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The impact of organizational changes on psychological contracts

A longitudinal study

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Abstract

Purpose – The purpose of this study is to add to the existing literature on the impact of organizational changes on psychological contracts by examining the exchange between employer and employee obligations and organizational commitment and intention to turnover in a causal model.

Design/methodology/approach – Psychological contracts of 450 health care workers were assessed in a three-wave longitudinal design, covering a one-year period. The Tilburg Psychological Contract Questionnaire measures perceived obligations with respect to Job Content, Career Development, Social Atmosphere, Organizational Policies and Rewards (perceived organizational obligations) and In-role and Extra-role Obligations (perceived employee obligations). Linear structural equation modeling was used to test the changes in psychological contracts and outcome variables over time, and also to investigate the changes in the relationships between the dependent and independent variables over time.

Findings – The results show that organizational changes negatively affect the fulfilment and violation of perceived organizational obligations. However, perceived employee obligations are not affected. The perceived fulfilment of Organizational Policies and violations of the psychological contract in general are most strongly affected.

Originality/value – Empirical longitudinal field research on the effects of organizational changes on psychological contracts is virtually non-existent. This study is a valuable contribution to psychological contract research, because of the longitudinal nature of the study and the linear structural equation models that are used.

Keywords Organizational change, Psychological contracts, Employers, Employees

Paper type Research paper

Introduction

In searching for balance in modern employment relationships, one of the greatest challenges is to match the needs of organizations and employees. Many publications have highlighted the influential changes that have occurred in the relationship between employees and organizations in recent years (e.g., Hiltrop, 1995; Anderson and Schalk, 1998; Frese, 2000; Guest, 2004). These changes are caused by an increasing global competition, rapid technological advancement, corporate culture change due to

mergers and acquisitions, increased complexity of work, reduced supervision, changing job and career concepts and increased cultural diversity (Frese, 2000). Different demands are put on the workforce; employees are expected to work on flexible contracts, on different tasks, in changing teams, at a faster pace and in an increasingly technical environment. Accordingly, psychological contracts of employees are expected to change along.

A psychological contract is the exchange relationship between employee and organization, concerning mutual obligations in the employment relationship as perceived by the employee (Rousseau, 1995). Although the language of the literature is firmly rooted in “that much favored rhetorical device of management of the all changing world” (Cullinane and Dundon, 2006), empirical research on the effects of changes in organizations on psychological contracts is scarce. The few exceptions (Turnley and Feldman, 1998; Pate *et al.*, 2000 (longitudinal); Kickul *et al.*, 2002), provide some evidence that psychological contracts are affected during organizational change processes. It was found that employees in downsizing or restructuring organizations experienced psychological contract violations with regard to job security (Turnley and Feldman, 1998), compensation and advancement opportunities (Turnley and Feldman, 1998; Pate *et al.*, 2000) and communication (Pate *et al.*, 2000). Pate *et al.* (2000) described that particularly HR policies and practices led to psychological contract breach. Thus, psychological contracts seem to be affected when organizational changes are implemented.

The aim of the current study is to add to the existing literature on the impact of organizational changes on psychological contracts by using a longitudinal design. Organizational change processes are dynamic, and it is interesting to study whether the relationships between organizational change and the psychological contract remain constant over time. The dynamics of the relationships between psychological contracts and organizational commitment and intention to turnover are also studied in this paper.

The psychological contract

In this study the psychological contract is conceptualized as an employee's belief of mutual obligations that arise in the context of his relationship with the organization, which shape this relationship and govern the employee's behavior. The obligations are a result of promises that the organization and employee have made to each other, at least in the perception of the employee (Rousseau, 1995).

Non-fulfilment of obligations occurs when employees perceive that their organization did not live up to their promises, whereas they themselves fulfil their part of the deal (e.g., Turnley and Feldman, 1998; Conway and Briner, 2005). Morrison and Robinson (1997) make a distinction between the cognitive perception of a discrepancy (breach) and the emotional reaction to the discrepancy (violation). They refer to violation as the emotional reaction to a perceived failure to comply with the terms of a psychological contract.

Organizational change and the psychological contract

Organizational changes are presumed to have an impact on the psychological contract, because the changes are likely to affect what the organization will offer to the employees involved and/or what the organization expects to receive from its

employees. Psychological contracts are assumed to be influenced by organizational changes in a number of ways. In the first place, the change itself may have consequences for the work situation of employees, for example when their role and tasks are affected, and they have to adapt to new circumstances and changed demands. This might lead to the introduction of new obligations (Sims, 1994).

In the second place, when the atmosphere in the organization changes as an inadvertent effect of the change process, this might in itself be a cause of a violation of the psychological contract. If a relaxed working atmosphere is one of the selling points of the organization, this might no longer be the case during the organizational change implementation phase. In addition, employees may become insecure about the future and wonder if more expectations will be violated (Morrison, 1994). As providing security is a perceived organizational obligation, this might be a violation of the psychological contract.

Finally, the implementation process (communication, participation and support) will have consequences for the psychological contract (Schalk *et al.*, 1998). The way the organization deals with the change process concerns opinions on who should be involved in the change process, which information needs to be provided and which support needs to be given. All these factors include potential violations of psychological contracts. Organizational changes may be categorized by taking a look at the level of change by assessing whether the complete organization or only part of it is affected, whether the change was planned or unintended, whether an urgent problem needs to be solved or gradual developments are implemented (McNamara, 2006).

The organizations participating in this study went through major, planned changes, in which the complete organization was affected. We measured organizational change by asking "Did something change in the past six months in your work or the organization policy?" In this way the perspective of the employee on the type of organizational change was taken into account. In this study the perception of change is the central issue. Is the employee positively or negatively affected by the change? And in what way is the employee confronted with the changes: were work processes adjusted or were new teams created, for example. The question we address is whether the perception of an organizational change leads to changes in psychological contracts.

The first group of hypotheses of our study is related to the impact of organizational changes on psychological contracts. We expect that during the change implementation process certain perceived obligations are fulfilled to a lesser extent and that the number of violations of the psychological contract increases:

- H1. Organizational changes decrease the fulfilment of perceived organizational obligations.
- H2. Organizational changes decrease the fulfilment of perceived employee obligations.
- H3. Organizational changes increase the number of psychological contract violations.

The psychological contract is an exchange relationship. The scales of perceived employee obligations and perceived organizational obligations are often seen as

separate entities, but fulfilling perceived obligations should be studied as an outcome of the exchange relationship (Coyle-Shapiro and Kessler, 2000). In this study the level of perceived employee obligations is modeled as an outcome of the fulfilment or violation of perceived organizational obligations, which leads to *H4*:

- H4.* The non-fulfilment or violation of perceived organizational obligations is related to a lower level of perceived employee obligations.

Empirical research shows a host of possible outcomes of psychological contract violation, such as higher turnover, lower trust, lower job satisfaction, higher neglect and lower commitment to the organization (Conway and Briner, 2005). The outcomes not only concern self-reports on attitudes and intentions, but also actual employee behavior like performance rated by supervisors or customers, organizational citizenship behavior rated by supervisors or co-workers, absenteeism and actual turnover (Conway and Briner, 2005). In this study, organizational commitment and intention to turnover are measured.

Organizational commitment

The Organizational Commitment Model by Meyer and Allen (1991) has clearly dominated commitment research in the past years and can be regarded as a quasi-standard research approach (Lubich, 1997). Their model conceptualizes organizational commitment as a three-dimensional construct consisting of:

- (1) *affective commitment*, the emotional attachment to an organization when employees identify with an organization and enjoy the membership;
- (2) *continuance commitment*, based on the perceived costs-benefit evaluation of maintaining organizational membership; and
- (3) *normative commitment*, the feelings of obligation to remain with the organization.

Thus, each component leads to the same main behavioral consequence, remaining with the organization, but the antecedents differ. In this study two forms of commitment are measured: affective commitment and continuance commitment. We are interested in the relationship between commitment and turnover intention. The predictive power of commitment on turnover is largely based on affective commitment (Meyer *et al.*, 1993; Jaros, 1997). Furthermore, there is an ongoing debate about whether affective commitment and normative commitment are sufficiently distinguishable from each other. In their meta-analysis Meyer *et al.* (2002) found a correlation of 0.74 between both scales. The continuance commitment scale does display discriminant validity concerning to the ACS (a correlation of -0.01 between ACS and CCS) (Meyer and Allen, 1984).

Intention to turnover

One of the assumed reactions to violations of psychological contracts is the intention to leave the organization or actual turnover. Withdrawal is a way to resolve perceived inequities that exist in the employment relationship. The intention to turnover can be regarded as the strongest and most direct precursor of actual turnover behavior (Jaros, 1997). Therefore, we chose to measure intention to turnover. It is defined as the

“conscious wish to terminate one’s membership with an organization” (Lubich, 1997). Whether the intention to leave the organization will be acted upon, depends on two premises: the available job alternatives and the costs (monetary, social or psychological) of leaving the organization (Jaros *et al.*, 1993).

A second group of hypotheses is related to the causal order of effects of changes in psychological contracts. With respect to the consequences of fulfilment or violation of psychological contracts, we expect that when psychological contracts are fulfilled to a lesser extent or violated more often, this will be accompanied by lower levels of organizational commitment and higher levels of intention to turnover. And we examine the direct influence of organizational change on the levels of organizational commitment and intention to turnover:

- H5. When psychological contracts are violated more often or if perceived organizational obligations are fulfilled to a lesser extent, this is related to lower levels of affective and continuance commitment.
- H6. When psychological contracts are violated more often or if perceived organizational obligations are fulfilled to a lesser extent, this is related to higher levels of intention to turnover.
- H7. Organizational changes negatively affect the level of affective and continuance commitment.
- H8. Organizational changes increase the level of intention to turnover.

Figure 1 shows the hypothesized relationships in a model.

Figure 1.
Research model

Method

The participating organizations

Three organizations in The Netherlands participated in our study. Two organizations provide home care for persons with (mental or physical) health problems and their families. The third organization hosts elderly people who are not able to care for themselves because of mental or physical problems. Tasks of the employees include physical care (treating wounds, providing medication, washing patients or helping them to get dressed), housekeeping and taking care of the children of the patients. Health care organizations are going through a lot of changes in The Netherlands, because of the need of reducing costs of health care, trends to treat patients at home as long as possible, ageing of the population and changing demands of clients. Thus, the social service sector was being confronted with decreasing budgets, a need for greater cost-efficiency, and more emphasis on customer-orientation. One home care organization was involved in a merger. All of the participating organizations had to reorganize their middle management layer. The merging organizations also went through a radical restructuring process. New jobs were created, and employees had to apply for one of the new jobs. Since jobs were restructured, the content of many jobs was changed. The home care employees were faced with new teams, new supervisors, a strict separation of care and cleaning services, the introduction of time schedules that prescribed the minutes they were allowed to work on each task and the bureaucracy that accompanied this system and travel cost benefits were cut. Furthermore, a new work schedule of night and weekend shifts was introduced. The intake procedure for clients also changed; it was no longer conducted by employees of the organizations but by an independent institution. Management tried to implement a more customer-oriented approach, and a new reward system was established. In addition, new hires were no longer offered permanent contracts and sometimes vacancies were not filled. The home for elderly people was in a process of restructuring tasks, comparable to the merging home care organizations, besides the reorganization of the middle management layer in order to reduce costs. The interventions in the work processes not only affected health care workers, but also directly affected their clients. By introducing the strict time schedules little time is left to have a chat with clients. The new shifts meant that clients were confronted with more different health care workers.

Research design

The design of the study was to present the first questionnaire five months before the actual merger/restructuring (Time 1: pre-change measurement), the second one approximately one month after the merger/restructuring (Time 2: first post-change measurement) and a third measurement seven months after the merger/restructuring (Time 3: second post-change measurement).

Sample

At the first measurement, 869 employees were approached of whom 450 responded (response rate 52 percent). The second time employees who had participated in the first study were asked to fill in the same questionnaire ($n = 413$). The response rate was 59 percent (245 employees). Data for all three measurement points were available of 186 employees (76 percent of the respondents of measurement two sent back the third

questionnaire). A common threat to the validity of longitudinal findings is non-random subject attrition (Little *et al.*, 2000). Attrition occurs when not all subjects who have been asked to participate in a longitudinal study participate in all assessments. We assessed whether the 186 respondents who completed questionnaires on all three measurement points were representative for the total sample (450 respondents). With logistic regressions it was examined whether participation in the second and third assessment could be predicted with regard to age, supervision, organization, and the scores on the psychological contract and attitude scales. Only the organization to which the respondents belonged predicted whether they participated the next time. An explanation for this finding is that in organization A due to administrative problems 37 respondents could not be traced for the second measurement, which lowered the response rate for the second measurement. The conclusion of the logistic regressions is that whether a subject dropped out of the study can not be predicted on the basis of the variables measured at a previous time. The participants who remained in the sample did not differ on the variables mentioned above from the participants who dropped out of the sample, nor did they differ in their answers on the questionnaire scales.

The mean age of the sample of 450 respondents was almost 40 years, tenure with the organization eight years, and on average employees had their current job six years. Most employees in the sample were female (98 percent) and more than half of them (57 percent) took care of children living at home. Most employees had a low educational level (58 percent), 17 percent was high educated, and 25 percent had an intermediate educational level. Almost 80 percent of the employees had a partner who contributed more to the family income than the respondents did themselves. A total of 12 percent of the employees had supervisory tasks, and most of the employees had part-time jobs (mean number of working hours 21, SD 9.0), in a tenured position (97 percent).

The Tilburg Psychological Contract Questionnaire (TPCQ)

To all respondents the Tilburg Psychological Contract Questionnaire (in Dutch) was sent three times. The development of this questionnaire is described in Freese *et al.* (2008). The questionnaire consisted of six parts:

- (1) *Part 1.* Demographic characteristics (such as age, gender, education) (only at Time 1), and (changes in) job, contract, home situation.
- (2) *Part 2.* Perceived organizational obligations are measured by five scales, which were obtained by exploratory factor analyses (see Freese *et al.*, 2008). Respondents were asked to what extent the actual situation concerning the particular obligation meets their expectations (seven point Likert scale, 1 = "less than expected", 7 = "more than expected"[1]). With these items the level of fulfilment of the psychological contract by the organization as perceived by the employee is assessed. A level of fulfilment of a particular obligation that is below what the employee expected from the organization is considered to be breach; a divergence has been perceived (cognitively) by the employee:
 - *Job Content* (ten items, Cronbach's $\alpha = 0.87$), for example: "To have work that is varied".
 - *Career Development* (five items, Cronbach's $\alpha = 0.83$), for example: "Achieve progress in my field of work".

- *Social Atmosphere* (nine items, Cronbach's $\alpha = 0.90$), for example: "A good atmosphere at work".
 - *Organizational Policies* (11 items, Cronbach's $\alpha = 0.91$), for example: "Fairness and transparency of measures and procedures".
 - *Rewards* (five items, Cronbach's $\alpha = 0.73$), for example: "Rewards for exceptional performance or special occasions".
- (3) *Part 3.* An assessment of experienced Violations (40 items, Cronbach's $\alpha = 0.92$) of the perceived organizational obligations. The respondents are asked to indicate "whether the degree of fulfilment of the obligations is acceptable. Not acceptable means that you are really bothered by the level of fulfilment of this obligation and that you feel that this should change" (dichotomous score: 1 = "acceptable", 2 = "not acceptable" (40 items)). The score not acceptable refers to a violation: the affective state that one's organization has failed to adequately maintain the psychological contract.
- (4) *Part 4.* An assessment of employee obligations. (five point Likert scale, 1 = "I feel absolutely not obligated to do this", 5 = "I feel very strongly obligated to do this"). Exploratory factor analyses yielded two scales (see Freese *et al.*, 2008):
- *In-role Obligations* (ten items, Cronbach's $\alpha = 0.86$), for example: "Provide good service".
 - *Extra-role Obligations* (eight items, Cronbach's $\alpha = 0.77$), for example: "Work extra hours if that is what is needed to get the job done".
- (5) *Part 5.* An assessment of Organizational Commitment and Intention to Turnover (seven-point Likert scale, 1 = "I absolutely do not agree", 7 = "I fully agree"):
- *Affective Commitment.* Items derived from OCQ (Mowday *et al.*, 1979) and ASQ (Meyer and Allen, 1991), (seven items, Cronbach's $\alpha = 0.84$), for example: "I really care about the fate of this organization".
 - *Continuance Commitment.* Items derived from CCS (Meyer and Allen, 1991) (seven items, Cronbach's $\alpha = 0.70$), for example: "It would be very hard for me to leave my organization right now, even if I wanted to".
 - *Intention to Turnover* (eight items, Cronbach's $\alpha = 0.88$). Newly constructed scale, with items from QCQ (Mowday *et al.*, 1979), Franklin (1975), for example: "I often think about quitting".
- (6) *Part 6.* Organizational change was measured by a single item: "Did something change in the past six months in your work or the organization policy?" (1 = yes, 2 = no).

Statistical analyses

The aim of the statistical analyses was twofold. First, we wanted to examine the influence of organizational changes in the period preceding the data gathering on perceived organizational obligations, violations, perceived employee obligations, organizational commitment, and intention to turnover. Since there were three measurements, it was possible to examine these relationships for each measurement

point, and to test whether the effects were the same. Second, we wanted to test whether the relationships between perceived organizational obligations, violations, perceived employee obligations, organizational commitment, and intention to turnover as depicted in our conceptual model (see Figure 1) fitted our data and were stable over time. Note that this way of analysing does not focus on the changes in means of variables over time, but on the stability of relationships between variables over time. Frees (2004) suggests in his book on methods to analyze longitudinal and panel data that a “seemingly unrelated regressions” or SUR model (Zellner, 1962) is an appropriate model for analyzing repeated measurements of a dependent variable in its relationship with a fixed set of time-varying explanatory variables, as was the aim in this study. We will elaborate below how the statistical analyses were performed.

The regression analyses are based on the conceptual model (shown in Figure 1) that postulates relationships among the variables in this study. Following the model the set of variables is partitioned into four blocks. The first block consists of the variable Change. The second block contains the perceived organizational obligations (Job Content, Career Development, Social Atmosphere, Organizational Policies, Rewards and Violations). The third block contains Affective Commitment, Continuance Commitment, In-role Obligations and Extra-role Obligations. The fourth block consists of Intention to Turnover. Based on the conceptual model several regression models can be defined by relating each variable in a particular block to all the variables in the previous blocks, in accordance to the postulated causal ordering. In total 11 different regression models can be defined:

- (1) six regression analyses in which each of the perceived organizational obligations scales is regressed on Change;
- (2) four regression analyses in which each of the four variables (Affective Commitment, Continuance Commitment and the perceived employee obligations) in the third block are regressed on the seven variables from the first and second block; and
- (3) the regression analysis of Intention to Turnover from the fourth block on all 11 variables from the previous three blocks.

All variables were measured at three time points in time, and the “change” variable reflects changes in the period preceding the data gathering. To make optimal use of the information of the three measurement points, and since carrying out all 11 regression analyses separately for the three points in time would involve an overwhelming number of analyses the results of which would be very difficult to integrate into a substantive model, the following strategy was chosen. For each of the dependent variables a linear structural equation model (LSEM) was built in which its three measurements are related to the relevant explanatory variables measured at the same point in time as the dependent variable itself. This approach is illustrated by means of an example in which a dependent variable Y and a single explanatory variable X is measured at three points in time. The consecutive measurements on the two variables are denoted by the triples (Y_1, Y_2, Y_3) and (X_1, X_2, X_3) . The type of model that will be considered for these data consists of a set of three regression equations with each measurement of Y being regressed on the explanatory variable measured at the same point in time. More formally, this model is specified by three regression equations:

$$\begin{aligned}Y_1 &= a_1 + b_1X_1 + E_1 \\Y_2 &= a_2 + b_2X_2 + E_2 \\Y_3 &= a_3 + b_3X_3 + E_3\end{aligned}$$

or, more concisely, by:

$$Y_t = a_t + b_tX_t + E_t$$

with $t = 1, 2$, or 3 . Note that it is not assumed that the regression coefficients of X remain constant over time.

Although it may seem that the unknown regression parameters are estimated by carrying out separate linear regression analyses for the three dependent variables, this is only the case when the three error terms are mutually uncorrelated. When the association or correlation between two measurements of Y is not completely explained by the effects of their respective explanatory variables, these error terms will be correlated. A model of this type with correlated error terms (and with no additional equality restrictions on the regression parameters) is known as a “seemingly unrelated regressions” or SUR model (Zellner, 1962). Such a model is considered as an appropriate model for analyzing repeated measurements of a dependent variable in its relationship with a fixed set of time-varying explanatory variables.

When the data do not contain missing values, the parameters of a SUR model are usually estimated by means of a generalized least squares procedure (see Srivastava and Giles, 1987). Here, the parameters of the regression equations were estimated by AMOS 6 which is a software package for fitting and testing linear structural equations models. This program was chosen, because it provides full information maximum likelihood (FIML) estimates of the parameters when the data contain missing scores. Several simulation studies have shown that the FIML approach is the most efficient method among the available methods to deal with data missing at random. FIML estimation is therefore the appropriate method for analyzing longitudinal data when there is a considerable dropout of subjects throughout the study, like in the present study.

FIML estimation by means of AMOS requires that the SUR model is recast as a linear structural equations model (LESM). This was done in the following way. The system of three regression equations linking each measurement of the dependent variable to its explanatory variables represents the core of the structural equations model. Since in a SUR model the error terms from the different equations are allowed to correlate, these mutual error correlations were specified as additional unknown parameters. An additional important point to consider was whether the error term in a particular equation is also allowed to be correlated with the explanatory variables in the two other equations. Drton and Richardson (2004) have made clear that the original SUR model as formulated by Zellner (1962) implies that a dependent variable Y_t is conditionally independent from the explanatory variables $X_{t'}$ for $t' \neq t$ given the explanatory variables X_t . The association or correlation between Y_t and $X_{t'}$ is then spurious and is completely explained by their dependence on X_t . In the context of a linear structural equations model, conditional independence of this kind means that the error term E_t from the regression equation for Y_t is uncorrelated with all explanatory variables that are not included in that equation. It furthermore implies that no common

causes of Y_i and X_i' are left out of the model. Conditional independent assumptions of this kind are very strong and are probably very difficult to justify in practical data analyses. Therefore, the linear structural equations models formulated in this study were extended by allowing a correlation between each error term and the explanatory variables that are not included in its corresponding regression equation.

When no further constraints are imposed on the model parameters, the structural equation model defined in this way is a saturated model against which more restrictive sub-models can be tested. Two particular types of sub-models were systematically tested in this paper:

- (1) In the first type of restrictive models the hypothesis was tested that the effect of an explanatory variable remained constant over time by setting its regression coefficients in the three equations equal to each other. In terms of the simple example introduced above this model tests the null hypothesis:

$$b_1 = b_2 = b_3.$$

- (2) In the second type of restrictive models the hypothesis was tested that a particular explanatory variable had no significant effect on the dependent variable at any point in time by setting all its regression coefficients in the three equations equal to zero. In terms of the same example we now test the null hypothesis:

$$b_1 + b_2 + b_3 = 0.$$

Both hypotheses were tested for each of the explanatory variables in turn while the regression coefficients of the remaining explanatory variables were left free to vary. In this way LSEM analyses were separately carried out for each of the 11 dependent variables in this study. Given the large number of statistical tests carried out in this study, the significance level was set at 1 percent to reduce the risk of Type 1 errors.

Results

In order to adequately assess the extent to which large scale organizational changes affect employees, it is important to identify whether the individual employees have noticed these organizational changes and whether they were affected by the organizational changes. In changing organizations some employees may be affected quite drastically by the reorganization process, while for others it is business as usual (Nelson *et al.*, 1995). Even though the employees involved in this study all work in the same organizations which were undergoing massive changes during the period the data were gathered, it cannot be assumed that they are affected in the same way by the organizational change process. Therefore, we asked employees at each measurement point whether in their opinion an organizational change had taken place in their organization in the past six months. Psychological contracts can only be affected by organizational changes if employees actually experience organizational change. Much to our surprise, at Time 1, when the management had assured us that the changes had not been formally introduced yet, 81 percent of the respondents indicated that they had perceived a change, the highest percentage of all measurement moments. At Time 2 64 percent and at Time 3 59 percent of the employees perceived organizational changes. Organizational change thus was an ongoing process in the organizations.

Table I depicts the means, standard deviations and correlations between the variables included in this study.

With respect to the impact of the organizational changes on the psychological contract and attitudes the results of the LSEM analyses are described below. First, we tested the null hypothesis that regression coefficients of the independent variables remain constant over time. Then we tested the null hypothesis that all those regression coefficients are equal to zero. Both tests were separately carried out for each dependent variable. While testing both hypotheses for the regression coefficients for each independent variable, the coefficients in the equations for the remaining variables are left free.

If the first null hypothesis is rejected ($p \leq 0.01$), the regression coefficients vary over time. All of these null hypotheses were accepted, meaning that the regression coefficients of the independent variables all remain constant over time. The relationships between organizational change, the psychological contract, organizational commitment and intention to turnover remain constant over the different measurement moments. To increase readability we will not report these tests in the Tables. If the second null hypothesis is rejected ($p \leq 0.01$), the independent variable has a significant effect on the dependent variable that is considered.

In Table I, the results of the tests of the regression analyses of organizational change on the perceived organizational obligations are presented. CMIN refers to the result of the Chi Square Goodness of Fit test.

Organizational changes have an influence on the fulfilment of perceived organizational obligations with regard to Organizational Policies ($B = -0.427$ (se = 0.094), $\beta: -0.147, -0.185$, and -0.200) and Rewards ($B = -0.382$ (se = 0.086), $\beta: -0.137, -0.182$, and -0.198). Organizational change also affects the occurrence of violation of the psychological contract ($B = 0.071$ (se = 0.015), $\beta: 0.165, 0.181$, and 0.189).

H1: Organizational changes decrease the fulfilment of perceived organizational obligations

This hypothesis is partially accepted. The changes lead to a decreased fulfilment of some perceived organizational obligations, Organizational Policies and Rewards, but had no effect on the perceived levels of fulfilment of the scales Job Content, Career Development and Social Atmosphere.

	CMIN	Test (df = 3)	p
Job Content	3.923		0.270
Career Development	2.377		0.498
Social Atmosphere	3.606		0.307
Organizational Policies	23.968		0.000 *
Rewards	23.959		0.000 *
Violation	23.444		0.000 *

Note: * $p = 0.001$

Table I.
Test of significance of the
influence of
organizational change on
perceived organizational
obligations

H3: Organizational changes increase the number of psychological contract violations
This hypothesis is accepted.

In Table II the results of the tests of the regression analyses of organizational change and perceived organizational obligations on In-role Obligations, Extra-role Obligations, Affective Commitment and Continuance Commitment are presented.

In-role Obligations are influenced by Violation ($B = 0.364$ ($se = 0.100$), β : 0.167, 0.169, and 0.175), Career Development ($B = -0.036$ ($se = 0.015$), β : -0.121 , -0.113 and -0.120) and Social Atmosphere ($B = 0.042$ ($se = 0.018$), β : 0.128, 0.122, and 0.124). For Extra-role Obligations no significant effects are found.

Affective Commitment is influenced by the fulfilment of perceived organizational obligations regarding Job Content ($B = 0.097$ ($se = 0.030$), β : 0.145, 0.123 and 0.134) and Organizational Policies ($B = 0.231$ ($se = 0.029$), β : 0.360, 0.320 and 0.331). None of the explanatory variables has a significant effect on Continuance Commitment except Organizational Policies ($B = 0.160$ ($se = 0.032$), β : 0.211, 0.200 and 0.205). With respect to the hypotheses we can conclude the following.

H2: Organizational changes decrease the fulfilment of perceived employee obligations
This hypothesis is rejected. Organizational change does not affect perceived In-role or Extra-role Obligations.

H4: The non-fulfilment or violation of perceived organizational obligations is related to a lower level of perceived employee obligations

This hypothesis is partially accepted. A lesser fulfilment of Career Development, Social Atmosphere and Violations of the psychological contract in general have a negative time-invariant effect on In-role Obligations, but not on Extra-role Obligations. Job Content, Organizational Policies and Rewards have no significant effects on In-Role or Extra-role Obligations.

H5: When psychological contracts are violated more often or if perceived organizational obligations are fulfilled to a lesser extent, this is related to lower levels of affective and continuance commitment

This hypothesis is partially accepted. Lower levels of fulfilment of Job Content and Organizational Policies are accompanied by lower levels of Affective Commitment.

Table II.
Test of significance of the influence of organizational change and perceived organizational obligations on In-role Obligations, Extra-role Obligations, Affective Commitment and Continuance Commitment

		Test (df = 3) intra-role obligations		Test (df = 3) extra-role obligations		Test (df = 3) affective commitment		Test (df = 3) continuance commitment	
		CMIN	p	CMIN	p	CMIN	p	CMIN	p
Change		5.144	0.162	4.449	0.217	3.023	0.388	8.230	0.041
Job Content *		5.698	0.127	8.675	0.034	11.509	0.009	1.983	0.576
Career Development *		12.621	0.006	5.810	0.121	8.454	0.038	2.274	0.517
Social Atmosphere *		14.156	0.003	4.428	0.219	1.057	0.787	2.090	0.554
Organizational Policies **		2.443	0.486	4.504	0.212	27.921	0.000	20.283	0.000
Rewards		6.053	0.109	3.285	0.350	2.883	0.418	0.470	0.926
Violations *		14.838	0.002	4.678	0.197	7.648	0.054	1.247	0.742

Note: * $p = 0.01$; ** $p = 0.001$

The level of fulfilment of Social Atmosphere, Career Development and Rewards and the number of Violations in general, have no effect on Affective Commitment. For Continuance Commitment, only the level of fulfilment of Organizational Policies had an influence.

H6: When psychological contracts are violated more often or if perceived organizational obligations are fulfilled to a lesser extent, this is related to higher levels of intention to turnover

This hypothesis is partially accepted. Intention to Turnover is not affected by the level of fulfilment of perceived organizational obligations. The level of fulfilment of perceived employee obligations does influence the intention to turnover. Note that the sign of regression coefficient of Extra-role Obligations is positive whereas a negative value is expected on substantive grounds. This is an example of a suppressor effect (Maassen and Bakker, 2001). Extra-role obligations correlate highly positive with two other predictors (In-role obligations and Affective commitment) that have negative coefficients in the regression equation. The (non-causal) indirect effect of Extra-role Obligations on Intention to Turnover turns out to be highly negative.

H7: Organizational changes negatively affect the level of affective and continuance commitment

This hypothesis is rejected.

In Table III the results of the regression analyses of organizational change, perceived organizational and employee obligations and organizational commitment on intention to turnover are presented.

Job Content, Career Development, Social Atmosphere, Organizational Policies and Rewards have no effect on Intention to Turnover. There are time-invariant effects on Intention to Turnover for: Change: ($B = 0.211$ ($se = 0.046$), $\beta = 0.040$, 0.057 , and 0.045 respectively), Violation: $B = 0.965$ ($se = 0.145$), $\beta = 0.080$, 0.080 and 0.078), Affective Commitment ($B = -0.777$ ($se = 0.042$), $\beta = -0.681$, -0.683 and -0.750), Continuance Commitment ($B = -0.142$ ($se = 0.018$), $\beta = -0.265$, -0.263 and -0.259), In-role Obligations: ($B = -0.280$ ($se = 0.077$), $\beta = -0.056$, -0.065 and

	CMIN	Test (df = 3)	p
Change **	19.830		0.000
Job Content	0.368		0.947
Career Development	4.979		0.173
Social Atmosphere	2.141		0.544
Organizational policies	9.122		0.028
Rewards	8.318		0.040
Violation *	16.546		0.001
Affective Commitment **	229.329		0.000
Continuance Commitment **	23.449		0.000
In-role Obligations *	13.756		0.003
Extra-role Obligations *	25.665		0.000

Note: * $p = 0.01$; ** $p = 0.001$

Table III.
Test of significance of the influence of organizational change, perceived organizational/employee obligations and organizational commitment on intention to turnover

H8: Organizational changes increase the level of intention to turnover
This hypothesis is accepted.

Discussion

When the organization changes, more psychological contract violations occur. The employment relationship is judged more negatively. Employees consider the non-fulfilment of organizational obligations unacceptable more often in times of organizational change. In their eyes, this situation needs to change. If we investigate which organizational obligations are fulfilled less in times of change, employees indicate that organizational policies and rewards are affected most. When the specific changes that took place in these organizations are taken into consideration (new organizational structure, new supervisors, and changing tasks and contracts), our findings that the perceived level of fulfilment of organizational policies decreased can be justified. As travel costs and over-time benefits became less favorable, the decreased level of perceived fulfilment of Rewards is also evident. Whether this result can be found in other sample depends on the organizational change context. Career development and social atmosphere are not affected negatively during the change process. Here also context is important. The organizations involved are relatively flat, with few career opportunities. Most employees are low educated, and probably not very interested in career development. It is often mentioned that the social atmosphere suffers during organizational changes, and we had expected that these obligations would certainly be affected. Employees in these organizations often work at the clients home, and rarely come to the office. In interviews we did with 41 of the employees, they indicated that not being able to spend enough time with their clients was a major violation of their psychological contract. Unfortunately, the social atmosphere scale does not reflect this particular setting very well. Job content was not affected by the organizational change process either. It seems that the employees experienced the changes in composition of tasks in their jobs during the change as not really affecting the main focus in their job (providing care to clients). Our study confirms the findings of De Vos *et al.* (2005) that the psychological contract should be considered as a multi-dimensional concept. Organizational changes have differential effects on the different content aspects of the psychological contract.

The change process does not affect the employee's part of the deal, they do not perceive less employee obligations. We assume that these scales suffer from social desirability. An indication is that the variance in the Employee obligations scales is much smaller than the variance in the Organizational obligations scales. When we asked the respondents about the fulfilment of their obligations in the interviews, employees easily came up with examples of the reduction of effort on their part. For example: "In the past I did not take off my hours, because I was afraid my clients would not get help. Now I think of myself first. If I am off, find another solution. I used to go shopping for my clients, when I went shopping for myself. Now I draw a line between work and private life". This discrepancy between questionnaire scores and interview data calls for other methods to collect information on the fulfilment of employee

obligations. Using interviews, or adding supervisor ratings of OCB or performance could be a solution to this problem.

Organizational change did not directly affect organizational commitment, but did increase the intention to turnover. This is a remarkable finding, as affective commitment is strongly correlated with intention to turnover (-0.67). Affective commitment became significantly lower over time ($M = 5.31, 5.15$ and 5.04 , CMIN 35.905 , $p = 0.000$) and intention to turnover significantly increased over time ($M = 2.53, 2.66, 2.74$, CMIN 12.138 , $p = 0.002$). However, with regard to affective commitment, there was no difference between employees who experienced a change over the past six months and the employees who did not. With respect to intention to turnover, there was a difference. Employees who had experienced a change were more likely to leave the organization.

The effect of psychological contract breach is stronger for Affective Commitment than for Continuance Commitment. The added value of the Continuance Commitment scale in this study was not proven. Lower levels of fulfilment of Job Content and Organizational Policies are accompanied by lower levels of Affective Commitment. The level of fulfilment of Social Atmosphere, Career Development and Rewards and the number of Violations in general, have no effect on Affective Commitment. Although there is no clear explanation for this result, probably the characteristics of the context in which this study was done play a role in this respect. In home care, care is provided in the clients home, and therefore the interactions with colleagues could be not that influential on affective commitment. In low level, part time jobs, career development and rewards are probably not core issues for affective commitment. Intention to Turnover is not directly affected by the level of fulfilment of perceived organizational obligations. The level of fulfilment of perceived employee obligations does influence the intention to turnover, however. With respect to the causal order it seems that employees who are also less likely to exert effort on behalf of the organization, intend to leave.

All significant effects that were found were time-invariant effects. The relationships between the independent and dependent variables are thus quite constant over time.

Our findings partially support the recommendation of Coyle-Shapiro and Kessler (2002) to study perceived employee obligations as an outcome of fulfilment or violation of perceived organizational obligations. There is an exchange relationship between the fulfilment or violation of organizational obligations and perceived employee obligations, although the nature of the exchange is not unequivocal. A lesser fulfilment of Career Development and Social Atmosphere and violations of the perceived organizational obligations in general have a negative effect on In-role Obligations, but not on Extra-role Obligations. Job Content, Organizational Policies and Rewards have no significant effects on In-Role or Extra-role Obligations. These findings call for further research that can clarify these findings by examining the specifics of the exchange processes related to fulfilment of employee and employer obligations. The finding that there was a relationship with In-role Obligations but not with Extra-role Obligations was remarkable. Intuitively, we would have assumed that Extra-Role Obligations would be affected to a greater extent than In-role Obligations. Yet, by examining the items in the Extra Role Obligations scales more closely, an explanation can be found. Accepting a transfer, developing new skills, accepting a job

change and participating in social activities are obligations that are not considered to be part of the employment relationship of homecare workers, regardless of the situation. The mean of the Inrole Obligations (average 4.4 over three measurements) was much higher than the mean of Extrarole Obligations (3.5).

Contributions, limitations and suggestions for future research

Empirical field research on the effects of organizational changes on psychological contracts is scarce, and longitudinal research on organizational change is virtually non-existent (with exception of the research by Pate *et al.*, 2000). Therefore, our research project is a valuable contribution to psychological contract research. A longitudinal design allows us to capture changes in the employee's psychological contracts over time and study intra-individual differences in this change process. Another contribution of this study is that the models that are used to test the changes in psychological contracts and outcome variables over time, also investigate the changes in the relationships between the dependent and independent variables over time.

A limitation of this study is that the outcomes studied are attitudes and intentions and not actual employee behavior. Future research should include performance ratings by supervisors or co-workers on in-role and extra-role behavior, absenteeism data and actual turnover. Moreover, multi-method approaches would be very useful, especially to measure the fulfilment of employee obligations. The change process in the participating organizations proved to be a continuous process, which, as the results show, had in fact already started before the first measurement point. Therefore, assessing the effect of "the" (turnkey) change was not possible, nor were we able to collect pre- and post-change data. The typical characteristics of the organizations and employees probably have influenced our findings. The respondents are low educated, part-time working women and certainly will have other interests than the typical young MBA executive. Moreover, these employees indicated that the clients are their main interest and they often work at the clients house. Organizational changes will be experienced in another way, than by employees who work in an office and have no customer contact.

An interesting future research avenue would be to investigate which kinds of organizational change has the largest impact on psychological contracts. Although these data were collected in this study, these data could not be used, because of the many different kinds of change, making the sub samples too small for further examination. Conway and Briner (2005) remarked that in longitudinal research time elapse between surveys is often not justified in any way. Another useful direction for future research would be to investigate which time span between measurements best captures psychological contract change. For organizational change research it is important to identify whether the individual employees have undergone the organizational changes and took account of these. Even though the employees in this study all work in the same organizations undergoing massive changes, they were not affected in the same way by the organizational change process. Perceptions of the organizational change differed between employees, even among direct co-workers. Some of the employees experienced no change at all, whereas others were very much mentally preoccupied with the change process. More research is needed on why some employees perceive organizational changes and are affected by them, whereas for others it is business as usual.

Note

1. Note that this questionnaire is in Dutch. The Dutch word for promise has a very strong meaning in Dutch, making an implicit promise virtually impossible. Therefore in Dutch psychological contract questionnaires the word promise is often avoided (see also for instance Ten Brink (2004)).

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