

A lifespan perspective on psychological contracts and their relations with organizational commitment

P. Matthijs Bal¹, Annet H. de Lange², Hannes Zacher³, and Beatrice I. J. M. Van der Heijden⁴

¹Department of Management and Organization, VU University Amsterdam, Amsterdam, The Netherlands

²Department of Work and Organizational Psychology, Radboud University Nijmegen, Nijmegen, The Netherlands

³School of Psychology, University of Queensland, Brisbane, Australia

⁴Institute for Management Research, Radboud University Nijmegen, Nijmegen, The Netherlands, Open Universiteit, The Netherlands, University of Twente, Enschede, The Netherlands

The current study investigated the influence of age-related constructs on the psychological contract and its relationships with continuance and normative commitment. It was proposed that as people age, their future time perspective (FTP) decreases. Consequently, it was expected that contract fulfilment would be positively related to continuance commitment for workers with short FTP, while it would be positively related to normative commitment for workers with long FTP. Conversely, it was argued that, with age, workers' perceived work-related expertise increases, resulting in stronger reactions to obligation fulfilment on normative commitment. A study among 334 employees showed that FTP and work-related expertise indeed moderated the relationships between contract fulfilment and organizational commitment. The results showed that the influence of age on the relations between contract fulfilment with outcomes is dependent upon FTP and occupational expertise. The study shows the value of a lifespan perspective on psychological contracts and their relations with organizational commitment.

Keywords: Age; Future time perspective; Lifespan perspective; Organizational commitment; Perceived occupational expertise; Psychological contracts.

Due to the ageing of the workforce, governments and organizations are increasingly aware of the need to retain older workers in the labour market in order to ensure sufficient levels of staff in the long run (European Commission, 2010; Wang & Shultz, 2010). On the one hand, the large baby boom generation is currently reaching retirement; on the other hand, birth rates have considerably decreased during the last decades. These demographic changes imply a shortage of younger workers who enter the labour market in relation to the supply needed to fill the places of those employees retiring (Alley & Crimmins, 2007). Therefore, the ageing workforce has become one of the most important challenges in organizations nowadays and considerable research has been devoted to the topic (Shultz & Wang, 2011; Wang & Shultz, 2010). For instance, research has focused on how older workers can be motivated in

their work, and what causes them to remain committed to their organizations (Bal, Jansen, Van der Velde, De Lange, & Rousseau, 2010; Ng & Feldman, 2009).

A highly useful perspective on the motivation of older workers has been presented by psychological contract theory (Rousseau, 1995) which postulates that a high-quality relationship between the employee and the organization is necessary for employees to become committed to their organization (Zhao, Wayne, Glibkowski, & Bravo, 2007). Although some previous studies have looked at the role of age in psychological contracts and its relations with job attitudes (Bal, De Lange, Jansen, & Van der Velde, 2008; Bellou, 2009; Ng & Feldman, 2009), no previous empirical attempts have been made to explain *why* and *how* age affects the relations of psychological contracts with job attitudes. Stated

Correspondence should be addressed to Matthijs Bal, Department of Management and Organization, 3A-36, VU University Amsterdam, De Boelelaan 1105, 1081 HV Amsterdam, The Netherlands. Email: p.m.bal@vu.nl

differently, empirical research on the age-related processes that influence reactions to psychological contracts is lacking (Kooij, De Lange, Jansen, & Dikkers, 2008; Zacher, Heusner, Schmitz, Zwierzanska, & Frese, 2010).

The limited approach focusing on chronological age only has been criticized because age is an “umbrella” variable under which various changes in people’s lives are subsumed. Moreover, the neglect of mediator and moderator variables in previous research is unfortunate, because research on ageing is often criticized for treating age as if it was a psychologically meaningful construct by itself (Schaie, 1986). Chronological age is only an index, and it is therefore of utmost importance to gain a better understanding of how age-related changes in psychological variables affect organizational outcomes (Ng & Feldman, 2008; Schwall, 2012). Moreover, up until now research has shown inconsistent findings with regard to the role of age in psychological contract reactions (Bal et al., 2008; Bellou, 2009). This inconsistency could be explained such that age can have both negative and positive effects, through decreases in future time perspective and through increases in experience and perceived work-related expertise. Therefore, the *total* effect of age on psychological contracts may be neutralized and, therefore, invisible.

Hence, it is imperative to investigate the underlying concepts to disentangle the complex role of age in the relations between psychological contract evaluations and presumed outcomes (Bal et al., 2008; Kooij et al., 2008). This article, therefore, introduces a lifespan perspective on psychological contracts, and shows the pivotal roles of future time perspective and perceived expertise in the relations of age with psychological contracts and job attitudes. Sterns and Miklos (1995; see also Kooij et al., 2008) introduced several theoretical perspectives on age to explain the various relationships of age-related concepts with attitudes and behaviours. Both a psychosocial perspective on age, describing how people perceive themselves in relation to their future, and an organizational perspective on age, describing how age influences perceived expertise in one’s job, may explain why the relation of age with organizational outcomes such as psychological contracts is complex.

On the one hand, the psychosocial perspective on ageing focuses on how people, as they age, gain a different perception of their future (Carstensen, 2006). Socioemotional selectivity theory (Carstensen, Isaacowitz, & Charles, 1999) argues that older workers have less expansive time horizons, implying that they will react less intensely towards psychological contract fulfilments that aim at preserving their relationship with their employer (Bal et al., 2008). On the other hand, the

organizational perspective on age indicates that, with increasing age, people gain higher experience and expertise (Quinones, Ford, & Teachout, 1995). Because of this, people have higher expectations of their employer, and tend to respond more strongly to inducements offered by their employer (Bal et al., 2008).

In the current study, we integrate both of these perspectives in the relations between age, psychological contracts, and organizational commitment. We focus on organizational commitment as outcome of psychological contracts, because commitment has been identified as one of the strongest predictors of both employee performance and the motivation to continue working (Harrison, Newman, & Roth, 2006; Wang & Shultz, 2010). We differentiate between continuance and normative commitment since it is expected that FTP and expertise are differentially related to these types of commitment, and we do not focus on affective commitment, because it is equally important for low and high FTP and expert employees (Bal et al., 2008). Moreover, they tap different types of psychological linkages with the organizations, and are accordingly expected to be predicted through different processes (Allen & Meyer, 1990). In all, this study will reveal a piece of the complex puzzle that constitutes the, up to now, somewhat contradictory and not fully understood, relations between age, the psychological contract, and its relations with commitment (Ng & Feldman, 2009). Figure 1 shows the research model that guides the current research. The main purpose of the article is to show *how* age influences the relationships of psychological contract fulfilment with outcomes through its effects on both FTP and expertise. Hence, the aim of the article is to show that age has distinct effects on the relations of contract fulfilment with outcomes because it negatively relates to FTP and positively relates to expertise.

THE PSYCHOLOGICAL CONTRACT

According to Rousseau (1995, p. 9), “the psychological contract consists of individual beliefs regarding terms of an exchange agreement between individuals and their organization”. An employee’s psychological contract includes that person’s understandings of his or her own and the employer’s obligations (Dabos & Rousseau, 2004; Rousseau, 1995), and are subjective in nature and exist in the eye of the beholder, that is, the employee (Suazo, Martínez, & Sandoval, 2009). Psychological contracts include perceptions of the employee about employer obligations and the extent to which these obligations are fulfilled. Employees perceive the extent to which their employer has fulfilled its obligations towards them. Research has shown that it is through these perceptions of

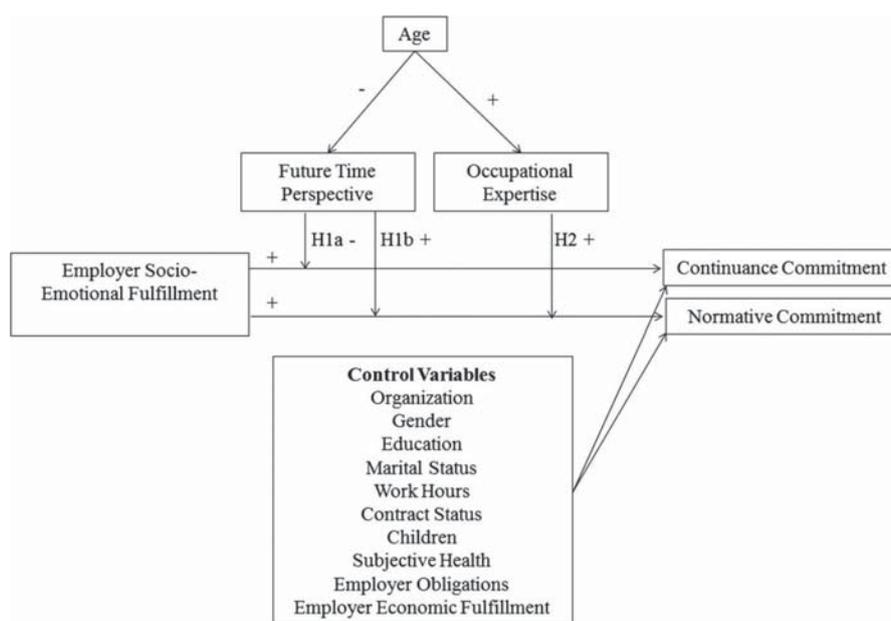


Figure 1. Research model of the current study.

fulfilment (i.e., employer fulfilment) that employees become more committed towards their organization (Zhao et al., 2007).

Theoretically, in line with social exchange theory and the norm of reciprocity (Gouldner, 1960), people engage in a social exchange relationship and form a psychological contract with their employer, and investments of one party are likely to be reciprocated by the other party. Hence, contract fulfilments by the employer are reciprocated by the employee with higher commitment.¹ In this study, we distinguish two types of employer fulfilment. In line with the framework of Bal et al. (2010; see also Foa, 1971), we distinguish employer economic and socioemotional fulfilment. *Economic fulfilment* refers to extent to which employees perceived that their organization fulfils its obligations concerning monetary resources, and these include fair pay compared to other employees and fringe benefits (Coyle-Shapiro & Conway, 2005; Shore et al., 2004). These obligations are limited in time frame such that they focus on the transactional relationship between the employee and the organization. *Socioemotional fulfilment* refers to the extent to which employees perceive that their organization has fulfilled its obligations concerning resources that are aimed to developing the employee and to build up a strong relationship (Bal et al., 2010). These resources include participation in decision making and support for development, and

are a form of support and socioemotional concern of the organization for the employee. Economic and socioemotional fulfilments are not opposites but complement each other in the psychological contract of employees with their organizations (Bal et al., 2010).

A LIFESPAN PERSPECTIVE ON PSYCHOLOGICAL CONTRACTS

Previous studies have shown that age plays a significant role in the development and consequences of psychological contracts (Bal et al., 2008; Ng & Feldman, 2009). For instance, Bal et al. (2008) showed that the impact of contract breach on commitment is weaker for older workers. However, the limitation of these earlier studies is that there have been few attempts to explain the specific role of age. Researchers have argued that ageing can be regarded as a proxy for different underlying age-related processes (e.g., De Lange et al., 2010; Kooij et al., 2008; Sterns & Miklos, 1995). More concretely, in this study, we examine differences in people's perceptions of possibilities for future goal attainment (future time perspective) and perceptions of their expertise at work (perceived work-related expertise), as potential explanations for differences in responses to contract fulfilments.

SOCIOEMOTIONAL SELECTIVITY THEORY AND THE PSYCHOLOGICAL CONTRACT

According to Socioemotional Selectivity Theory, when people grow older, they increasingly experience

¹Theoretically, the psychological contract also consists of employee obligations; however, in the current study, we omit this part of the psychological contract, since it has been shown that, in particular, employer obligations and fulfilment influence organizational commitment (Zhao et al., 2007).

time as running out (Carstensen, 2006; Carstensen & Mikels, 2005). Related to work settings, ageing workers perceive a changing horizon in terms of the time and opportunities they have left until their retirement (Zacher & Frese, 2009). In contrast to objective calendar time, future time perspective (FTP) focuses on peoples' subjective experiences (Husman & Shell, 2008). FTP refers to how much time and opportunities individuals believe they have left in their personal future and comprises a process that is subject to large interindividual differences. FTP generally decreases with age, but the extent to which people see their future as open-ended or constrained may also vary among people of the same age (Bal et al., 2010; Zacher & Frese, 2009). This shifting time perspective has profound effects on human processes including motivation and emotion (Carstensen, 2006). People who see their future as open-ended are more likely to focus on long-term goals and a long-term relationship with their organization. In contrast, people who see their future as running out are more likely to focus on immediate rewards and on building up relationships with close others (Lang & Carstensen, 2002).

With respect to the psychological contract, we argue that differences in FTP will determine the strength of the relationships between contract fulfilment and commitment, as the salience of obligations as well as the type of commitment varies depending on whether people have low or high levels of FTP. In line with Bal and colleagues (2010), who argued that reactions to fulfilment of salient obligations are stronger compared to fulfilment of less important obligations, we expect that the relations of socio-emotional fulfilment with organizational commitment are moderated by FTP, while we control for the extent to which employees perceived their economic obligations to be fulfilled. Theory on commitment (Allen & Meyer, 1990; Meyer et al., 2002) postulates that employees form psychological linkages with their organization because they have to do so due to the costs of leaving the organization (i.e., they have to remain; continuance commitment), or because they feel obligated to remain with their organization (i.e., they believe they ought to stay; normative commitment). Previous research has shown that these forms are distinct and are predicted by different antecedents (Meyer et al., 2002). Hence, we expect specific interactions to occur between FTP, contract fulfilment, and commitment.

Socioemotional fulfilment should generally strengthen the relationship between employee and organization, and thus they are expected to enhance commitment (Zhao et al., 2007). However, short FTP workers (who, in general, are older workers) perceive fewer opportunities in the future, and are more focused on maintaining what they have and on strengthening their relationship with their

organization (Bal et al., 2010; Zacher & Frese, 2011). Hence, when they receive socioemotional resources, they will be more likely to feel increased costs of leaving the organization because they perceive that other organizations are less likely to offer these inducements to them. Thus, for short FTP workers, socioemotional fulfilments relate to higher continuance commitment. This is consistent with findings of Markovits et al. (2008), who found that employees with a high prevention focus (cf. short FTP workers; Zacher & De Lange, 2011) are higher in continuance commitment than employees with a promotion focus, indicating that employees with a stronger focus on preventing losses are more inclined to hold a strong relationship with their current organization. Furthermore, a meta-analysis has shown that older workers value job security higher than younger workers (Kooij, De Lange, Jansen, Kanfer, R., & Dijkers, 2011), indicating that older workers will be more highly focused on resources that contribute to their continuance commitment.

In contrast, long FTP workers are focused on the future and on rewards that will be obtained in the future (Zacher et al., 2010). People who experience their future as open-ended are more likely to see many remaining opportunities in life and work. Therefore, they are more inclined to look for organizations and employment opportunities that fulfil their needs for relational exchanges, and they strive to work for organizations that offer them resources that fulfil their needs for challenging jobs and development. Hence, when long FTP workers receive socioemotional fulfilments, they will not perceive increased costs of leaving their organization (i.e., continuance commitment) because they perceive that they are employable and will easily find a new job. However, because of the resources they received from their employer, they will feel obligated to remain in their organization. These organizational investments in them enhance felt obligations and norms to stay in their organization, even though they feel low costs of leaving their organization (Markovits et al., 2008). This is only expected for socio-emotional fulfilments, since they tap into the relational aspects of the employment exchange relationship, whereas economic fulfilments refer to transactional elements, indicating universal resources that employees can obtain through different means, and in different organizations (Bal et al. 2010; Foa, 1971). Hence, socioemotional fulfilment increases high continuance commitment for short FTP workers, and increases normative commitment among long FTP workers.

Hypothesis 1a: FTP moderates the relationship between socioemotional fulfilment and continuance commitment, with a stronger relationship for

employees low in FTP compared to employees high in FTP.

Hypothesis 1b: FTP moderates the relationship between socioemotional fulfilment and normative commitment, with a stronger relationship for employees high in FTP compared to employees low in FTP.

PERCEIVED WORK-RELATED EXPERTISE AND THE PSYCHOLOGICAL CONTRACT

Across their lifespan, people not only perceive their future being more constraint as they age, they also develop themselves and may become more experienced in their work and experts in their occupation (Ackerman, 1996). Consequently, older workers become better in adapting to their environment. Research has indeed shown that older workers become better in adapting to environmental challenges until late adulthood (Heckhausen, Wrosch, & Schulz, 2010; Zacher & Frese, 2011). Hence, this increased experience may determine to a large extent how workers respond to contract fulfilments. In this study, we focus on *perceived work-related expertise*, which we define as employees' perceptions of their accumulated professional skills and knowledge (Van der Heijde & Van der Heijden, 2006). It is deemed appropriate to assess employees' own perceptions of their skills and knowledge, since previous research has shown that generally people can accurately assess their level of knowledge and abilities (Ackerman, Beier, & Bowen, 2002). It is expected that over the life course, people develop more expertise in relation to their work and occupation. Consequently, because their expertise is a form of valuable human capital, they gain a sense of entitlement towards their organization (Rousseau & Parks, 1993; Van der Heijde & Van der Heijden, 2006).

We argue that perceived expertise moderates the relationship between socioemotional fulfilment and normative commitment. We do not expect expertise to moderate the relationship between contract fulfilment and continuance commitment, because for high expertise employees it will be easier to find a new job, and hence continuance commitment is less likely to be an issue for experienced employees (Van der Heijde & Van der Heijden, 2006). Employees with high levels of perceived expertise are expected to see more obligations from their employer, because of a sense of entitlement they have towards their organization in return for the value they bring in the organization with their knowledge and skills (Farr & Ringseis, 2002; Rousseau & Parks, 1993). Therefore, they are more highly focused on, will more strongly monitor the inducements they receive from their

organization, and will prioritize their long-term relationship with their organization (Wright & Bonett, 2002). As such, fulfilment of obligations that stress the socioemotional relationship is expected to have stronger effects on normative commitment for people with a high amount of perceived expertise. Because experts feel a sense of entitlement, and have a high amount of employability (Van der Heijde & Van der Heijden, 2006), organizational investments in the long-term relationship between the two parties indicates that the organization cares for the employee, and wants to retain the employee (Cassar & Briner, 2011; Restubog, Hornsey, Bordia, & Esposito, 2008). Consequently, these employees will feel more normatively committed to the organization when fulfilment is high. In contrast, resources that stress the transactional relationship, such as economic fulfilments, have no or little indicative value for the strength of the relationship, and hence do not promote commitment, neither for experts nor for low-expertise employees (Mathieu & Zajac, 1990). Thus, we only expect the relations of socioemotional fulfilment with normative commitment to be moderated by perceived expertise.

Hypothesis 2: Perceived work-related expertise moderates the relationship between socioemotional fulfilment and normative commitment, with a stronger relationship for employees with a high perceived expertise compared to those with a low perceived expertise.

METHOD

Participants and procedure

We included two samples in the current study. For Sample A, a questionnaire was distributed among employees in two departments of a large telecommunications company in Belgium. One hundred and seventeen respondents responded to a digital invitation to participate in an online questionnaire (response rate 68%). The respondents were on average 37 years old and 44% were male; 91% worked full time. For Sample B, a questionnaire was distributed in five Dutch cities among 1012 bus and taxi drivers employed by a transport company. Two hundred and seventeen employees filled out the questionnaire (response rate 21%). The employees' ages ranged from 21 to 70 years, with a mean age of 54.8 years; 67% were male, 79% were cohabiting or married, and 65% worked full time. The respondents can be considered representative for the entire population of drivers, who show similar demographic statistics (e.g., 65.3% men; 47.5% aged 55 or older). Later, we present evidence to justify the aggregation of the samples into one dataset ($N = 334$).

Measures

Psychological contract

Employer fulfilment was measured by indicating the extent to which employees believed their employer had fulfilled a range of obligations (on a 5-point Likert scale: 1 = “not at all”, 5 = “to a very great extent”). Previous studies have shown good psychometric qualities, i.e., the reliability and validity of these scales (Bal et al., 2010; Coyle-Shapiro & Conway, 2005). Economic fulfilment was measured with six items referring to financial aspects of employees’ jobs, an example item being “pay for performance”, and socioemotional fulfilment was also measured by means of six items, an example item being “participation in decision making”. Both scales were found to be reliable measures: economic fulfilment, $\alpha = .90$; socioemotional fulfilment, $\alpha = .84$.

Age. This was measured by the chronological age of the respondent. Future time perspective was measured with the 10-item scale developed by Lang and Carstensen (2002). Participants rated on a 7-point scale (1 = “not at all”, 7 = “to a very great extent”) the degree to which they agreed with each of the items. Examples were: “I have the sense that time is running out” (reverse coded), and “Many opportunities await me in the future” ($\alpha = .89$). Perceived work-related expertise was measured with the 15-item scale from Van der Heijde and Van der Heijden (2006) indicating the level of knowledge and skills employees perceive to have in their work. Answers were provided on a 6-point scale, with examples of scale extremes ranging from 1 = “not at all” to 6 = “to a very great extent”. An example item was: “My competencies are qualitatively of a high level” ($\alpha = .92$).

Organizational commitment. This was measured using two subscales from Allen and Meyer (1990). Continuance and normative commitment were each measured with eight items. An example item of continuance commitment was: “It would be very hard for me to leave my organization right now, even if I wanted to” ($\alpha = .81$). Normative commitment appeared to be also reliably measured ($\alpha = .74$), with an example item being: “I was taught to believe in the value of remaining loyal to one organization.”

Control variables

In the analyses, we controlled for the effects of organization (dummy coded), gender, education, marital status, work hours, contract status, children, subjective health, and employer obligations, as these variables have been identified in previous empirical research to be confounders of the relations between

age-related variables and psychological contract and organizational commitment (Bellou, 2009; Mathieu & Zajac, 1990). Gender was measured as follows: 0 = female, 1 = male. Education was measured using the highest finished educational degree (1 = primary school; 4 = university degree). Marital status measured whether people were married or cohabiting (0), or whether they were single, divorced, or something else (1). Work hours indicated how many hours the respondent worked per week. Contract status indicated whether one had a temporary or a permanent contract. Respondents were asked how many children they had. They were also asked to indicate their subjective health on a 5-point scale ranging from 1 = “poor” to 5 = “excellent”. Finally, we controlled for perceived employer obligations, because the impact of psychological contract fulfilment may be dependent upon the extent to which employees perceive something as an obligation by the employer (Rousseau, 1995). Economic obligations and socioemotional obligations were measured using scales from Bal et al. (2010) asking the respondent to which extent their employer is obligated to provide a range of items, using the same list of items as the employer fulfilment scale. Both scales were found to be reliable: economic obligations, $\alpha = .88$; socioemotional obligations, $\alpha = .84$.

Analyses

First, confirmatory factor analyses were conducted to test the factor structure underlying the data (CFA with LISREL 8.80; Jöreskog & Sörbom 2008). The hypothesized model was tested with the proposed nine multiitem factors under study, and was compared to alternative models. Moderated mediation analyses were conducted to test the hypotheses (Hayes, 2012; Preacher, Rucker, & Hayes, 2007). The independent variables were mean-centred to avoid multicollinearity (Cohen, Cohen, West, & Aiken, 2003). First, we tested a model in which age was related to FTP and perceived expertise, to ascertain whether FTP and perceived expertise mediated the moderation of age in the relations between contract fulfilment and commitment. Subsequently, we tested a moderated mediation model with relations of age with FTP and expertise, as well as the proposed interactions between FTP/expertise and contract fulfilment in relation to commitment (see Figure 1). To rule out the possibility of any alternative interaction effects of the age-related variables with contract fulfilment, we included interactions of FTP/expertise with economic fulfilment (not hypothesized). For the significant interaction effects, we performed simple slopes analyses, and calculated the coefficients for the slopes one SD below and above the mean (Cohen et al., 2003).

Moreover, indirect effects of age on the outcomes variables through FTP and expertise were estimated with the recommended bias-corrected and accelerated bootstrapped confidence intervals (Preacher et al., 2007).

RESULTS

Table 1 shows the results of the CFA. The proposed nine-factor model had an acceptable fit, and all of the alternative models had a significantly worse fit compared to the measurement model (Hu & Bentler, 1999). Therefore, it was concluded that the measures were adequate for the current study. Moreover, we tested whether it was appropriate to aggregate the two samples in one dataset through multigroup CFA. First, we tested a model in which the factor loadings were set invariant for the two organizations, and compared this model to a model in which the factor loadings were freely estimated for each organization. Table 1 shows that the invariant model obtained the best fit, and the free-parameter model did not obtain a significant better fit. Thus, we proceeded by aggregating the two samples.

Table 2 shows the correlations of all variables under study. In the telecommunications company, there were more women, and more highly educated, they were younger and healthier, and more were employed part time. They tended to work fewer hours per week, have fewer children, and reported more FTP and lower expertise than the employees in the taxi company. Moreover, employees in the telecommunications company reported higher economic fulfilment, lower socioemotional fulfilment, and lower normative commitment. Age was negatively related to FTP and positively to occupational expertise and normative commitment. FTP was negatively related to expertise and continuance commitment. Furthermore, expertise was not

correlated with commitment. Socioemotional fulfilment was positively related to both forms of commitment, and the two commitment types were moderately intercorrelated. In sum, correlations were in line with expectations.

Hypothesis testing

We first tested whether age was related to FTP and perceived expertise. Table 3 presents the results of these analyses. All of the control variables were included in the analyses (organization, gender, education, marital status, contract status, work hours, children, and health), but for clarity of presentation purposes only significant predictors are shown. Age was significantly related to FTP, $B = -.028$, $p < .001$, and age was also related positively to perceived expertise, $B = .015$, $p < .001$. Hence, the first step for the mediated moderation hypotheses was fulfilled with age being negatively related to FTP and positively to perceived expertise.

Hypotheses 1 stated that FTP moderated the relations between socioemotional fulfilment and continuance and normative commitment. Tables 4 and 5 show the results of the moderated regression analyses. All of the control variables were included in the analyses, but for clarity of presentation purposes, only significant predictors are shown. The interaction between socioemotional fulfilment and FTP was significantly related to continuance commitment, $B = -.204$, $p < .01$. Figure 2 shows the interaction pattern. In line with the hypothesis, the relation was positive for short FTP workers, $B = .30$, $p < .01$, but nonsignificant for long FTP workers, $B = -.12$, *ns*. Thus, with these outcomes Hypothesis 1a was supported.

FTP also moderated the relationship between socioemotional fulfilment and normative commitment, $B = .112$, $p < .05$. Figure 3 shows that the relationship

TABLE 1
Results of scale analyses

Model	CFA	χ^2	df	RMSEA	CFI	IFI	Δdf	$\Delta \chi^2$
Baseline	8 factors	5421.94***	2089	.069	.92	.92		Baseline
Alt. 1	7 factors	6484.68***	2096	.079	.91	.91	7	1062.74***
Alt. 2	7 factors	6039.57***	2096	.075	.91	.91	7	627.63***
Alt. 3	7 factors	6024.87***	2096	.075	.91	.91	7	602.93***
Alt. 4	1 factor	18641.37***	2117	.15	.79	.79	28	13291.43***
Organization comparison								
Invariant	8 factors	7078.32***	4078	.067	.90	.90		Baseline
Free estimated	8 factors	7072.38***	4040	.067	.93	.93	38	5.94 <i>ns</i>
Organization A	8 factors	812.23	2089	.010	.99	.99		
Organization B	8 factors	4290.57***	2089	.070	.90	.90		

Eight factors refer to the proposed eight factors under study. Alt 1: psychological contract obligations as one factor; Alt. 2: psychological contract fulfilment as one factor; Alt. 3: Commitment as one factor; Alt 4: all items together. CFA = Confirmatory Factor Analysis; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; IFI = Incremental Fit Index. *** $p < .001$.

TABLE 2
Means, standard deviations, reliabilities, and correlations of the study variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Organization	0.65	—	—																
2. Gender	0.59	—	.22**	—															
3. Education	2.64	1.04	-.37**	-.09	—														
4. Marital status	0.77	—	.05	.12	-.06	—													
5. Contract status	0.75	—	-.31**	-.17**	.22**	-.02	—												
6. Work hours	31.56	10.46	.47**	-.09	.37**	-.07	.34**	—											
7. Children	1.58	1.25	.24**	.08	-.19**	.20**	-.06	-.20**	—										
8. Health	3.43	0.84	-.41**	-.03	.41**	-.08	.07	-.27**	-.14**	—									
9. Age	47.92	12.27	.46**	.33**	-.46**	.16**	-.27**	-.48**	.47**	-.37**	—								
10. Future time perspective	3.00	0.77	-.35**	-.15*	.27**	-.11*	.16**	.30**	-.21**	-.28**	-.53**	—							
11. Perceived expertise	4.64	0.61	.64**	.20**	-.42**	.07	-.14*	-.32**	.08	.23**	.46**	-.12*	.89	—					
12. Economic obligations	3.95	0.65	.11	.06	-.12*	.04	-.00	-.02	.04	.03	-.02	.06	.29**	.87	—				
13. Socioemotional obligations	3.74	0.61	-.09	-.05	.03	.09	.09	.05	.03	.08	-.13*	.20**	.17**	.59**	.81	—			
14. Economic fulfillment	2.82	0.91	-.38**	.07	.24**	.00	.08	.14*	-.11	.21***	-.23*	.31**	-.33**	-.12*	.05	.92	—		
15. Socioemotional fulfillment	2.95	0.65	.39**	-.07	-.31**	-.02	-.02	-.14*	.06	-.07	.17**	.20**	.38*	.18**	.22**	.27**	.86	—	
16. Continuance commitment	3.10	0.71	.08	-.08	-.19**	.02	.02	.12*	.04	-.13*	.12*	-.18**	.04	.13*	.16*	.08	.16**	.80	—
17. Normative commitment	2.82	0.56	.15**	.03	-.26**	-.04	-.03	-.03	.04	-.05	.08	.01	.09	.07	.21**	.13*	.38**	.29**	.74

Reliabilities are reported along the diagonal. *N* = 334. Organization dummy (0 = telecommunications company, 1 = transport company); gender: 0 = female, 1 = male; marital status: 0 = single, divorced, or something else, 1 = married or cohabiting; contract status: 0 = part-time, 1 = full-time. **p* < .05, ***p* < .01.

was positive for long FTP workers, $B = .30, p < .01$, but nonsignificant for short FTP workers, $B = .08, ns$. Hence, Hypothesis 1b was also supported. We also found two nonhypothesized interaction effects of economic fulfilment with FTP in relation to continuance

TABLE 3
Bootstrap regression analyses predicting FTP and perceived expertise ($N = 334$)

	Dependent variables	
	Future time perspective <i>B (SE)</i>	Perceived expertise <i>B (SE)</i>
Control variables		
Education		-.174 (.033)*
Independent variables		
Age	-.028 (.004)*	.015 (.003)*
<i>F</i>	18.98*	16.68*
<i>R</i> ²	.32	.29

Bootstrap sample size = 5000. * $p < .001$. All predictors were mean-centred. For clarity of presentation, only significant results of the control variables are shown.

TABLE 4
Moderated regression analyses predicting organizational commitment ($N = 334$)

	Dependent variables	
	Continuance commitment <i>B (SE)</i>	Normative commitment <i>B (SE)</i>
Control variables		
Organization dummy	-.127 (.028)***	
Gender	-.218 (.077)**	
Education	-.144 (.043)***	-.176 (.034)***
Work hours	.022 (.004)***	.007 (.003)*
Socioemotional obligations		.227 (.058)***
Independent variables		
Age	.011 (.005)*	.002 (.004)
Future time perspective (FTP)	-.222 (.060)***	-.103 (.047)*
Perceived expertise (Occ. Exp.)	.004 (.076)	-.014 (.059)
Economic fulfilment (Ec. Ful.)	.095 (.054)	.025 (.042)
Socioemotional fulfilment (S-E. Ful.)	.108 (.080)	.185 (.063)**
Interaction terms		
Ec. Ful. \times FTP	.111 (.064) [†]	-.113 (.050)*
S-E. Ful. \times FTP	-.204 (.070)**	.112 (.055)*
Ec. Ful. \times Occ. Exp.	-.078 (.084)	-.066 (.066)
S-E. Ful. \times Occ. Exp.	.099 (.113)	.314 (.088)***
<i>F</i> ¹	5.99***	6.44***
<i>R</i> ²	.26	.27

LL = lower limit; CI = confidence interval; UL = upper limit. Bootstrap sample size = 5000. * $p < .05$, ** $p < .01$, *** $p < .001$. All predictors were mean-centred. For clarity of presentation, only significant results of the control variables are shown. [†] $p < .10$.

commitment, $B = .111, p < .10$, and normative commitment, $B = -.113, p < .05$. Figures 4 and 5 show the interaction patterns. Economic fulfilment was positively related to continuance commitment for long FTP workers, $B = .21, p < .05$, but not for short FTP workers, $B = -.02, ns$. For normative commitment, we found an opposite interaction pattern: The relation was positive for short FTP workers, $B = .14, p < .01$, but nonsignificant for long FTP workers, $B = -.09, ns$.

Hypothesis 2 stated that perceived expertise moderated the relation between socioemotional fulfilment and normative commitment. Table 4 shows that perceived expertise moderated the relationship between socioemotional fulfilment and normative commitment, $B = .314, p < .001$. Figure 6 shows the interaction pattern. While the relationship was nonsignificant for employees with low expertise, $B = -.12, ns$, it was positive for employees with high expertise, $B = .50, p < .001$. In sum, Hypothesis 2 was supported; the relationship between socioemotional fulfilment and normative commitment was stronger for high expertise employees.

TABLE 5
Indirect effects of age on organizational commitment

Indirect effect of age	Effect (SE)	LL	UL
		95% CI	95% CI
Continuance commitment			
Mediator: Future time perspective			
-1 SD of economic fulfilment	.009 (.003)	.004	.015
Mean economic fulfilment	.006 (.002)	.002	.010
+1 SD of economic fulfilment	.003 (.003)	-.002	.009
-1 SD of socioemotional fulfilment	.002 (.003)	-.003	.008
Mean socioemotional fulfilment	.006 (.002)	.002	.010
+1 SD of socioemotional fulfilment	.010 (.003)	-.005	.017
Normative commitment			
Mediator: Future time perspective			
-1 SD of economic fulfilment	.000 (.002)	-.004	.004
Mean economic fulfilment	.003 (.002)	.000	.006
+1 SD of economic fulfilment	.006 (.002)	.001	.011
-1 SD of socioemotional fulfilment	.005 (.002)	.001	.010
Mean socioemotional fulfilment	.003 (.002)	.000	.006
+1 SD of socioemotional fulfilment	.001 (.002)	-.003	.005
Mediator: Perceived expertise			
-1 SD of socioemotional fulfilment	-.004 (.002)	-.008	-.001
Mean socioemotional fulfilment	.000 (.001)	-.003	.002
+1 SD of socioemotional fulfilment	.004 (.002)	.000	.008

LL=lower limit; CI=confidence interval; UL=upper limit. Bootstrap sample size=5000.

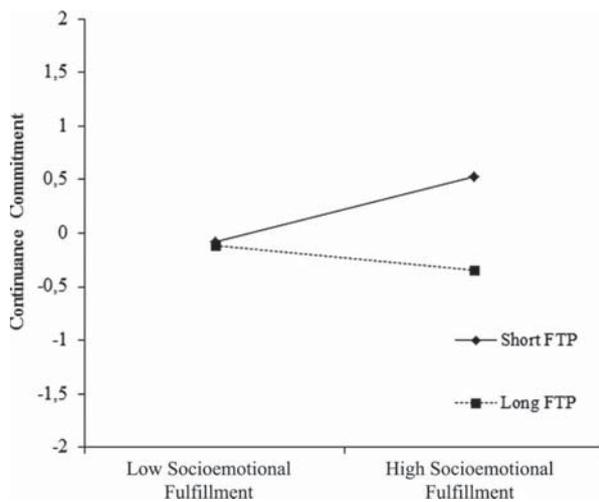


Figure 2. The interaction between socioemotional fulfillment and future time perspective on continuance commitment.

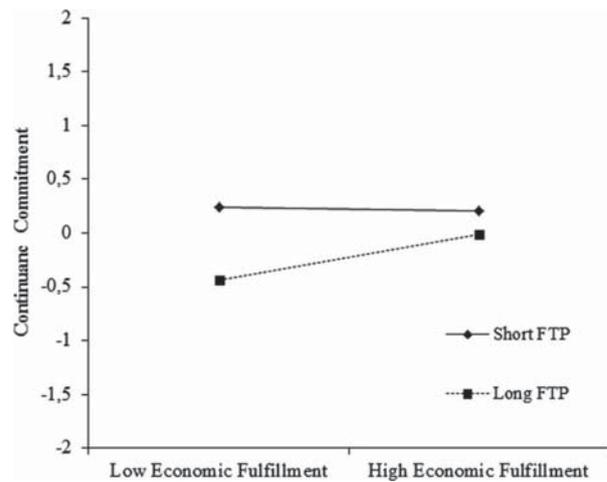


Figure 4. The interaction between economic fulfillment and future time perspective on continuance commitment.

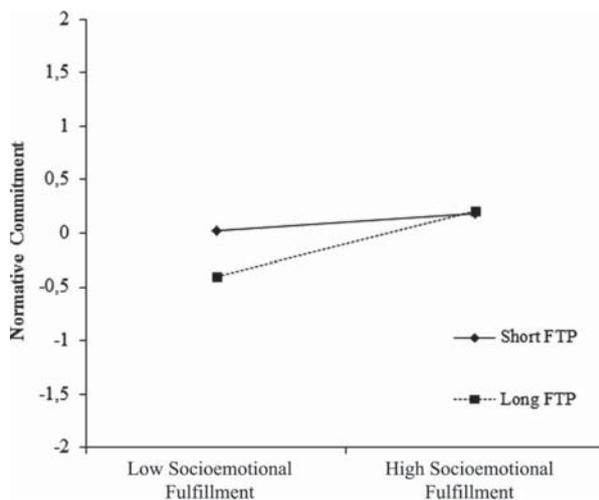


Figure 3. The interaction between socioemotional fulfillment and future time perspective on normative commitment.

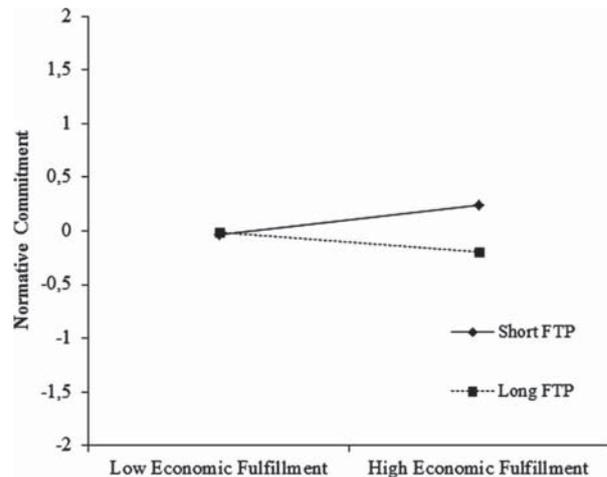


Figure 5. The interaction between economic fulfillment and future time perspective on normative commitment.

DISCUSSION

The current study investigated *how* age influences the relations between psychological contract fulfillment and different forms of organizational commitment. As suggested by a number of scholars (e.g., Kooij et al., 2008; Sterns & Miklos, 1995), it is imperative to study the underlying processes of age-related differences in the workplace. Through investigation of the relations between age and future time perspective and perceived work-related expertise, on the one hand, and the moderating effects of FTP and perceived expertise on the relations between psychological contract fulfillment and organizational commitment on the other hand, we have gained a better understanding on the processes underlying the effects of age in the workplace.

We have shown that age is related to decreased FTP and to increased perceived expertise. When people age, they experience both gains (in experience and expertise), and losses (in their perceived remaining time and opportunities). Hence, while individual differences exist among people of the same age, we observe changes in FTP and perceived expertise with increasing age.

The study also showed that FTP and perceived expertise moderate the relationships between contract fulfillment and organizational commitment. We found that the relations between contract fulfillment and continuance and normative commitment are complex. The extent to which employees feel that the costs of leaving their organization are too high, or to which they feel high normative obligations to stay with their organization, are dependent upon

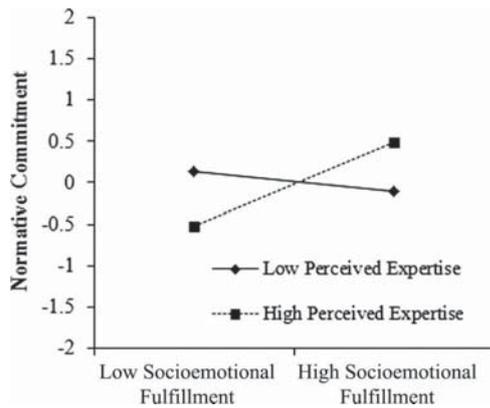


Figure 6. The interaction between socioemotional fulfillment and perceived expertise on normative commitment.

employees' levels of FTP and perceived work-related expertise.

Socioemotional fulfillment contributes to higher continuance commitment only for short FTP workers. Because short FTP workers (and hence in general older workers) perceive fewer opportunities to pursue in their future, they tend to focus on present relationships with others (Carstensen, 2006), and hence when they receive resources that promote their relationship with their employer, such as socioemotional fulfillments, they will perceive that the sacrifices they have to give up when leaving their organization become even higher. For long FTP workers, however, continuance commitment is less important, because they perceive more remaining opportunities, are more focused on proactivity (Zacher & Frese, 2011), and hence, when they receive socioemotional fulfillments, their continuance commitment does not increase but their normative commitment does. In other words, they know that they are independent of their organization, but the resources they receive from their organization enhance their perceptions of reciprocity, or the norm to stay in their organization.

Hence, socioemotional fulfillment appeared to be particularly related to the cognitive, moral form of commitment among long FTP workers, but not to their level of continuance commitment. In other words, although long FTP workers realize that these incentives from the organization *should* enhance their commitment to the organization, they may have more problems with actually *wanting* to stay with their organization. Long FTP workers may perceive new chances and opportunities (Bal et al., 2010), yet they might be more likely to see these not only in their current organization, but also outside of their current organization, even though they know that they should stay in their current organization, because of the investments made by their employer in terms of enhancing their work motivation. We found similar

results for perceived work-related expertise, which moderated the relationship between socioemotional fulfillment and normative commitment, such that these relations were stronger for those employees with a high amount of expertise. Our outcomes also partly answer the so-called employability paradox: Long-term investments through socioemotional fulfillments cause highly skilled employees to become even more employable (Van der Heijde & Van der Heijden, 2006), and although these investments are reciprocated through a higher level of felt normative commitment (Gaspersz & Ott, 1996), it is not merely accompanied with a higher emotional bond with the organization, and the desire to stay with it, herewith supporting the fear of employers to lose their high potentials.

On the other hand, short FTP workers might not have expected to receive socioemotional inducements, and, therefore, fulfillment comes as a surprise to them, presumably making them more likely to stay. Offering socioemotional inducements aimed at a long-term relationship to short FTP workers may create new opportunities for these employees to pick up new challenges in their work, and to invest in their career. For these people, organizational incentives are direct signals that the organization cares for them, and values their contribution to the organization (Conway & Coyle-Shapiro, 2012), and, hence, they reciprocate through higher continuance commitment. Thus, socioemotional inducements may increase short FTP workers' perceptions of being in control (Heckhausen et al., 2010), through investments in their skills, knowledge, and participation in the organization.

With regard to economic fulfillments, we found that the interaction patterns were opposite to those of socioemotional fulfillments, indicating a reversed signal sent through these resources compared to socioemotional resources. Economic fulfillments may increase continuance commitment for long FTP workers, because it may become harder for them to find a new job which delivers them the same amount of economic rewards. However, since economic fulfillments do not contribute to emotional attachment to the organization, it can be questioned whether these expensive resources provide the desired results in terms of productivity and performance (Harrison et al., 2006). Moreover, we found that economic fulfillment related to higher normative commitment for short FTP workers. This can be explained by the fact that the cognitive discrepancy of high economic resources, as experienced by short FTP workers, is responded to by feeling more obligated to stay. Short FTP workers tend to prioritize immediate rewards from their work; hence, economic fulfillment, stressing the transactional nature of the relationship, appears to increase the feeling

among employees that they ought to be committed to their organization. This also supports the propositions of socioemotional selectivity theory (Carstensen, 2006), which postulates that when people have a short FTP, they tend to prioritize short-term goals rather than long-term goals. Hence, the short-term, transactional utility of economic fulfilment may fulfil the needs of employees with a decreasing FTP.

This article contributes to previous research on the relationship between age and psychological contracts in a number of ways. First, it sheds light on the various roles of age-related variables in relations between psychological contracts and, more specifically, organizational commitment, including future time perspective and perceived work-related expertise. As a result, it furthers our understanding of the role of age in the workplace by simultaneously investigating a psychosocial perspective and an organizational perspective on age (Kooij et al., 2008). Thereby, this empirical study offers explanations for the inconsistent results on the role of age in psychological contracts (Bal et al., 2008, 2010; Ng & Feldman, 2009).

Second, by looking at two less often investigated forms of commitment (Allen & Meyer, 1990), this study extends our insight into the effects of age and psychological contracts on commitment (Bal et al., 2008). For researchers of the effects of psychological contracts on commitment, it is important to acknowledge that fulfilment may differentially relate to various types of organizational commitment, depending whether it concerns a cost-based or a normative form of commitment. Finally, this article adds to previous research by focusing on the roles of age-related variables in both content and fulfilment of the psychological contract, thereby extending previous research, which has primarily focused on interactions of age with perceptions of contract breach (Bal et al., 2008).

Limitations of the present study

This study also has some limitations. First, all data were collected through self-reports, which might have led to potential problems of common-method bias (Podsakoff, MacKenzie, & Podsakoff, 2012). This may have affected our results, and future research should also include other-reports such as from colleagues or supervisors. However, moderated relationships are less likely to be affected by common-method bias (Siemsen, Roth, & Oliviera, 2010). Second, the study was cross-sectional, and therefore causal interpretations must be made cautiously. It could for instance be that more highly committed employees receive more contract fulfilments by their organization, as a way of reciprocation of employee

loyalty to the organization (Conway & Coyle-Shapiro, 2012). Finally, further research is needed to be able to conclude on the generalizability of our outcomes to a broader population. The sample included call-centre employees and drivers, and the work that these employees conduct may be different from other types of job where more possibilities might exist for people to influence both their levels of future time perspective and their work-related expertise (Bal et al., 2010). Even though we found that the factor structure was similar for both samples, we also found differences between the two samples in many variables. Because jobs in the telecommunications company primarily concerned office work, these employees were more likely to be female, younger, and more highly educated, whereas employees in the taxi company were more likely to be male, older, and less educated. Because younger workers tend to value economic rewards more than older workers, the employees in the telecommunications company might be more focused on economic fulfilment, whereas employees in the taxi company were more focused on socioemotional fulfilments. Moreover, the somewhat older employees in the taxi company may be more normatively committed. Thus, further research is needed to investigate the robustness of our findings, and to determine the extent to which our findings generalize to other occupational settings and/or to other countries (Fouad & Arbona, 1994).

Suggestions for future research

This study focused on the moderating effects of FTP and perceived expertise on the relationships between psychological contracts and organizational commitment. Future research should also investigate objective measures of work behaviours, such as job performance, absenteeism, and turnover (Shaw, Dineen, Fang, & Vellella, 2009). A potential avenue for research is whether these concepts also influence how people actually behave at work, to obtain more insight into actual work outcomes of psychological contract dynamics. Further, due to shortages at the labour market, and recent changes in retirement ages, more people will be working after the age of 65 (Bal, De Jong, Jansen, & Bakker, 2012). However, older workers (>50 years) are underrepresented in psychological contract research to date. We therefore need additional research that includes employees with a wider age range, to investigate more specifically how older workers perceive their psychological contracts. It is also important to investigate how psychological contracts develop when people continue working after retirement, since it is likely that more and more workers will be active at a higher age (Bal et al., 2010).

Practical implications and conclusion

The results of the current study also have important practical implications. First, organizations focusing on implementing age-conscious Human Resource policies should be aware of the interindividual differences among employees of the same age. We have shown that it is not age per se, but the extent to which people perceive their future as open-ended or limited that determines how they react towards psychological contract fulfilments. Moreover, the same applies to work-related expertise; the extent to which employees perceive that they have built up expertise in their specific occupation determines how they react normatively towards contract fulfilments. Hence, to motivate employees in their work, and to keep employees committed to their organization, managers have to ascertain how employees perceive their future, and they have to seriously acknowledge and value the amount of expertise they have gained throughout their career. Moreover, organizations will benefit from including socioemotional elements in the psychological contract, such that it motivates employees in their work, and to become more committed to the organization. Although, as shown, economic fulfilments (e.g., high pay) will be beneficial in the recruitment of employees for the firm, it is the socioemotional part of the job that causes employees to become more committed to the goals of the organization and to stay. Hence, socioemotional obligations are very important elements of the psychological contract, as they send out positive signals to employees about the long-term relationship between the employee and the organization.

This study showed that age-related variables, such as FTP and perceived expertise, play an important role in how age relates to the development of psychological contracts and their impact upon organizational commitment. We integrated theoretical perspectives from socioemotional selectivity theory (Carstensen, 2006) with psychological contract research (Rousseau, 1995), and found that socioemotional fulfilments appeared to be more strongly related to continuance commitment for short FTP workers, and to normative commitment for long FTP and high expertise workers.

REFERENCES

- Ackerman, P. L. (1996). A theory of adult intellectual development: Process, personality, interest, and knowledge. *Intelligence*, 22, 227–257.
- Ackerman, P. L., Beier, M. E., & Bowen, K. R. (2002). What we really know about our abilities and our knowledge. *Personality and Individual Differences*, 33, 587–605.
- Allen, N. J., & Meyer, J. P. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology*, 63, 1–18.
- Alley, D., & Crimmins, E. (2007). The demography of aging and work. In K. S. Shultz & G. A. Adams (Eds.), *Aging and work in the 21st century* (pp. 7–23). New York, NY: Psychology Press.
- Bal, P. 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, 306–331.
- Bal, P. M., De Lange, A. H., Jansen, P. G. W., & Van der Velde, M. E. G. (2008). Psychological contract breach and job attitudes: A meta-analysis of age as a moderator. *Journal of Vocational Behavior*, 72, 143–158.
- Bal, P. M., Jansen, P. G. W., Van der Velde, M. E. G., De Lange, A. H., & Rousseau, D. M. (2010). The role of future time perspective in psychological contracts: A study among older workers. *Journal of Vocational Behavior*, 76, 474–486.
- Bellou, V. (2009). Profiling the desirable psychological contract for different groups of employees: Evidence from Greece. *International Journal of Human Resource Management*, 20, 810–830.
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, 312, 1913–1915.
- Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *The American Psychologist*, 54, 165–181.
- Carstensen, L. L., & Mikels, J. A. (2005). At the intersection of emotion and cognition: Aging and the positivity effect. *Current Directions in Psychological Science*, 14, 117–121.
- Cassar, V., & Briner, R. B. (2011). The relationship between psychological contract breach and organizational commitment: Exchange imbalance as a moderator of the mediating role of violation. *Journal of Vocational Behavior*, 78, 283–289.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Conway, N., & Coyle-Shapiro, J. A. M. (2012). The reciprocal relationship between psychological contract fulfilment and employee performance and the moderating role of perceived organizational support and tenure. *Journal of Occupational and Organizational Psychology*, 85, 277–299.
- Coyle-Shapiro, J. A. M., & Conway, N. (2005). Exchange relationships: Examining psychological contracts and perceived organizational support. *Journal of Applied Psychology*, 90, 774–781.
- Coyle-Shapiro, J. A. M., & Kessler, I. (2002). Exploring reciprocity through the lens of the psychological contract: employee and employer perceptions. *European Journal of Work and Organizational Psychology*, 11, 69–86.
- Dabos, G. E., & Rousseau, D. M. (2004). Mutuality and reciprocity in psychological contracts of employees and employers. *Journal of Applied Psychology*, 89, 52–72.
- De Lange, A. H., Taris, T. W., Jansen, P., Kompier, M. A. J., Houtman, I. L. D., & Bongers, P. M. (2010). On the relationships among work characteristics and learning-related behavior: Does age matter? *Journal of Organizational Behavior*, 31, 925–950.
- European Commission. (2010). *Green paper: Toward adequate, sustainable and safe European pension systems*. Brussels, Belgium: Author.
- Farr, J. L., & Ringseis, E. L. (2002). The older worker in organizational context: Beyond the individual. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (Vol. 17, pp. 31–75). New York, NY: Wiley.
- Foa, U. G. (1971). Interpersonal and economic resources. *Science*, 171, 345–351.
- Fouad, N. A., & Arbona, C. (1994). Careers in a cultural context. *Career Development Quarterly*, 43, 96–104.

- Gaspersz, J., & Ott, M. (1996). Management van employability [Management of employability]. Assen, The Netherlands: Van Gorcum/Stichting Management Studies (SMS).
- Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review*, 25, 161–178.
- Harrison, D. A., Newman, D. A., & Roth, P. L. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal*, 49, 305–325.
- Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed-variable mediation, moderation, and conditional process modeling*. Manuscript submitted for publication.
- Heckhausen, J., Wrosch, C., & Schulz, R. (2010). A motivational theory of life-span development. *Psychological Review*, 117, 32–60.
- 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.
- Husman, J., & Shell, D. F. (2008). Beliefs and perceptions about the future: A measurement of future time perspective. *Learning and Individual Differences*, 18, 166–175.
- Jöreskog, K., & Sörbom, D. (2008). *LISREL 8.80*. Chicago, IL: Scientific Software International.
- Kooij, D., De Lange, A., Jansen, P., & Dijkers, J. (2008). Older workers' motivation to continue to work: Five meanings of age. *Journal of Managerial Psychology*, 23, 364–394.
- Kooij, D., De Lange, A. H., Jansen, P. G. W., Kanfer, R., & Dijkers, J. (2011). Age and work-related motives: Results of a meta-analysis. *Journal of Organizational Behavior*, 32, 197–225.
- Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology and Aging*, 17, 125–139.
- Markovits, Y., Ullrich, J., Van Dick, R., & Davis, A. J. (2008). Regulatory foci and organizational commitment. *Journal of Vocational Behavior*, 73, 485–489.
- Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108, 171–194.
- Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of antecedents, correlates, and consequences. *Journal of Vocational Behavior*, 61, 20–52.
- Ng, T. W. H., & Feldman, D. C. (2008). The relationship of age to ten dimensions of job performance. *Journal of Applied Psychology*, 93, 392–423.
- Ng, T. W. H., & Feldman, D. C. (2009). Age, work experience, and the psychological contract. *Journal of Organizational Behavior*, 30, 1053–1075.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendation on how to control it. *Annual Review of Psychology*, 63, 539–569.
- Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research*, 42, 185–227.
- Quinones, M. A., Ford, J. K., & Teachout, M. S. (1995). The relationship between work experience and job performance: A conceptual and meta-analytic review. *Personnel Psychology*, 48, 887–910.
- Restubog, S. L. D., Hornsey, M., Bordia, P., & Esposito, S. (2008). Effects of psychological contract breach on organizational citizenship behaviour: Insights from the group value model. *Journal of Management Studies*, 45, 1377–1400.
- Rousseau, D. M. (1995). *Psychological contracts in organizations: Understanding written and unwritten agreements*. Thousand Oaks, CA: Sage.
- Rousseau, D. M., & Parks, J. M. (1993). The contracts of individuals and organizations. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior* (Vol. 15, pp. 1–43). Greenwich, CT: JAI Press.
- Schaie, K. W. (1986). Beyond calendar definitions of age, time, and cohort: The general developmental model revisited. *Developmental Review*, 6, 252–277.
- Schwall, A. R. (2012). Defining age and using age-relevant constructs. In J. W. Hedge & W. C. Borman (Eds.), *The Oxford handbook of work and aging* (pp. 169–186). New York, NY: Oxford University Press.
- Shaw, J. D., Dineen, B. R., Fang, R., & Vellella, R. F. (2009). Employee-organization exchange relationships, HRM practices, and quit rates of good and poor performers. *Academy of Management Journal*, 52, 1016–1033.
- Shore, L. M., Tetrick, L. E., Taylor, M. S., Coyle-Shapiro, J. A. M., Liden, R. C., Parks, J. M., ... Van Dyne, L. (2004). *The employee-organization relationship: A timely concept in a period of transition*. In J. J. Martocchio (Ed.), *Research in personnel and human resources management* (Vol. 23, pp. 291–370). Oxford, UK: Elsevier.
- Shultz, K. S., & Wang, M. (2011). Psychological perspectives on the changing nature of retirement. *The American Psychologist*, 66, 170–179.
- Siemsen, E., Roth, A., & Oliveira, P. (2010). Common method bias in regression models with linear, quadratic, and interaction effects. *Organizational Research Methods*, 13, 456–476.
- Sterns, H. L., & Miklos, S. M. (1995). The aging worker in a changing environment: Organizational and individual issues. *Journal of Vocational Behavior*, 47, 248–268.
- Suazo, M. M., Martinez, P. G., & Sandoval, R. (2009). Creating psychological and legal contracts through human resource practices: A signaling theory perspective. *Human Resource Management Review*, 19, 154–166.
- 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.
- Wang, M., & Shultz, K. S. (2010). Employee retirement: A review and recommendations for future investigation. *Journal of Management*, 36, 172–206.
- Wright, T. A., & Bonett, D. G. (2002). The moderating effects of employee tenure on the relation between organizational commitment and job performance: A meta-analysis. *Journal of Applied Psychology*, 87, 1183–1190.
- Zacher, H., & De Lange, A. H. (2011). Relations between chronic regulatory focus and future time perspective: Results of a cross-lagged structural equation model. *Personality and Individual Differences*, 50, 1255–1260.
- 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.
- Zacher, H., & Frese, M. (2011). Maintaining a focus on opportunities at work: The interplay between age, job complexity, and the use of selection, optimization, and compensation strategies. *Journal of Organizational Behavior*, 32, 291–318.
- 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.
- Zhao, H., Wayne, S. J., Glibkowski, B. C., & Bravo, J. (2007). The impact of psychological contract breach on work-related outcomes: A meta-analysis. *Personnel Psychology*, 60, 647–680.