

Psychological contract breach and job attitudes: A meta-analysis of age as a moderator [☆]

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Abstract

The aim of this study was to examine the influence of age in the relation between psychological contract breach and the development of job attitudes. Based on affective events, social exchange, and lifespan theory, we hypothesized that (1) psychological contract breach would be related negatively to job attitudes, and (2) that age would moderate these relations. The hypotheses were tested by means of a meta-analysis of $k = 60$ studies, using Weighted Least Squares estimation. Our results supported both hypotheses for the outcomes trust and organizational commitment. However, for job satisfaction the moderating influence of age was in the unexpected direction. The relations between contract breach and trust and organizational commitment were indeed stronger for younger workers, whereas the relation between contract breach and job satisfaction was stronger for older workers. The implications are discussed, and a research agenda is presented.

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1. Introduction

The proportion of the workforce aged over 45 is increasing rapidly in North America and Europe (Caldwell, Farmer, & Fedor, 2007; European Commission, 2005; Kanfer & Ackerman, 2004). As a consequence, organizations will have to employ more older workers, and hence adapt organizational policies to the needs and abilities of older workers. It is therefore not surprising that age has become an important factor in organizational research (Greller & Stroh, 1995; Kanfer & Ackerman, 2004). However, little research has been conducted on the role of age in the employment relationship (Farr & Ringseis, 2002; Hall & Mirvis, 1995; Kanfer & Ackerman, 2004).

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An important constitutive element of the employment relationship is the psychological contract between employees and their organizations (Rousseau, 1995). It has been suggested that psychological contracts affect job attitudes (such as job satisfaction) differently for older workers than for younger workers (Farr & Ringseis, 2002). Because older people, in general, have better emotion regulation skills (Löckenhoff & Carstensen, 2004), and having build up more stable psychological contracts (Rousseau, 2001), they will react differently than younger people to fulfillment or breach of the psychological contract.

A recent meta-analysis revealed significant relations between psychological contract breach and work-related outcomes (Zhao, Wayne, Glibkowski, & Bravo, 2007), building on the affective event theory (Weiss & Cropanzano, 1996). Affective events theory proposes that events at the workplace shape emotions, which at their turn influence job attitudes and behaviors. Zhao et al. (2007) showed that there may be moderators in the relations between contract breach and outcomes, and examined as potential moderators two types of breach measure, namely type and content of contract breach. Researchers have also mentioned other moderators, such as the factor age (Farr & Ringseis, 2002). Farr and Ringseis (2002) stated that older workers may react differently to psychological contract breach than younger workers. Unfortunately, studies examining relations between psychological contracts and outcomes have not yet explicitly investigated the influence of the factor aging at work. Therefore, the current meta-analysis investigates the moderating role of age in the relations between psychological contracts and three job attitudes (trust, job satisfaction, and affective commitment). While previous meta-analytic studies have been criticized because they were often data-driven rather than theory-based (Hunter & Schmidt, 2004), this study employs a theoretical framework, based on earlier insights of affective events, social exchange, and lifespan theories of aging. To explain why events happening at the workplace (such as psychological contract breach) lead to attitudes and behaviors, affective events theory is applied in the psychological contract framework (Weiss & Cropanzano, 1996; Zhao et al., 2007). Furthermore, we employ social exchange theory (Cropanzano & Mitchell, 2005) to explain why events may be evaluated as positive or negative by employees. Finally, we use lifespan psychology (Carstensen, Isaacowitz, & Charles, 1999; Carstensen, Fung, & Charles, 2003) to explain why older people react differently from younger people to psychological contract breach.

1.1. The psychological contract

Rousseau (1989, 1995) defined the psychological contract as the employees' beliefs concerning mutual obligations between the employee and the organization (see for a comprehensive review of the concept, Conway & Briner, 2005). When the organization does not fulfill its obligations, employees may experience psychological contract breach. Contract breach is defined as the cognitions of an employee that the organization has failed to deliver its obligations (Morrison & Robinson, 1997). An affective reaction may follow, including feelings of anger and betrayal (i.e. contract violation; Robinson & Morrison, 2000). The current study follows this distinction between breach and violation, as made by Morrison and Robinson (1997). Breach refers to the cognition that the organization has failed to fulfill its obligations, whereas feelings of violations refer to the affects following breach.

1.2. Effects of psychological contracts on job attitudes

Previous research on psychological contracts has indicated that contract breach has a profound impact on job attitudes (Conway & Briner, 2005; Zhao et al., 2007). Studying job attitudes is important because they are predictors of key behaviors as job performance and withdrawal (Harrison, Newman, & Roth, 2006). When organizations break psychological contracts, employees' trust in their organization is harmed. Furthermore, organizational failure to deliver its obligations is also associated with a decrease of job satisfaction and commitment to the organization. Zhao et al. (2007), in their recent meta-analysis on the relations between psychological contract breach and outcomes, employed affective events theory to explain the relations between psychological contracts and attitudes and behaviors. According to affective events theory, a negative event at the workplace causes negative emotional reactions, such as anger or frustration (Morrison & Robinson, 1997; Weiss & Cropanzano, 1996). These emotions color the cognitive evaluations of one's job, in such a way that experience of negative emotions will cause more negative job attitudes (Thoresen, Kaplan, Barsky,

Warren, & de Chermont, 2003). Previous research has confirmed this link between negative emotions and job attitudes by showing that negative emotions are related to decreases in trust (Dunn & Schweitzer, 2005), job satisfaction (Judge & Ilies, 2004), and commitment (Thoresen et al., 2003). On the other hand, positive emotions will color evaluations of the job in a positive way, such that people experience higher trust, satisfaction, and commitment. Zhao et al. (2007) argue that in particular psychological contract breach is perceived as such a negative event. Thus, contract breach leads to affective reactions, which in turn contribute to the establishment of job attitudes. However, it is not always clear why and how employees come to perceive something as a negative event. Social exchange theory provides an explanatory framework of the processes that lead employees to perceive a negative event, and hence, psychological contract breach.

According to social exchange theory, people engage in interactions with other people because they are motivated by the expectations of receiving inducements in return from the other party (Blau, 1964; Gouldner, 1960). Social exchange involves series of interactions (such as incentives from the employer and contributions from the employee) between two parties (Cropanzano & Mitchell, 2005). Each party acts according to the norm that the other party will reciprocate such actions, creating mutual obligations over time. If one party does not reciprocate, an imbalance is created between the contributions of the two parties (Cropanzano & Mitchell, 2005). If employees perceive that their employer has not reciprocated their contributions, they will respond with emotional reactions such as anger and frustration, in line with affective events theory. Furthermore, they may restore the balance in social exchanges by lowering their trust, job satisfaction, and commitment (Taylor & Tekleab, 2004). According to Taylor and Tekleab (2004), social exchanges and reciprocity play a critical role in the psychological contract because mutual obligations, as social exchanges, form a psychological contract. Shore and Barksdale (1998) found that imbalances between employee and employer obligations resulted in a lower affective commitment than in a balanced situation, especially when it involved mutually high obligations.

Not receiving anything in return for contributions to the organization will therefore be perceived as a negative event. Subsequently, and in accordance with affective events theory (Blau, 1964; Taylor & Tekleab, 2004), contract breach as an imbalance in social exchange will affect job attitudes. As a result, employees respond to contract breach by lowering their trust, job satisfaction, and commitment to the organization. To explain why older workers react differently to contract breach than younger workers, we employ relevant insights of previous lifespan psychological theories (e.g. Carstensen et al., 1999, 2003; Kanfer & Ackerman, 2004).

1.3. The moderating role of age between contract breach and job attitudes

Although dispositional differences were mentioned as moderators in affective events theory, until now they have been scarcely tested empirically. Moreover, there are no studies that focused on how the relations between psychological contracts and job attitudes change over the lifespan (Guest, 2004; Schalk, 2004).

According to lifespan theory, aging is generally associated with both gains and losses (Baltes & Baltes, 1990; Kanfer & Ackerman, 2004). When people grow older health and biological abilities decrease, whereas knowledge and experience will generally increase. Moreover, previous research has shown that as people grow older, their future time perspective decrease and the feeling that time is running out becomes more salient (Lang & Carstensen, 2002). A number of age-related mechanisms that are of influence on the relations between psychological contracts and job attitudes is addressed.

According to Carstensen et al. (1999), the perception of approaching retirement may be characterized by an effort of making experiences more positive. Younger workers may be less concerned with how their employment relationship ends, since they may have opportunities to work in other organizations, than older workers who tend to have fewer options for job transfer (Hedge, Borman, & Lammlein, 2006). Moreover, a perception of older workers, that their current employer will be their last, makes them feel more positive about the employer (Carstensen et al., 1999, 2003). Longitudinal research supports this idea of ‘emotional selectivity’ by finding that older people report less negative affectivity than younger people, whereas positive affectivity remains stable across the lifespan (Charles, Reynolds, & Gatz, 2001).

Moreover, there is accumulating evidence that older people become better in regulating their emotions after negative events than younger people (Carstensen et al., 2003; Löckenhoff & Carstensen, 2004). An explanation

for this is that older and more experienced workers have relatively more stable psychological contracts (Rousseau, 2001). Psychological contracts form mental models, or abstractions of complex concepts such as employment relationships, to help understand and make sense of the world employees live in (Rousseau, 2001). Over time, employees develop an increasingly stable psychological contract, which is more resistant to change than those of younger and more inexperienced workers. Changes in the employment situation, such as contract breaches, may have a more intense impact on young people given their less stable mental models of their psychological contract than older workers (Rousseau, 2001).

Finally, older workers may have different types of psychological contracts than younger workers (Anderson & Schalk, 1998; Schalk, 2004). As a consequence of environmental and personal changes, psychological contracts will develop and change over time (De Vos, Buyens, & Schalk, 2003). Young people often enter the workforce with high expectations, but after time they adapt their expectations according to reality (De Vos et al., 2003; Thomas & Anderson, 1998). Older workers may have more realistic expectations about what to receive than younger workers (Thomas & Anderson, 1998). Therefore, a psychological contract breach may be less harmful to older workers than to younger workers.

In sum, according to social exchange theory, organizational failure to reciprocate employee contributions may be perceived as a negative event (Cropanzano & Mitchell, 2005). Affective events theory shows that negative events at the workplace are related to decreases in trust, job satisfaction, and commitment (Zhao et al., 2007). Finally, lifespan psychology explains that older workers are more focused on positive experiences, have better emotion regulation, and have more realistic expectations than younger workers (Carstensen et al., 1999). Therefore, older workers may react less intense to psychological contract breach than younger workers.

It is expected that contract breach will be related negatively to trust, job satisfaction, and commitment. This expectation is based on findings of a recent meta-analysis of Zhao et al. (2007). Moreover, it is expected that older people's attitudes will be less affected by contract breaches than younger people. More specifically, in this study we will address the following hypotheses:

H1: Psychological contract breach relates negatively to trust, job satisfaction, and commitment.

H2: Age moderates the relations between psychological contract breach and job attitudes, such that the attitudes of older workers are less affected by contract breach.

2. Methods

2.1. Search strategy

To find relevant articles about psychological contracts, several search strategies were conducted. First, the ABI-Inform, Psycinfo, and Medline databases (1989–2007) were searched using key-terms such as psychological contract(s), contract breach, and contract fulfillment, added by the outcomes contract trust, job satisfaction, and organizational commitment. Databases were searched after 1989 (the year Rousseau redefined the psychological contract; Rousseau, 1989). In addition, the reference lists of several review and other articles about the psychological contract were scrutinized (e.g. Anderson & Schalk, 1998; Shore et al., 2004), as well as the reference lists from articles which were obtained from the database searches. Furthermore, electronic searches were conducted among a wide range of journals, including the *Journal of Vocational Behavior*, *Journal of Applied Psychology*, and *Academy of Management Journal*.

Speakers at the Annual Academy of Management Conferences (1999–2006) as well as the Society of Industrial and Organizational Psychology conferences (SIOP; 1999–2007) who presented papers about psychological contracts were emailed and asked to send their papers. To obtain as many unpublished studies as possible and to avoid publication bias (Hunter & Schmidt, 2004), authors of the published articles were mailed and asked whether they had, or knew of, relevant unpublished studies. In total, these searches uncovered 352 articles and studies on psychological contracts. Only studies including employees working in organizations were taken into account since the psychological contract describes mutual obligations between employees and their organizations (Rousseau, 1995). There were also a number of studies conducted with samples of students working in organizations (e.g. Robinson & Rousseau, 1994). Provided these studies focused on their psychological contracts with their employers, these studies were included in the meta-analysis. Subsequently, theoret-

ical papers, qualitative studies, studies which were not in English or Dutch, and studies that did not investigate the variables relevant to the current study were rejected.

An assumption in meta-analysis is that samples are independent (Hunter & Schmidt, 2004). Where more than one article had been published using the same respondent database, and investigated the same relationships, only the most recent publication was used for the analysis. The final dataset consisted of 60 studies, with 62 samples.

2.2. Measures

Where researchers had measured contract breach but labeled it as a contract violation, we treated it as a psychological contract breach. Further, many researchers have measured fulfillment (by asking employees to what extent organizations have fulfilled their obligations). In line with the method suggested by Zhao et al. (2007), the signs of the correlations between fulfillment job attitudes were reversed to indicate psychological contract breach. In studies where fulfillment of a number of obligations were reported rather than a single measure of fulfillment (e.g. Cassar, 2001), the correlations were averaged. Organizational commitment was operationalized as affective organizational commitment (Allen & Meyer, 1993).

2.3. Statistical procedure

The first hypothesis was tested with the formulas of Hunter and Schmidt (2004) and the statistical software of Schmidt and Le (2004). To investigate the second hypothesis, the correlations between contract breach and outcomes were regressed on the mean age of the studies, using Weighted Least Squares estimation (WLS; Steel & Kammeyer-Mueller, 2002; see also Wright & Bonett, 2002). We applied the Fisher Z-transformation to all correlations, in order to investigate the moderating effect of age. The weights were set to $(n_j - 3\alpha_{xj}\alpha_{xy})$, where n_j is the sample size in sample j , α_{xj} is the reliability of psychological contract breach in sample j , and α_{xy} is the reliability of the outcome measure in sample j , in order to correct for unreliability of the measures (Hunter & Schmidt, 2004). Whenever the reliability of a study was not reported, it was replaced by the mean of the other available reliabilities of the particular correlation. The second hypothesis was tested using SPSS.

Moderator analysis in meta-analysis is mostly conducted using dichotomous or categorical moderators (Steel & Kammeyer-Mueller, 2002). The present meta-analysis, using Weighted Least Squares (WLS) estimation, enables us to test for age as a continuous moderator. Moreover, by using weights in the analyses, we can also correct for differences between samples sizes, as well as unreliability in the variables measured (Hunter & Schmidt, 2004).

Researchers have argued that the effects of employee age on job attitudes may be correlated with effects of time spent within the organization (De Lange et al., 2006; Wright & Bonett, 2002). Cohen (1993) showed the importance of separating age from tenure effects. His meta-analysis on the relations between age, tenure and organizational commitment showed that effects of tenure may be attributed to job and organizational factors, whereas effects of age may be due to external factors. To disentangle age from organizational tenure effects, we will analyze the influence of age and organizational tenure separately, as well as age and organizational tenure simultaneously. Age effects should exist after adding organizational tenure as a moderator in the relation between psychological contract breach and job attitudes (see also Wright & Bonett, 2002). However, due to a small number of available studies, we could not estimate the influence of age and tenure simultaneously as moderators in the relation between breach and trust.

3. Results

3.1. Description of the selected studies

Of the selected studies, 75% were conducted among employees in organizations, 17% among MBA students (including questions referring to their jobs), and the remaining 8% were conducted among managers. The mean age, weighted by sample size, was 36.15 years (the mean ages of the various studies ranged from 18 to 55 years). Of the total sample, 58% were female.

Sample characteristics, average age, average tenure, sample size, reliability of psychological contract breach, and the correlations between psychological contract breach and the job attitudes, and their reliabilities are listed in Table 1.

Table 1 shows that the correlations between contract breach and trust ranged from $-.75$ to $-.17$, the correlation with satisfaction from $-.77$ to $-.08$, and with commitment from $-.67$ to $-.07$, indicating considerable variation between studies. Therefore it is likely that the relationships are moderated by specific characteristics of the studies (Hunter & Schmidt, 2004).

Reliabilities of the psychological contract breach measures ranged from .66 to .96, the reliability of the trust measures from .62 to .93, of the job satisfaction measure from .67 to .94, and the affective commitment measure from .59 to .92. Tables 2 and 3 show the results of the meta-analyses.

In Table 2, the following statistics are reported: the number of studies (k), the number of total respondents in the separate meta-analyses (N), the sample size weighted mean observed correlation (r), the true score correlation (ρ), the standard deviation (SD) in ρ , the 80% credibility interval of ρ , the 95% confidence interval of ρ , and the percentage of the variance explained by the artifacts (see Field, 2005; Hunter & Schmidt, 2004).

H1: Contract Breach Relates Negatively to Job Attitudes

The first hypothesis was that psychological contract breach would be related negatively to trust, job satisfaction, and affective commitment. As can be observed from Table 2, psychological contract breach is found to be significantly related to trust (true score correlation $\rho = -.61$), job satisfaction ($\rho = -.52$), and affective commitment ($\rho = -.39$). None of the confidence intervals include zero, meaning that all correlations differ significantly from zero. Thus, the first hypothesis is supported. Psychological contract breach is related negatively to trust, job satisfaction, and affective commitment.

H2: Age Moderates the Relations between Contract Breach and Job Attitudes

The second hypothesis was that age moderates the relations between psychological contract breach and job attitudes, such that older workers are less affected by contract breach. As can be seen in Table 3, age moderated the relation between contract breach and trust ($\beta = .50$, $p < .001$). Since the correlation between breach and trust is negative (see Table 2), the positive beta indicates that the negative correlation becomes smaller for older workers, than for younger workers. The explained variance was $R^2 = .25$, indicating that 25% of the variance between the samples in the correlation between breach and trust can be attributed to the effects of age.

Age moderated the correlation between breach and job satisfaction ($\beta = -.20$, $p < .05$). However, the effect was the opposite of our hypothesis. Older people showed a stronger decrease in job satisfaction following contract breach than younger people. The explained variance was $R^2 = .04$.

Age moderated the negative relation between contract breach and affective commitment in the expected direction ($\beta = .23$, $p < .05$). The negative correlation between contract breach and affective commitment becomes smaller with age. The explained variance was $R^2 = .05$.

Thus, the second hypothesis was fully supported for the outcomes trust and commitment, but not supported for the job satisfaction outcome. The moderation of age in the relation between breach and job satisfaction was in the unexpected direction.

As was mentioned above, we performed the same analysis with organizational tenure as we did for age. Moreover, to test whether the age effect exists, we added organizational tenure to the effect of age on the contract breach–job attitudes relationship. Organizational tenure moderated the relation between contract breach and trust in the same direction ($\beta = .90$, $p < .001$; $k = 7$; $N = 2,301$; $R^2 = .80$). However, due to a too small number of studies age and tenure could not be combined in one analysis.

Organizational tenure did not moderate the relation between psychological contract breach and job satisfaction when tenure was separately analyzed ($\beta = .13$; $k = 17$; $N = 13,029$; $R^2 = .02$). However, when age and tenure were both included in the analysis, age was a significant negative predictor ($\beta = -.43$, $p < .001$; $k = 17$; $N = 11,111$), whereas tenure was a significant positive predictor ($\beta = .23$, $p < .05$). The explained variance was $R^2 = .15$.

Table 1

Sample characteristics, average age and tenure, sample size, reliability of contract breach, and Pearson correlations of contract breach with outcomes, and reliabilities of the outcomes

Authors	Sample	Age	Tenure	N	R_{xx} Breach	Trust		Satisfaction		Commitment	
						r	r_{yy}	r	r_{yy}	r	r_{yy}
1 Agee (2000)	US university employees	—	—	121	.85	-.75	.93	-.74	.84	-.64	.91
2 Bunderson (2001)	US hospital clinicians	45.5	9	167	.76			-.08	.78	-.07	.83
3 Carbery et al. (2003)	Irish hotel managers	30	—	89	.94			-.60	.80	-.48	.59
4 Carvalho et al. (2007)	Portuguese police officers	32	8.7	209	.88			-.28	.75		
5 Cassar (2000)	Maltese public service employees	42	21	132	—	-.17	.71	-.11	.87	-.12	.81
6 Castaing (2005)	French civil service employees	45	18.9	754	.83					-.22	.91
7 Cavanough and Noe (1999)	US managers and professionals	38	—	136	—			-.72	.74		
8 Cheung (2005)	Chinese part-time service employees	33	1	200	.88					-.34	.78
9 Cheung and Chiu (2005)	Chinese manufactory employees	18	1.2	354	.85					-.28	.74
10 Chrobot-Mason (2003)	Minority employees at US university	—	—	88	.88	-.68	.95	-.57	.87	-.50	.85
11 Claes et al. (2002)	Flemish workers	36.52	9.46	596	.86			-.31	.85	-.25	.77
12 Conway and Briner (2002)	S1: UK bank employees	29	6.14	1608	.74			-.51	.83	-.28	.81
	S2: UK supermarket employees	26	2.42	366	.81			-.50	.83	-.36	.78
13 Coyle-Shapiro (2002)	UK public service employees	42.92	10.51	480	.74	-.38	.90				
14 Coyle-Shapiro and Kessler (2000)	UK public service employees	42.4	7.6	6953	.80			-.43	.88	-.27	.90
15 Coyle-Shapiro and Morrow (2006)	European contracted employees	—	6.83	99	.96					-.55	.91
16 De Cuyper and De Witte (2006)	Belgian employees	37	—	538	.80			-.42	.84	-.38	.78
17 De Witte and Van Hecke (2002)	Range of Flemish employees	34	8.14	226	.66			-.41	.78		
18 Deery et al. (2006)	Australian service employees	35.45	7.42	480	.82	-.60	.76				
19 Dulac et al. (2006)	Large Belgian organizations	28	9	159	.89	-.49	.90			-.38	.88
20 Freese et al. (1999)	Dutch home care organization	39.6	8.3	119	.92					-.26	.82
21 Gakovic and Tetrick (2003a)	US university students working in organizations	28	1.82	601	.92					-.47	.83
22 Gakovic and Tetrick (2003b)	US employees from financial corporation	—	—	161	.77			-.55	.74		
23 George (2003)	US research laboratory, computer manufacturer, consumer product retailer	36.2	5.69	256	.84	-.69	.89			-.60	.81
24 Granrose and Baccili (2006)	US aerospace employees	43.35	13.5	145	.79					-.10	.89
25 Gregory et al. (2007)	Canadian nurses	37.4	—	343	.70			-.46	.80	-.55	.92
26 Guest and Clinton (2006)	UK, range of occupations	37	5	642	—	-.62	.91	-.50	.83	-.45	.69
27 Guzzo et al. (1994)	US expatriate managers	42.76	12.63	148	.91					-.27	.86
28 Huiskamp and Schalk (2002)	Range of Dutch occupations	38	9.6	1331	.83					-.30	.82
29 Johnson and O'Leary-Kelly (2003)	US bank employees	35.8	4.37	103	.94			-.59	.88	-.52	.87
30 Kickul (2001)	US MBA-students	29.41	3.86	151	.78					-.28	.85
31 Kickul and Lester (2001)	US MBA students	31.73	3.29	183	.82			-.56	—		
32 Kickul et al. (2004)	Hong Kong bank employees and US MBA-students	33.34	4.83	136	.91			-.35	.86	-.29	.85
33 Kickul et al. (2002)	US MBA students, working in changing organizations	33.43	4.22	246	.90			-.45	.86		
34 Kickul and Zaper (2000)	US MBA-students	32.05	5.14	260	.90					-.27	.70
35 Knights and Kennedy (2005)	Australian government employees	47.54	15.44	251	.84			-.77	.87	-.67	.90
36 Lambert et al. (2003)	Student employees	20.5	2.5	213	.70			-.24	.90		
37 Larwood et al. (1998)	US range of occupations	36.2	—	259	.75			-.49	.67		
38 Lee (2005)	IT Singapore expatriates	36.3	—	302	.75			-.12	.90		
39 Lemire and Rouillard (2005)	Canadian civil servants	44.23	12.45	132	—					-.45	.81

(continued on next page)

Table 1 (continued)

	Authors	Sample	Age	Tenure	N	R_{xx}	Breach	Trust		Satisfaction		Commitment	
								r	r_{yy}	r	r_{yy}	r	r_{yy}
40	Lester and Kickul (2001)	US MBA students	27.6	3.4	268	—				-.21	.86		
41	Lester et al. (2002)	US MBA students	32.27	4.34	134	.89						-.60	.87
42	Lo and Aryee (2003)	Chinese MBA-students	—	6.56	152	.86		-.56	.87				
43	Montes and Irving (2005)	US students in work team	20.5	.00	293	.77				-.36	.90		
44	Raja et al. (2004)	Higher level employees in Pakistan	38.81	12.25	197	.79				-.30	.75	-.49	.82
45	Restubog et al. (2006)	Philippines IT employees	—	—	137	.87						-.64	.82
46	Robinson (1995)	US MBA Alumni	30	6.29	126	.85				-.44	.94	-.54	.84
47	Robinson (1996)	US MBA Alumni	—	—	125	.78		-.29	.87				
48	Robinson and Rousseau (1994)	US MBA Alumni	—	—	96	—		-.61	.93	-.61	.92		
49	Rybnikova (2006)	German interim managers	55	—	133	.73				-.32	.69		
50	Shih and Chen (2006)	Taiwanese MBA-graduates	36.6	9.7	485	.87				-.31	.92		
51	Sturges et al. (2005)	UK employees from media company	32.5	2.42	151	.91						-.36	.83
52	Sutton and Griffin (2004)	Australian new professionals	23.2	.75	235	.71				-.57	.84		
53	Tallman (2001)	US new hires in organizations	—	—	63	—		-.44	.62	-.45	.78	-.56	.80
54	Tekleab et al. (2005)	US university employees	47	13.4	191	.83				-.37	.68		
55	Tekleab and Taylor (2003)	US university employees	45	—	130	.81				-.34	.75		
56	Ten Brink et al. (1999)	Dutch employees health care	—	—	527	.93		-.54	.84			-.31	.60
57	Ten Brink et al. (2002)	S1: Dutch rural company	39	—	762	.95		-.58	.77			-.46	.85
		S2: Dutch public sector employees	42	—	74	.84		-.41	.86			-.33	.83
58	Thompson and Heron (2005)	UK, 6 high-technology firms	34.26	7.89	429	.86						-.42	.82
59	Turnley and Feldman (2000)	US managers	35.07	7.41	804	.83				-.56	.70		
60	Yeh (2006)	Taiwanese hospital nurses	27.5	4.5	364	.70						-.30	.83

Table 2

Meta-analytic results of relationships between psychological contract breach and outcomes

Outcome	<i>k</i>	<i>N</i>	Mean <i>r</i>	ρ	<i>SD</i> of ρ	80% Credibility interval		95% Confidence interval		Var. expl.
						Lower	Upper	Lower	Upper	
Trust	15	4800	–.52	–.61	.14	–.79	–.44	–.68	–.54	12.02
Job satisfaction	36	17,333	–.43	–.52	.13	–.69	–.35	–.56	–.48	10.30
Commitment	39	19,407	–.32	–.39	.12	–.54	–.24	–.43	–.35	14.42

k = number of studies; *N* = population; mean *r* = mean uncorrected correlation; ρ = true score correlation; *SD* of ρ = standard deviation of true score correlation; Var. expl. = percentage of variance in correlations explained by artifacts.

Table 3

Meta-analytic results of the moderating role of age in the relationships between psychological contract breach and job attitudes

	Correlation breach–trust		Correlation breach–job satisfaction		Correlation breach–affective commitment	
	β	<i>SE</i>	β	<i>SE</i>	β	<i>SE</i>
Age	.50***	.01	–.20*	.00	.23**	.00
Variance explained	.25		.04		.05	
No. of samples (<i>N</i>)	8 (2985)		22 (12,708)		28 (15,756)	

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

Organizational tenure did not moderate the relations between contract breach and commitment; neither when analyzed separately ($\beta = .14$; $k = 28$; $N = 16,207$; $R^2 = .02$), nor when analyzed simultaneously with age (age: $\beta = .20$, tenure: $\beta = .03$; $p < .05$; $k = 24$; $N = 14,039$; $R^2 = .02$).

In sum, age moderated the relations between contract breach and trust and commitment positively, but moderated the relation between contract breach and satisfaction negatively. After adding organizational tenure as a moderator, the effects of age remained significant.

4. Discussion

4.1. Psychological contract breach and job attitudes

Our results show that psychological contract breach is related strongly to job attitudes (i.e. trust, job satisfaction, and affective commitment). These results are comparable to the recent meta-analysis of Zhao et al. (2007). Although the sample of Zhao et al. (2007) differs somewhat from the current sample (due to availability and language of the studies), similar correlations were found between psychological contract breach and trust ($\rho = -.61$ in the current study vs. $\rho = -.65$ in the Zhao et al. study), job satisfaction ($\rho = -.52$ vs. $\rho = -.54$), and commitment ($\rho = -.39$ vs. $\rho = -.38$). Especially the correlation between psychological contract breach and trust ($\rho = -.61$) is high, indicating that cognitions that the organization has failed to fulfill its obligations is related strongly to a decrease of trust in the employer (Guest, 1998). Moreover, psychological contract breach is associated strongly with job satisfaction and affective commitment. These findings underline the importance of psychological contracts at the workplace, in shaping attitudes of employees. Furthermore, these results are in line with affective events theory (Weiss & Cropanzano, 1996), as well as social exchange theory (Blau, 1964). When employees perceive their psychological contract as breached, they react to this breach by a decrease in trust, job satisfaction, and commitment to the organization.

4.2. Age as a moderator

This study shows that age is related to the response to psychological contract breach. Based on lifespan theories of aging, we expected that as people grow older, and become better in regulating their emotions, they will respond less emotional to breach of their psychological contracts (Carstensen et al., 1999). This hypothesis

was supported for the relation between contract breach and trust and organizational commitment. The correlation was less negative for older workers than for younger workers. This positive moderation of age in the breach–trust and breach–commitment relations corroborate the expectation that older workers focus more on positive aspects of their relationship with the organization, and hence are less affected by negative events, such as contract breach (cf. Allen & Meyer, 1993; Löckenhoff & Carstensen, 2004).

However, this was not the case for the relation between contract breach and job satisfaction, where the opposite pattern was found. The correlation was more negative for older workers than for younger workers. Thus, when contracts are breached, older workers respond with a higher decrease of job satisfaction, than younger workers. This adverse effect on the breach–satisfaction relation may be explained by several factors. Since older workers have more experience, the work they conduct may become less interesting (Clark, Oswald, & Warr, 1996; Sarker, Crossman, & Chinmteepituck, 2003). For younger workers the job may be of greater importance than the relation with their (in the future possibly changing) employer, whereas for older workers with fewer job transfer options the reverse is the case (Hedge et al., 2006; Kacmar & Ferris, 1989). Older workers' satisfaction may therefore stem primarily from the relation with the employer and coworkers, than younger workers, whose satisfaction may be derived more from the work they conduct. Therefore, when organizations break the psychological contract, younger workers' job satisfaction is less intensely harmed, but they lose trust in their employer and become less committed to the organization.

As the mobility of older workers is reduced, they may perceive fewer chances for job transfer than their younger colleagues, and may therefore react more strongly to contract breach on aspects like job satisfaction (Hedge et al., 2006). Finally, older workers may receive higher satisfaction from factors outside their work, such as family, hobbies, and the community (Clark et al., 1996). Therefore, they can permit themselves to be less satisfied with their jobs after a contract breach, while maintaining satisfaction from areas outside their work.

When we analyzed the influence of organizational tenure on the relations between psychological contract breach and job attitudes, it appeared that organizational tenure moderated the breach–trust relationship positively, and did not moderate the relations between contract breach and job satisfaction and commitment. When age and organizational tenure were analyzed simultaneously, the effects of age remained the same, whereas the moderating effect of organizational tenure on the relation between contract breach and job satisfaction became significantly positive.

This study shows that it is important to separate effects due to age from effects due to organizational tenure. Considering the relation between contract breach and trust, the effects of age and organizational tenure are the same. With respect to the breach–job satisfaction relation, age (negative) and organizational tenure (positive) have adverse effects. Finally, regarding the breach–commitment relationship, it appeared that age has a positive effect, whereas the effect of organizational tenure was non-significant. The findings of the study have important implications for future research on psychological contracts.

4.3. Theoretical implications

Research on the influence of age and aging on organizational phenomena is criticized for lacking theoretical explanations (Kanfer & Ackerman, 2004). This study takes a lifespan perspective, and provides a theoretical underpinning for the possible influence of age in psychological contracts. This is a major advantage, since specific hypotheses can be tested that are based on these theories (Löckenhoff & Carstensen, 2004). Until now, research on psychological contracts has mainly focused on the processes of how psychological contracts lead to job attitudes and behaviors (Conway & Briner, 2005). It is assumed that these processes are static and apply equally to all organizational employees. However, individual differences and the dynamic nature in these processes are neglected (Anderson & Schalk, 1998; Coyle-Shapiro & Neuman, 2004). Our results show that it is important to employ a dynamic lifespan perspective on psychological contracts, as it was clearly shown that relations between contract breaches and job attitudes are dependent on employee age. Future research should incorporate a lifespan perspective on the psychological contract processes that lead to job attitudes and behaviors.

Moreover, our study showed that there are differences between the effects of age and organizational tenure in the relations between psychological contracts and job attitudes. As the main focus of this paper was the influence of the factor age, we did not theorize further about the effects of organizational tenure. However,

our results did show some interesting differential effects of age versus organizational tenure. For example, age moderated the relation between contract breach and job satisfaction negatively, whereas organizational tenure moderated this relation positively. Therefore, it is important to disentangle age effects from time spent within an organization, and to also theorize further about the effects of tenure. For example, a meta-analysis of [Wright and Bonett \(2002\)](#) showed that the relation between organizational commitment and work performance was moderated by tenure, whereas age did not affect this relationship.

4.4. Limitations of the present study

Despite these relevant new results and strengths of our study, we also have to address a number of limitations. Older workers are consistently missed or underrepresented in many reviewed studies because of early retirement options ([Griffiths, 1999](#)) and healthy worker effects ([Zapf, Dormann, & Frese, 1996](#)). Due to healthy people staying at the job and maybe conducting post-retirement work while unhealthy people retire early, there may be a survivor bias. The older people who are still employed may be very motivated, since until recently it was financially very attractive to retire early. On the other hand, since older workers in the studies included in the meta-analysis are the healthy and motivated survivors, this study may be a study of survival behavior in organizations ([Noonan, 2005](#)). The results show that by reacting less intense to contract breaches, older workers survive within organizations. However, it is impossible to estimate how these effects precisely influenced the outcomes of previous studies, and the results found in our meta-analysis. Therefore, future research should investigate whether there are differences between those who stay in the workforce and leave the workforce before official retirement age.

Furthermore, since most of the correlations in this meta-analysis are based on cross-sectional data, it is impossible to draw conclusions regarding causality. For example, people who are dissatisfied with their jobs may perceive more contract breaches. Due to the limited amount of longitudinal studies conducted on psychological contracts, we could not estimate whether there were differences between cross-sectional and longitudinal studies. Therefore, longitudinal research is needed to examine the causal direction of the relations under study (cf. [De Lange, Taris, Kompier, Houtman, & Bongers, 2005](#)).

Finally, in line with the procedure of [Zhao et al. \(2007\)](#), we reversed the correlations of fulfillment to indicate psychological contract breach. However, it can be argued that fulfillment and breach are two distinct components of the psychological contract ([Conway & Briner, 2005](#)). Breaking promises may have other effects than not fulfilling obligations. However, both obligations and promises constitute the psychological contract ([Guest, 1998; Rousseau, 1995](#)). Further research is needed to disentangle effects of breach, fulfillment, and unfulfillment.

4.5. Recommendations and research agenda

This meta-analysis is the first study to investigate the influence of aging in psychological contract research, and found a significant moderating influence of age in relations between contract breach and job attitudes. Further research should investigate the explanations of why age moderates relations between breach and trust and commitment positively, and the relation with job satisfaction negatively.

Furthermore, this study only focused on job attitudes as outcomes, but future research should also investigate relations between age, psychological contracts, and work behaviors, such as job performance, citizenship behaviors and turnover. In line with the findings of [Zhao et al. \(2007\)](#), psychological contract breach is related to work behaviors, and it may be expected that age also moderates these relations. Can the effects found be generalized to behavioral outcomes as well?

The results show that a lifespan perspective on employee-employer relations, expectations and obligations is important. One could therefore also examine more underlying social contract processes like fairness and justice (see [Guest, 1998](#)). For instance, in terms of training, older workers are, in general, treated less fairly than younger workers ([Simpson, Greller, & Stroh, 2002](#)). These research areas should also benefit from incorporating a lifespan perspective. Research is needed on the influence of age on justice and fairness perceptions.

Moreover, it can be argued that the content of the psychological contract may differ for younger versus older workers ([Anderson & Schalk, 1998; Guest, 2004; Schalk, 2004](#)). It is argued that older workers have

a more traditional view of the employment relationship (Peterson & Spiker, 2005). For instance, younger workers may focus mainly on career-related or transactional types of obligations, whereas older workers are focused mainly on protection of the current status and working conditions (Schalk, 2004). According to life-span psychology, older people develop other goals in life than younger people (Ebner, Freund, & Baltes, 2006). For instance, whereas younger people are focused on growth and learning, older people shift their focus to maintaining current well-being and functioning. From that perspective, older workers may perceive different obligations from their employers than younger workers. Future research is needed to determine whether there is evidence for age-related differences in the content of the psychological contract.

Due to shortages at the labor market and recent changes in retirement ages, more people will be working after the age of 65. However, older workers (age >50) 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 compared to younger workers, and how the relationships between psychological contracts and attitudes and behaviors differ for younger and older workers. It is also important to investigate how psychological contracts develop when people continue working after the age of 65, since it is likely that more and more workers will be active after their 65th (Peterson & Spiker, 2005).

Furthermore, age is a proxy of several age-related changes people experience, and refers to biological, psychological, social, and societal changes (De Lange et al., 2006). For instance, age is linked to time spent within the organization or job (Wright & Bonett, 2002), family status (Roehling, Roehling, & Moen, 2001), and to a shortening of future time perspectives (Lang & Carstensen, 2002). Thus, the influence of age could be a proxy effect of other relevant age-related factors. As additional analyses revealed, there may be differences in the effects of age and tenure, such as in the relation between contract breach and job satisfaction. Future research should in depth study how age-related factors, such as tenure and family status, are related to the psychological contract.

Finally, we could not determine whether the relations found in this study were the consequence of aging or age cohort, since all psychological contract studies have been conducted in the last twenty years. Therefore, longitudinal research is needed, in order to disentangle age, cohort, and period effects (Schaie, 1986; Van Masche & Van Dulmen, 2004). Moreover, these types of studies are also needed to estimate appropriate time lags to investigate psychological contracts in relation to work-related outcomes (Hertzog & Nesselroade, 2003).

4.6. Practical implications

Our meta-analysis has shown that older workers respond differently to organizational treatment than younger colleagues. When employees perceive that the organization has breached the psychological contract, older workers may respond to this by a strong decrease in job satisfaction, whereas young employees respond by lowering their level of trust and commitment to the organization. Organizations should be aware that by fulfilling their promises and obligations, employee work attitudes are influenced, but this is also affected by the employee's age. Especially younger workers may respond to contract breaches by becoming less attached to the organization. To avoid decreases of trust, satisfaction, and commitment among employees, organizations should design and implement human resource policies and practices in such a way that psychological contract breach is prevented. This can be obtained through realistic job previews (Rousseau, 1995), and tailoring human resource practices to age-related needs.

Summarizing, this meta-analysis has shown that age plays an important role as moderator in the relationships between psychological contracts and job attitudes. Future research can therefore employ a more dynamic and lifespan perspective, and sophisticated longitudinal studies may be designed to examine the relations between psychological contracts and work-related outcomes across the lifespan.

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