



Future time perspective, regulatory focus, and selection, optimization, and compensation: Testing a longitudinal model

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Summary

This study examines the behavioral processes through which future time perspective (FTP) and regulatory focus may influence coping behaviors in older workers. A three-wave longitudinal study was conducted to test a novel model, positing that FTP affects regulatory focus, which then influences the coping strategies of selection, optimization, and compensation. A sample of participants from the Netherlands was invited to participate and complete online questionnaires. Results demonstrated strong support that FTP was found to influence regulatory focus, which then influenced the use of selection, optimization, and compensation behaviors. Copyright © 2014 John Wiley & Sons, Ltd.

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Introduction

Experts agree that the global workforce is rapidly aging in industrialized nations (e.g., Geipel, 2003; United Nations Department of Economic and Social Affairs Population Division [UNDESAPD], 2002). In fact, the United Nations (UN) has described the aging of the population as unprecedented, pervasive, and enduring, leaving profound implications for organizations (UNDESAPD, 2002). According to estimates by the Hudson Institute—an independent policy research organization—as well as the UN, population growth in many industrialized and developed countries has been either slowing or declining, partly owing to declining fertility rates and increasing life expectancy (Geipel, 2003; UNDESAPD, 2002).

Not only is the number of older workers increasing at a rapid pace, but these employees are also making up a larger proportion of the workforce (e.g., Bureau of Labor Statistics [BLS], 2008a, 2008b; Teichgraber, 2012). A study by the U.S. Bureau of Labor Statistics found that the number of workers over 65 years old more than doubled between 1977 and 2007 and, for workers over 75 years old, the number nearly tripled (BLS, 2008a, 2008b). Likewise, although unemployment increased 2012 in the European Union overall, employment of older workers increased by 1.5 percentage points (Teichgraber, 2012). Looking ahead, the number of the youngest workers and the oldest workers is expected to decline and rise sharply over the next 5 years, respectively (BLS, 2008a, 2008b; Toossi, 2009). Furthermore, the issue is pervasive as these older workers hold a wide variety of jobs in diverse fields with approximately 60 percent working in various white-collar positions (Bovbjerg, Jeszeck, & Petersen, 2001).

The accelerated aging of the world's workforce is exacerbated by several factors. First, a larger proportion of older workers are remaining in, or returning to, the labor force than ever before, a trend that has been occurring since the 1990s (BLS, 2008a, 2008b). This is occurring for some because many older workers no longer have a choice about

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whether to retire and for others because recent economic conditions that discourage retirement and encourage maintaining a fixed income (Hedge, Borman, & Lammlein, 2006). Second, the large baby boomer cohort is beginning to and will continue to approach retirement age, accelerating the current phenomenon. Thus, participation rates of older workers are increasing (Toossi, 2009), emphasizing the significance of this group to organizations.

As increasing numbers and proportions of employees age and work well into retirement age and beyond, it becomes increasingly paramount to understand how older workers function in the workplace and what factors facilitate their job performance. For example, although cognitive and physical abilities do tend to decline as individuals get older, no research has confirmed a causal relationship between age and performance (Hedge et al., 2006). Organizations undoubtedly will have a vested interest in motivating older workers and otherwise better understanding how to optimize the performance of older workers.

Furthermore, economic uncertainty, cost cutting, and focus on efficiency in current times have led organizations to place even greater emphasis on increasing worker effectiveness. The nature of work is evolving such that changes within organizations are occurring faster and in greater numbers than ever before (e.g., Van Der Heijde & Van Der Heijden, 2006), and thus, the importance of employee effectiveness is perhaps as high as ever before. Because high performance has become so important, individuals are frequently pressured to work more hours and/or produce greater output (BLS, 2008a). In the Netherlands, for example, productivity (output per hour) has been rising steadily the past several years. Despite the importance of increasing the effectiveness of older workers, the extant research remains unclear of the factors involved in this process. In this paper, we attempt to identify the key factors involved in the process and propose a model that may illuminate how the process unfolds.

Research is beginning to suggest that *future time perspective* (FTP)—beliefs about how much time is left in the future—and *regulatory focus* (a strategic motivational principle that relates to how people tend to approach and strive for desirable outcomes; Wallace, Johnson, & Frazier, 2009) are important factors in the performance process, especially for older workers. Lewin defined FTP as “the totality of the individual’s views of his psychological future and his psychological past existing at a given time...” (Lewin, 1951, p. 75). He stated that how we see the future influences our actual behavior (e.g., expectations, fears, and hopes; Lewin, 1939) and asserted that changes in FTP is one of the most fundamental facts of development.

Research has found FTP and regulatory focus to be important antecedents or determinants of motivation and performance (e.g., Lang & Carstensen, 2002; Lockwood, Jordan, & Kunda, 2002). For example, the latest research suggests that regulatory focus influences several types of performance: productivity, safety, task, and contextual (Wallace et al., 2009).

Despite the establishment of these relationships, it remains unclear precisely what role FTP and regulatory focus have in the performance process. The next step in this body of research is to explore the mechanisms behind these relationships.

Although we know that these constructs have an *influence* on job performance, it is important for researchers to explain *how* this process occurs. One factor that likely plays a role in this process is the behavioral coping strategies of selection, optimization, and compensation (SOC). Weigl, Muller, Hornung, Zacher, and Angerer (2013) found a relationship between SOC use and work ability. Furthermore, both Abraham and Hansson (1995) and Bajor and Baltes (2003) found evidence that supports the role of SOC as a unique predictor of job performance. Thus, it is proposed that SOC constitutes the behaviors through which FTP and regulatory focus eventually affect performance. Because previous research has established the beneficial effects of SOC strategies on performance, this study’s scope is focused on FTP and regulatory focus as potential predictors of SOC usage. In other words, this study specifically directs its scope and focuses on the interplay among FTP, regulatory focus, and SOC. In particular, we are interested in exploring the role of SOC in the casual chain of these three constructs, as well as the mechanism through which the overall effect occurs.

Zacher and Frese (2009) have called for more research that demonstrates how FTP affects work behavior, and the present study is aimed at addressing this. Specifically, we test the degree to which those who have a more open-ended FTP may endorse a promotion focus by being more focused on creating goals and achieving success. Moreover, we examine how promotion focus influences SOC behavior at work.

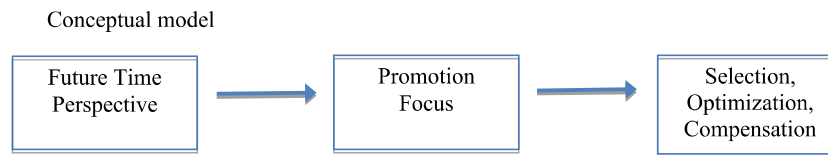


Figure 1. Conceptual model

Thus, the present study advances and tests a novel process model, positing that FTP affects promotion focus goal orientation (one of two types of regulatory focus), which then influences SOC (Figure 1). In other words, the purpose of the present paper is to demonstrate how a contemporary meta-theory of effective development—SOC—is linked to FTP and promotion focus. To this end, the paper will examine the longitudinal relationships between FTP, promotion focus, and SOC.

The concepts of FTP, promotion focus, and SOC are discussed next, followed by the present study's hypotheses.

Future time perspective

Future time perspective refers to people's beliefs and perceptions in relation to how much time is left available in their future life (Cate & John, 2007; Zacher & Frese, 2009). Conceptualized as flexible, cognitive–motivational, and age-related with the ability to fluctuate over time, FTP is characterized as a unidimensional, temporally based construct, ranging from a limited FTP (i.e., limited time remaining) to an expansive or open-ended FTP (Carstensen, 2006; Cate & John, 2007).

Recent research has identified two separate dimensions of FTP: (i) focus on opportunities, or perceiving one's future in a positive light; and (ii) focus on limitations, or perceiving the future as limited and restricted (Cate & John, 2007). The former focuses on options, plans, and goals that may still be available, whereas the latter focuses on boundaries on time and losses and limitations.

Future time perspective has been positively related to work performance, subjective health, locus of control, and positive affect, such that individuals who feel like they have little time left have lower subjective health ratings, a lower locus of control, and a lower positive disposition (Allen, Hilgeman, & Allen, 2011; Treadway, Duke, Perrwe, Breland, & Goodman, 2011; Zacher & Frese, 2009; Zacher, Heusner, Schmitz, Zwierzanska, & Frese, 2010). FTP has been negatively related to anxiety, negative affect, and work–family conflict, such that individuals who feel like they have little time left have more anxiety, a higher negative disposition, and more work–family conflict (Allen et al., 2011; Treadway et al., 2011). Perceptions of how much time is left are not the only way FTP has been characterized. FTP has also been examined in the context of how many opportunities are left. The number of opportunities left has been correlated negatively with age and positively correlated with physical health (Zacher & Frese, 2009).

Future time perspective has been found to be related to age, such that as individuals age, they perceive time as more limited, rather than open ended (Allen et al., 2011; Zacher & Frese, 2009). Older employees perceive less remaining time and fewer remaining opportunities at work than younger employees. The strong relationship between age and remaining time at work can be partially explained by the fact that most people retire within a narrowly defined age range. Importantly, although FTP tends to become more limited with age, there is still considerable variability between individuals, with some older workers having a more open-ended view than others (e.g., Lang & Carstensen, 2002).

Again, we suggest that those who have a more open-ended FTP may endorse a promotion focus goal orientation, primarily because a more open-ended FTP involves a long-view perspective. To the extent that one perceives time as less limited, one also sees more opportunity (i.e., for success, gains, and accomplishment); promotion focus puts an emphasis on what we aspire to and dream of accomplishing (Higgins, Shah, & Friedman, 1997). Time is an

instrumental resource for accomplishing goals and desires. Thus, a long view promotes goal creation and striving, which in turn facilitates success (e.g., Locke, 1991). In sum, we posit that promotion focus goal orientation, which is discussed next, plays an important role in the performance process for older workers.

Regulatory focus: promotion focus goal orientation

Regulatory focus has seen burgeoning interest from organizational scholars since Higgins (1997, 2001) introduced the concept as a more sophisticated extension of the basic hedonic principle (“...seeking pleasure and avoiding pain”; 1997, p. 1280), as an explanation for human motivation. Theory on regulatory focus suggests that people pursue two different types of regulatory goals, and thus, it has identified two types of self-regulation foci: (i) promotion focus; and (ii) prevention focus (e.g., Higgins, 1997). *Promotion focus* is focused on gains and accomplishments, whereas *prevention focus* is focused on safety and non-losses (Higgins et al., 2001). Promotion focus leads to a strategic eagerness for achievement, successes, and gains (Higgins et al., 2001). Additionally, promotion focus puts an emphasis on what we aspire to and dream of accomplishing (Higgins et al., 1997). Promotion focus goals are centered on striving for ideals and pursuing desirable outcomes, leading to sensitivity toward positive outcomes (Lockwood et al., 2002).

In contrast, prevention focus leads to a strategic avoidance of failures, losses, and other negative outcomes. Prevention goals are centered on avoiding disasters and other undesirable outcomes, leading to sensitivity toward negative outcomes. Prevention focus puts an emphasis on what we should or ought to do, such as tasks or obligations (Higgins et al., 1997).

Work-related regulatory focus

Only recently has regulatory focus been examined within the context of work. Wallace et al. (2009) found that regulatory focus is linked to task, productivity, safety, and citizenship types of performance. Meta-analyses demonstrated linkages with citizenship behaviors, counterproductive work behaviors, task performance, innovation, and safety (Gorman et al., 2012; Lenai, Chang, & Johnson, 2012). In terms of antecedents, work-related regulatory focus is related to neuroticism, extraversion, and affectivity (Gorman et al., 2012; Lenai et al., 2012).

Regulatory focus also has an important role in the effect of feedback on motivation and performance (Van Dijk & Kluger, 2011; also see Brockner & Higgins, 2001, for a detailed discussion on the relationships among regulatory focus, emotions, and motivation). For example, positive feedback increased performance among individuals working on promotion tasks but decreased performance among people working on prevention tasks. Additionally, promotion focus facilitates speed in task performance, whereas prevention focus facilitates accuracy; promotion focus was conducive to maximizing performance (Forster, Higgins, & Bianco, 2003).

Promotion focus

The emphasis in the present study is on promotion goals—and thus a promotion focus—particularly because this type of regulatory focus tends to be most strongly linked to enhanced performance (Wallace et al., 2009). People who adopt a promotion focus tend to scan the environment for and recall success-related information (Lockwood et al., 2002), be attuned to emotions relating to success (Higgins et al., 1997), and focus on strategies that lead to the achievement of desired outcomes (Higgins, Roney, Crowe, & Hymes, 1994). Promotion focus also leads to high motivation and persistence on tasks geared toward promotion (Shah, Higgins, & Friedman, 1998).

As a core component of regulatory focus, the latest research suggests that promotion focus is an important influence on several types of performance (e.g., productivity, task, and contextual; Wallace et al., 2009). Although promotion focus seems to be an important influence on factors relating to job performance, research has not been conducted to elucidate how promotion focus relates to SOC. Specifically, we believe that those employees high in promotion focus may engage in more coping behaviors (i.e., SOC), which have previously been related to performance.

Selection, optimization, and compensation

Selection, optimization, and compensation refers to a general set of resource allocation strategies that individuals use to adapt to and deal with major life challenges in myriad domains (e.g., Baltes & Baltes, 1990). Initially termed as *selective optimization with compensation*, SOC originated as a “meta theory of development” in the lifespan developmental psychology literature. SOC is rooted in the idea that resources are a limited commodity. On the basis of this argument, SOC suggests how one may maximize gains and minimize losses toward successful development (Baltes & Rudolph, 2012). In other words, the theory of SOC “posits that across the lifespan, individuals further their development adaptively by maximizing their potential gains and minimizing losses” (Li, Lindenberger, Freund, & Baltes, 2001, p. 230). Additionally, SOC usage has been positively correlated with coping success and stressor reduction (Young, Baltes, & Pratt, 2007). Within the organizational context, SOC has also been related to work ability as well as performance (Abraham & Hansson, 1995; Bajor & Baltes, 2003; Weigl et al., 2013).

The SOC theory specifies a number of behaviors that can help individuals adapt to significant losses or declines in resources as well as other challenges to healthy adjustment as they age (e.g., Baltes & Rudolph, 2012). SOC consists of three interrelated components. The first of these components, *selection*, relates to goal setting. The second, *optimization*, relates to resource acquisition. The final component, *compensation*, refers to acquiring alternative means or support. The next few sections discuss these three components in more detail.

Selection

Selection generally involves actively and consciously setting goals and preferences, which can be carried out passively or subconsciously as well as intentionally (Baltes, Baltes, Freund, & Lang, 1999). The concept of selection involves goal directionality, identification of goal domains, and reducing the pool of possible potentialities (e.g., Baltes, 1997; Baltes et al., 1999). Selection is based on the premise that development always has specific goals of functioning. A basic assumption is that there are constraints on time and resources, which necessitate individuals to actively select a certain set of goals or directions. Baltes (1997) noted that, “age-associated losses in biological potential or plasticity increase the pressure for selection” (p. 371). More recent SOC theory distinguishes between *elective selection*, or motivation-based selection involving goal specification and commitment, and *loss-based selection*, or selection that stems from a loss in resources involving adaptation and goal revision. As an example of selection in a work context, an employee may choose to work on a particular project first because it is a higher priority than the other projects on which he or she is working.

Optimization

Optimization is focused on acquiring, refining, or maintaining means appropriate for securing relevant outcomes (e.g., Baltes, 1997; Baltes et al., 1999). It involves searching for enhancing contexts likely to lead to goal attainment and pursuing goal-relevant means to achieve desired outcomes. Specifically, optimization includes factors such as attentional focus, effort/energy, practice of skills, and acquiring new skills/resources, all of which are conducive to selected goal attainment. Additionally, optimization includes less obvious means of acquisition, such as establishing relationships in order to generate a larger social or coworker support base (Baltes & Rudolph, 2012). As an example of optimization, an employee may take the time to learn a new technique or skill that will enable him or her to work more efficiently.

Compensation

Compensation occurs when means or resources are reduced or no longer available, thus involving alternative means to counteract a loss. It refers to a response to losses/declines in means—specifically, investing in substitute or alternative means. These alternative means may include changes in adaptive contexts, revision of goal structures, or acquiring new goal-directed means such as using external aids or help from others. Unlike optimization, compensation is focused on counteracting losses (Baltes, Zhdanova, & Clark, 2011). For example, an employee may ask a coworker for help on a task if he or she does not have time to finish it before a deadline.

Research evidence suggests that SOC strategies involve effective behaviors that lead to successful outcomes. For example, SOC is associated with conscientiousness (Freund & Baltes, 2002), well-being, domain-specific success (Wiese, Freund, & Baltes, 2000), emotional balance (Wiese, Freund, & Baltes, 2002), and satisfaction with one's work situation (Baltes & Smith, 2004). Additionally, SOC has been shown to reduce work–family conflict (Baltes & Heydens-Gahir, 2003; Early & Baltes, 2012). Finally and most importantly, SOC has been associated with changes in job performance-related constructs including productivity (Yeung & Fung, 2009), job performance ratings (Bajor & Baltes, 2003), job competence (Abraham & Hansson, 1995), and multitask performance (Baltes & Smith, 2004). Overall, the more an individual reports the use of SOC strategies, the higher that individual's level of performance. We thus suspect and posit that SOC plays a critical behavioral role in the performance process.

Current Study

In the present study, we make the general contention that attitudes toward time affect our approach toward goals. In turn, this affects the strategies that individuals adopt and behaviors in which individuals engage. In other words, the effect of FTP attitudes on job performance may be translated through a complex process involving cognition and behaviors.

Specifically, FTP not only influences motivation, a known correlate of goal setting behavior (Carstensen, 2006; Locke, 1991), but also has been directly related to goal setting behavior itself (Lang & Carstensen, 2002). Additionally, ideals (and other such symbols that emanate from a more open-ended time perspective) are considered as a major influence in the development of a promotion focus (Brockner & Higgins, 2001). This previous research suggests that FTP will lead to a promotion focus goal orientation.

In turn, promotion focus leads to the adoption of SOC behaviors because SOC highlights promotion strategies—SOC behaviors emphasize goal seeking and attainment, even in the face of lost resources. Also, those who seek promotion focus goals are more sensitive to the presence of positive outcomes (Lockwood et al., 2002) and thus are likely to engage in behaviors that are also focused on goal attainment. Individuals driven by promotion focus goals tend to focus on strategies that promote desired outcomes and are attuned to emotions relating to the successful pursuit of positive outcomes (Higgins et al., 1994; Higgins et al., 1997). Like promotion focus, SOC strategies are focused on achieving success and provide guidance toward success. That is, promotion focus and SOC are matching in that they are goal congruent. Van Dijk and Kluger (2011) suggested that congruence between type of feedback and promotion focus was important for performance. For example, positive feedback increased performance among individuals working on promotion tasks but decreased performance among people working on prevention tasks. It therefore is plausible that promotion focus may be linked to behavioral strategies that promote successful achievement of goals (i.e., SOC).

In sum, we contend that those who hold a more open-ended time perspective will be more focused on the achievement of goals and successes—rather than avoiding failure—which in turn leads to the adoption of effective behavioral strategies (SOC) to attain those goals (see Figure 1 for a visual representation of the conceptual model). We expect these workers to create goals and select and pursue opportunities that are aligned with achievement, to optimize their resources and abilities, and to compensate for any losses by relying on remaining resources. In fact, individuals who are driven by promotion focus goals tend to be highly motivated and persistent (Shah et al., 1998), even in the face of difficulties. SOC behaviors have been demonstrated to be effective life management strategies in a variety of domains and have been linked to higher performance. In other words, we hypothesize an accordant, goal-congruent process whereby promotion focus mediates the relationship between FTP and SOC. Relatedly, we expect the pathways between FTP and promotion focus and between promotion focus and SOC to be significant.

Two longitudinal, cross-lagged models with two time points were tested independently in order to examine the relationships and relative roles among FTP, promotion focus, and SOC. Specifically, Model 1 examines the relationships among FTP at Time 1, FTP at Time 2, promotion focus at Time 1, and promotion focus at Time 2. Model 2

examines the relationships among promotion focus at Time 1, promotion focus at Time 2, SOC at Time 1, and SOC at Time 2. This type of analysis provides longitudinal evidence for the effects between variables.

Furthermore, given our model that posits that FTP influences promotion focus and that promotion focus influences SOC, one would expect only one of the cross-lagged relationships to be significant. Specifically, we expect that the cross-lagged relationships in Model 1 will demonstrate that FTP predicts promotion goal focus orientation across time, and also that promotion goal focus orientation will not predict FTP. In Model 2, we expect that promotion goal focus orientation will predict SOC across time, and also that SOC will not predict promotion goal focus orientation.

Finally, we also predicted that the effect of FTP on SOC would be mediated by promotion focus. Thus, we ran a final model with three time points that tested whether this was indeed the case.

Method

Sample and procedure

Participants were recruited from a Dutch temporary employment agency that specifically contracts workers older than 65 years. All registered clients of this agency were invited to participate ($N=6538$ working and non-active clients; 74.80 percent male, $M_{\text{age}}=69.70$ years). These employees conducted various jobs, ranging from teaching to interim management. Within the group of invited workers, $N=784$ workers responded to an online questionnaire, which served as Wave 1 of the study (response rate=11.99 percent). For Wave 2, all registered contractors of the agency were invited to participate again ($N=6538$ working and non-active clients). Of these individuals, $N=655$ completed the online questionnaire at Time 2 (response rate=10.01 percent). For Wave 3, $N=541$ completed the online questionnaire. A total of 228 participants completed both Time 1 and Time 2 time points, and this sample was used for Models 1 and 2. A total of $N=104$ participants completed all three time waves, and these individuals constitute the sample used in the final meditational model. All measures were in Dutch.

In regard to demographics from Wave 1, 76.50 percent of the respondents were male, and their mean age was 69.20 years ($SD=6.54$ years). On average, the respondents worked 2.90 ($SD=3.53$) years for the employment agency; these participants had worked, on average, 34.18 ($SD=16.07$) years prior to their 65th birthday. Participants worked an average of $M=14.25$ hours/week ($SD=15.20$) for the temporary employment agency. Importantly, comparison analyses of the respondents to the total group of workers revealed that the sample did not differ significantly in terms of calendar age or gender from the total employee population working for the employment agency.

Research context

Currently, in the Netherlands, the official retirement age is 65 years (the age will gradually increase to age 66 years by 2019 and 67 years by 2023). However, it is possible to continue working after one's formal retirement age while also maintaining a government-funded pension. In recent years, shortages in the labor market have emerged as a result of the Netherlands having the lowest unemployment rates in Europe (4.4 percent in 2011, compared with an average rate of 9.7 percent for the entire European Union; Eurostat, 2012). Moreover, because employers pay lower employment taxes for workers over 65 years old, it is also financially attractive to employ such workers. Accordingly, an increasing number of Dutch firms have employed workers over 65 years old.

Materials

Future time perspective

Future time perspective ($\alpha = .82$) was measured with a scale developed by Carstensen and Lang (1996). Respondents rated their agreement with each of the 10 items on a Likert-type 1–5 scale, ranging from *not applicable* to *entirely appropriate*. Higher scores indicate a more open-ended time perspective, whereas lower scores indicate a more limited time perspective. Sample items are “Many opportunities await me in the future,” “I expect that I will set many new goals in the future,” and “My future is filled with possibilities.”

Promotion focus

The Lockwood et al. (2002) trait-like measure of regulatory focus (*promotion goal* subscale) was used to measure the *promotion focus* aspect of regulatory focus. Respondents rated each of the nine items using a 9-point Likert-type scale ranging from *not at all true of me* to *very true of me*. Sample items are “In general, I am focused on preventing negative events in my life,” “I am anxious that I will fall short of my responsibilities and obligations,” and “I frequently imagine how I will achieve my hopes and aspirations.”

Selection, optimization, and compensation

To assess SOC behaviors, the short version of the SOC scale developed by Baltes et al. (1999) was used. The measure consists of 12 total items (see Baltes & Heydens-Gahir, 2003, for the full scale as well as a more detailed description of the scoring procedure for this scale). Higher scores indicate stronger endorsement of the respective SOC strategy. In other words, individuals who score higher on this scale adapt to and deal with life challenges more effectively. Negative behaviors are not included in the SOC model and thus are not included in the measure. Sample items are “When things don’t go as well as they have in the past, I choose one or two important goals” and “When I can’t do something important the way I did before, I look for a new goal.”

Results

All analyses were run by analyzing the covariance matrix using the maximum likelihood method in LISREL 8.80 (Jöreskog & Sörbom, 1993). Multiple fit indices were used to assess model fit. Along with the normal theory weighted least squares chi-square, these included the CFI (Bentler, 1990), the NNFI (Tucker & Lewis, 1973), and the SRMR (Hu & Bentler, 1995). For the CFI and NNFI, values of above 0.90 are judged as indicative of a good model fit (Hoyle, 1995). For the SRMR, a value less than 0.08 is considered a good fit (Bollen & Long, 1993; Hu & Bentler, 1999).

The first set of analyses was conducted on the first two time points, and they were testing for the directional relationships between FTP and promotion focus as well as between promotion focus and SOC. Correlations, means, and standard deviations for all study variables are presented in Table 1.

Model 1 examines the cross-lagged effects between FTP and promotion focus. Model 1 had a chi-square that was significant, $\chi^2(1, N = 228) = 11.84, p < .05$, and the NNFI indicated less than optimal fit (NNFI = 0.69). However, CFI indicated good fit (CFI = 0.95), and the SRMR was 0.05, which reflects a good fit. Collectively, the fit indices seem to suggest that this is an adequately fitting model overall. Figure 2 shows that only one of the hypothesized cross-lagged pathways is significant. Specifically, the pathway from FTP at Time 1 to promotion focus at Time 2 was statistically significant ($.12, p < .05$), whereas the pathway from promotion focus at Time 1 to FTP at Time 2 was not (.07).

Furthermore, a test to see if the pathways are meaningfully different was run using changes in model fit and an examination of the effect size associated with each pathway. A model where the two pathways were held to be equal was run, and the reduction in model fit was examined. The chi-square difference between the original model (e.g.,

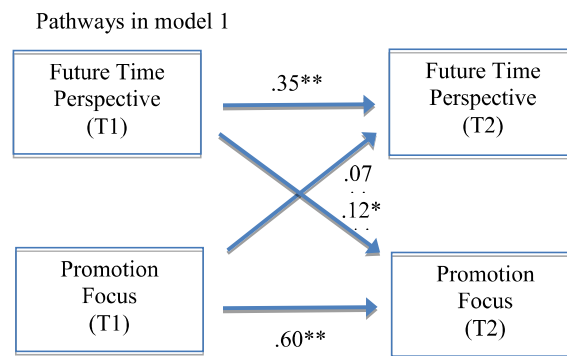
Table 1. Correlations, means, and standard deviations for all study variables.

Measures	<i>M</i> (<i>SD</i>)	1	2	3	4	5	6	7	8	9
1. FTP T1	2.57 (0.62)	(.82)								
2. FTP T2	2.68 (0.74)	.31**	(.83)							
3. FTP T3	2.70 (0.84)	.32**	.60**	(.85)						
4. Promotion focus T1	2.18 (0.52)	.39**	.16*	.37**	(.79)					
5. Promotion focus T2	2.28 (0.52)	.38**	.30**	.39**	.66**	(.80)				
6. Promotion focus T3	2.32 (0.64)	.28**	.28**	.37**	.63**	.73**	(.78)			
7. SOC T1	3.13 (0.72)	.11	.03	.12	.10	.07	.14	(.85)		
8. SOC T2	3.31 (0.72)	.19**	.14*	.03	.22**	.25**	.26*	.23**	(.79)	
9. SOC T3	3.40 (0.75)	.22*	.12	.14*	.28*	.18	.14*	.33**	.30**	(.76)

Note: $N = 228$ for correlations between Time 1 and 2 variables. $N = 104$ for correlations between Time 3 variables and all others. Reliabilities for the scales are given in the diagonals.

**Correlations are significant at the .01 level.

*Correlations are significant at the .05 level.



Note: $N = 228$, * $p < .05$, ** $p < .01$

Figure 2. Pathways in Model 1

Model 1) and the constrained model (e.g., two paths forced to be equal) was tested for significance. The results indicated that there was not a significant difference in fit between the two models ($\Delta\chi^2 = 0.26$, ns). However, the effect size difference between the two pathways was large as the pathway from FTP at Time 1 to promotion focus at Time 2 was twice as large as the pathway from promotion focus at Time 1 to FTP at Time 2. Thus, we would argue that the significance (or lack thereof) of the individual paths in Model 1 combined with the effect size defenses would support Hypothesis 1.

Model 2 examines the cross-lagged relationships between promotion focus and SOC. Model 2 had a chi-square that was significant, $\chi^2(1, N = 228) = 5.38$, $p < .05$, but the CFI and NNFI both indicated adequate to good fit (CFI = 0.97; NNFI = 0.80). Additionally, the SRMR was 0.04, which reflects a good fit. Collectively, the fit indices seem to suggest that this is a good fitting model. Figure 3 shows, again, that only one of the hypothesized cross-lagged pathways is significant. Specifically, the pathway from promotion focus at Time 1 to SOC at Time 2 was statistically significant ($r = .28$, $p < .01$), whereas the pathway from SOC at Time 1 to promotion focus at Time 2 was not ($r = -.01$).

As before, a test to see if the pathways are meaningfully different was run using changes in model fit and an examination of the effect size associated with each pathway. The chi-square difference between the original model (e.g., model 2) and the constrained model (e.g., two paths forced to be equal) was tested for significance. The results indicated that there was a significant difference in fit between the two models ($\Delta\chi^2 = 8.57$, $p < .01$). Also, the effect

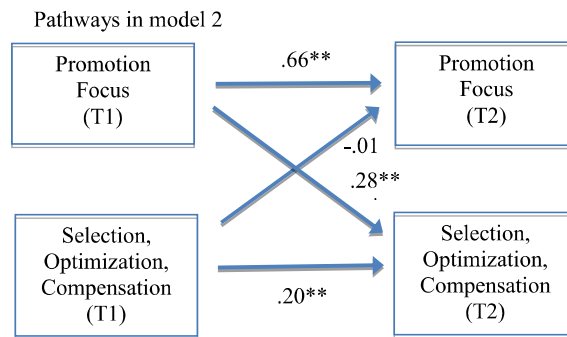


Figure 3. Pathways in Model 2

size difference between the two pathways was large as the pathway from promotion focus at Time 1 to SOC at Time 2 was much larger than the pathway from SOC at Time 1 to promotion focus at Time 2. In tandem, Models 1 and 2 suggest longitudinal evidence of the hypothesized effects among variables.

The last analysis was conducted with the data from all three time points and was constructed to test the mediational model outlined in Figure 1. Specifically, a model as suggested by Cole and Maxwell (2003) using all three time points and testing for both direct and indirect effects was employed (Figure 4).

The last model had a chi-square that was significant, $\chi^2(25, N = 104) = 44.56, p < .01$, but the CFI and NNFI both indicated good fit (CFI=0.93; NNFI=0.90). Additionally, the SRMR was 0.12, which reflects a marginally adequate fit. Collectively, the fit indices seem to suggest that this is an adequate fitting model. The results of the analysis

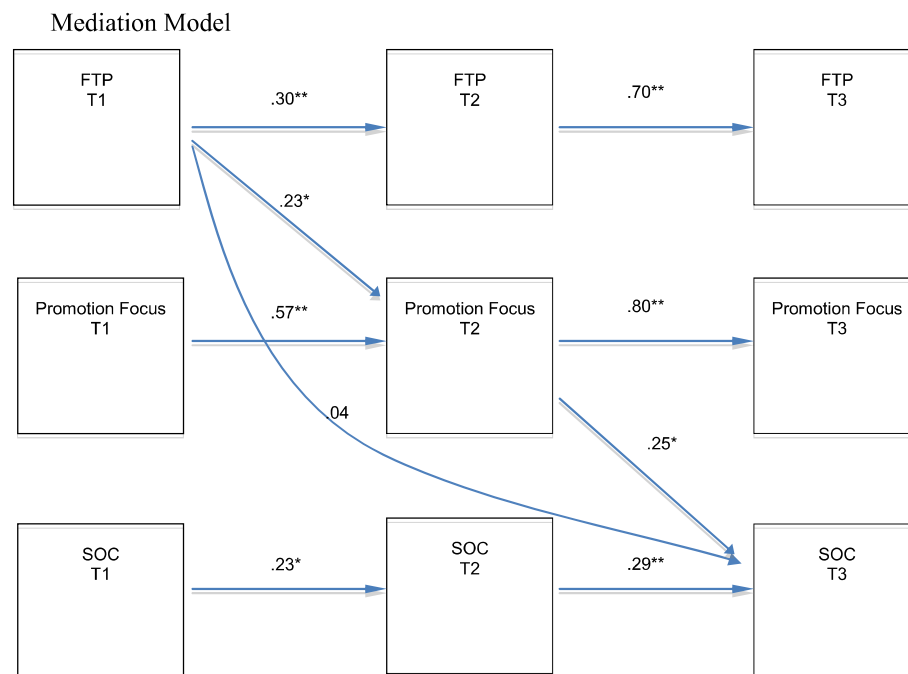


Figure 4. Mediation model

suggest that, across the three time points, individuals who had more of an open-ended FTP at Time 1 had greater levels of promotion focus at Time 2. Greater levels of promotion focus at Time 2, in turn, were related to increased levels of reported engagement in SOC strategies at Time 3. With respect to mediation, there was significant indirect effect for FTP (at Time 1) on SOC (at Time 3) = 0.06, $p < .05$. However, there was no significant direct effect of FTP (at Time 1) on SOC (at Time 3). Overall, the present evidence suggests a partially mediated process, with FTP influencing promotion focus and promotion focus then influencing SOC behaviors.

Discussion

The results of the present study provide evidence of the proposed mediated model. Specifically, (i) FTP is positively and significantly related to promotion focus; (ii) promotion focus is positively and significantly related to engagement in SOC behaviors; and (iii) FTP had a significant indirect effect on SOC through promotion focus.

The present study contributes to the extant literature by providing evidence of the proposed cognitive-behavioral sequence. Because of the longitudinal research design, causation is implied. As such, the present study suggests that changes in FTP will likely influence the use of SOC behaviors. Therefore, the present study sheds light on specific factors that may influence SOC behavior, especially among older employees. In particular, the evidence suggests that older workers who adhere to a more open-ended time perspective engage in a cognitive-behavioral process (i.e., focus on promotion goals leading to engagement in strategic, goal-oriented behaviors) that likely will facilitate greater adoption of SOC strategies. Because SOC predicts performance, identifying this sequence is crucial to improving and maintaining performance in organizations as the working population continues to age throughout the next several decades. To bolster the use of SOC behaviors, employers should find ways to develop an open FTP among incumbents over time. Perhaps one method of increasing FTP in organizations is to create events and awards that honor or praise the efforts of older workers in organizations. Although older workers may still sense that their time is limited, such awards and events may cause them to feel that they can accomplish more in a short amount of time, which may decrease some of the negative effects of low FTP.

Limitations and future research

Despite these strengths, we acknowledge some limitations of this study. For instance, the findings clearly demonstrate an effect for older workers; although this segment of the working population is garnering burgeoning interest from researchers and practitioners alike, how FTP influences work behavior among middle-aged and younger workers remains unknown. Future research should examine and explicate these effects by including a broader range of worker ages.

Furthermore, we did not explore prevention focus, the other piece of regulatory focus that theory has identified. Exploring the link between FTP (i.e., limited FTP) and prevention focus would be an interesting avenue for future research.

Moreover, although the literature has begun to suggest that FTP and optimism/pessimism are related but distinct from one another (e.g., Beck, Weissman, Lester, & Trexler, 1974), the relationship between the two constructs merits further explication and specification. Given that FTP is a fairly newly studied construct, relatively little research has explored and delineated the relationship between FTP, and optimism and pessimism. Future research should examine this relationship further in the context of work performance and clarify how the effects on work-related behaviors of FTP (e.g., SOC) are similar to and distinct from optimism and pessimism.

Last, and importantly, we did not include performance as an endogenous variable in our study, and thus, relationships among FTP, regulatory focus, SOC, and performance are unexplored. SOC consists of the goal- and achievement-oriented behaviors through which FTP may be translated into performance. That is, perhaps promotion

focus goal orientation and SOC are among the mechanisms that explain the process through which FTP influences performance. Future studies should not only replicate our findings but also include measurement of job performance and investigate these relationships.

Conclusion

In summary, this paper addresses a gap in previous research by determining some of the casual mechanisms that influence the use of coping behaviors that facilitate performance. In support of our hypotheses, FTP influenced regulatory focus, which, in turn, influenced SOC adoption. Considering these results, future research should consider the role of FTP and, perhaps, even age when examining issues of work–life balance and stress. In regard to practice, executives and managers in organizations are encouraged to consider the role of FTP when dealing with issues such as employee stress management, motivation, and performance among older workers.

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References

- Abraham, J. D., & Hansson, R. O. (1995). Successful aging at work: An applied study of selection, optimization, and compensation through impression management. *Journal of Gerontology*, 50, 94–103.

- Allen, J. Y., Hilgeman, M. M., & Allen, R. S. (2011). Prospective end-of-life treatment decisions and perceived vulnerability: Future time left to live and memory self-efficacy. *Aging and Mental Health*, 115, 122–131.
- Bajor, J. K., & Baltes, B. B. (2003). The relationship between selective optimization with compensation, conscientiousness, motivation, and performance. *Journal of Vocational Behavior*, 63, 347–367.
- Baltes, B. B., & Heydens-Gahir, H. A. (2003). Reduction of work–family conflict through the use of selection, optimization, and compensation behaviors. *Journal of Applied Psychology*, 88, 1005–1018.
- Baltes, B. B., & Rudolph, C. W. (2012). The theory of selective optimization with compensation. In M. Wang (Ed.), *The Oxford handbook of retirement*. New York, NY: Oxford University Press.
- Baltes, B. B., Zhdanova, L. S., & Clark, M. A. (2011). Examining the relationships between personality, coping strategies, and work–family conflict. *Journal of Business and Psychology*, 26, 517–530.
- Baltes, P. B. (1997). On the incomplete architecture of human ontogeny: Selection, optimization, and compensation as a foundation of developmental theory. *American Psychologist*, 52, 366.
- Baltes, P. B., & Baltes, M. M. (1990). Psychological perspectives on successful aging: The model of selective optimization with compensation. *Successful Aging: Perspectives from the Behavioral Sciences*, 1, 1–34.
- Baltes, P. B., Baltes, M. M., Freund, A. M., & Lang, F. (1999). *The measurement of selection, optimization, and compensation (SOC) by self-report: Technical report 1999*. (Materialien aus der Bildungsforschung Nr. 66). Berlin, Germany: Max-Planck-Institut fuer Bildungsforschung.
- Baltes, P. B., & Smith, J. (2004). Lifespan development: From developmental contextualism to developmental biocultural co-constructivism. *Research in Human Development*, 1(3), 123–144.
- Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: The Hopeless Scale. *Journal of Consulting and Clinical Psychology*, 42, 861–865. doi: 10.1037/h0037562
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238–246.
- Bollen, K. A., & Long, J. S. (1993). *Testing structural equation models*. Newbury Park, CA: Sage.
- Bovbjerg, B., Jeszeck, C., & Petersen, J. (2001). *Older workers: Demographic trends pose challenges for employers and workers*. Report to the ranking minority member, Subcommittee on Employer–Employee Relations, Committee on Education and the Workforce, House of Representatives (GAO Report No. GAO-02-85). Washington, DC: General Accounting Office.
- Brockner, J., & Higgins, E. T. (2001). Regulatory focus theory: Implications for the study of emotions at work. *Organizational Behavior and Human Decision Processes*, 86, 35–66.
- Bureau of Labor Statistics. (2008a). Spotlight on older workers. Retrieved from U.S. Bureau of Labor Statistics website: http://www.bls.gov/spotlight/2008/older_workers/
- Bureau of Labor Statistics. (2008b). International Labor Comparisons: Country at a Glance: Netherlands. Retrieved from U.S. Bureau of Labor Statistics website: <http://www.bls.gov/fls/country/netherlands.htm/>
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, 312, 1913–1915.
- Carstensen, L. L., & Lang, F. R. (1996). *Future time perspective scale*. Unpublished manuscript, Department of Psychology, Stanford University, Palo Alto, California.
- 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, 186–201.
- Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology*, 4, 558–577.
- Early, R. J., & Baltes, B. B. (2012, April). *Examining the longitudinal relationship between SOC and work–family conflict. Poster paper presented at the annual meeting of the Society for Industrial and Organizational Psychology*, San Diego, CA.
- Forster, J., Higgins, E. T., & Bianco, A. T. (2003). Speed/accuracy decisions in task performance: Built-in trade-off or separate strategic corners? *Organizational Behavior and Human Decision Processes*, 90, 148–164.
- Freund, A. M., & Baltes, P. B. (2002). Life-management strategies of selection, optimization, and compensation: Measurement by self-report and construct validity. *Journal of Personality and Social Psychology*, 82, 642–662.
- Geipel, G. L. (2003). Global aging and the global workforce. Retrieved from the Hudson Institute website: http://www.hudson.org/index.cfm?fuseaction=publication_details&id=2740
- Gorman, C. A., Meriac, J. P., Overstreet, B. L., McIntyre, A. L., Apodaca, S., Park, P., & Thorndike, J. N. (2012). A meta-analysis of the regulatory focus nomological network: Work-related antecedents and consequences. *Journal of Vocational Behavior*, 80, 160–172.
- Hedge, J. M., Borman, W. C., & Lammlein, S. E. (2006). *The aging workforce: Realities, myths, and implications for organizations*. Washington, DC: American Psychological Association.
- Higgins, E. T. (1997). Beyond pleasure and pain. *American Psychologist*, 52, 1280–1300.
- Higgins, E. T. (2001). Promotion and prevention experiences: Relating emotions to nonemotional motivational states. In J. P. Forgas (Ed.), *Handbook of affect and social cognition* (pp. 186–211). Mahwah, NJ: Erlbaum.
- Higgins, E. T., Friedman, R. S., Harlow, R. E., Idson, L. C., Ayduk, O. N., & Taylor, A. (2001). Achievement orientations from subjective histories of success: Promotion pride versus prevention pride. *European Journal of Social Psychology*, 31, 3–23.

- Higgins, E. T., Roney, C., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance: Distinct self-regulatory systems. *Journal of Personality and Social Psychology*, 66, 276–286.
- Higgins, E. T., Shah, J., & Friedman, R. S. (1997). Emotional responses to goal attainment: Strength of regulatory focus as a moderator. *Journal of Personality and Social Psychology*, 72, 515–525.
- Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications*. Thousand Oaks, CA: Sage.
- Hu, L. T., & Bentler, P. M. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues and applications* (pp. 76–99). Thousand Oaks, CA: Sage.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55. Software.
- Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8 user's reference guide*. Chicago, IL: Scientific.
- Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology and Aging*, 17, 125–139.
- Lenai, K., Chang, D., & Johnson, R. E. (2012). Regulatory focus and work-related outcomes: A review and meta-analysis. *Psychological Bulletin*, 138, 998–1034.
- Lewin, K. (1939). Field theory and experiment in social psychology: concepts and methods. *The American Journal of Sociology*, 44, 868–897.
- Lewin, K. (1951). *Field theory in Social Sciences*. New York: Harpers.
- Li, K. Z. H., Lindenberger, U., Freund, A. M., & Baltes, P. B. (2001). Walking while memorizing: Age-related differences in compensatory behavior. *Psychological Science*, 12, 230–237.
- Locke, E. A. (1991). The motivation sequence, the motivation hub, and the motivation core. *Organizational Behavior and Human Decision Processes*, 50, 288–299.
- Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology*, 83, 854–864.
- Shah, J., Higgins, E. T., & Friedman, R. (1998). Performance incentives and means: How regulatory focus influences goal attainment. *Journal of Personality and Social Psychology*, 73, 447–458.
- Toossi, M. (2009). Labor force projections to 2018: Older workers staying more active. *Monthly Labor Review*, 132, 30–51. Retrieved from U.S. Bureau of Labor Statistics website: <http://www.bls.gov/opub/mlr/2009/11/art3exc.htm>
- Teichgraber, M. (2012). Labour market and labour force statistics: European Union Labour force survey—Annual results 2012. Retrieved from European Commission Eurostat website: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Labour_market_and_labour_force_statistics/
- Treadway, D. C., Duke, A. B., Perrwe, P. L., Breland, J. W., & Goodman, J. M. (2011). Time may change me: The impact of future time perspective on the relationship between work–family demands and employee commitment. *Journal of Applied Social Psychology*, 41, 1659–1679.
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum-likelihood factor analysis. *Psychometrika*, 35, 417–437.
- United Nations Department of Economic and Social Affairs Population Division. (2002). World population ageing: 1950–2050. Retrieved from United Nations website: <http://www.un.org/esa/population/publications/worldageing19502050/>
- Van Der Heijde, C. M., & Van Der Heijden, B. I. J. M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Human Resource Management*, 45, 449–476.
- Van Dijk, D., & Kluger, A. N. (2011). Task type as a moderator of positive/negative feedback effects on motivation and performance: A regulatory focus perspective. *Journal of Organizational Behavior*, 32, 1084–1105.
- Wallace, J. C., Johnson, P. D., & Frazier, M. L. (2009). An examination of the factorial, construct, and predictive validity and utility of the regulatory focus at work scale. *Journal of Organizational Behavior*, 30, 805–831.
- Weigl, M., Muller, A., Hornung, S., Zacher, H., & Angerer, P. (2013). The moderating effects of job control and selection, optimization, and compensation strategies on the age–work ability relationship. *Journal of Organizational Behavior*, 34, 607–628.
- Wiese, B. S., Freund, A. M., & Baltes, P. B. (2000). Selection, optimization, and compensation: An action-related approach to work and partnership. *Journal of Vocational Behavior*, 57, 273–300.
- Wiese, B. S., Freund, A. M., & Baltes, P. B. (2002). Subjective career success and emotional well-being: Longitudinal predictive power of selection, optimization, and compensation. *Journal of Vocational Behavior*, 60, 321–335.
- Yeung, D. Y., & Fung, H. H. (2009). Aging and work: How do SOC strategies contribute to job performance across adulthood? *Psychology and Aging*, 24, 927–940.
- Young, L. M., Baltes, B. B., & Pratt, A. (2007). Using selection, optimization, and compensation to reduce job/family stressors: Effective when it matters. *Journal of Business and Psychology*, 18, 1–29.
- Zacher, H., Heusner, S., Schmitz, M., Zwierzanska, M. M., & Frese, M. (2010). Focus on opportunities as a mediator of the relationships between age, job complexity, and work performance. *Journal of Vocational Behavior*, 76, 374–386.
- 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, 487–493.