity to retirement (years to retirement)	Both measures of health negatively related to retirement $Q = 1$ Job more burdensome when drawing close to fixed retirement age, regardless of age $Q = 2$
16	Ekerdt and DeViney (1993), <i>Journals of Gerontology</i>	US older workers, $n = 1,365$, mean age = 56.98, four-wave nine-year panel study	Proximity to retirement	Job tension, fatigue		Health limitations and being married are positively correlated with retirement risk $Q = 3$
17	Hayward et al. (1989), <i>Demography</i>	US male older workers, $n = 2,816$, age = 55+, longitudinal survey study	Occupational influences (age and health as covariates)	Labor market withdrawal (retirement)	Functional and life span age: self-rated health and marital status	

(continued)

Table I.

Table I.

No.	Author and journal	Sample and design	Independent variables	Dependent variables	Measurement instrument of age-related variable	Results and quality of the study (Q)
18	Henkens and Tazelaar (1997), <i>Research on Ageing</i>	Dutch civil servants, $n = 1,015$, age = 1 year from eligibility for early retirement, cross-sectional survey study	Individual and work-related factors	Retirement decision	Functional and life span age: self-rated health based on demand for medical care ($\alpha = 0.67$), perceptions of spouse etc.	No significant relationship between health and retirement decision. Normative context plays substantial role Q = 1
19	Higgs et al. (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	Chronological, functional and life span age: 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
20	Hwalek et al. (1982), <i>Ageing & Work</i>	US male industrial workers, $n = 100$, marriage = 55, cross-sectional interview study	Social pressures, income, health status etc	Intention to retire	Psychosocial age: interview-based age norms (social pressure)	Social pressures were significant predictors of retirement intentions Q = 0
21	Lund and Borg, 1999, <i>Experimental Ageing Research</i>	Danish employees, $n = 3,320$, age 35-59, longitudinal interview study	Work-related variables, health, stress and musculo-skeletal problems	Remaining in work	Functional age: self-rated health (one item)	For male and female employees a very good health was associated with remaining in work Q = 2
22	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	Functional and life span age: self-rated health ($\alpha = 0.87$) and family stage	Decisions to retire early or extend working life are largely due to individual characteristics (health, spouse's career) Q = 1
23	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	Life span age: family stage = couple	Spouses influence the retirement decision Q = 0
24	Vries et al. (2002), <i>Technical Report</i>	Dutch employees in education, $n = 1,206$, age = 45+, cross-sectional survey study	Individual, organizational and social factors	Retirement decision	Chronological and life span age: eligibility to early retirement arrangement	Educational workers retire, because they prefer more leisure time and because it's financially attainable Q = 1

No.	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>					
1	Bandura (1977), <i>Psychological Review</i>	Psychosocial age: self efficacy	Motivation (initiation, effort and persistence)	Motivation theory	Self efficacy determines motivation Q = 1
2	Carstensen (1995) <i>Current Directions in Psychological Science</i>	Psychosocial age	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
3	Kanifer and Ackerman (2004), <i>Academy of Management Review</i>	Functional and psychosocial age: age-related changes in adult development, such as cognitive abilities and self concept	Work motivation	Life span theories, research on cognitive abilities, personality, affect, vocational interests, values, and self-concept, Kanifer's expectancy theory	There is theoretical nor empirical evidence that work motivation declines with age Q = 1
4	Korman (1970), <i>Journal of Applied Psychology</i>	Psychosocial age: 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
5	Lazear (1998), John Wiley & Sons	Organizational age: steep earning profiles	Incentives to work	Labor economics	Steep earning profiles provide positive incentives Q = 1

(continued)

Table II.
Selected conceptual studies

Table II.

No.	Author	Independent variables	Dependent variables	Theories or method	Results/ideas and Quality of the study (Q)
6	London (1990), <i>Journal of Organization Change Management</i>	Organizational age: career identity, career insight and career resilience	Career motivation		Career motivation consists of career identity, career insight and career resilience Q = 0
7	Rosen and Jerdee (1976), <i>Journal of Applied Psychology</i>	Psychosocial age: 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
8	<i>Studies examining termination of motivation to continue work</i> Hansson et al. (1997), <i>Journal of Vocational Behavior</i>	Organizational age	Retirement decision	Literature review (1992-1996)	The perception of career attainment influences job attachment, which in turn influences the retirement decision Q = 1
9	Hurd (1996), University of Chicago Press	Life span age	Retirement decision	Literature review to support retirement model	Tastes for work gradually shift with age towards leisure Q = 0

only older workers (starting at 45 +) or retirees in their samples. These studies examine particularly the chronological, functional and life span age.

The measurement instruments used to measure the age-related variables particularly consist of one or two-item self-rated age (13 percent), organizational or job tenure (17 percent), health (25 percent), and family status (25 percent). Only five studies (21 percent) use a multi-item scale to measure the age-related variable: two studies on career stage (Cron and Slocum, 1986; Ornstein *et al.*, 1989), one study on obsolescence (Shearer and Steger, 1975), one study on health status (Saba and Guerin, 2005) and one study on self perception (Lang and Carstensen, 2002). Cronbach's alpha of these multi-item scales ranged from 0.83 to 0.94 in these studies.

In order to assess the quality of the 33 studies, we defined the following five quality criteria (based on Breslin *et al.*, 2007; Lange *et al.*, 2003):

- (1) longitudinal study design;
- (2) sample size $n > 500$;
- (3) reliability coefficients of (in)dependent variable(s) $\alpha > 0.75$;
- (4) reliability of age measurement instrument $\alpha > 0.75$;
- (5) 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 I and II reveal that most studies (49 percent) meet one of these criteria ($Q = 1$), 30 percent meet two ($Q = 2$), 15 percent meet none of the criteria, of which 6 percent are conceptual studies (Hurd, 1996; London, 1990) and 9 percent are interview-based studies (Hwalek *et al.*, 1982; Vallerand *et al.*, 1995), and 6 percent (Hayward *et al.*, 1989; Holahan, 1988) meet three of these criteria. We will keep this in mind 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 percent), "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 and 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 *et al.*, 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 *et al.*, 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 I and II show that $n = 9$ of the 33 (27 percent) 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 and Simpson, 1999; Sterns and 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 and Burkhauser, 1985; Hayward *et al.* 1989; Higgs *et al.*, 2003), and thus on the motivation to continue to work (Lund and Borg, 1999). Conversely, another study,

among civil servants, indicated that personal health played only a modest role in retirement decisions (Henkens and 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 and Simpson, 1999). Avolio *et al.* (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.

Results, question 3: the impact of psychosocial age on motivation to continue to work
Tables I and II show that $n = 7$ of the 33 studies examined indicators of psychosocial age (21 percent). 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. First, 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.

Second, 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.

Third, 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 *et al.*, 1998; Pratt *et al.*, 1999), are likely to motivate older workers (Kanfer and 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 *et al.*, 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 *et al.*, 1995; Martin and Strauss, 1956; Panek *et al.*, 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 and McFarlane Shore, 1992; Lawrence, 1988; Martin and 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 (cf. McCann and 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 and Simpson, 1999; Sterns and Miklos, 1995; Visser *et al.*, 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 (cf. Chiu *et al.*, 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 and 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 I and II shows that $n = 12$ of the 33 studies (36 percent) 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 and 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 and 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 and Aranya, 1984; Cron and Slocum, 1986; Lynn *et al.*, 1996; Morrow and 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 *et al.* (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 *et al.* (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 *et al.* (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 *et al.*, 1988). Therefore, skills obsolescence can be expected to increase with age. This view is to some extent supported by earlier research (Dalton and Thompson, 1971; Shearer and 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 life span age on motivation to continue to work

Tables I and II show that $n = 9$ of the 33 studies (27 percent) examined indicators of life span age. According to the life span 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 and 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 and Tazelaar, 1997; Saba and Guerin, 2005; Smith and 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.

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 nine conceptual studies. In Figure 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 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) Life span 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, six age-related factors are related negatively, and three factors are related ambiguously to motivation to continue to work (Figure 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 life span 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: that it is the first conceptual review to examine relevant age-related factors in relation to motivational outcomes for aging workers, and 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.

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- (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 (cf. 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 (cf. Montepare and 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 *et al.*, 2003) seems to disagree with this statement, showing that personality changes across the lifespan (Srivastava *et al.*, 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 nine of the 33 (27 percent) selected studies focused on functional age; the same holds for life span age (see Tables I and II).
- (4) Further attention should be given to the operationalization and measurement of especially functional, psychosocial, organizational, and life span age. Psychometric studies on the (relations between) indicators of the different approaches to measure aging at work are still lacking. Furthermore, Tables I and II 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 I reveals that the selected studies only include western samples. However, the meaning of age and aging differs across cultures. For example, Keith *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 *et al.*, 1999) posits that successful development across the life span 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 (see Ebner *et al.*, 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 and 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.

Note

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 percent.

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About the authors

Dorien Kooij is a PhD-student at the Department of Organizational Behavior and Development of the VU University Amsterdam, The Netherlands. Dorien Kooij graduated, *cum laude*, in 2002 with a specialization in HRM at the UvA University of Amsterdam. In September 2006 she started her PhD-project, titled "The impact of HRM policy and practices on the work motivation and labor market participation of older workers". Her main research interests are in HRM, work motivation and aging at work. Dorien Kooij is the corresponding author and can be contacted at: tkooij@feweb.vu.nl

Annet de Lange is an associate professor at the department of Social and Organizational Psychology at the University of Groningen, The Netherlands, and holds a PhD (*cum laude*/doctorate) of the Radboud University of Nijmegen, The Netherlands. Her main research interests concern life-span perspectives on ageing at work, causality and longitudinal survey research, and the across-time development of the relation between work and mental health. Her research has been successful, culminating in several honorary prizes (IBM Frye Stipendium, André Büssing Memorial Price of EA-OHP, Stichting Praemium Erasmianum Prize (www.erasmusprijs.org), and the *Journal of Occupational Health Psychology* best paper of past ten years award). She has published in, and reviewed for, many international journals.

Paul Jansen is Professor of Industrial Psychology, Faculty of Economics and Business Administration, VU University Amsterdam, The Netherlands. Paul Jansen graduated, *cum laude*, in 1979, with specialization in Mathematical Psychology at the University of Nijmegen; PhD in social sciences in 1983. Paul Jansen is one of the founders, and current board member of the HRM Network NL. Since 2006 he has been chairman of the Amsterdam Center for Career Research. His research interests are in management development, careers, assessment (e.g. assessment centers, 360-graden feedback) and performance management. Recent publications were in, for example, *International Journal of Selection and Assessment*, *International Journal of Human Resource Management*, *Journal of Applied Psychology*, *Small Business Economics*, and *Journal of Vocational Behavior*.

Josje Dikkers is assistant professor at the Department of Organizational Behavior and Development of the VU University Amsterdam. Josje Dikkers graduated, *cum laude*, in 2001 with a specialization in Work & Organizational Psychology at the University of Tilburg. From 2001 until 2005 she worked as a PhD-student at the Department of Work & Organizational Psychology of the Radboud University Nijmegen. Her PhD-project focused on the interaction between people's work and private life (i.e. work-home interaction) in relation to organizational, work and home characteristics, and has been published in four international academic journals. Josje Dikkers teaches and coordinates a course on Organizational Behavior, and coordinates and supervises HRM-related bachelor- and master-theses. Her research interests are in HRM-policies (and culture) facilitating work-home balance, and motherhood ideology in relation to career success. Recent publications were in the *International Journal of Stress Management*, and *Work & Stress*.