

The relations between work centrality, psychological contracts, and job attitudes: The influence of age

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The current study sought to explain a largely overlooked theme in psychological contract literature, that is, how individual factors are related to formation of psychological contract. It investigated the relationship between work centrality, psychological contracts, and job attitudes. It was expected that people with higher work centrality would be less likely to have a transactional contract and more likely to have a relational contract. Furthermore, it was expected that psychological contract mediates the relations between work centrality and job attitudes. Finally, we expected age to moderate the relations between work centrality and the psychological contract, with stronger relations for older workers than for younger workers. Based on life span psychology, it was argued that work centrality becomes an important factor for older workers in deciding whether or not to invest in the relationship with the organization. The study was conducted among 465 employees in a Dutch health care organization. Structural equation models supported the mediating effect of psychological contract types in the relations between work centrality and three job attitudes (work engagement, job satisfaction, and turnover intention). Moreover, it was found that the relations between work centrality and psychological contract were indeed stronger for older workers than for younger workers.

Keywords: Age; Job attitudes; Older workers; Psychological contract; Work centrality.

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The authors thank Paul Jansen for his valuable comments on previous drafts of the article. The research is part of the project "Postponing Retirement in Health Care", funded by Stichting Senior Werk.

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<http://www.psypress.com/ejwop> DOI: 10.1080/13594321003669079

The employment relationship literature has gained huge popularity in the last decades (Coyle-Shapiro & Shore, 2007). The employment relationship is conceptualized in terms of psychological contracts between employees and their organizations, which have been found to have a positive impact on job attitudes and work behaviours (see, e.g., Bal, de Lange, Jansen, & van der Velde, 2008; Zhao, Wayne, Glibkowski, & Bravo, 2007). However, there is little research available on individual differences in perceptions of the nature of the psychological contract. For instance, it has been suggested that age plays an important role in psychological contracts (Bal et al., 2008; Schalk, 2004). Furthermore, Herriot and Pemberton (1997) argued that negotiation of psychological contracts may be influenced by individual needs and preferences; since for some people, work forms an important aspect of life, they may be more highly motivated to negotiate a favourable psychological contract with their organization. Hence, work centrality may be an important determinant of the type of psychological contract that people negotiate with their organization. Therefore, the current study investigates how work centrality is related to the employment relationship between the worker and the organization, and how this employment relation mediates the relations between work centrality and job attitudes.

Furthermore, since workforces are ageing throughout Europe (Schalk et al., 2009), interest in the role of age in the workplace is increasing. For instance, Armstrong-Stassen and Schlosser (2008) found that work centrality is positively related to development orientation (i.e., the propensity to engage in development activities) among older workers, suggesting that older workers with high work centrality are more likely to negotiate a relational contract than older workers with low work centrality. Therefore, we investigate the moderating role of age in the relations between work centrality and the psychological contract.

The study contributes to previous research in a number of ways. First, it contributes to a further understanding of how psychological contracts are formed between workers and their organizations by investigating the impact of work centrality on psychological contracts, which has not been investigated yet. Second, this study aims to increase our knowledge of the process through which work centrality is related to job attitudes by investigating psychological contract as mediator in these relations. Finally, we provide further understanding on the role of age in the workplace by investigating the moderating role of age in the relations between work centrality, psychological contracts, and job attitudes.

THE CONCEPT OF WORK CENTRALITY

Recently, the interest in concepts such as work centrality and work identity has increased substantially (Ibarra, 1999; Ibarra & Barbulescu, 2010; Ng &

Feldman, 2008; Pratt, Rockmann, & Kaufmann, 2006). Although a significant amount of research has been devoted to how people identify with others in social situations (e.g., social identity theory; Ashforth & Mael, 1989), still little is known about individual identification processes, and in particular how one's work centrality influences work motivation and behaviour. Work centrality is defined as "individual beliefs regarding the degree of importance that work plays in their lives" (Walsh & Gordon, 2008, p. 46). It determines how one acts both at the workplace and outside of it (Alvesson, Ashcraft, & Thomas, 2008).

High work centrality means that one identifies with one's work role, and sees work as an important aspect of life (Diefendorff, Brown, Kamin, & Lord, 2002). Thus, individuals with high work centrality attach more importance to the role of work in life than individuals who score low on work centrality. Further, it is generally acknowledged that work centrality is a relatively stable attitude towards work that is not extremely sensitive to conditions of a particular work setting (Hirschfeld & Feild, 2000). Work centrality is assumed to be stable over shorter periods of time (state-wise), but may change over longer periods of time (trait-wise; see, e.g., Atchley, 1989). In contrast to work centrality, concepts such as job involvement are particularly influenced by work-related experiences, such as job demands and resources.

We argue that work centrality differs from concepts such as job and work involvement. Whereas work centrality refers to the extent to which people perceive work as a main component of their life, job and work involvement refer to the extent to which people are immersed in their *present* job or work (Diefendorff et al., 2002; Fortner, Crouter, & McHale, 2004; Paullay, Alliger, & Stone-Romero, 1994). As such, work centrality is broader in scope than job involvement, because it reflects the importance of work in general, whereas the scope of work and job involvement concern the job that a person currently has. Theoretically, people with low work centrality may report high levels of job involvement, when a person is immersed in activities at work and thinks regularly about issues at work, even when not working (Diefendorff et al., 2002). Therefore, work centrality and job and work involvement are distinct constructs (Paullay et al., 1994).

Work centrality also differs from concepts such as workaholism, overcommitment, and work alienation. Work centrality can be regarded as the positive antipode of work alienation (Hirschfeld & Feild, 2000). Work centrality leads to identification with the work role, and consequently investment of time and energy in building a relationship with the employer, through which employees become engaged in the world of work (Hirschfeld & Feild, 2000). Hence, work centrality leads to engagement in work, whereas work alienation represents *disengagement* from work and the

work role (Hirschfeld & Feild, 2000; Ng, Sorensen, & Feldman, 2007). Concepts such as overcommitment, workaholism, and Type A behaviour patterns are also related to disengagement from work in the long run (Burke & Fiksenbaum, 2009; Ng et al., 2007; Schaufeli, Taris, & van Renen, 2008).

Research has shown that engagement and disengagement represent two distinct processes (see, e.g., Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004a). On the one hand, job and personal resources (i.e., work centrality) consist of positive features that relate to higher engagement, satisfaction, and intent to remain with the company (Schaufeli et al., 2008). On the other hand, overcommitment to work, workaholism, and Type A behaviours consist mainly of negative features that relate to higher burnout, work alienation, and health problems in the long run (Ng et al., 2007; Schaufeli et al., 2008). In sum, work centrality refers to a different construct than workaholism or work alienation, with differential patterns in relation to outcomes.

WORK CENTRALITY AND PSYCHOLOGICAL CONTRACTS

The psychological contract is defined as “individual beliefs, shaped by the organization, regarding an exchange agreement between individuals and their organizations” (Rousseau, 1995, p. 9). There are two broad classifications of the type of psychological contract one has with the organization: *transactional* and *relational* (Rousseau, 1995; Rousseau & Parks, 1993). Transactional contracts refer to the short-term monetizable aspects of the relationship where there is little mutual involvement in the lives and activities of each other (Rousseau & Parks, 1993). The focus is purely materialistic. Relational contracts, however, entail aspects of the relationships that focus on mutual agreement with both exchanges of monetizable elements and socioemotional elements, including career development. The focus is on establishment of a long-term and open-ended relationship (Rousseau & Parks, 1993). In line with previous research on psychological contract, we expect that transactional and relational contract represent two distinct dimensions that are negatively correlated (Dabos & Rousseau, 2004; Millward & Hopkins, 1998; Raja, Johns, & Ntalianis, 2004). Whereas transactional contract refers to the monetary aspects of the exchange agreement between employees and their organization, relational contract refers to the aspects of the relationship that are aimed at mutual investment and career development. Likewise, Rousseau (1995, p. 97) argued that “transactional and relational terms are basic separate elements in most employment contracts”. For instance, employees with a temporary contract are assumed to have solely a transactional contract because of the

short-term focus of their employment status. However, research has shown that there are no significant differences in transactional or relational contracts between temporary and permanent workers (Hughes & Palmer, 2007).

Since people with a high work centrality value work and are focused on building a relationship with the employer which is constituted of mutual investment, it is likely that high work centrality is related to having a more relational psychological contract. Conversely, people with a low work centrality will be more likely to have a “tit-for-tat” transactional contract with the organization. This can be theoretically explained by Resource Theory (Hobfoll, 2002; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007, 2009). Consistent with this theory, people allocate their resources according to their preferences, because resources such as time and energy are valuable and their investment comes at a price (Hobfoll, 2002). Since work plays an important role in the lives of people with high work centrality, they are willing to allocate their resources to work, and to invest in building a mutual relationship with their organization (i.e., a relational contract). People with low work centrality, on the other hand, attach little value to work, and will not be willing to allocate their resources to work (Grant & Wade-Benzoni, 2009). As a consequence, they will not invest in the relation with their organization and a transactional contract is more likely to occur. Therefore, the first hypothesis is:

Hypothesis 1a: Work centrality is negatively related to transactional psychological contract.

Hypothesis 1b: Work centrality is positively related to relational psychological contract.

PSYCHOLOGICAL CONTRACT AND JOB ATTITUDES

Psychological contracts serve as signals for employees about the state of their relationship with the employer (Guest, 2004). Psychological contract theory predicts that when an employee and an organization have a relationship that is characterized by mutual investment and reciprocal commitment to the relationship, the relationship may become a self-fulfilling prophecy that makes the employee and the organization more attached to each other (Dabos & Rousseau, 2004). The employee anticipates future rewards by the employer with increased satisfaction, engagement, and with decreased turnover intention. Moreover, a relational contract facilitates positive personal and organizational outcomes, because of the mutual commitment to the relationship by both the employee and the organization

(Raja et al., 2004). Furthermore, according to social exchange theory, people engage in interactions with other people because they are motivated by the expectations of receiving inducements from the other party (Blau, 1964; Gouldner, 1960). Relational contracts increase the likelihood of receiving future rewards of the organization. Employees anticipate these future rewards of the employer with increased positive attitudes. Finally, Millward and Hopkins (1998) state that employees with a relational contract are more likely than those with a transactional contract to be committed to the goals of the organization and to behave as organizational citizens. Therefore, people with a relational contract will be more satisfied with their job, more engaged in their work, and less likely to look for another job. Conversely, people with a transactional contract will be less satisfied, engaged, and more inclined to turnover. Support for direct relations between the type of psychological contract one has with the organization and job attitudes has been shown in previous studies (Dabos & Rousseau, 2004; Millward & Hopkins, 1998; Raja et al., 2004). In sum, the second hypothesis is:

Hypothesis 2a: Transactional contract is negatively related to job satisfaction.

Hypothesis 2b: Transactional contract is negatively related to work engagement.

Hypothesis 2c: Transactional contract is positively related to turnover intentions.

Hypothesis 2d: Relational contract is positively related to job satisfaction.

Hypothesis 2e: Relational contract is positively related to work engagement.

Hypothesis 2f: Relational contract is negatively related to turnover intentions.

PSYCHOLOGICAL CONTRACT AS MEDIATOR IN THE RELATIONS BETWEEN WORK CENTRALITY AND JOB ATTITUDES

In line with Hypotheses 1 and 2, we argue that psychological contract mediates the relations between work centrality and job attitudes. People with high work centrality attach higher meaning to the role of work in their lives, and consequently invest time and effort in building a mutual long-standing relationship with their employer. Thus, high work centrality results in a relational contract with the organization, which in turn results in higher

job satisfaction, engagement in the job, and a lower tendency to leave the organization (Diefendorff et al., 2002). People with low work centrality, on the other hand, attach little value to the role of work in their lives, and invest little time and effort into the relation with their employer. Thus, low work centrality results in a transactional contract with the organization which in turn results in lower satisfaction and engagement, and higher turnover intention.

The mediating role of psychological contract between work centrality and job attitudes can be explained by job orientation theory and resource theory (Grant & Wade-Benzoni, 2009; Hobfoll, 1989, 2002). People with high work centrality are willing to invest their valuable resources of time and energy in work, and to invest in the relationship with their organization. As a consequence, these people are more likely to negotiate relational contracts instead of transactional contracts, resulting in positive attitudes (Judge, Bono, Erez, & Locke, 2005; Xanthopoulou et al., 2009). Similarly, research that distinguishes between people perceiving their work as a job (i.e., as a means to fulfil the values of supporting oneself, one's family, and one's leisure time) or as a "calling" (i.e., as an end in and of itself) (Wrzesniewski, McCauley, Rozin, & Schwartz, 1997) has shown that this latter group of people is more highly motivated to invest in their relationship with the organization (see also Grant & Wade-Benzoni, 2009). Empirical evidence for positive relations between work centrality and job attitudes were found in a study of Aryee and Luk (1996), who showed that work centrality was positively related to career satisfaction. Along similar lines, Diefendorff and colleagues (2002) found positive relations between work centrality and organizational citizenship behaviours and Witt and colleagues (Witt, Patti, & Farmer, 2002) found positive relations between work centrality and organizational commitment.

In sum, transactional contracts functions as a negative mediator, with work centrality negatively relating to transactional contract, which in turn, negatively relates to job satisfaction and work engagement, and positively relates to turnover intention. The reverse applies to relational contracts, with work centrality positively relating to relational contracts, and relational contracts positively relating to job satisfaction and work engagement, and negatively relating to turnover intention. The third hypothesis is:

Hypothesis 3a: Transactional contract fully mediates the relation between work centrality and job satisfaction, work engagement, and turnover intention.

Hypothesis 3b: Relational contract fully mediates the relation between work centrality and job satisfaction, work engagement, and turnover intention.

AGE AS A MODERATOR IN THE RELATIONS BETWEEN WORK CENTRALITY AND PSYCHOLOGICAL CONTRACT

Finally, we argue that age moderates the relation between work centrality and psychological contract, such that the relations are stronger for older workers than for younger workers. This is expected because younger workers are motivated to negotiate a relational contract rather than a transactional contract, regardless of the level of their work centrality. According to lifespan psychology, younger and middle-aged people are more focused on growth and learning than older people (Ebner, Freund, & Baltes, 2006; Freund, 2006). Younger and middle-aged people are in general focused on gaining resources, learning new things and developing themselves (Freund, 2006). Older workers may be less focused on growth and learning because they face increasing loss of resources; it is difficult for them to acquire new resources, and losses in resources are threatened by downward spirals (Ebner et al., 2006). Because younger workers are focused on growth and learning, they aim for a relational contract (i.e., a relationship that is aimed at mutual investment and career development), rather than a transactional contract, regardless of the level of work centrality.

For older workers, on the other hand, the extent to which work plays a central role in their life will be crucial for the type of psychological contract they have with their organization. Older workers with high work centrality will be more likely to have a relational contract and less likely to have a transactional contract than older workers with low work centrality. When people age, they become more aware of the fact that time is finite, and thus will prioritize tasks and goals that are meaningful (Carstensen, 2006; Grant & Wade-Benzoni, 2009). At the same time, the resources of older adults become more valuable, because of losses in resources and the need for more resources in order to maintain a certain level of functioning (Baltes, Staudinger, & Lindenberger, 1999). Therefore, older adults will think more thoroughly about where to allocate their time and energy. Older workers who value the role of work in their life will be motivated to invest in the relationship with the organization. In line with this reasoning, positive associations have been found between work centrality and the intention to remain in the company of older workers (Armstrong-Stassen & Schlosser, 2008; Schmidt & Lee, 2008). Older workers who prioritize emotional meaningful goals *outside* of their work, such as taking care of family and volunteering work, will be more likely not to invest in the relationship with their organization (Grant & Wade-Benzoni, 2009). Hence, for older workers who attach low importance to work, the relationship with their organization will be more transactional. Moreover, the relations between work centrality

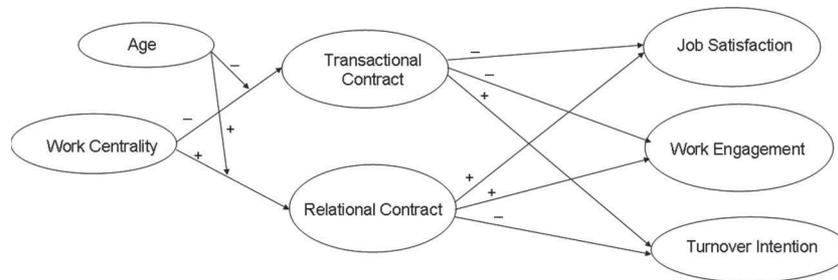


Figure 1. Research model of the current study.

and relational contract will be stronger for older worker. The fourth hypothesis is:

Hypothesis 4a: Age moderates the relation between work centrality and transactional contract, such that the relation will be stronger for older workers than for younger workers.

Hypothesis 4b: Age moderates the relation between work centrality and relational contracts, such that the relation will be stronger for older workers than for younger workers.

Figure 1 shows the conceptual model of the study.

METHOD

Sample and procedure

Data were collected from a health care organization situated in the middle of The Netherlands. The organization provided mental health care for children as well as for adults. Access to the organization was gained through contact with the board of directors and personnel manager. Surveys were distributed in autumn of 2008, by means of a digital questionnaire which could be accessed through an e-mail that was sent to all employees within the organization. The data were collected using self-report questionnaires, based on 465 employees who completed the survey (response rate of 21%). No significant differences were found in terms of age, organizational tenure, gender, work status, and education between the sample and the overall employee population working for the organization. The mean age of the sample was 43 years ($SD = 11$ years), 73% was female, and 50% had children living at home. On average, participants had worked 14 years for the company and 8 years in their current function.

Measures

Previously published scales were used to collect data relevant for the study. Because the study was part of a larger study on the role of the psychological contract in health care organizations, shortened scales were used to measure the concepts. Unless stated otherwise, all measures were assessed using a 5-point Likert-type scale (1 = “strongly disagree”; 2 = “disagree”; 3 = “neither agree nor disagree”; 4 = “agree”; and 5 = “strongly agree”).

Work centrality. This measure was a shortened scale of the measure of Hirschfeld and Feild (2000). Their scale was based on the measure of Lodahl and Kejner (1965; see also Paullay et al., 1994). The three items are: “The major satisfaction in my life comes from my job”, “The most important things that happen to me involve my work”, and “I have other activities more important than my work” (reverse coded). The scales alpha’s reliability was .75.

Psychological contract. To measure transactional and relational psychological contracts, the 18-item scale of Raja and colleagues (2004) was used, which was developed by Millward and Hopkins (1998). Transactional and relational contracts are both assessed by nine items. The items measuring transactional contract referred to a purely monetizable exchange agreement between employee and organization, whereas the items for the relational contract referred to a long-term agreement, with investment of the organization in the long-term relationship with the employee, through offering advancement and promotion opportunities (Rousseau, 1995). Raja and colleagues (2004) showed that the current measure of the both types of psychological contract correlated highly with the psychological contract measure of Rousseau (2000; transactional $r = .71$; relational $r = .59$), therefore providing convergent validity of the measure. Finally, similar correlations between the two types of psychological contract with turnover intentions have been found for the Rousseau measure (transactional $r = .37$; relational $r = -.60$; Dabos & Rousseau, 2004) and the Millward and Hopkins measure (transactional $r = .26$; relational $r = -.57$; Raja et al., 2004). Confirmatory Factor Analysis (CFA; Jöreskog & Sörbom, 2005) with the 18 items of the study indicated that five items had factor loadings below .40, and were therefore deleted from further analyses. See the Appendix for the items that were used in the current study. Further assessment of the validity of the scales is presented below. The reliability for transactional contract was .71 and for relational contract .82.

Job attitudes. Three job attitudes were investigated in the present study. Job satisfaction was measured with six items from van der Sluis (2000).

An example is “I am satisfied with my current job”. The reliability was .84. Work engagement was measured by the Utrecht Work Engagement Scale (UWES; Schaufeli & Bakker, 2003, 2004a). The scale consisted of seven items, which could be answered on a 7-point scale, ranging from “never” to “daily”. An example is: “At my work, I feel bursting with energy”. Previous research has shown that the scale is internally consistent and valid (Schaufeli & Bakker, 2004b). The reliability was .92. Turnover intention was measured with the scale from Wayne, Shore, and Liden (1997) and consisted of five items aimed at thinking of leaving the organization. An example is “As soon as I can find a better job, I’ll leave [name of company]”. The internal consistency as reported by Wayne and colleagues was .89. In the current study the alpha reliability was .88.

Age was measured as a continuous variable. The mean age was 43 years ($SD = 11$ years). Younger workers are referred to as those below 31 years, and older workers as those above 54 years (i.e. one standard deviation below and above the mean age; Aiken & West, 1991). 19.6% of the respondents were younger than 30, 19.5% were between 31 and 40, 29.1% between 41 and 50, 31.2% between 51 and 60, and 0.6% between 61 and 64.

Control variables. In the analyses, a number of control variables that possibly influence the variables under study were added. These were gender (1 = female, 2 = male), dependent children living at home (1 = no, 2 = yes), educational level (on a 7-point scale, ranging from primary education to university degree), work status (1 = part-time, 2 = fulltime), and organizational tenure (measured in years).

Statistical analyses

The hypotheses were tested with moderated structural equation modelling using LISREL 8.72 (MSEM; Jöreskog & Sörbom, 2005). Covariance analyses were preferred over hierarchical regression analyses because the first allows for correction of measurement error. The procedure of Mathieu, Tannenbaum, and Salas (1992; see also Cortina, Chen, & Dunlap, 2001) was followed to conduct the analyses. We built a model including three exogenous variables (work centrality, age, and the interaction between work centrality and age). Each exogenous variable had one indicator, which was the standardized scale score (Cortina et al., 2001). For the interaction term, we multiplied the standardized score of work centrality and the standardized score of age. The paths from the latent exogenous factors to their indicators were fixed with the square root of the scale reliabilities. For age, a reliability of .90 was assumed (Cortina et al., 2001). In line with recommendations of Cortina et al., the error variances of the exogenous variables were set equal to the product of the variance of the exogenous variable and one minus

the reliability of the variable. Moreover, the correlations between work centrality and the interaction term and between age and the interaction term were fixed to zero. Work centrality and age and were allowed to correlate (for more details see Cortina et al., 2001).

For the latent endogenous variables, it is recommended to use partial disaggregation models because latent factors need more than one indicator for a model to be identified (Bagozzi & Edwards, 1998; Yuan, Bentler, & Kano, 1997). This means that for the psychological contract measures and the outcome variables item parcels were used instead of the scale scores as indicators of the latent variable. We conducted preliminary factor analyses to assess which items have similar factor structure. The items with similar relative errors are recommended to combine in item parcels (Yuan et al., 1997). Item parcelling was conducted based on the decision that the constructs had acceptable reliabilities (Cronbach's alpha > .70). For significant interactions, we plotted the interaction patterns using simple slope analysis with slopes one standard deviation below and above the mean of the moderator, in line with recommendations of Aiken and West (1991).

A structural model was specified in which work centrality affects the psychological contract, and in which the psychological contract was related to the job attitudes. Moreover, we included paths from age to transactional and relational contract, as well as paths from the interaction between age and work centrality to transactional and relational contract. Tests for mediation were conducted in line with procedures as described by James, Mulaik, and Brett (2006; see also LeBreton, Wu, & Bing, 2009; MacKinnon, Fairchild, & Fritz, 2007; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). First, there must a significant relation between the independent variable (work centrality) and the mediator (psychological contract). Second, the mediator must be related to the dependent variables. To estimate whether the mediation effects of transactional and relational contract were significant, Sobel tests (Sobel, 1982) were conducted.

Finally, we included paths from the control variables to work centrality, the psychological contract measures, and the job attitudes. To evaluate model fit, established goodness-of-fit measures were used. The Root Mean Square Error of Approximation with values of below .08 are assumed to be acceptable, and below .05 as good (Bentler, 1990; Hu & Bentler, 1999). Furthermore, Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI), and Incremental Fit Index (IFI) should be above .90.

CFAs were conducted to assess the measures' factor structure. The analyses were conducted in LISREL 8.72 (Jöreskog & Sörbom, 2005). Table 1 presents the results of the CFAs. First, a model was tested with the proposed six factors of the study: work centrality, transactional contract (six items), relational contract (seven items), job satisfaction, work engagement,

TABLE 1
Results of scale analyses

<i>Model</i>	<i>CFA</i>	χ^2	<i>df</i>	<i>RMSEA</i>	<i>NNFI</i>	<i>CFI</i>	<i>IFI</i>	Δdf	$\Delta\chi^2$
1	1 factor	5405.33***	509	.16	.79	.81	.81		
2	3 factors	4244.97***	506	.15	.84	.86	.86	3	1160.36***
3	5 factors	2295.85***	499	.09	.92	.93	.93	7	1949.12***
4	6 factors	1619.51***	494	.07	.94	.95	.95	5	676.34***
5	7 factors	1628.42***	500	.07	.95	.95	.95	6	8.91

One factor refers to all items together; three factors refer to a work centrality factor, a psychological contract factor, and a job attitudes factor; five factors refer to a work centrality factor, a psychological contract factor, a job satisfaction factor, a work engagement factor, and a turnover intention factor; six factors refer to a work centrality factor, a transactional contract factor, a relational contract factor, a job satisfaction factor, a work engagement factor, and a turnover intention factor; seven factors refer to the six proposed factors, with a path from each of these factors to a single latent factor. CFA = Confirmatory Factor Analysis; RMSEA = Root Mean Square Error of Approximation; NNFI = Non-Normed Fit Index; CFI = Comparative Fit Index; IFI = Incremental Fit Index.

and turnover intention. This model reached acceptable fit, $\chi^2 = 1619.51$, $p < .001$, $df = 494$, $RMSEA = .07$, $CFI = .95$. All of the factor loadings of the items on their respective factors were significant. Moreover, this model fitted significantly better than a range of models with fewer factors (see Table 1). Finally, an unmeasured latent factor was added to test for common source method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003, Model 5). The model including this latent factor did not improve model fit. Therefore, it can be concluded that common method bias did not influence the validity of the factor structure. Moreover, the confirmatory factor analysis showed that work centrality was conceptually different from the other scales of the study and that there was no overlap between the variables of the study (Hirschfeld & Feild, 2000). Table 1 presents the findings of the CFA. To test whether the item parcels were valid representations of the factors in the study, CFA was also conducted with the item parcels as indicators of the latent variables instead of the single items. Similar results were found, with the six-factor model significantly fitting better than the other models.

RESULTS

Table 2 presents the descriptive statistics of the variables under study. Work centrality was positively related to age, $r = .19$, $p < .01$, negatively to education, $r = -.11$, $p < .05$, positively to organizational tenure, $r = .15$, $p < .01$, and to working fulltime, $r = .14$, $p < .01$. Moreover, work centrality

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
1. Age	42.64	11.28	—											
2. Gender	1.27		.23	—										
3. Children	1.50		.14	.03	—									
4. Education	4.74	1.50	-.05	.15	-.04	—								
5. Organizational tenure	14.26	10.98	.51	.25	.12	-.11	—							
6. Work status	1.30		.10	.49	-.08	.15	.20	—						
7. Work centrality	2.28	0.74	.19	.06	-.06	-.11	.15	.14	.75	—				
8. Transactional contract	1.96	0.67	-.01	.12	-.01	-.02	.12	-.05	-.15	.71	—			
9. Relational contract	2.83	0.79	-.31	-.03	-.10	.05	-.22	.02	.13	-.27	.82	—		
10. Job satisfaction	3.54	0.79	.11	-.03	-.00	-.01	.04	.02	.13	-.29	.34	.84	—	
11. Work engagement	5.99	0.94	.13	-.06	.08	-.06	.04	.03	.20	-.39	.29	.46	.92	—
12. Turnover intention	2.26	0.98	-.19	.06	-.01	.08	-.05	.01	-.16	.31	-.23	-.53	-.40	.88

N = 465. Correlation coefficients greater than ±.10 are significant at *p* < .05. Correlation coefficients greater than ±.13 are significant at *p* < .01. Values in bold along the main diagonal are coefficient alphas for scaled variables. Gender: 1 = female; 2 = male. Children: 1 = no children at home; 2 = yes, children living at home. Education was measured on a 7-point ordinal scale, ranging from 1 = primary education to 7 = university degree or higher. Organizational tenure was measured in years. Work status: 1 = part-time and 2 = full-time.

was negatively related to transactional contract, $r = -.15$, $p < .01$, and positively to relational contract, $r = .13$, $p < .01$. Transactional contract was positively related to organizational tenure, $r = .12$, $p < .05$. Significant gender differences were found in transactional contract, $F(1, 463) = 7.14$, $p < .01$, with men scoring higher on transactional contract than women. Relational contract was negatively related to age, $r = -.31$, $p < .01$, and to organizational tenure, $r = -.22$, $p < .01$.

Model fit

The results of the research model are shown in Figure 2. The proposed full mediation model fitted well, $\chi^2 = 135.69$, $p < .01$, $df = 47$, $RMSEA = .06$, $NNFI = .95$, $CFI = .97$, $IFI = .97$. To evaluate whether the full mediation model obtained better fit than a partial mediation model, we constructed a model with direct paths from work centrality to the job attitudes. This partial mediation model obtained good fit, $\chi^2 = 130.08$, $p < .01$, $df = 44$, $RMSEA = .07$, $NNFI = .95$, $CFI = .97$, $IFI = .97$. However, this more complex partial mediation model did not obtain significant better fit than the full mediation model, $\Delta\chi^2 = 5.61$, $\Delta df = 3$, ns . None of the paths from work centrality to the job attitudes was significant. Therefore, the full mediation model obtained the best fit.

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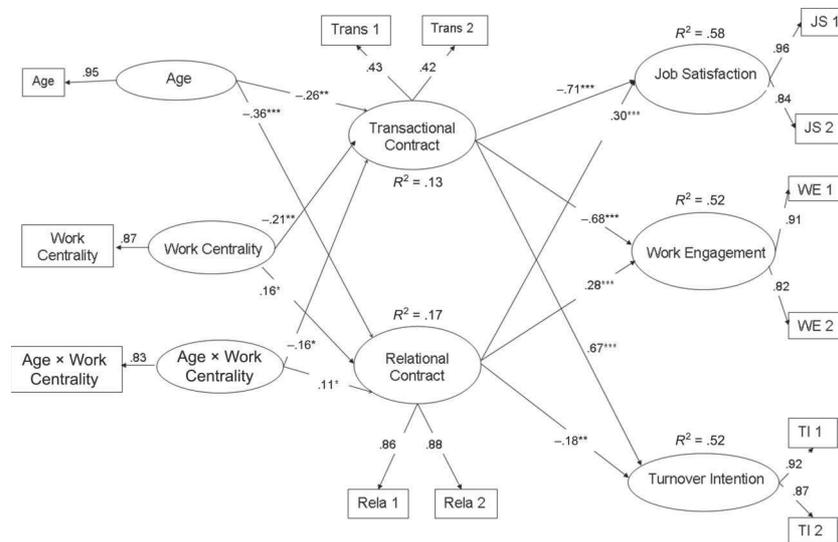


Figure 2. LISREL results for the hypothesized model ($N = 465$). * $p < .05$, ** $p < .01$, *** $p < .001$.

Hypothesis testing

In line with Hypothesis 1 we found that work centrality was negatively related to transactional contract, $\gamma = -.13$, $p < .01$, and was positively related to relational contract, $\gamma = .17$, $p < .001$. Thus, hypothesis 1 was supported.

In line with Hypothesis 2, transactional contract was negatively related to job satisfaction, $\gamma = -.71$, $p < .001$, and to work engagement, $\gamma = -.68$, $p < .001$, and positively related to turnover intention, $\gamma = .67$, $p < .001$. Furthermore, relational contract was positively related to job satisfaction, $\gamma = .30$, $p < .001$, and to work engagement, $\gamma = .28$, $p < .001$, and negatively related to turnover intention, $\gamma = -.18$, $p < .01$. Therefore, Hypothesis 2 was fully supported.

Hypothesis 3 predicted a mediating effect of psychological contract in the relation between work centrality and job attitudes. Transactional contract significantly mediated the relation between work centrality and job satisfaction, Sobel test $z = 3.48$, $p < .001$, work engagement, Sobel test $z = 3.45$, $p < .001$, and turnover intention, Sobel test $z = 3.43$, $p < .001$. Relational contract also significantly mediated the relation of work centrality with job satisfaction, Sobel test $z = 2.68$, $p < .01$, work engagement, Sobel test $z = 2.64$, $p < .01$, and turnover intention, Sobel test $z = -2.30$, $p < .05$. The indirect standardized effects of work centrality on job satisfaction were $\gamma = .19$, $p < .001$, on work engagement $\gamma = .18$, $p < .001$, and on turnover intention $\gamma = -.17$, $p < .001$. Thus, Hypothesis 3 was supported.

Hypothesis 4 stated that age moderates the relations between work centrality and psychological contract. Age was negatively related to both transactional contract, $\gamma = -.26$, $p < .01$, and to relational contract, $\gamma = -.36$, $p < .001$. The interaction between age and work centrality was significantly related to transactional contract, $\gamma = -.16$, $p < .05$, as well as to relational contract, $\gamma = .11$, $p < .05$. The interaction patterns are shown in Figures 3 and 4. Simple slope analyses revealed that the relation between work centrality and transactional contract was not significant for younger workers, $\gamma = -.03$, *ns*, whereas the relationship was negative for older workers, $\gamma = -.34$, $p < .001$ (see Figure 3). Furthermore, the relation between work centrality and relational contract was also not significant for younger workers, $\gamma = .10$, *ns*, whereas the relation was positive for older workers, $\gamma = .28$, $p < .001$. The relations between work centrality and transactional and relational contract were stronger for older workers than for younger workers. We also investigated whether the interaction was significantly related to the job attitudes (i.e., mediated moderation). Sobel tests were not significant, and showed that neither transactional contract nor relational contract significantly mediated the relation between the interaction and the three job attitudes. However, the indirect relations of

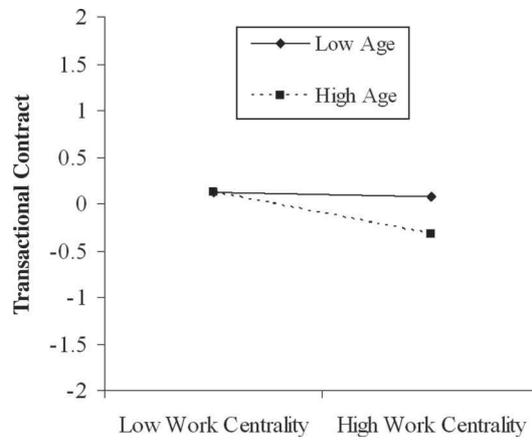


Figure 3. Interaction between age and work centrality on transactional contract.

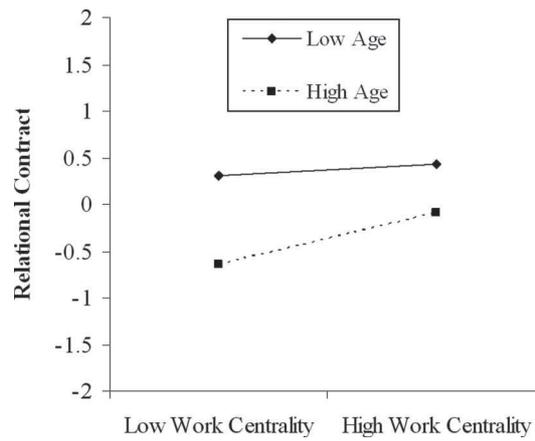


Figure 4. Interaction between age and work centrality on relational contract.

the interaction between age and work centrality with the three job attitudes were significant: job satisfaction, $\gamma = .14, p < .05$; work engagement, $\gamma = .15, p < .05$; and turnover intention, $\gamma = -.13, p < .05$. Thus, although the indirect relations of the interaction with the job attitudes were significant, transactional and relational contract did not mediate the relation between the interaction and job attitudes significantly. Hypothesis 4 was fully supported.

To estimate whether the moderating role of age was continuous and not nonlinear, multigroup analyses were performed with three age groups

(younger workers: < 30 years old, $n = 91$; middle-aged workers: 31–44 years old, $n = 127$; older workers: > 45 years old, $n = 247$ based on de Lange et al., in press). The three work centrality items were used as indicators of the latent variable. For the other variables, the item parcels were used. Different models were compared in which the paths from work centrality to psychological contract were invariant or freely estimated among the age groups. A model with the paths being invariant for younger and middle-aged workers and freely estimated for older workers obtained the best fit, $\chi^2 = 2173.38$, $p < .001$, $df = 232$, and fitted significantly better than the other possible models. The relation of work centrality with transactional contract was not significant for younger/middle-aged workers, $\gamma = -.08$, *ns*, but was significant for older workers, $\gamma = -.51$, $p < .001$. The relation between work centrality and relational contract was not significant for younger/middle-aged workers, $\gamma = .04$, *ns*, and was significant for older workers, $\gamma = .40$, $p < .001$. In sum, the results of the multigroup analyses produced similar results as the moderator analyses with age as continuous variable. Thus, there is no indication of nonlinear relations.

The correlation between age and transactional contract was not significant, but became significant in the analyses, indicating a lower likelihood of older workers to have a transactional contract. This can be explained by a suppressor effect of work centrality, such that after controlling for work centrality, older workers are less likely to have a transactional contract than younger workers. In other words, older workers with low work centrality have a higher transactional contract than older workers with high work centrality, and therefore the zero-order correlation is not significant when the total group of older workers is compared to the younger workers.

DISCUSSION

The current study investigated the mediating effects of psychological contracts in the relations between work centrality and job attitudes, as well the moderating role of age in the relations between work centrality and psychological contract. Work centrality was found to be related to psychological contracts people have with their organizations; people with higher work centrality are more likely to have a relational contract with the organization, and are less likely to have a transactional contract. In addition, both psychological contract types fully mediated the relations between work centrality and job satisfaction, work engagement, and turnover intention. Thus, psychological contracts play a critical role in the way work centrality is related to job attitudes. Finally, age was found to moderate the relations between work centrality, psychological contracts, and job attitudes. The relation of work centrality with psychological contracts, and thus with job attitudes, was stronger for older workers.

This research contributes to the literature on work centrality, psychological contracts, and ageing at work. First, by showing that work centrality is related to positive attitudes towards the job, this study contributes to the literature on work centrality, which is mainly focused on antecedents of work centrality (Mannheim, Baruch, & Tal, 1997). In addition to organizational citizenship behaviour, career satisfaction, and organization commitment (Aryee & Luk, 1996; Diefendorff et al., 2002; Witt et al., 2002), work centrality was found to relate to job satisfaction, work engagement, and turnover intention. Thus, work centrality is an important concept to include in studies on work behaviour.

Second, although there are many studies on the effects of psychological contracts, little research has been conducted on how psychological contracts are negotiated (Raja et al., 2004). In addition to findings that personality relates to the psychological contract (Raja et al., 2004; Tallman & Bruning, 2008), this study contributes to a further understanding of formation of psychological contracts. People with high work centrality invest in their work and their relationship with the organization, and consequently are able to negotiate a more relational contract that is aimed at the long term and involves both economic and socioemotional elements (Grant & Wade-Benzoni, 2009; Hobfoll, 2002; Rousseau & Parks, 1993).

Furthermore, the results showed that both transactional and relational contract mediated the relations between work centrality and job attitudes. This finding provides an explanation or reveals the underlying processes through which work centrality has a positive effect on job attitudes. Workers with high work centrality are willing to invest their time and effort in work, and thus in their relation with the organization. These workers will negotiate a relational psychological contract, which will result in positive job attitudes. Conversely, workers with a low work centrality are not willing to invest in work or in their relation with the organization. These workers will negotiate a transactional "tit-for-tat" psychological contract, which will result in negative job attitudes.

Subsequently, we contributed to the literature on ageing at work by examining the impact of age on the relations between work centrality, psychological contracts, and job attitudes. First, we found negative relations between age and both transactional and relational contracts. Particularly the negative relation between age and relational contracts is in contrast with the nature of relational contracts, which are aimed at long-term relationships between employees and their organizations. This is likely to be more prevalent among older workers (Rousseau & Parks, 1993). However, it might be that older workers become more aware of the fact that time is finite, and thus have a shorter future time perspective (Carstensen, 1995). Therefore, their focus on long-term relational contract decreases. Another explanation is that a lack of investment of the organization in the employee

might cause employees to believe that they have a transactional rather than a relational contract with their organization. Thus, older workers might be as likely as younger workers to be offered transactional contracts. However, presence of relational contracts might be more likely among younger workers than among older workers, since many organizations are aimed at offering possibilities for building human capital for younger workers with an open infinite future rather than for older workers whose future is limited (Simpson, Greller, & Stroh, 2002).

Furthermore, we found that work centrality was particularly related to the psychological contract of older workers. Older workers will think more thoroughly about where to allocate their time and energy (Baltes et al., 1999; Carstensen, 2006; Grant & Wade-Benzoni, 2009). Hence, when work is an important part of their lives, older workers invest in the relationship with the organization. On the other hand, when work is not an important part of their lives, older workers will not invest in the relationship with their organization (Grant & Wade-Benzoni, 2009). In sum, older workers who attach high importance to work have a relational relationship with their organization. Similarly, positive associations have been found between work centrality and the intention to remain in the company of older workers (Armstrong-Stassen & Schlosser, 2008; Schmidt & Lee, 2008). Thus, work centrality is an important concept that explains why older workers want to invest in work, and might even explain why older workers continue working.

Limitations and future research

There are limitations to the study that have to be addressed. First, the cross-sectional nature of the study limited the findings in that we could not show evidence for causal relationships. Although we could test for the likelihood of the direction of the relationships, it is still possible that the concepts of the study are reciprocally related. For instance, the work centrality of people holding positive attitudes about their jobs may be enhanced by the positive experiences at work (Pachulicz, Schmitt, & Kuljanin, 2008; Xanthopoulou et al., 2009). Further longitudinal research is needed to investigate these reciprocal relationships over time.

Moreover, because all variables were measured from one source, the employee, there is a chance of common method bias (Podsakoff et al., 2003). Theoretically, concepts like work centrality and psychological contracts exist in the “eye of the beholder”, and therefore self-reports are deemed appropriate to measure these concepts (Pratt et al., 2006; Rousseau, 1995). The confirmatory factor analysis including a common latent factor did not improve model fit, showing evidence for the distinction of the concepts investigated in this study. However, future studies should also investigate

whether work centrality and psychological contract contribute to the bottom line, and whether or not they are related to concepts such as OCBs, absenteeism, and turnover. All in all, we are confident that the results were not seriously affected by common method bias.

A further limitation was that contextual differences were not included in the study design. The current study was conducted among people working in health care; replication of the study in other sectors might produce different results. In contexts where the zone of negotiability within psychological contracts is small (Schalk & Roe, 2007), work centrality might not have a significant impact on whether one will have a transactional or relational contract with the organization. Moreover, certain contexts will attract people with high work centrality, whereas in other contexts the reverse might be the case.

Finally, the response rate of the current study was not high (21%). Although the sample was not significantly different from the employee population in terms of age, gender, organizational tenure, work status, or education, we could not estimate whether the nonresponse was random or not (Newman, 2009). It could be that unsatisfied employees are less willing to cooperate with a study that is supported by their organization (Rogelberg, Luong, Sederburg, & Cristol, 2000). However, at the same time it could be that unsatisfied employees use organizational surveys to express their opinions about the organization (Newman, 2009; Rogelberg et al., 2003). The standard deviations of the scales were above .67, indicating sufficient variation in response and no likelihood of one particular type of employee responding to the questionnaire (e.g., the unsatisfied employees; Rogelberg et al., 2003). Moreover, as indicated by the model of Rogelberg et al. (2000), situational constraints can influence response to a survey. Since the current survey was distributed by means of an online questionnaire, it was not possible to obtain a (theoretical) response of 100%, because not all employees had direct access to computers. Furthermore, Rogelberg et al. (2003) concluded that “nonresponse bias does not appear to be a concern for satisfaction type variables”, indicating that nonresponse in attitude surveys is in general missing completely at random (MCAR). Therefore, nonresponse bias seems to be minimal in the current study.

Practical implications

This study has implications for organizations as well. Since the study showed that people with high work centrality are the ones with relational contracts, organizations may focus more on attracting personnel by selecting those who have high work centrality. Employees with relational psychological contracts are those who are among the more satisfied, engaged, and loyal employees (see also Dabos & Rousseau, 2004;

Raja et al., 2004). Furthermore, the work centrality of older workers provides information about their willingness to invest in work and in the relation with their organization.

Moreover, organization may want to offer relational contracts to their employees, since this study showed that employees with relational contracts are more satisfied, more engaged in their work, and show lower tendency to leave the organization. Relational contracts cost time and energy for the organization to establish. Employees are motivated when the organization offers skill development, job security, flexibility, and good career prospects. Absence of these types of inducements may cause employees to perceive their psychological contract as transactional relationship with the organization. Furthermore, since there are more older workers active on the labour market, organizations may benefit by employing older workers with high work centrality, since these older workers are more willing to invest in their work and relationship with the organization.

CONCLUSION

The current study investigated the mediating role of psychological contract in the relation between work centrality and job attitudes. It was found that work centrality is positively related to relational contracts and negatively related to transactional contracts, which in their turn relate to job attitudes. We provided empirical evidence that people with high work centrality are able to negotiate a relational contract with the organization, which consequently makes them more satisfied with their job, more engaged in their work, and less inclined to leave the organization. In addition, this study investigated the moderating role of age in relations between work centrality and psychological contracts. It was found that the relation of work centrality with the psychological contracts was particularly strong for older workers.

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Original manuscript received August 2009

Revised manuscript received January 2010

First published online August 2010

APPENDIX
Variables under study and item parcels^a

	<i>Item parcel</i>
Work centrality ($\alpha = .75$)	
1. The major satisfaction in my life comes from my job.	–
2. The most important things that happen to me involve my work.	–
3. I have other activities more important than my work. (reverse coded)	–
Transactional contract ($\alpha = .71$)	
1. I work only the hours set in my contract and no more.	1
2. My commitment to this organization is defined by my contract.	1
3. I prefer to work a strictly defined set of working hours.	2
4. I only carry out what is necessary to get the job done.	1
5. I work to achieve the purely short-term goals of my job.	2
6. It is important to be flexible and to work irregular hours if necessary. (reverse-coded)	2
Relational contract ($\alpha = .82$)	
1. I expect to grow in this organization.	1
2. I feel part of a team in this organization.	1
3. I have a reasonable chance of promotion if I work hard.	2
4. The organization develops/rewards employees who work hard and exert themselves.	2
5. I expect to gain promotion in this company with length of service and effort to achieve goals.	2
6. I feel this company reciprocates the effort put in by its employees.	2
7. I am motivated to contribute 100% to this company in return for future employment benefits.	1
Job satisfaction ($\alpha = .84$)	
1. I am satisfied with my current job.	1
2. I am satisfied with my work environment.	2
3. I am satisfied with my career so far.	1
4. I am satisfied with my salary.	2
5. I am satisfied with my learning opportunities.	1
6. I am satisfied with my career prospects.	2
Work engagement ($\alpha = .92$)	
1. At my work, I feel bursting with energy.	1
2. At my job, I feel strong and vigorous.	2
3. I am enthusiastic about my job.	1
4. My job inspires me.	1
5. When I get up in the morning, I feel like going to work.	2
6. I feel happy when I am working intensely.	2
7. I am proud on the work that I do.	1
Turnover intention ($\alpha = .88$)	
1. I am actively looking for a job outside my organization.	1
2. As soon as I can find a better job, I'll leave my organization.	1
3. I am seriously thinking about quitting my job.	2
4. I often think about quitting my job at my organization.	2
5. I think I will be working at my organization five years from now. (reverse coded)	2

For each scale (except work centrality), two item parcels were created, which are referred to as 1 and 2. ^aThe items are from Millward and Hopkins (1998).