

RESEARCH ARTICLE

All set in stone? How essentialist beliefs about aging affect older workers' motivation to continue working beyond retirement age

Mona Weiss¹  | David Weiss²  | Hannes Zacher³ 

¹Department of Management, School of Business and Economics, Freie Universität Berlin, Berlin, Germany

²Department of Psychology, Martin-Luther University of Halle-Wittenberg, Halle, Germany

³Wilhelm Wundt Institute of Psychology, Leipzig University, Leipzig, Germany

Correspondence

Mona Weiss, Department of Management, School of Business and Economics, Free University of Berlin, Garystr. 21, Berlin 14195, Germany.

Email: mona.weiss@fu-berlin.de

Funding information

Volkswagen Foundation, Grant/Award Number: Az. 96 849-1; German Research Foundation, Grant/Award Number: 396974499

Summary

Although population aging requires that employees increasingly work beyond traditional retirement ages, negative age stereotypes often portray older workers as unwilling or unable to work longer. However, recent lifespan developmental research suggests that there are significant individual differences in how fixed versus malleable people perceive the aging process possibly affecting how they envision their occupational future. We develop and test a theoretical model on the role of essentialist beliefs about aging (i.e., the extent to which people believe that aging is an immutable, genetically determined process) in shaping occupational future time perspective and, in turn, motivation to continue working beyond retirement age. Specifically, we hypothesized that older workers (40–65 years) who more strongly endorse essentialist beliefs about aging will be less motivated to continue working beyond retirement age, because they have a more constrained occupational future time perspective. On the basis of a three-wave study ($N = 617$) and an experiment ($N = 358$), we find evidence for our proposed indirect effect model, above and beyond previously established control variables (e.g., age, income, health, and age stereotypes). Our findings advance theorizing on work motivation in later adulthood and have important organizational implications in the context of demographic change.

KEYWORDS

aging beliefs, essentialism, motivation to continue working, occupational future time perspective, retirement

1 | INTRODUCTION

With an increasingly older workforce and fewer younger workers available, organizations need to find ways to motivate older workers to continue working for as long as possible, even after their official retirement age. This important practical concern for organizations and

aging societies more broadly is also reflected in a recent surge of research that adopts a lifespan perspective on work motivation to understand antecedents of employees' motivation to continue working beyond their official retirement age (e.g., Armstrong-Stassen & Ursel, 2009; Bal et al., 2012; Kanfer et al., 2013). Among others, this research has revealed various socio-demographic (e.g., chronological

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age, finances, and health status; Topa et al., 2018) and work-related predictors (e.g., age stereotypes; Bal et al., 2015) to understand motivation to continue working or its counterpart, early retirement. However, the effects of these predictors have not always been consistent, and researchers have pointed out that there still is significant inter-individual variation that is not completely understood so far (e.g., Wang et al., 2008).

One aspect that has been overlooked by this body of research, but that may be a fundamental factor explaining why some older individuals are motivated to work beyond retirement age while others are not, are beliefs about aging. Many employees believe that aging is associated with increasing limitations in cognitive and physical abilities and decreasing time and opportunities at work (Heckhausen et al., 1989; Rudolph et al., 2018; Zacher & Frese, 2009). One major reason for these cognitive representations of aging are socially shared negative images of aging or age stereotypes, which suggest that the desire and competence to work generally decline with age (Ng & Feldman, 2012; Posthuma & Campion, 2009). However, research has highlighted that aging entails both losses *and* gains and that there is substantial interindividual variability in how people age and experience their own aging (Heckhausen et al., 1989). Recent research from the lifespan developmental literature suggests that aging beliefs do not only entail expectations concerning gains and losses but also assumptions about the malleability of the aging process. In fact, it has been shown that when older adults *believe* that aging is a malleable, flexible process (nonessentialist view), rather than a fixed, genetically determined process (essentialist view), they are less stressed when faced with cognitive challenges, feel that they have more time left in life, and perform even better when faced with negative age stereotypes (Weiss, 2018; Weiss et al., 2016; Weiss & Weiss, 2016). Thus, it seems crucial to consider essentialist beliefs about aging to better understand individuals' motivation to work beyond retirement age.

In this research, we thus supplement the lifespan perspective on work motivation with a social-cognitive lens and argue that older workers are motivated to continue working beyond retirement age when they believe that aging is a modifiable process (nonessentialist view) rather than a biologically predetermined process that inevitably leads to decline (essentialist view). We further argue that one important pathway through which essentialist beliefs about aging affect workers' motivation to continue working beyond retirement age is their perception of occupational future time perspective (OFTP), which refers to how much remaining time and opportunities people believe they have left in their future occupational life (Rudolph et al., 2018; Zacher & Frese, 2009). This is because older workers who feel that aging is a fixed process that cannot be influenced are more likely to perceive their future occupational time and opportunities to be limited, and, therefore, they are less motivated to continue working beyond retirement age.

We present the results of a three-wave study and an experiment with workers aged 40–65 years. Our findings show that essentialist beliefs about aging (a) are associated with time-lagged effects on motivation to continue working beyond retirement age via OFTP and (b) exert causal effects on OFTP and motivation to continue working

beyond retirement age. These effects are robust to the influence of important control variables such as workers' chronological age, their health status, income, their educational background, and the perception of age stereotypes at work (Wang & Shi, 2014).

Our research makes several important contributions to the organizational literature. By studying essentialist beliefs about aging as a relatively new social-cognitive concept to predict motivation to continue working beyond retirement age, we respond to repeated calls to identify explanatory variables that account for age-related differences in work outcomes rather than focusing merely on chronological age (Bal et al., 2013; Truxillo & Fraccaroli, 2013; Wang et al., 2015). In doing so, we expand the lifespan perspective on work motivation and the psychological retirement literature that has predominantly focused on socio-demographic antecedents (e.g., chronological age, health, finances), attitudes toward work and work meaningfulness, job and organizational aspects, and perceptions of the work context (e.g., Gobeski & Beehr, 2009; Kanfer et al., 2013; Topa et al., 2018), but that has not yet considered how beliefs about the nature of the aging process shape one's motivation to work past retirement. We also advance the literature on essentialist beliefs about aging specifically, and on belief systems, lay theories and mindsets more broadly (e.g., Bandura, 2001; Dweck, 2008; Dweck & Leggett, 1988). While this literature has shown that essentialist beliefs about aging can affect general age-related outcomes (e.g., perception of aging-related threat, physiological reactivity, and cognitive performance; Weiss 2018; Weiss, et al., 2016), our research shifts the focus to a practically important work-related outcome. On this basis, we offer practical recommendations for organizations to motivate older individuals to continue working beyond retirement age.

2 | THEORETICAL BACKGROUND

2.1 | Motivation to continue working beyond retirement age

Motivation to continue working beyond retirement age refers to individuals' intention to work after reaching the official retirement age (e.g., Armstrong-Stassen & Ursel, 2009; Bal et al., 2012; Kanfer et al., 2013). Individuals who are motivated to continue working beyond retirement age are determined to stay in the workforce even after their official retirement age because they value work and find meaning in it (Kanfer & Ackerman, 2004; Kanfer et al., 2013). According to the lifespan perspective on work motivation, motivation to continue working beyond retirement age gains increasing importance as people grow older (Kooij et al., 2020). Kanfer et al. (2013) proposed an organizing framework that differentiates between “to work,” “at work,” and “to retire” goals that become more or less salient across the lifespan. Motivation to retire typically becomes salient prior to formal retirement and motivation at work more closely relates to performing one's work role and may be affected by age-related changes in ability and affect. Motivation to work, in contrast, refers to individuals' desire to participate in a formal work

arrangement and to allocate their resources, such as time, effort, and skills, in exchange for intrinsic (e.g., sense of accomplishment) or extrinsic (e.g., pay) outcomes. It has been noted that, as individuals grow older, “the ‘motivation to continue to work’ becomes more relevant than, and starts to supersede, the ‘motivation to work’” (Kooij et al., 2008, p. 367).

We note that by the term “older workers,” we refer to both middle-aged and older individuals who are 40–65 years of age. The definition of what constitutes an older worker has been debated quite actively in the literature. While various age ranges and thresholds have been proposed, there is no specific chronological age to define an older worker (e.g., McCarthy et al., 2014; Truxillo et al., 2015). This is because the term “older” is a fluid social category and associated with various (often negative) stereotypes. Acknowledging that the age range of 40–65 years entails very different age groups that may differ along certain psychological, physical, and social characteristics, in the context of predicting motivation to continue working beyond retirement age, applying a wider age range seems theoretically and practically justified. First, especially in organizational contexts, researchers often use the threshold of 40–45 years because in this context, “older” represents an organizational age that often entails different knowledge, skills, and attitudes as compared to younger age groups (Kooij et al., 2018). Second, individuals' motivation to continue working beyond retirement age is not a static event that is only relevant for those who are very close to retirement, but rather a temporally dynamic process that typically starts with envisioning one's future and planning for retirement (Wang & Shi, 2014). In this process, individuals start to think about future career goals and organize necessary resources for future retirement possibly as soon as they enter secure employment (e.g., pension insurance and other financial assets). For example, in our research context (i.e., Germany), the official retirement age is currently 65 years, but actual retirement ages may be as low as 55 years. Various subsidiary partial retirement programs and other flexible retirement options allow many individuals to choose their effective retirement age after which they start to receive public pensions. Similar retirement regulations are adopted in the Netherlands, France, the United Kingdom, Italy, and also the United States of America. Acknowledging that this may not uniformly translate to other contexts, these specific retirement policies render individuals' considerations about how long they want to keep working important at a relatively early age.

Previous research has identified several individual and work-related factors that are associated with the motivation to continue working beyond retirement age or its counterpart, the intention to retire. Not surprisingly perhaps, chronological age has been repeatedly shown to be one of the strongest predictors of when workers retire (e.g., Adams & Rau, 2004; Wang et al., 2008). Moreover, in a meta-analysis with more than 120 000 participants, Topa et al. (2018) found that, among others, financial security and health status had the strongest relationships with the decision to retire early (i.e., before the official retirement age). Relatedly, cognitive aging has been shown to decrease individuals' capability to deal with novel information or technology at work (Spiegel & Shultz, 2003), thus leading to reduced

commitment and eventually to the decision to retire (early). Apart from these individual-level determinants, research also points to the importance of meso-level factors, such as perceptions of the work context. A study with civil servants demonstrated that older workers continued to work not only when they were financially attached to work but also when they enjoyed their work (Higgs et al., 2003). Moreover, findings suggest that when organizations actively support older employees, they are more motivated to work longer (Armstrong-Stassen & Schlosser, 2008; Bal et al., 2012).

Further emphasizing the relevance of work-related perceptions, research suggests that the perception of age stereotypes in the workplace can affect older workers in their motivation to continue working beyond retirement age. Negative age stereotypes may be prevalent in organizations and often inaccurately depict older workers as slow, resistant to change, and low performing (e.g., Posthuma & Campion, 2009). Such negative stereotypes may be internalized by older workers themselves and thus exert detrimental effects on their motivation and performance (e.g., Kulik et al., 2016; Levy, 2009). For example, research showed that when older workers feel that they are the target of negative age stereotypes that question their competence and work abilities, they have stronger intentions to resign and retire (Bal et al., 2015; von Hippel et al., 2013).

These previous findings suggest that a higher chronological age, a poor health status, sufficient finances, and the perception of negative age stereotypes at work (i.e., ageism) will uniformly lead to a lowered motivation to continue working beyond the official retirement age. However, it has been demonstrated that many of these determinants (e.g., finances) show inconsistent relationships with individuals' retirement decisions, suggesting that there may be other factors at play that can potentially overshadow their effects (Wang et al., 2008). In their comprehensive review of the psychological retirement literature, Wang and Shi (2014) conclude that “an individual's attitudes toward retirement are the probably the most proximal predictors of retirement-related behaviors” (p. 219). This conclusion resonates with research from the broader aging and lifespan literature suggesting that beliefs and meaning-making processes about aging can have important consequences for cognitive and health outcomes and for how individuals envision their future (Heckhausen et al., 1989). Even though beliefs lie at the heart of people's preferences, attitudes, and personality and, thus, have powerful consequences for motivation and behavior (e.g., Dweck, 2008), no previous research has looked at how individuals' beliefs about aging may affect their motivation to continue working beyond retirement age.

2.2 | Essentialist beliefs about aging

Beliefs in general can be defined as “mental representations of the nature and workings of the self, of their relationships, and of their world” (Dweck, 2008, p. 391). Beliefs are social-cognitive in nature because people do not adopt beliefs in a social vacuum; rather, they interact with and are shaped by the context in which they are situated (Bandura, 1989). Thus, by interacting with the social context, people

develop and are guided by beliefs about themselves, about other people, attributes, social categories, and the processes that take place during lifelong development. These beliefs provide individuals with a framework or schema for experience and action. Recently, research in the area of lifespan developmental psychology has shown that people differ in their perception of aging-related changes. While some people may view aging as a relatively inherent, immutable, and inevitable process (i.e., essentialist view), others perceive the aging process as relatively modifiable, changeable, or flexible (i.e., [non] essentialist view; Weiss et al., 2016, 2019; Weiss & Weiss, 2016). Accordingly, essentialist beliefs about aging construe aging as a “fixed rather than malleable process including a set of inevitable and uncontrollable changes that occur over time” (Weiss et al., 2016; pp. 997–998).

The concept of essentialism has been studied within a variety of disciplines including philosophy, social theory, and psychology. Research has demonstrated that essentialism is a fundamental characteristic of human cognition (Prentice & Miller, 2007). It contains the idea that certain categories such as “man,” “dog,” or “intelligence” have underlying “true natures” or “essences,” that give rise to their unique identity (Gelman, 2003). Medin and Ortony (1989) introduced the term “psychological essentialism” to refer to laypeople’s beliefs about the essence of categories. They argued that things do not necessarily *have* essences but that people’s representations of things reflect their *beliefs* about underlying essences.

Beliefs about the immutable or flexible nature of processes do not only matter for social perception but also have implications for people’s understanding of themselves. Research has shown that individuals hold “lay” or implicit theories about the nature of various human traits and abilities such as personality, intelligence, memory performance, or will-power as being fixed or malleable (e.g., Dweck & Leggett, 1988; Job et al., 2010; Plaks & Chasteen, 2013). This line of research has shown that some people have a fixed (or “entity”) theory and believe that their characteristics, such as personality or intelligence are fixed, inherited traits. Other people, in contrast, hold a malleable (or “incremental”) theory and believe that their basic attributes can be shaped and changed through their own actions (Dweck, 2008). Findings show that people with a malleable theory are more open to learning and more persistent after failure, leading to better performance in school and at work (Blackwell et al., 2007; Dweck, 1999; Kray & Haselhuhn, 2007; Zingoni & Corey, 2016). Among older adults specifically, holding a fixed theory regarding human abilities can result in poorer memory performance (Plaks & Chasteen, 2013).

Essentialist beliefs about aging are conceptually related to implicit theories and to incremental versus entity mindsets, but they differ in that they do not capture how people perceive their own aging process but whether they construe the aging process as fixed versus malleable *in general*. It is also important to note that essentialist beliefs about aging are related to but different from control beliefs, which refer to individuals’ perception of the degree to which they *themselves* can control important events in their lives (Lachman & Weaver, 1998) and not whether growing old is a process that can *generally* be influenced or not. In line with this argument, previous research has confirmed

that essentialist beliefs about aging carry significant predictive validity above and beyond control beliefs and a variety of other age-related concepts such as age stereotypes (Weiss, 2018; Weiss et al., 2016). While age stereotypes refer to generalized images of older adults that can have positive or negative valence, essentialist beliefs about aging refer to how malleable versus fixed the aging process is perceived.

Previous research has identified negative relationships between essentialist beliefs about aging and various psychological and physiological outcomes. For example, findings suggest that a more flexible view of aging is linked to adults’ tendency to feel younger than their chronological age (Weiss et al., 2019), which is related to more positive job attitudes (for an overview, see Weiss & Weiss, 2016). A more malleable view of aging also helps older adults to mitigate the detrimental consequences of negative age stereotypes and low social status such that they exhibit less physiological stress and perform better when faced with cognitively challenging tasks (Weiss, 2018; Weiss & Weiss, 2016).

In line with previous works on essentialism and implicit theories (Dweck, 2008; Haslam et al., 2000; Weiss et al., 2016), essentialist beliefs about aging reflect a continuum of aging-related beliefs with malleable beliefs about the process of aging standing in opposition to fixed beliefs about the aging process. As such, it is possible that people endorse essentialist and nonessentialist beliefs about aging simultaneously, which would be reflected by the midpoint of the scale. Moreover, it is important to note that, although essentialist beliefs about aging are relatively stable knowledge structures, research has shown that their accessibility and structure may be affected by cues from the social context (Weiss et al., 2016). For example, an experimental study showed that older individuals who read a newspaper article that provided evidence of a more fixed view of aging (essentialism) felt more threatened by aging-related changes and had a more limited future time perspective (FTP) (Weiss et al., 2016). This is in line with the extant literature on implicit theories that showed, for example, that students’ implicit theories of intelligence changed in response to an experimental intervention and subsequently affected their cognitive performance (e.g., Aronson et al., 2002). Taken together, previous empirical findings suggest that essentialist beliefs about the process of aging exert fundamental effects on psychological, cognitive, and health outcomes. We build on these previous empirical findings as well as on the motivational implications of implicit theories and meaning-making systems (Bandura, 1989; Dweck, 1999, 2008; Molden & Dweck, 2006).

Drawing on the lifespan perspective on work motivation introduced earlier (e.g., Ackerman & Kanfer, 2020), we argue that essentialist beliefs about aging should substantially affect older workers’ motivation to continue working beyond retirement age. In particular, we suggest that to the extent that older workers endorse an essentialist view on aging they are less motivated to continue working beyond retirement age. Because flexible versus fixed beliefs regarding the nature of aging in general may serve as a blue print or projection for their own aging process, endorsing an essentialist view on aging likely diminishes people’s intention to remain in an occupational context as they envision their own future (Kanfer et al., 2013; Wang &

Shi, 2014). It is important to point out that essentialist beliefs about aging should exert effects above and beyond the perception of age stereotypes in the workplace. This is because regardless of whether older adults or aging is seen as favorable or unfavorable in one's immediate work context, holding a belief that the aging process is highly essential in nature implies that the potential to affect one's aging process toward achieving occupational goals is limited. Because they are convinced that aging is an immutable and genetically programmed process, they may experience aging-related changes as less controllable and more threatening (Weiss et al., 2016) and feel that regardless of their personal effort or motivation, there is not much they can do about it (Dweck, 2008). This perception of aging as an essential, immutable, and threatening process should thus lower their motivation to continue working beyond retirement age (Kanfer et al., 2013; Wang, 2007).

In contrast, older workers who hold a more nonessentialist view about aging believe that aging can be influenced and that a person's age is not indicative of their skills and abilities. Endorsing such a flexible view on the aging process likely leads them to be motivated to continue working beyond the official retirement age. As they believe that aging does not uniformly lead to decline but that it is a process that is flexible and strongly depends on the individual, they see themselves as still capable to influence their own aging no matter at what point in life, and, thus, are motivated to continue working past retirement age. We hypothesize:

Hypothesis 1 (H1): Essentialist beliefs about aging are negatively related to individuals' motivation to continue working beyond retirement age.

2.3 | The mediating role of OFTP

In the following, we discuss in more detail how and why essentialist beliefs about aging affect older workers' motivation to continue working beyond retirement age. Drawing from a lifespan motivational perspective (e.g., Kanfer et al., 2013), we propose that one important mechanism that links these two variables is a specific motivational orientation that influences individuals' perception of remaining time and opportunities at work, also denoted as OFTP.

OFTP is defined as individuals' perception of their future in the employment context (Rudolph et al., 2018; Zacher & Frese, 2009). OFTP originates from the concept of general FTP which refers to how much time people perceive to have left in life (Carstensen et al., 1999; Lang & Carstensen, 2002). Zacher and Frese (2009) adapted the concept of FTP to the work context, arguing that people's perception of their occupational future time and possibilities at work has meaningful implications for work-related motivation and performance. Specifically, OFTP consists of three related dimensions: perceived remaining time (i.e., individuals' perceptions of future time in employment), focus on opportunities (i.e., individuals' perceptions of new work-related goals and possibilities in the future), and focus on limitations (i.e., individuals' perceptions of restrictions and constraints in the

foreseen occupational future; Cate & John, 2007; Rudolph et al., 2018; Zacher & Frese, 2009).

Studies have shown that similar to FTP, OFTP tends to decrease with chronological age such that older adults perceive their future time in employment to be more limited and their possibilities at work to be more constrained (Zacher & Frese, 2009). Other temporal variables such as organizational and job tenure resonate with this finding and show a comparably negative relationship with OFTP (Ho & Yeung, 2016). One common explanation for the negative relationship between age and OFTP is that mandatory, forced, or involuntary retirement leads older (or longer tenured) workers to perceive their occupational time as more limited (e.g., Zacher & Frese, 2009). Moreover, it has also been suggested that, because organizations invest more resources into younger employees (Maurer et al., 2003), older workers may be less likely to pursue more long-term occupational goals (Rudolph et al., 2018). Finally, older workers with better self-rated health report a longer OFTP because they feel that they have the necessary resources to invest in their work (e.g., Hobfoll & Wells, 1998; Kooij & van de Voorde, 2011).

In this research, we posit that OFTP represents one important mediating mechanism linking essentialist beliefs about aging with older workers' motivation to continue working beyond retirement age. Previous research has confirmed the effect of essentialist beliefs about aging on general FTP (Weiss et al., 2016). More specifically, these studies showed that individuals who held a more essentialist aging mindset experienced aging-related changes as more threatening resulting in the perception of a more limited general FTP. Although essentialist beliefs about aging may not seem readily associated with one's work, we propose that they also affect individuals' OFTP. By drawing from a lifespan goal-setting perspective (e.g., Ackerman & Kanfer, 2020), we propose that people who see the aging process as something that is set in stone and cannot be influenced may feel more constrained in their future occupational possibilities. This is because they may see themselves as less capable to act on and adapt to novel job opportunities (Dweck, 1999; Kooij & van de Voorde, 2011). Believing that growing old inevitably implies the loss of important capabilities and skills may shift one's occupational focus on limitations rather than on future opportunities, development, and growth. When individuals feel that their possibilities are constrained, they are more likely to withdraw their commitment from work and to prepare for retirement (Wang & Shi, 2014). As such, the perception of limited time and opportunities at work will be negatively related to the motivation to continue working beyond retirement age. Thus, we hypothesize:

Hypothesis 2 (H2): The relationship between essentialist beliefs about aging and motivation to continue working beyond retirement age is mediated by OFTP such that individuals who more strongly endorse an essentialist view on aging are more likely to perceive a more limited OFTP which, in turn, negatively relates to their motivation to continue working beyond retirement age.

3 | OVERVIEW OF RESEARCH

To test our hypotheses, we conducted two studies with workers aged 40–65 years.

In Study 1, we used a time-lagged design with three measurement occasions to collect data from workers across a range of different industries and occupying various hierarchical positions. The findings provided initial evidence for our proposed mediation model. To be able to obtain more robust conclusions regarding the proposed causal order of our variables of interest, we conducted a second study (Study 2), in which we experimentally manipulated essentialist beliefs about aging and examined their resulting effects on OFTP and motivation to continue working beyond retirement age. In both studies, to establish the incremental validity of essentialist beliefs about aging, we investigated its effects over alternative explanatory variables known to influence OFTP and/or motivation to continue working, such as chronological age, health, income, level of education, and age stereotypes (Armstrong-Stassen & Schlosser, 2008; Bal et al., 2012; Kooij et al., 2018; Levy, 2009; von Hippel et al., 2013; Weiss et al., 2016).

3.1 | Study 1

In this study, we aimed to test our hypotheses with a time-lagged study using a sample of working adults from a wide range of industries and occupations. The design entailed three measurement waves with a lag of 3 months between two consecutive waves.

3.1.1 | Participants and procedure

Data for this study were collected as part of a larger longitudinal data collection effort. So far, seven articles based on the same dataset, but with completely different research questions and completely different sets of substantive variables, have been published ((Rudolph & Zacher, 2021; Zacher & Rudolph, 2021a; Zacher & Rudolph, 2021b; Zacher et al., 2021; Koziel et al., 2021; Rudolph et al., *in press*; Rauvola et al., *in press*) [Correction added on 20 June 2022, after first online publication: The seven articles mentioned are now cited in this version.]. Data were collected at three measurement occasions separated by 3 months in December 2019 (Time [T] 1), March 2020 (T2), and June 2020 (T3). A professional panel provider was commissioned to recruit participants from a nationally representative panel in Germany. At T1, 4,839 persons in the company's database were contacted. To be eligible for inclusion in our study, participants had to be at least 40 years old, not older than 65 years, and be working full-time. At T1, 1,137 participants (24.05%) met these inclusion criteria and provided complete responses to the focal variables. At T2 and T3, $n = 748$ and $n = 631$ individuals participated who had also provided data at T1 and T2, respectively.

Participants' age ranged from 40 to 65 years with a mean age of 51.51 years ($SD = 6.56$). With regard to educational level, 725 (63.8%) had obtained a primary, secondary, or an advanced high

school degree, 85 (7.5%) held a vocational diploma, 314 (27.6%) held a university degree (undergraduate and postgraduate), and eight (0.7%) reported to hold other degrees, and five (0.4%) participants did not respond to that question. Participants worked across 20 different industries with most people working in manufacturing (11%), healthcare (10.9%), or public administration (10.6%). To address systematic patterns of attrition, incomplete responders (T1 only; $n = 326$) were compared to the panel of complete responders (T1, T2, and T3; $n = 631$) on key demographic and substantive variables. Results showed that those who dropped out were slightly older (Cohen's $d = .18$), more likely to be female (59.4% vs. 39.6% women), slightly less educated (Cohen's $d = .17$), and had less income (Cohen's $d = .36$). No meaningful differences appeared for health (Cohen's $d = .03$), essentialist beliefs about aging (Cohen's $d = .05$), OFTP (Cohen's $d = -.04$), and motivation to continue working (Cohen's $d = .08$).

3.1.2 | Measures

Essentialist beliefs about aging

Essentialist beliefs about aging were assessed at T1 with a 10-item scale (Weiss & Diehl, 2021; Weiss et al., 2016). The scale was anchored from 1 = *do not agree* to 7 = *absolutely agree* with five items assessing the beliefs that aging-related changes are relatively flexible and five items assessing the belief that aging-related changes are relatively fixed and immutable. Example items are as follows: “To a large extent, a person's age biologically determines his or her abilities,” “Aging is an irreversible biological process and cannot be influenced,” “Age is just a number and does not say much about a person” (reverse scored), and “No matter at what point in life, you can always influence your own aging” (reverse scored). Cronbach's alpha for the scale was .77.

Occupational future time perspective

We assessed OFTP at T1 and T2 using the 10-item OFTP scale (Zacher & Frese, 2009). The scale ranged from 1 (*do not agree*) to 7 (*absolutely agree*), and sample items are as follows: “Many opportunities await me in my occupational future,” “I expect that I will set many new goals in my occupational future,” and “As I get older, I begin to experience time in my occupational future as limited” (reverse coded). An overall mean composite score was computed with higher values indicating a more extended OFTP. Cronbach's alphas for the scale were adequate across measurement occasions (T1: .89; T2: .90).

Motivation to continue working beyond retirement age

Motivation to continue working beyond retirement age was assessed at T1 and T3 with a four-item scale (1 = *do not agree* to 7 = *absolutely agree*; “If I were completely free to choose, I would prefer to continue working after my retirement age,” “I expect to continue working as long as possible after my retirement age,” “I am highly motivated to continue working after my retirement age” and “Barring unforeseen circumstances, I would remain working as long as possible”; see Armstrong-Stassen & Schlosser, 2008; Bal et al., 2012).

Cronbach's alphas for the scale were adequate across measurement occasions (T1: .97; T3: .96).

Covariates

We included chronological age (in years), sex (1 = men, 2 = women), level of education (ranging from 1 = no educational degree, to 7 = university degree (undergraduate and postgraduate)), self-rated health ("How would you describe your health status in the last 3 months?" 1 = bad to 5 = excellent), and income (log) as covariates, because previous research has shown that these variables may influence OFTP (Kooij et al., 2018) and/or the decision whether or not to continue working beyond retirement age (Armstrong-Stassen & Schlosser, 2008; Bal et al., 2012). To assess the extent to which participants perceive and endorse age stereotypes at work, we used the seven-item competence subscale of the work-related age-based stereotypes scale (Marcus et al., 2016; e.g., "Older workers are capable in their jobs" or "Older workers generally show reduced performance at work" (reverse coded); 1 = do not agree to 7 = absolutely agree).

Analytic approach

To test the direct and indirect effects of essentialist beliefs about aging on OFTP and motivation to continue working beyond retirement age, we tested a time-lagged indirect effect model. Such models shed light on temporality or causal ordering of variables by quantifying mediation relations over time (MacKinnon & Fairchild, 2009). We tested all hypotheses simultaneously using a time-lagged indirect effect model (Preacher & Hayes, 2008) which estimates the direct effect of essentialist beliefs about aging on motivation to continue working (Hypothesis 1) as well as the indirect effect of essentialist beliefs about aging on motivation to continue working beyond retirement age through OFTP (Hypothesis 2). Specifically, we regressed motivation to continue working beyond retirement age at T3 on essentialist beliefs about aging assessed at T1 and on OFTP assessed at T2 while controlling for the effects of motivation to continue working beyond retirement age at T1 and OFTP at T1 as well as our additional control variables.

Because we control for time-lagged T1 levels of mediators and outcomes, our model represents an autoregressive panel model looking at change in individual differences in OFTP and motivation to continue working (Selig & Little, 2012; Selig & Preacher, 2009). Accordingly, the observed effects of predictors in these models can be interpreted in terms of their effect on between-person changes in mediator and outcome variables from T1 to T3. This model also represents a full time-lagged mediation model (MacKinnon & Fairchild, 2009; Selig & Preacher, 2009), because of the time lag between the predictor (T1 essentialist beliefs about aging), the mediator (T2 OFTP), and the outcome (T3 motivation to continue working beyond retirement age). With this time-lagged indirect effect model, we aimed to explain between-person rather than a within-person variation in OFTP and motivation to continue working beyond retirement age by essentialist beliefs about aging. As the lag between two consecutive waves was relatively short (3 months), we did not expect significant intraindividual variation to occur for OFTP or motivation to

continue working beyond retirement age. Consistently, the ICC(1) as an indicator of between- versus within-person variance components indicated that, for the two measurement points of motivation to continue to working beyond retirement age, 73% of the variance resided at the between-person level. Thus, our analytic approach focuses on explaining between- and not within-person variance. We adjusted for covariates (chronological age, sex, level of education, older worker competence, and health) in our indirect effect model for mediator and outcome. To test whether the contribution of the mediator (i.e., indirect effect through OFTP) was significantly different from zero, we constructed 95% confidence intervals (CIs) using 5,000 bootstrap samples. If zero is not contained in the interval, then the indirect effect via OFTP is significant.

3.1.3 | Results

Means, standard deviations, and bivariate correlations for the variables are reported in Table 1. To ensure that our constructs were empirically distinct, we computed confirmatory factor analyses (CFAs) to specify measurement models using latent variables. The measurement model including five distinct constructs (EBA, OFTP T1 and T2, MCW T1 and T3) was confirmed and had a good overall model fit ($\chi^2[197] = 812.66$, $p < .001$, comparative fit index [CFI] = .95, Tucker–Lewis index [TLI] = .94, root mean square error of approximation [RMSEA] = .06, standardized root mean square residual [SRMR] = .04) and provided significantly better fit than (a) a two-factor model in which OFTP and EBA items loaded on one factor ($\chi^2[203] = 2,889.61$, $\Delta\chi^2 = 2,076.95$, $p < .001$, CFI = .77, TLI = .74, RMSEA = .12, SRMR = .14) and (b) a single factor model ($\chi^2[206] = 4,645.53$, $\Delta\chi^2 = 3,832.87$, $p < .001$, CFI = .63, TLI = .58, RMSEA = .15, SRMR = .17). In addition, we could confirm measurement invariance of configural, metric, and scalar invariance for the time-varying constructs (OFTP and MCW) (see Table S1).

Results of the indirect effect model that simultaneously tested all of our hypotheses revealed that essentialist beliefs about aging at T1 negatively predicted motivation to continue working beyond retirement age at T3 ($B = -.14$, $SE = .07$, $p < .05$, 95% CI [-0.283, -0.0002]), suggesting that a more fixed view of the aging process is related to a lowered motivation to continue working beyond retirement age (see Table 2). Moreover, essentialist beliefs about aging (T1) were significantly and negatively related to OFTP at T2 ($B = -.09$, $SE = .04$, $p < .05$, 95% CI [-0.169, -0.002]) and OFTP at T2 was significantly and positively related to motivation to continue working beyond retirement age assessed at T3 ($B = .31$, $SE = .07$, $p < .001$, 95% CI [0.170, 0.437]). The indirect effect through the mediator (i.e., OFTP at T2) was significant (indirect effect = -0.03, $SE = .01$, 95% CI [-0.057, -0.0004]). Figure 1 displays the time-lagged indirect effect results.

To rule out possible reverse causal effects, we also tested an alternative model specifying motivation to continue working beyond retirement age at T2 as a mediator in the relationship between essentialist beliefs about aging at T1 and OFTP at T2 (see Table S2). The results indicated that the direct and indirect effects for this model

TABLE 1 Means, standard deviations, and bivariate correlations for variables in Study 1

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	51.51	6.59	-									
2. Sex	1.54	0.50	-.03	-								
3. Education	4.95	1.66	-.08*	.04	-							
4. Health	3.08	0.90	-.04	.11**	.11**	-						
5. Income	7.62	0.86	-.03	.16***	.13***	.11**	-					
6. AS	5.25	1.03	.20***	-.11**	.04	.11**	.01	-				
7. EBA T1	3.76	0.78	-.03	.06	-.14***	-.21***	-.05	-.09**	-			
8. OFTP T1	3.53	1.20	-.38***	.05	.13***	.34***	.06	-.03	-.23***	-		
9. OFTP T2	3.45	1.19	-.40***	.05	.15***	.30***	.13**	-.07	-.24***	.76***	-	
10. MCW T1	2.99	1.86	.05	.10**	.10**	.22***	.05	.04	-.14***	.38***	.32***	-
11. MCW T3	3.11	1.85	.08*	.09*	.08*	.21***	-.04	.05	-.20***	.33***	.35***	.73***

Note: Sex (1 = “female”, 2 = “male”), education (1 = “no degree” – 7 = “university degree”), self-rated health (1 = “bad” to 5 = “excellent”), income = log income.

Abbreviations: AS, age stereotypes; EBA, essentialist beliefs about aging; MCW, motivation to continue working beyond retirement age; OFTP, occupational future time perspective; T, measurement time.

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

TABLE 2 Time-lagged direct and indirect effects predicting motivation to continue working beyond retirement age at T3 (Study 1)

Predictor variables	OFTP (T2)		MCW (T3)	
	B	SE	B	SE
Age	-.03***	(.01)	.03**	(.01)
Sex ^a	.06	(.06)	.06	(.10)
Edu	.01	(.02)	-.02	(.03)
Health	.06	(.04)	.08	(.06)
Income	.07	(.04)	.001	(.07)
AS	-.01	(.03)	.01	(.05)
OFTP (T1)	.65***	(.03)	-.09	(.07)
OFTP (T2)	--	--	.30***	(.07)
MCW (T1)	.04*	(.02)	.66***	(.03)
EBA (T1)	-.09*	(.04)	-.14*	(.07)
R ²	.63**		.56*	

Note: $N = 617$. Sex (1 = “male”, 2 = “female”), Edu = level of education (1 = “no degree” to 7 = “university degree”), self-rated health (1 = “bad” to 5 = “excellent”), income = log income.

Abbreviations: AS, age stereotypes; EBA, essentialist beliefs about aging; MCW, motivation to continue working beyond retirement age; OFTP, occupational future time perspective; T, measurement time (1–3).

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

were not significant. To account for the relatively wide age range in our sample, we also tested whether there was an interaction effect between chronological age and essentialist beliefs about aging on motivation to continue working beyond retirement age. Moderated regression results revealed no significant interaction ($B = -.03$, $p = .062$), suggesting that essentialist beliefs about aging affected relatively younger and older individuals' motivation to continue working beyond retirement age similarly.

3.1.4 | Discussion

Results of a three-wave study with individuals working across various industries upheld our prediction that essentialist beliefs about aging relate negatively to individuals' motivation to continue working beyond retirement age. Specifically, older workers who believed that the aging process is fixed were less motivated to continue working beyond retirement age 6 months later than those who believed that aging is a flexible and modifiable process. Also, in line with predictions, we found that the effect was mediated by OFTP such that individuals with a more essentialist view of the aging process reported a more constrained OFTP, which in turn was associated with a decreased motivation to continue working beyond retirement age. These relationships were robust to the inclusion of previously identified control variables such as age, sex, level of education, self-rated health, and age stereotypes. By adopting a time-lagged design, we were able to temporally separate our predictor, mediator, and outcome variables, such that we are able to derive relatively robust inferences regarding the direction of the effects. However, there are some limitations. As all variables of interest were assessed via self-report measures, common method bias may be an issue. Moreover, because causality can only be inferred from experimental designs, we designed a second study in which we manipulated essentialist beliefs about aging to investigate its resulting impact on OFTP and motivation to continue working beyond retirement age.

3.2 | Study 2

In this experimental study, we manipulated essentialist beliefs about aging using a newspaper article and subsequently assessed OFTP and motivation to continue working.

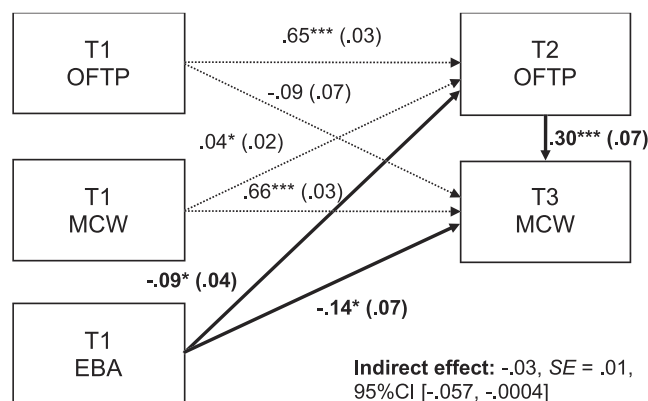


FIGURE 1 Time-lagged indirect effect model predicting motivation to continue working at T3 (Study 1); EBA, essentialist beliefs about aging; MCW, motivation to continue working beyond retirement age; OFTP, occupational future time perspective; T, measurement time; controlling for chronological age, sex, health, income, level of education, and age stereotypes; showing unstandardized estimates and standard deviations in parentheses; solid lines represent mediation effects, dashed lines represent autoregressive and cross-lagged effects. * $p < .05$, ** $p < .01$, *** $p < .001$

3.2.1 | Participants and procedure

We commissioned a certified professional panel provider to recruit participants in Germany to participate in our experimental online study. A total of $N = 361$ adults between 40 and 65 years of age were randomly assigned to one of three experimental conditions. Overall, 11 participants failed attention checks or provided incomplete data and were excluded from analyses, resulting in a sample of $N = 350$ ($M = 51.47$, $SD = 6.62$; 47.4% women). More specifically, the current study consisted of a randomized between-participant design with three conditions: (1) essentialism about aging ($n = 134$), (2) nonessentialism about aging ($n = 125$), and (3) control ($n = 91$). We included a control condition in order to confirm the absolute effects of manipulating essentialist versus nonessentialist beliefs about aging relative to manipulating neither. To activate (non)essentialist beliefs about aging, we used an experimental procedure that has been successfully implemented in previous research (Weiss et al., 2016). Specifically, participants were randomly assigned to one of the three conditions (essentialism, nonessentialism, or control) and were asked to read one of three versions of an ostensible newspaper article. The first version of the article used in this study (essentialism: “Aging is a process set in stone”) described scientific evidence supporting the view that the aging process is fixed and depends largely on one’s genetic material. In contrast, the second version of the article (nonessentialism: “Age is just a number”) endorsed the belief that the aging process is malleable and that one’s aging trajectory depends primarily on lifestyle choices. Finally, in the control condition, participants read an article about a neutral, aging-unrelated topic about the domestication of grain discussing the role of grazing animals for grain cultivation. All three articles were written in parallel such that they were similar in style and length. A manipulation check consisting of a multiple-choice quiz confirmed that all participants correctly understood the content of the article and selected the correct answers in each of the conditions.

Essentialist beliefs about aging

Essentialist beliefs were assessed with the same 10-item scale as in Study 1 (Weiss & Diehl, 2021; Weiss et al., 2016). The scale was anchored from 1 = *do not agree* to 5 = *absolutely agree*. Cronbach’s alpha for the scale was .87.

Occupational future time perspective

OFTP was assessed with the same scale as in Study 1 (Zacher & Frese, 2009). The scale ranged from 1 (*do not agree*) to 5 (*absolutely agree*). Cronbach’s alpha for the scale was .89.

Motivation to continue working beyond retirement age

Motivation to continue working beyond retirement age was assessed with the same four-item scale as in Study 1 (1 = *do not agree* to 5 = *absolutely agree*; Armstrong-Stassen & Schlosser, 2008; Bal et al., 2012). Cronbach’s alpha for the scale was .93.

Covariates

We included chronological age (in years), sex (1 = female, 2 = male); level of education, self-rated health, and income (log). As in Study 1, we controlled for these variables as they showed associations with our outcome variables (Armstrong-Stassen & Schlosser, 2008; Bal et al., 2012; Kooij et al., 2018). In addition, we included age stereotypes as a control variable to test the incremental value of essentialist beliefs about aging above and beyond generalized perceptions about older workers.

3.2.2 | Results

Means, standard deviations, and bivariate correlations for the variables are reported in Table 3. First, we tested the proposed main effect of condition on essentialist beliefs about aging, which also served as a manipulation check. A one-way analysis of variance

TABLE 3 Means, standard deviations, and bivariate correlations for variables in Study 2

	M	SD	1	2	3	4	5	6	7	8	9
1. Age	51.47	6.62	-								
2. Sex	1.53	0.50	-.04	-							
3. Education	5.47	1.96	-.14**	.04	-						
4. Health	3.30	0.74	-.10	.01	.09	-					
5. Income	1.65	0.40	.03	.25***	.32***	.16**	-				
6. AS	4.43	0.56	.24***	-.11*	-.08	.05	-.04	-			
7. Condition	.52	0.50	.05	.04	.06	.11*	.01	.07	-		
8. EBA	2.90	0.81	.05	.09	-.05	.06	-.01	-.01	.77***	-	
9. OFTP	2.71	0.76	-.46***	.06	.24***	.26***	.12*	-.02	-.12*	-.17**	-
10. MCW	2.78	1.18	.04	.00	.02	.16**	.02	.23***	.01	-.05	.28***

Note: Sex (1 = “female”, 2 = “male”); education (1 = “high school” to 8 = “MSc”); health = self-rated health (1 = “bad” to 5 = “excellent”); income = log income; condition = experimental condition (0 = “nonessentialist condition”, 1 = “essentialist condition”).

Abbreviations: AS, age stereotypes; EBA, essentialist beliefs about aging; MCW, motivation to continue working beyond retirement age; OFTP, occupational future time perspective.

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

(ANOVA) yielded a main effect of condition suggesting that essentialist beliefs about aging differed significantly between the conditions, $F(2, 348) = 206.35$, $p < .001$, $n^2_p = .55$. Planned linear contrasts (essentialism = 1, nonessentialism = -1, and control = 0) confirmed our predictions ($p < .001$). In addition, pairwise comparisons demonstrated that essentialist beliefs about aging were significantly higher in the essentialist condition ($M = 3.57$, $SD = 0.58$) as compared to the nonessentialist condition ($M = 2.19$, $SD = 0.57$), $t(257) = 19.36$, $p < .001$, and the control condition ($M = 2.88$, $SD = 0.81$), $t(223) = 9.57$, $p < .001$. In addition, we found that essentialist beliefs about aging were significantly lower in the nonessentialism condition as compared to the control condition, $t(214) = -9.50$, $p < .001$. Further, the effects were significant when including covariates (i.e., chronological age, sex, level of education, health, perceived control, and age stereotypes).

Second, we tested the effect of condition on OFTP. An one-way ANOVA yielded a main effect of condition suggesting that OFTP differed significantly between the conditions $F(2, 348) = 4.67$, $p = .01$, $n^2_p = .03$. Again, planned linear contrasts (essentialism = 1, nonessentialism = -1, and control = 0) confirmed our predictions ($p < .001$). In addition, pairwise comparisons showed that OFTP was significantly lower in the essentialism condition ($M = 2.58$, $SD = 0.69$), as compared to the nonessentialism condition ($M = 2.76$, $SD = 0.79$), $t(257) = -1.97$, $p = .03$, or the control condition ($M = 2.81$, $SD = 0.80$), $t(223) = -2.23$, $p = .02$. Again, the effects were significant when including covariates (i.e., chronological age, sex, level of education, health, and perceived competence of older workers). No significant differences appeared between conditions for motivation to continue working beyond retirement age ($F[2, 349] = .09$, $p = .91$). We also note that, similar to Study 1, there was no significant interaction between experimental condition (essentialism vs. nonessentialism) and age on motivation to continue working beyond retirement age ($B = .02$, $p = .368$).

Finally, we tested the proposed indirect effect of condition on motivation to continue working beyond retirement age via OFTP by computing an indirect effect model that simultaneously tested all of our hypotheses and provided estimates about the direct and indirect effects (see Table 4). In the indirect effect model including covariates, condition (nonessentialism vs. essentialism, $n = 259$) significantly and negatively predicted OFTP ($B = -.18$, $SE = .08$, $p = .028$, 95% CI [-0.335, -0.018]) and OFTP further predicted motivation to continue working beyond retirement age ($B = .50$, $SE = .11$, $p < .001$, 95% CI [0.286, 0.719]). To test whether the contribution of the mediator (i.e., indirect effect through mediator) was significantly different from zero, we constructed 95% CIs using 5,000 bootstrap samples. If zero is not contained in the interval, then the indirect effect via OFTP is significant. The direct effect of condition on motivation to continue working beyond retirement age was not significant (direct effect = 0.05, $SE = .14$, $p = .737$ 95% CI [-0.231, 0.325]); thus, Hypothesis 1 was not supported. The indirect effect through the mediator (i.e., OFTP) was significant and negative (indirect effect = -.09, $SE = .05$, 95% CI [-0.192, -0.007]).¹ Figure 2 depicts the mediated regression results. Overall, these results support Hypothesis 2.

3.2.3 | Discussion

Using an experimental design, Study 2 showed that older individuals who were confronted with an essentialist perspective on aging were less motivated to continue working beyond retirement age because they had a more restricted OFTP as compared to those who were confronted with a nonessentialist perspective on aging.

Study 2 largely replicated the results of Study 1 as we found support for our proposed mediation model linking essentialist beliefs about aging with motivation to continue working beyond retirement age via OFTP. Again, the effect was robust when including

chronological age, sex, health status, level of education, perceived control, and stereotypes about older workers, all of which have been found to be significant predictors of OFTP and/or motivation to continue working beyond retirement age. It is noteworthy that in contrast to Study 1, we did not find a main effect of essentialist beliefs about aging on motivation to continue working beyond retirement age. Statistically, there is no need for a significant direct effect of X on Y to establish mediation (Zhao et al., 2010). Theoretically, there are two possibilities that may account for the lack of a direct effect. First, the effect of our manipulation might have faded out while participants completed the subsequent measures, which is a common problem with experimental studies because participants rapidly shift their attention away from the manipulation (Perdue & Summers, 1986). Second, the lack of a direct effect may be also explainable by the fact that there are other mediators that possibly carry both positive and negative effects, subsequently leading to a nonsignificant direct effect (Hayes, 2009). The highly significant indirect effect along with an

experimental design nevertheless underscores the important role of OFTP in the relationship between essentialist beliefs about aging and motivation to continue working beyond retirement age among older workers.

4 | GENERAL DISCUSSION

Across a three-wave study and an experiment with workers aged 40–65 years from various industries, we demonstrate that beliefs about the malleability of the aging process affect older workers' motivation to continue working beyond retirement age. First, Study 1 showed that believing that aging is a fixed, immutable, and biologically predetermined process was associated with a lowered motivation to keep working beyond retirement age. In addition, this study provided initial evidence for the suggested mediating role of OFTP. Specifically, holding a more essentialist view of aging related to a more constrained OFTP, which, in turn, related to a lowered motivation to continue working beyond retirement age. Second, our experimental Study 2 underlines the suggested causal relationships and mechanism: Participants who read arguments in favor of a fixed and biologically determined aging process were more likely to perceive their future occupational opportunities and time as limited, which, in turn, lowered their motivation to continue working past retirement age. With this research, we make several theoretical contributions to the literatures on retirement and work motivation of older workers and offer managerial implications for retaining older workers.

4.1 | Theoretical implications

Our findings contribute to a better understanding of the psychological pathways affecting motivation to continue working beyond retirement age specifically and psychological research on retirement more broadly (e.g., Gobeski & Beehr, 2009; Wang et al., 2008). Previous research adopting a lifespan perspective on work motivation has often focused on socio-demographic determinants (e.g., chronological age, health, and finances) as well as on attitudes toward and perceptions of the immediate work environment to predict motivation to continue working beyond retirement age or other retirement-related outcomes (e.g., Bal et al., 2012; Kooij et al., 2018; Topa et al., 2018; Wang

TABLE 4 Direct and indirect effects of essentialist beliefs about aging on occupational future time perspective and motivation to continue working beyond retirement age (Study 2)

Predictor variables	OFTP		MCW	
	B	SE	B	SE
Age	-.05***	(.01)	.03	(.01)
Sex	.01	(.08)	-.18	(.15)
Education	.05*	(.02)	.001	(.04)
Health	.17**	(.06)	.16	(.08)
Income	.15	(.11)	-.26	(.20)
AS	.06	(.07)	.28*	(.13)
OFTP	--	--	.50***	(.11)
Condition	-.18*	(.08)	.05	(.14)
R ²	.29***		.14***	

Note: N = 258. Sex (1 = “female”, 2 = “male”); Edu = level of education (1 = “high school” to 8 = “MSc”); health = self-rated health (1 = “bad” to 5 = “excellent”); income = log income; Condition = experimental (0 = ‘nonessentialist condition’, 1 = ‘essentialist condition’). Abbreviations: AS, age stereotypes; EBA, essentialist beliefs about aging; MCW, motivation to continue working beyond retirement age; OFTP, occupational future time perspective.

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

Indirect effect: -.09, SE = .05, 95%CI [-.192, -.007]



FIGURE 2 Indirect effect model predicting motivation to continue working (Study 2); EBA, essentialist beliefs about aging; MCW, motivation to continue working beyond retirement age; OFTP, occupational future time perspective; experimental condition (1 *essentialist condition*; 0 *nonessentialist condition*); controlling for chronological age, sex, health, income, level of education, and age stereotypes; showing unstandardized estimates and standard deviations in parentheses

et al., 2008). However, the effects of these predictors were not always consistent, and, thus, researchers have called for more insight into individual differences that potentially affect motivational resources as workers approach retirement (e.g., Wang & Shultz, 2010; Wang et al., 2008).

Our findings respond to this call and point toward the importance of beliefs regarding the nature of aging above and beyond these previously established effects. Believing whether the aging process is set in stone or malleable may not seem to be readily related to the work context, yet it appears to strongly affect the perception of occupational goals and possibilities in the future, thus affecting how much resources people are willing to still invest into work (Ackerman & Kanfer, 2020). Our findings show that above and beyond physical markers of aging (i.e., self-rated health and chronological age), people's aging mindsets regarding the "nature vs. nurture" of aging affects whether people desire to continue with or end their career path. In addition, the demonstrated impact of beliefs about the immutability of aging goes beyond the influence of aging stereotypes that have previously been established as antecedents of retirement intentions or work engagement in older individuals (e.g., Bal et al., 2015; Kulik et al., 2016; von Hippel et al., 2013).

This is consistent with social-cognitive theory and implicit or lay theories which have highlighted the powerful effects of beliefs and mindsets on motivation and behavior (Bandura, 2001; Dweck, 1999, 2008). We found that individuals with a more essentialist view of aging feel that their future occupational possibilities are more restricted because they believe that aging is an immutable process which cannot be influenced. Their understanding of the aging process as fixed likely causes older adults to believe that they themselves are unable to alter their own aging process. As such, beliefs in the present have a significant impact on motivation and behavior in the future and may thus become self-fulfilling prophecies. Thus, our findings underscore the fact that it is not chronological age per se that explains why some older workers are motivated to continue working beyond retirement age but rather their beliefs and mental representations of age and aging as "just a number" versus "set in stone." We thus respond to repeated calls by aging at work researchers to identify explanatory variables rather than treating chronological age as the independent variable (Bal et al., 2013; Truxillo & Fraccaroli, 2013; Wang et al., 2015).

We uncover OFTP as an important mediating mechanism in the relationship between aging-related beliefs and motivation to continue working beyond retirement age. Thus, our findings resonate with the literature on OFTP that has highlighted its impact on relevant work outcomes, such as retirement intentions and work continuance intentions (Rudolph et al., 2018; Zacher & Frese, 2009). However, our research also expands current theorizing about the antecedents of OFTP that has predominantly centered on demographic aspects (e.g., age, health, education, and job tenure; see also Rudolph et al., 2018) by pointing to the importance of aging-related beliefs.

We also significantly extend the range and predictive value of essentialist beliefs about aging as a relatively new and emerging social-cognitive concept. While previous research has predominantly

investigated its effects in nonworking samples and focused on age-related outcomes (e.g., cognitive performance and age-related threat; Weiss et al., 2016; Weiss & Weiss, 2016), we show that essentialist beliefs about aging have significant and previously unknown effects in the work context and specifically in the context of retirement. Our nonsignificant interactions between chronological age and essentialist beliefs about aging on motivation to continue working suggest that essentialist beliefs about aging affected not only those employees who were very close to retirement but also those who were further away. This resonates with previous research that has shown that essentialist beliefs about aging are already a meaningful concept in younger adulthood that can affect individuals' general FTP (i.e., 18 years and older; Weiss et al., 2016).

Our experimental study also showed that essentialist beliefs about aging may themselves not be set in stone but that a relatively simple intervention has the potential to change them. This is consistent with previous research that has shown that essentialist beliefs about aging can be manipulated (Weiss et al., 2016) and resonates with discussions on the malleability of self or implicit theories (Aronson et al., 2002; Molden & Dweck, 2006). However, it is noteworthy that the effect of such interventions may be limited to the extent that individuals may comply imperfectly with a certain treatment. Thus, for some individuals, their own essentialist beliefs about aging may still supersede the effects of outside interventions especially when the intervention is relatively short and does not stimulate in-depth elaboration which would be required to change relatively robust belief systems (Dweck & Leggett, 1988). We recommend that future research test the effects of interventions to change essentialist beliefs about aging more systematically by varying the frequency and depth of elaboration.

4.2 | Practical implications

As the workforce around the world is aging, organizations need to employ the right measures to retain and motivate older workers (i.e., 40 and older) to keep working beyond traditional retirement ages. As our experiment showed, nonessentialist beliefs about aging can be promoted through an intervention that highlights the malleability and the impact of individual effort on the aging process. Thus, organizations should promote the view that aging is a malleable process and that careers may not necessarily end with retirement. To foster nonessentialist aging beliefs, top managers and leaders have a particularly important role as they shape the organizational culture top-down (Hambrick & Mason, 1984). Their behavior toward and communication with older workers sets the stage in how older workers' potential is conceived by others and by older workers themselves. Thus, in the context of rapidly aging workforces, both managers' and employees' beliefs about aging should be thoroughly explored and targeted to foster a more flexible aging mindset. These efforts should be directed toward relatively younger employees as well as essentialist beliefs about aging are already a relevant concept in younger adults (Weiss et al., 2016).

Apart from promoting a nonessentialist aging mindset, organizations should also capitalize on those workers who already hold nonessentialist beliefs about aging and who are motivated to continue working beyond retirement age and to contribute to their organization. Paid or unpaid post-retirement career opportunities (e.g., partnership and counseling) may be one way to effectively use the potential of older workers beyond formal retirement. Bal et al. argued that “only an individualized approach will enhance motivation among employees to continue working” (Bal et al., 2012, p. 309). Our findings resonate with this claim by pointing to aging-related beliefs as an important individual aspect that needs to be considered to motivate the aging workforce.

4.3 | Limitations and future research

Even though the strengths of our research (i.e., mixed methods approach including multi-wave and experimental research, two different and highly diverse samples of older workers across a range of industries) allow us to draw relatively robust inferences regarding the causality of our findings, there are some limitations. First, in both studies, we used self-report measures, thus, biases relating to self-presentation may be not completely ruled out. Second, for our three-wave survey study, we chose a relatively short time lag of 3 months (Dormann & Griffin, 2015). This is because it was not our primary goal to investigate intraindividual change but to temporally separate our independent, mediator, and outcome variables and to focus on between-person change. However, it seems likely that both OFTP and motivation to continue working beyond retirement age may show significant intraindividual changes over a longer period of time. It is also an open question as to what kind of occupational opportunities people with more nonessentialist beliefs about aging choose to pursue (e.g., part-time work, self-employment, and voluntary work) and whether they maintain connections with their former organization (i.e., through paid or unpaid opportunities like consulting or mentoring) or start a new line of work. Thus, it seems fruitful to examine long-term patterns (i.e., across several years) of essentialist beliefs about aging, OFTP, and motivation to continue working beyond retirement age, and to investigate how essentialist beliefs about aging relate to actual post-retirement career choices. In this context, it may be worthwhile investigating younger individuals as well as our findings showed that essentialist beliefs about aging seem to be an important concept across various age groups.

Third, another limitation pertaining to the experimental study (Study 2) is that we did not manipulate the mediator which would be necessary to fully establish a causal link between all three variables of interest (Pirlott & MacKinnon, 2016). An interesting future research avenue would thus be to manipulate both essentialist beliefs about aging as well as OFTP as has been done in studies manipulating general FTP (e.g., Carstensen, 2006).

It remains noteworthy that in contrast to our time-lagged survey study (Study 1), we did not find a main effect of essentialist beliefs about aging on motivation to continue working beyond retirement age

in our experiment (Study 2). One likely explanation is that while Study 1 examined interindividual variation in these relatively stable beliefs, Study 2 entailed a manipulation to affect individuals' beliefs regarding the nature of aging. Thus, similar to the state–trait distinction, for example, in the context of personality characteristics (Nesselrode, 1988), essentialist beliefs about aging may have stable and dynamic components that exert different effects. While individuals' relatively stable beliefs about aging as examined in Study 1 have been shown to have a direct effect on their motivation to continue working beyond retirement age, the more dynamic, experimentally induced beliefs only exerted an indirect effect through OFTP. It may be helpful to investigate whether the timing (e.g., nonrecurring vs. recurring), duration, and intensity of an intervention that affects essentialist beliefs about aging may also affect the potential of generating a direct effect on individuals' motivation to continue working beyond retirement age.

Moreover, even though we found support for the mediating role of OFTP across a time-lagged and an experimental study, we focused on only one mediating mechanism (notably above and beyond the effects of several control variables) and thus omitted other potential mediating variables. For example, the lifespan theory of selection, optimization, and compensation (SOC; Baltes & Baltes, 1990; Truxillo et al., 2015) argues that older workers can employ strategies to compensate for losses and optimize efforts and resources to still be able to reach occupational goals. It is likely that older individuals with a more nonessentialist view on aging might be better able to deploy SOC strategies allowing them to proactively cope with age-related changes. Another possible mechanism stems from the theory on possible selves (Markus & Nurius, 1986), which refers to people's representations of themselves in the future. It is possible that the more individuals believe that aging is an inherent and fixed process, the more threatening their representation of their future may be, thus leading to a feared future self which leads them to decrease their motivation to continue working.

Finally, it is noteworthy that both studies were conducted in one specific cultural context (i.e., Germany) which affected the age range that we selected for our study and may have further implications for our outcome of interest, motivation to continue working beyond retirement age. The specific German retirement regulations that allow for a flexible retirement entry age seem to affect individuals' motivation to continue working beyond retirement age at a relatively young age (age 40). In other contexts, motivation to continue working beyond retirement age may not become relevant before the age of 50. Thus, future research should take into account the context-specific retirement regulations and other intercultural differences that may affect at what age motivation to continue working beyond retirement age may become a relevant concept for working individuals.

4.4 | Conclusion

This research shows how aging-related beliefs affect older workers' motivation to continue working beyond retirement age. The more individuals believe that aging is a fixed and biologically determined process, the more likely they perceive their future occupational time

and possibilities to be limited which, in turn, is negatively related to their motivation to continue working beyond retirement age.

ACKNOWLEDGMENTS

This research was supported by a Heisenberg Fellowship from the German Research Foundation awarded to David Weiss (396974499) and a grant from the Volkswagen Foundation awarded to Hannes Zacher (Az. 96 849-1, "Work and Health in the Time of COVID-19: A Longitudinal Study"). We thank Tobias Struck for his help with collecting the data for Study 2. Open Access funding enabled and organized by Projekt DEAL.

ENDNOTE

¹ To address the potential problem of imperfect treatment compliance, and resulting endogeneity, which can be an issue in experimental studies (Sajons, 2020), we also conducted an instrumental variable (IV) analysis. Using a two-stage least squares (2SLS) regression procedure, we defined the experimental condition as an instrumental variable, OFTP as explanatory variable, and motivation to continue working beyond retirement age as our outcome. The findings indicate a nonsignificant effect on motivation to continue working beyond retirement age ($B = .13$, $SE = .18$, $p = .459$). However, IV analysis makes an a priori assumption of full mediation such that the effect of X on Y is only transmitted via M/the explanatory variable (Otter et al., 2018; Sajons, 2020). In the context of previous findings, it is, however, reasonable to assume that OFTP should be an important (yet arguably not the one and only) mediating factor.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

ORCID

Mona Weiss  <https://orcid.org/0000-0003-2414-8336>

David Weiss  <https://orcid.org/0000-0002-7255-7428>

Hannes Zacher  <https://orcid.org/0000-0001-6336-2947>

REFERENCES

- Ackerman, P. L., & Kanfer, R. (2020). Work in the 21st century: New directions for aging and adult development. *American Psychologist*, 75(4), 486–498. <https://doi.org/10.1037/amp0000615>
- Adams, G., & Rau, B. (2004). Job seeking among retirees seeking bridge employment. *Personnel Psychology*, 57(3), 719–744. <https://doi.org/10.1111/j.1744-6570.2004.00005.x>
- Armstrong-Stassen, M., & Schlosser, F. (2008). Benefits of a supportive development climate for older workers. *Journal of Managerial Psychology*, 23(4), 419–437. <https://doi.org/10.1108/02683940810869033>
- Armstrong-Stassen, M., & Ursel, N. D. (2009). Perceived organizational support, career satisfaction, and the retention of older workers. *Journal of Occupational and Organizational Psychology*, 82(1), 201–220. <https://doi.org/10.1348/096317908X288838>
- Aronson, J., Fried, C. B., & Good, C. (2002). Reducing the effects of stereotype threat on African American college students by shaping theories of intelligence. *Journal of Experimental Social Psychology*, 38(2), 113–125. <https://doi.org/10.1006/jesp.2001.1491>
- Bal, M., de Jong, S. B., Jansen, P. G. W., & Bakker, A. B. (2012). Motivating employees to work beyond retirement: A multi-level study of the role of I-deals and unit climate. *Journal of Management Studies*, 49(2), 306–331. <https://doi.org/10.1111/j.1467-6486.2011.01026.x>
- Bal, P. M., de Lange, A. H., van der Heijden, B. I., Zacher, H., Oderkerk, F. A., & Otten, S. (2015). Young at heart, old at work? Relations between age,(meta-) stereotypes, self-categorization, and retirement attitudes. *Journal of Vocational Behavior*, 91, 35–45. <https://doi.org/10.1016/j.jvb.2015.09.002>
- Bal, P. M., de Lange, A. H., Zacher, H., & van der Heijden, B. I. J. M. (2013). A lifespan perspective on psychological contracts and their relations with organizational commitment. *European Journal of Work and Organizational Psychology*, 22(3), 279–292. <https://doi.org/10.1080/1359432X.2012.741595>
- Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. In P. B. Baltes & M. M. Baltes (Eds.), *Successful aging: Perspectives from the behavioral sciences* (pp. 1–34). Cambridge University Press. <https://doi.org/10.1017/CBO9780511665684.003>
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44(9), 1175–1184. <https://doi.org/10.1037/0003-066X.44.9.1175>
- Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52, 1–26. <https://doi.org/10.1146/annurev.psych.52.1.1>
- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development*, 78(1), 246–263. <https://doi.org/10.1111/j.1467-8624.2007.00995.x>
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, 312(5782), 1913–1915.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist*, 54(3), 165–181. <https://doi.org/10.1037/0003-066X.54.3.165>
- Cate, R. A., & John, O. P. (2007). Testing models of the structure and development of future time perspective: Maintaining a focus on opportunities in middle age. *Psychology and Aging*, 22(1), 186–201. <https://doi.org/10.1037/0882-7974.22.1.186>
- Dormann, C., & Griffin, M. A. (2015). Optimal time lags in panel studies. *Psychological Methods*, 20(4), 489–505. <https://doi.org/10.1037/met0000041>
- Dweck, C. S. (1999). Caution–Praise can be dangerous. *American Educator*, 23(1), 4–9.
- Dweck, C. S. (2008). Can personality be changed? The role of beliefs in personality and change. *Current Directions in Psychological Science*, 17(6), 391–394. <https://doi.org/10.1111/j.1467-8721.2008.00612.x>
- Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95(2), 256–273. <https://doi.org/10.1037/0033-295X.95.2.256>
- Gelman, S. A. (2003). *The essential child: Origins of essentialism in everyday thought*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/978019154061.003.0009>
- Gobeski, K. T., & Beehr, T. A. (2009). How retirees work: Predictors of different types of bridge employment. *Journal of Organizational Behavior*, 30(3), 401–425. <https://doi.org/10.1002/job.547>
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193–206. <https://doi.org/10.2307/258434>
- Haslam, N., Rothschild, L., & Ernst, D. (2000). Essentialist beliefs about social categories. *British Journal of Social Psychology*, 39(1), 113–127. <https://doi.org/10.1348/014466600164363>
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76(4), 408–420. <https://doi.org/10.1080/03637750903310360>
- Heckhausen, J., Dixon, R. A., & Baltes, P. B. (1989). Gains and losses in development throughout adulthood as perceived by different adult age groups. *Developmental Psychology*, 25(1), 109–121. <https://doi.org/10.1037/0012-1649.25.1.109>

- Higgs, P., Mein, G., Ferrie, J., Hyde, M., & Nazroo, J. (2003). Pathways to early retirement: Structure and agency in decision-making among British civil servants. *Ageing and Society*, 23(6), 761–778. <https://doi.org/10.1017/S0144686X03001326>
- Ho, H. C., & Yeung, D. Y. (2016). Effects of occupational future time perspective on managing stressful work situations. *International Journal of Psychology*, 51(4), 261–268. <https://doi.org/10.1002/ijop.12144>
- Hobfoll, S. E., & Wells, J. D. (1998). Conservation of resources, stress, and aging. In *Handbook of aging and mental health* (pp. 121–134). Springer. https://doi.org/10.1007/978-1-4899-0098-2_6
- Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion—Is it all in your head? Implicit theories about willpower affect self-regulation. *Psychological Science*, 21(11), 1686–1693. <https://doi.org/10.1177/0956797610384745>
- Kanfer, R., & Ackerman, P. L. (2004). Aging, adult development, and work motivation. *Academy of Management Review*, 29(3), 440–458. <https://doi.org/10.2307/20159053>
- Kanfer, R., Beier, M. E., & Ackerman, P. L. (2013). Goals and motivation related to work in later adulthood: An organizing framework. *European Journal of Work and Organizational Psychology*, 22(3), 253–264. <https://doi.org/10.1080/1359432X.2012.734298>
- Kooij, D., De Lange, A., Jansen, P., & Dikkers, J. (2008). Older workers' motivation to continue to work: Five meanings of age: A conceptual review. *Journal of Managerial Psychology*, 23, 364–394.
- Kooij, D., & van de Voorde, K. (2011). How changes in subjective general health predict future time perspective, and development and generativity motives over the lifespan. *Journal of Occupational and Organizational Psychology*, 84(2), 228–247. <https://doi.org/10.1111/j.2044-8325.2010.02012.x>
- Kooij, D. T. A. M., Kanfer, R., Betts, M., & Rudolph, C. W. (2018). Future time perspective: A systematic review and meta-analysis. *Journal of Applied Psychology*, 103(8), 867–893. <https://doi.org/10.1037/apl0000306>
- Kooij, D. T. A. M., Zacher, H., Wang, M., & Heckhausen, J. (2020). Successful aging at work: A process model to guide future research and practice. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 13, 345–365. <https://doi.org/10.1017/iop.2020.1>
- Koziel, R., Friedrich, J. C., Rudolph, C. W., & Zacher, H. (2021). Age-differentiated leadership and healthy aging at work: Evidence from the early stages of the COVID-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(23), 12509. <https://doi.org/10.3390/ijerph182312509>
- Kray, L. J., & Haselhuhn, M. P. (2007). Implicit negotiation beliefs and performance: Experimental and longitudinal evidence. *Journal of Personality and Social Psychology*, 93(1), 49–64. <https://doi.org/10.1037/0022-3514.93.1.49>
- Kulik, C. T., Perera, S., & Cregan, C. (2016). Engage me: The mature-age worker and stereotype threat. *Academy of Management Journal*, 59(6), 2132–2156. <https://doi.org/10.5465/amj.2015.0564>
- Lachman, M. E., & Weaver, S. L. (1998). The sense of control as a moderator of social class differences in health and well-being. *Journal of Personality and Social Psychology*, 74(3), 763–773. <https://doi.org/10.1037/0022-3514.74.3.763>
- Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology and Aging*, 17(1), 125–139. <https://doi.org/10.1037/0882-7974.17.1.125>
- Levy, B. (2009). Stereotype embodiment: A psychosocial approach to aging. *Current Directions in Psychological Science*, 18(6), 332–336. <https://doi.org/10.1111/j.1467-8721.2009.01662.x>
- MacKinnon, D. P., & Fairchild, A. J. (2009). Current directions in mediation analysis. *Current Directions in Psychological Science*, 18(1), 16–20. <https://doi.org/10.1111/j.1467-8721.2009.01598.x>
- Marcus, J., Fritzsche, B. A., Le, H., & Reeves, M. D. (2016). Validation of the work-related age-based stereotypes (WAS) scale. *Journal of Managerial Psychology*, 31(5), 989–1004. <https://doi.org/10.1108/JMP-11-2014-0320>
- Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41(9), 954–969. <https://doi.org/10.1037/0003-066X.41.9.954>
- Maurer, T. J., Weiss, E. M., & Barbeite, F. G. (2003). A model of involvement in work-related learning and development activity: The effects of individual, situational, motivational, and age variables. *Journal of Applied Psychology*, 88(4), 707–724. <https://doi.org/10.1037/0021-9010.88.4.707>
- McCarthy, J., Heraty, N., Cross, C., & Cleveland, J. N. (2014). Who is considered an ‘older worker’? Extending our conceptualisation of ‘older’ from an organisational decision maker perspective. *Human Resource Management Journal*, 24(4), 374–393. <https://doi.org/10.1111/1748-8583.12041>
- Medin, D., & Ortony, A. (1989). Psychological essentialism. In S. Vosniadou & A. Ortony (Eds.), *Similarity and analogical reasoning* (pp. 179–195). Cambridge University Press. <https://doi.org/10.1017/CBO9780511529863.009>
- Molden, D. C., & Dweck, C. S. (2006). Finding “meaning” in psychology: A lay theories approach to self-regulation, social perception, and social development. *American Psychologist*, 61(3), 192–203. <https://doi.org/10.1037/0003-066X.61.3.192>
- Nesselrode, J. R. (1988). Some implications of the trait-state distinction for the study of development over the life span: The case of personality. In P. B. Baltes, D. L. Featherman, & R. M. Lerner (Eds.), *Life-span development and behavior* (Vol. 8, pp. 163–189). Lawrence Erlbaum Associates, Inc.
- Ng, T. W., & Feldman, D. C. (2012). Evaluating six common stereotypes about older workers with meta-analytical data. *Personnel Psychology*, 65(4), 821–858. <https://doi.org/10.1111/peps.12003>
- Otter, T., Pachali, M. J., Mayer, S., & Landwehr, J. (2018). Causal inference using mediation analysis or instrumental variables—Full mediation in the absence of conditional independence. *Marketing ZFP—Journal of Research and Management*, 40(2), 41–57. <https://doi.org/10.15358/0344-1369-2018-2-41>
- Perdue, B. C., & Summers, J. O. (1986). Checking the success of manipulations in marketing experiments. *Journal of Marketing Research*, 23(4), 317–326. <https://doi.org/10.1177/002224378602300401>
- Pirlott, A. G., & MacKinnon, D. P. (2016). Design approaches to experimental mediation. *Journal of Experimental Social Psychology*, 66, 29–38. <https://doi.org/10.1016/j.jesp.2015.09.012>
- Plaks, J. E., & Chasteen, A. L. (2013). Entity versus incremental theories predict older adults memory performance. *Psychology and Aging*, 28(4), 948–957. <https://doi.org/10.1037/a0034348>
- Posthuma, R. A., & Campion, M. A. (2009). Age stereotypes in the workplace: Common stereotypes, moderators, and future research directions. *Journal of Management*, 35(1), 158–188. <https://doi.org/10.1177/0149206308318617>
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Prentice, D. A., & Miller, D. T. (2007). Psychological essentialism of human categories. *Current Directions in Psychological Science*, 16(4), 202–206. <https://doi.org/10.1111/j.1467-8721.2007.00504.x>
- Rauvola, R. S., Rudolph, C. W., & Zacher, H. (in press). Short-term effects of short-term work: Dynamics in fatigue across two national lockdowns. *Journal of Occupational and Environmental Medicine*. <https://doi.org/10.1097/JOM.0000000000002537>
- Rudolph, C. W., Breevaart, K., & Zacher, H. (in press). Disentangling between-person and reciprocal within-person relationships between perceived leadership and employee wellbeing. *Journal of Occupational Health Psychology*. <https://doi.org/10.1037/ocp0000320>
- Rudolph, C. W., & Zacher, H. (2021). Family demands and satisfaction with family life during the COVID-19 pandemic. *Couple and Family Psychology: Research and Practice*, 10(4), 249–259. <https://doi.org/10.1037/cfp0000170>

- Rudolph, C. W., Kooij, D. T. A. M., Rauvola, R. S., & Zacher, H. (2018). Occupational future time perspective: A meta-analysis of antecedents and outcomes. *Journal of Organizational Behavior*, 39(2), 229–248. <https://doi.org/10.1002/job.2264>
- Sajons, G. B. (2020). Estimating the causal effect of measured endogenous variables: A tutorial on experimentally randomized instrumental variables. *The Leadership Quarterly*, 31(5), 101348. <https://doi.org/10.1016/j.leaqua.2019.101348>
- Selig, J. P., & Little, T. D. (2012). Autoregressive and cross-lagged panel analysis for longitudinal data. In B. Laursen, T. D. Little, & N. A. Card (Eds.), *Handbook of developmental research methods* (pp. 265–278). The Guilford Press.
- Selig, J. P., & Preacher, K. J. (2009). Mediation models for longitudinal data in developmental research. *Research in Human Development*, 6(2–3), 144–164. <https://doi.org/10.1080/15427600902911247>
- Spiegel, P. E., & Shultz, K. S. (2003). The influence of preretirement planning and transferability of skills on naval officers' retirement satisfaction and adjustment. *Military Psychology*, 15(4), 285–307. https://doi.org/10.1207/S15327876MP1504_3
- Topa, G., Depolo, M., & Alcover, C. M. (2018). Early retirement: A meta-analysis of its antecedent and subsequent correlates. *Frontiers in Psychology*, 8, 1–24. <https://doi.org/10.3389/fpsyg.2017.02157>
- Truxillo, D. M., Cadiz, D. M., & Hammer, L. B. (2015). Supporting the aging workforce: A review and recommendations for workplace intervention research. *Annual Review of Organizational Psychology and Organizational Behavior*, 2, 351–381. <https://doi.org/10.1146/annurev-orgpsych-032414-111435>
- Truxillo, D. M., & Fraccaroli, F. (2013). Research themes on age and work: Introduction to the special issue. *European Journal of Work and Organizational Psychology*, 22(3), 249–252. <https://doi.org/10.1080/1359432X.2013.786604>
- von Hippel, C., Kalokerinos, E. K., & Henry, J. D. (2013). Stereotype threat among older employees: Relationship with job attitudes and turnover intentions. *Psychology and Aging*, 28(1), 17–27. <https://doi.org/10.1037/a0029825>
- Wang, M. (2007). Profiling retirees in the retirement transition and adjustment process: Examining the longitudinal change patterns of retirees' psychological well-being. *Journal of Applied Psychology*, 92(2), 455–474. <https://doi.org/10.1037/0021-9010.92.2.455>
- Wang, M., Burlacu, G., Truxillo, D. M., James, K., & Yao, X. (2015). Age differences in feedback reactions: The roles of employee feedback orientation on social awareness and utility. *Journal of Applied Psychology*, 100(4), 1296–1308. <https://doi.org/10.1037/a0038334>
- Wang, M., & Shi, J. (2014). Psychological research on retirement. *Annual Review of Psychology*, 65(1), 209–233. <https://doi.org/10.1146/annurev-psych-010213-115131>
- Wang, M., & Shultz, K. S. (2010). Employee retirement: A review and recommendations for future investigation. *Journal of Management*, 36, 172–206. <https://doi.org/10.1177/0149206309347957>
- Wang, M., Zhan, Y., Liu, S., & Shultz, K. S. (2008). Antecedents of bridge employment: A longitudinal investigation. *Journal of Applied Psychology*, 93(4), 818–830. <https://doi.org/10.1037/0021-9010.93.4.818>
- Weiss, D. (2018). On the inevitability of aging: Essentialist beliefs moderate the impact of negative age stereotypes on older adults memory performance and physiological reactivity. *The Journals of Gerontology, Series B, Psychological Sciences and Social Sciences*, 73(6), 925–933. <https://doi.org/10.1093/geronb/gbw087>
- Weiss, D., & Diehl, M. (2021). Measuring (non)essentialist beliefs about the process of aging. *The Journals of Gerontology, Series B: Psychological Sciences*, 76(7), 1340–1348. <https://doi.org/10.1093/geronb/gbaa113>
- Weiss, D., Job, V., Mathias, M., Grah, S., & Freund, A. M. (2016). The end is (not) near: Aging, essentialism, and future time perspective. *Developmental Psychology*, 52(6), 996–1009. <https://doi.org/10.1037/dev0000115>
- Weiss, D., Reitz, A., & Stephan, Y. (2019). Is age more than a number? The role of openness and (non)essentialist beliefs about aging for how young or old people feel. *Psychology and Aging*, 34(5), 729–737. <https://doi.org/10.1037/pag0000370>
- Weiss, D., & Weiss, M. (2016). The interplay of subjective social status and essentialist beliefs about cognitive aging on cortisol reactivity to challenge in older adults. *Psychophysiology*, 53(8), 1256–1262. <https://doi.org/10.1111/psyp.12667>
- Zacher, H., & Frese, M. (2009). Remaining time and opportunities at work: Relationships between age, work characteristics, and occupational future time perspective. *Psychology and Aging*, 24(2), 487–493. <https://doi.org/10.1037/a0015425>
- Zacher, H., & Rudolph, C. W. (2021a). Big Five traits as predictors of perceived stressfulness of the COVID-19 pandemic. *Personality and Individual Differences*, 175, 110694. <https://doi.org/10.1016/j.paid.2021.110694>
- Zacher, H., & Rudolph, C. W. (2021b). Individual differences and changes in subjective well-being during the early stages of the COVID-19 pandemic. *American Psychologist*, 76(1), 50–62. <https://doi.org/10.1037/amp0000702>
- Zacher, H., Rudolph, C. W., & Posch, M. (2021). Individual differences and changes in self-reported work performance during the early stages of the COVID-19 pandemic. *Zeitschrift für Arbeits- und Organisationspsychologie*, 65(4), 188–201. <https://doi.org/10.1026/0932-4089/a000365>
- Zhao, X., Lynch, J. G. Jr., & Chen, Q. (2010). Reconsidering baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197–206. <https://doi.org/10.1086/651257>
- Zingoni, M., & Corey, C. M. (2016). How mindset matters. *Journal of Personnel Psychology*, 16, 36–45. <https://doi.org/10.1027/1866-5888/a000171>

AUTHOR BIOGRAPHIES

Mona Weiss is Assistant Professor of Management and Diversity at Freie Universität Berlin. In her research program, she investigates antecedents and consequences of employee voice behavior, diversity with a focus on aging, as well as teamwork and leadership.

David Weiss is Senior Lecturer in Developmental Psychology at Martin-Luther University of Halle-Wittenberg. In his research program, he investigates age stereotypes, mindsets, and health as well as dynamics of social status and social inequality across the lifespan.

Hannes Zacher is Professor of Work and Organizational Psychology at Leipzig University. In his research program, he investigates aging at work and career development, occupational health, and well-being, as well as proactive and adaptive employee behaviors.

SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

How to cite this article: Weiss, M., Weiss, D., & Zacher, H. (2022). All set in stone? How essentialist beliefs about aging affect older workers' motivation to continue working beyond retirement age. *Journal of Organizational Behavior*, 43(8), 1446–1461. <https://doi.org/10.1002/job.2647>