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**THE ROLE OF PROCESS, CONTEXT AND INDIVIDUAL  
CHARACTERISTICS IN EXPLAINING READINESS TO CHANGE:**

**A MULTILEVEL ANALYSIS**

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## **ABSTRACT**

Organisational change often yields limited success. Failure in many cases is due to the motivation or readiness to change among employees. This article proposes and tests a multilevel model of readiness to change. Contrary to most works on readiness to change, readiness is conceptualised as a multifaceted construct (i.e. emotional involvement and commitment to change). Relationships of several context, process variables and locus of control with both components of readiness to change were examined. By means of a large scale survey administered in 56 public and private sector organisations, we collected 1,559 responses in total. Multilevel random coefficient modeling showed that a proportion of the total variance in emotional involvement and commitment to change is explained at the organizational level. Furthermore, the results indicated that the organization's change history, the sector (public versus private), participation in the change process and support of top management toward change are important variables in understanding readiness to change.

Key words: commitment to change, context factors of change, emotional involvement, locus of control, multilevel analysis and process factors of change

## 1. INTRODUCTION

Globalization, the emergence of e-business, and the accelerated pace at which technological innovations are introduced (Burke and Trahan, 2000; Cascio, 1995; Gordon et al., 2000; Howard, 1995), forced an increasing number of organisations to develop and implement change initiatives in order to retain their competitive edge (Fay and Lüthmann, 2004; Greenwood and Hinings, 1996). This resulted in an increasing interest in research on organisational change (Armenakis and Bedeian, 1999). Recent reviews of this literature have demonstrated that theories used to study change are principally macro-focused (Clegg and Walsh, 2004; Cunningham et al., 2002; Van de Ven and Poole, 1995). Such research tends to examine organisations' strategic adaptation to environmental changes (Romanelli and Tushman, 1994), or processes and procedures used for implementing single changes in organisations (Miller et al., 1994; Quirke, 1996). The use of change programs based on this macro-approach does not necessarily lead to successful organisational change (Beer and Nohria, 2000). Accordingly, several authors have called for a more person-focused approach to the study of organisational change (Cunningham, 2006; Judge et al., 1999; Vakola et al., 2003; Wanberg and Banas, 2000). Because organisations consist of people and are made by people, organisational change is assumed to be mediated through individual changes (Schein, 1980). As Schneider et al. (1996) put it: if people do not change, there is no organisational change. Therefore, a key element in determining the success of organisational changes and the central variable in this inquiry is the readiness or openness to change. Rowden (2001) even purports that for an organisation to truly become a learning organisation, employees and the organisation as a whole must be in constant readiness.

According to Lewin (1951) potential sources of readiness to change lie both within the individual as well as the individual's environment. Armenakis and Bedeian (1999) also note that personality factors, context and process, shape the reactions of employees to change efforts. The importance of these factors has been widely acknowledged (Armenakis and Harris, 2002; Bommer et al., 2005; Rosenblatt et al., 1999; Trade-Leigh, 2002; Judge et al. 1999), but research that has assessed these factors simultaneously as they relate to organisational change is rare (Self et al., 2001).

Wanberg and Banas (2000), for instance, examined a set of individual differences (i.e., optimism, self-esteem and perceived control) and context-specific predictors (i.e., information received about the changes, self-efficacy for coping with the changes, and participation in the change decision process) of employees' openness to workplace changes. In the Oreg (2006) study, both personality and context were also found to be significantly associated with employees' attitudes toward change. An important limitation of both studies, however, is that the results are based on data collected in single organisations or have a sector-specific character. Therefore, some caution is needed when interpreting these results, especially with respect to context variables. For instance, it is peculiar to draw conclusions about the effects of organisational context factors on readiness to change when analyses are based on the individual variation in perceptions of employees working in one and the same organisation. Additionally, in a similar study, Eby et al. (2000) concluded that work group attitudes and contextual variables were important in understanding readiness to change (Eby et al, 2000). Work group attitudes and organisational context variables, however, not only vary at an individual level but are also assumed to vary at the level of the organisation or team. In other words, the Eby et al. study (2000) as many others (e.g. Jones et al., 2005; Oreg, 2006; Wanberg and Banas, 2000) are cases of nested data or multilevel data, which require a different method of analysis than a standard method of analysis like ordinary least squares regression analysis (Hox, 1995). In consequence, multilevel analysis is a more appropriate technique to analyse data with a nested structure (Snijders and Bosker, 1999).

Moreover, another remark regarding prior research is that in the majority of these studies, 'readiness to change' has been considered to be a unifaceted concept (e.g. Cunningham et al., 2002; Judge et al., 1999; Miller et al., 1994; Wanberg and Banas, 2000). Critics argue that much is lost in the attempt to understand readiness to change or resistance to change as unifaceted (George and Jones, 2001). Piderit (2000) argued that resistance and readiness to change would benefit from assessing it as a function of attitudes. George and Jones (2001) suggested that the attitudes toward change comprise affective, cognitive, and intentional components that come into play at different stages of the process. Such a view is more likely to capture the complexity of the readiness to change phenomenon and may provide a better understanding of the relationships between readiness to change and its antecedents.

To summarize, the goal of this inquiry is to examine the extent to which personality factors, context variables, and process variables - using a multilevel model for analysis - are relevant antecedents of both facets of readiness to change (i.e. emotional involvement and commitment to change).

## **2. READINESS TO CHANGE**

Getting your employees motivated to change is an important condition for successful change (Madsen et al., 2005). In consequence, the ability and drive of an organisation to change heavily depends on the commitment, motivation and readiness to change of its employees (Armenakis et al., 1993; Backer, 1995; Bernerth, 2004; Eby et al., 2000).

According to Jansen (2000), the study of people's willingness to change has emerged as a countervailing power against the almost universally accepted axiom that people automatically resist change. This axiom, however, has come under attack (Metselaar and Cozijnsen, 1997). Kotter (1995), for example, asserts that individual resistance is actually quite rare. Furthermore, this negative model of resistance to change was found to increase the pressure to mitigate stress, and accordingly to reinforce resistance due to that increased pressure (Goldstein, 1988). Thus, instead of looking exclusively at the negative side of attitudes toward change, we share Jacobson's (1957) suggestion that there is a complementary construct of resistance to change. This need and emerging interest for the positive side of attitudes toward change also reflects the trend toward 'a positive psychology' that emphasizes on human strenghts and optimal functioning rather than on weaknesses and malfunctioning (Seligman and Csikzentmihaly, 2000).

In alignment with the positive psychology tradition, Armenakis et al. (1993) defined readiness to change as people's beliefs, attitudes, and intentions regarding the extent to which changes are needed and their perception of individual and organisational capacity to successfully make those changes. This commitment to change is a force that binds individuals to a course of action deemed necessary for the successful implementation of a change initiative (Herscovitch and Meyer, 2002).

Apart from the intentional base of readiness to change (Schein, 1980; Argyris, 1990), inseparable from it and playing a central role in perception of change is emotion (Damasio, 1994). According to Huy (1999), emotional involvement affects the concrete actions taken by a person in the direction of change.

In short, we define readiness to change as a two-dimensional attitude towards change, which includes affective and intentional facets. According to McGuire (1985) these facets involve two different manifestations of people's evaluation of an object or situation. The affective component (i.e. emotional involvement to change) refers to how one feels about the change, whereas the intentional component (i.e. commitment to change) involves the behavioural intentions toward change.

### **3. FACTORS RELATED TO READINESS TO CHANGE**

The factors that affect readiness to change are manifold. A first important set of factors involves the process factors of change. The way how a specific change is implemented can influence the reaction of employees toward change. The process factors included in this inquiry involve the support provided by top management and participation of employees during times of change.

Apart from the process factors, Armenakis and Bedeian (1999) suggested that responses to change also depend on contextual elements. According to Johns (2001; 2006) context factors need to be included to develop a better understanding of why a change initiative was successful or not. Context is defined as situational opportunities and constraints that affect the occurrence and meaning of organisational behaviour (i.e. readiness to change) (Johns, 2006). Several authors assert that context operates at multiple levels in which situational variables at one level of analysis (e.g. organisation) affect variables at another level (individual) (Cappelli and Sherer, 1991; Mowday and Sutton, 1993). Accordingly, the contextual elements affecting readiness to change comprise two large sets of factors: external context factors and internal context factors. The external context factors refer to conditions outside the organisation, whereas internal contextual elements are situated at the organisational level, at the group or work unit level (Burke and Litwin, 1992). In brief, the distinction between public and private sector is considered as an important external context variable of readiness to change.

Major internal context variables that are likely to affect readiness to change are trust in management, history of change and risk-taking reward orientation.

Apart from the context and the way in which an organisational change is implemented, readiness to change can vary according to individual differences. Substantial empirical work examined the influence of individual characteristics in coping with organisational change (Judge et al., 1999; Lau and Woodman, 1995; Oreg, 2006; Wanberg and Banas, 2000). In this inquiry locus of control is expected to affect readiness to change.

### **3.1 Process factors**

3.1.1 Support of management toward change. The first process variable we included in this inquiry refers to the attitude of management toward change. Establishing a need to change is one of the first important steps to follow in implementing change (Armenakis and Bedeian, 1999; Armenakis and Harris, 2001; Bernerth, 2004; Galpin, 1996; Judson, 1991). During major changes the head of the organisation is one of the key persons (Kotter, 1995; Lakshman, 2005). The development of a sense of urgency and a clear vision are key elements in the change process. Leaders are needed to provide vision, inspiration, and conviction and to demonstrate integrity, provide meaning, generate trust, and communicate values in order to facilitate readiness to change (Bommer, Rich and Rubin, 2005). Employees should also have the general feeling that the organisation cares for their well-being and is supportive of their concerns about change (Eisenberger et al., 1986). In other words, perceived support may impact one's reaction to the impending change such that it is perceived as less threatening, and may influence one's overall schema for organisational change such that the change is viewed more favourably (Eby et al., 2000). In the light of this it is expected that organisational members will be less committed and emotionally involved to change, if top management does not actively support the change process.

Hypothesis 1: Management support toward change is positively correlated with emotional involvement and commitment to change.



3.1.2 Participation. One of the earlier works that links participation to change is that of Lewin (1948), who put forward a contention that participation is useful in changing conduct during the change process. According to McNabb and Sepic (1995) lack of participation is a major cause of disappointing results with organisational renewal. In their research about cynicism of organisational change, Reichers et al. (1997) indicated employees must believe that their opinions have been heard and given careful respect and consideration. The active participation strategy is perhaps one of the most effective ways to motivate people to support change (Armenakis and Harris, 2001). Armenakis et al. (1999) distinguish three forms of active participation: (1) enactive mastery (gradually building skills, knowledge and efficacy through successive involvement and practice), vicarious learning (observing and learning from others), and participation in decision-making. This self-discovery, when combined with the symbolic meaning of organisational leaders demonstrating their confidence in the wisdom of employees (through participation), can produce a genuine feeling of a partnership. This is also confirmed in a recent study conducted by Msweli-Mbanga and Potwana (2006). Organisations with limited access to participation were less likely to achieve cooperation based on mutual trust and shared feelings. As such, change was found more likely to be resisted in those organisations.

Hypothesis 2: Participation in the change process is positively correlated with emotional involvement and commitment to change.

### **3.2 Context factors**

3.2.1 Trust in top management. In today's continually changing business environment, organisations often undergo large scale changes in order to stay competitive. These changes often create ambiguous situations which are perceived as a source of threat and uncertainty (Luhmann, 1979). Trust can reduce these feelings of uncertainty and stress. It is a resource for managing risk, dispersing complexity, and explaining the unfamiliar through the help of others (McLain and Hackman, 1999).

Theorists have described trust as a concept that represents the degree of confidence employees have in the goodwill of its leader, specifically the extent to which they believe that the leader is honest, sincere, and unbiased in taking their positions into account (Folger and Konovsky, 1989; Korsgaard et al., 1995; Roberts and O'Reilly, 1974). Trust of team members in their leader is found to be a critical antecedent of people's cooperation in implementing strategic decisions (Korsgaard et al., 1995), and an essential factor in predicting people's openness toward change (Eby et al., 2000; McManus et al., 1995).

Hypothesis 3: Trust in top management is positively correlated with emotional involvement and commitment to change.

3.2.2 Risk-taking reward orientation. Uncertainty or perceived risks associated with change related outcomes are found to affect different aspects of organisational behaviour including the motivation to change (Ashford, 1988; Ashford et al., 1989; Bordia et al., 2004; Hui and Lee, 2000; Pollard, 2001). Several authors assert that people will only implement change and prepare for action when the perceived benefits of change outweigh the anticipated risks of change (Cunningham et al., 2002; Prochaska et al., 1994). People will only take risks if the rewards for taking those risks are high enough. Senge (1990), for instance, found that organisations where risk-taking behaviour is rewarded stimulate a climate of organisational learning and innovation in which employees are motivated to support organisational changes.

Hypothesis 4: Risk-taking reward orientation is positively correlated with emotional involvement and commitment to change.

3.2.3 History of change. The readiness to change is influenced by the track record of successfully implementing major organisational changes (Schneider et al., 1996). If organisational changes have failed in the past, employees will be reluctant towards new change initiatives. In their research on cynicism about organisational change Wanous et al. (1997) have found that the history of change is correlated with the motivation to keep on trying to implement changes. This relationship suggests that cynicism may be somewhat self-fulfilling.

The researchers indicated that the higher the pre-existing level of cynicism about organisational change, the more executives need to confront and discuss previous failures before moving ahead.

Hypothesis 5: A successful history of change is positively correlated with emotional involvement and commitment to change.

3.2.4 Public and private sector context. Besides the importance of internal context variables such as history of change, risk-taking reward orientation and trust in top management it should be noted that the development of readiness to change also depends on the external context of the environment (i.e. public versus private sector context). People draw important information about the appropriateness of behaviour toward change from their cultural membership. Furthermore, cultural group membership shapes psychological boundaries that affect the beliefs, attitudes, intentions, and behaviours of members (Bushe, 1988; Van Maanen and Barley, 1985). Therefore, the typical context that characterises the public or private sector context is expected to be an important variable in shaping people's attitude toward change.

Two important differences in organisational focus help to explain why private and public sector organisations differ in their readiness to change. Firstly, there is an absence of competitive pressure in public agencies (Boyne, 2002), which makes them less market- and externally oriented. Private organisations, in contrary, operate in a turbulent market (Burke and Trahan, 2000), forcing them to develop and implement change in order to retain a competitive edge. In short, public agencies experience less urge to change and innovate continuously, in comparison to their private counterparts. A second important difference concerns the distinction in organisational preference for structure and represents the contrast of stability and control against flexibility and change (Boyne, 2002). According to Bozeman and Kingsley (1998), organisations in the public sector have more formal procedures for decision-making, are less flexible, in short have a more bureaucratic structure.

The preponderance of the external market oriented emphasis and flexibility orientation of private sector organisations therefore makes them more feasible environments for innovation and implementation of change.

Hypothesis 6: In the private sector emotional involvement and commitment to change is stronger during times of change in comparison to the public sector.

### **3.3 Personality characteristic**

Little research has taken a psychological focus in studying the process of organisational change. One of the rare exceptions is the study of Judge et al. (1999). In several entrepreneurship studies locus of control is perceived as one of the most influential characteristics affecting innovative behaviour (Boone et al., 1996; Brockhaus, 1982; Van de Ven et al., 1984). According to Rotter (1966) locus of control is the perception by the individual of his or her ability to exercise control over the environment. People with an internal locus of control see themselves as active change agents and believe they have control over their environment and their personal successes. Those with an external locus of control see themselves as relatively passive agents and believe that the events in their lives are controlled by external forces such as change and powerful others. Based on research with entrepreneurship, we expect that people with a stronger internal locus of control will show a more positive attitude to change.

Hypothesis 7: Internal locus of control is positively correlated with emotional involvement and commitment to change.

### **3.4 Demographic variables**

The role of hierarchical position cannot be neglected in the prediction of work-related motivation (Buelens and Van den Broeck, 2007). According to the Hierarchical Differentiation Theory, cultural membership (managers – non-managers) results in psychological boundaries that form people's attitudes, beliefs and intentions (Van Maanen and Barley, 1985). These psychological boundaries cause differences in readiness to change between hierarchical groups (Armenakis et al., 1993). Managerial and non-managerial personnel look at change from a different viewpoint. Managers are responsible for the communication of change, the announcement of change, and the introduction of change.

They often operate as change agents during times of change, whereas non-managerial personnel are often those who undergo and experience direct consequences of change. Strebelt (1998) also confirms that executives and employees see change differently, with managers seeing change as an opportunity, for both the business and themselves, and employees typically seeing change as disruptive, intrusive, and likely to involve loss.

Hypothesis 8: Managers score higher on emotional involvement and commitment to change in comparison to non-managerial personnel.

## **4. METHOD**

### **4.1 Data collection and sampling procedure**

A questionnaire was used for the data collection in this study. For each organisation the employees were asked to react to statements regarding internal context factors of change (trust in top management, risk-taking reward orientation and history of change), process factors of change (support of managers toward change and participation) and readiness to change (emotional involvement and commitment to change). Likert scales with a five point response format (1 = strongly disagree, 3 = neutral, 5 = strongly agree) were used in the questionnaire.

A two-stage sampling procedure was used. First, we conducted a stratified sample of public and private sector organisations from the metropolitan areas in Belgium. Second, a random sample of managerial and non-managerial personnel was drawn from each organisation. In total 1,559 respondents from a broad range of Belgian work organisations going through an organisational change process participated in this inquiry. Upper management confirmed that each of these organisations was experiencing important change processes. In total 56 organisations were included for analysis. Approximately 63% of the sample involved private sector organisations (n = 35) and 37 % (n = 21) public sector organisations. The group of private sector organisations is composed of manufacturing organisations (e.g. textile and metal), pharmaceutical firms, financial institutions, and others. The functions carried out by the public sector organisations include education, health services, environmental protection, and law enforcement.

In order to cross-validate the findings of the multilevel random coefficient modeling we decided to randomly split the total sample ( $N = 1,559$ ) in two samples of almost equal size. Both samples included employees and managers of the 56 organisations. Sample 1 involves answers of 746 respondents, whereas sample 2 has 810 respondents. Multilevel analysis was conducted.

## 4.2 Scales

4.2.1 Dependent variables emotional involvement and commitment to change. The readiness to change variables (emotional involvement and commitment to change) were respectively gauged by scales developed by Metselaar (1997) and Boonstra, Bennebroeck and Gravenhorst (1998). Emotional involvement measures the feeling people have with regard to change (e.g. 'I experience the change process as something positive'). This scale consists of five items and has demonstrated good internal consistency (cronbach alpha = .83). The second aspect of readiness to change measures 'commitment to change' (e.g. 'I am willing to contribute to the change process'). This scale comprises four items and has shown its reliability (cronbach alpha = .89). Although both variables have a strong positive correlation ( $r = .62$ ), factor analyses indicate that both facets can be treated as separate constructs.

4.2.2 Process factors. To measure 'support of top management' and 'participation' we relied on the scales developed by Boonstra et al. (1998). The first process variable 'support of top management' has four items (e.g. 'The top of the organisation is actively involved in the change project') and forms a homogeneous scale (cronbach alpha = .76). The scale for the second process variable 'participation' is comprised of 11 items (e.g. 'The employees are involved to analyse the problem') and yielded good reliability (cronbach alpha = .89).

4.2.3 Context factors. Risk-taking reward orientation (a four-item scale) was assessed with a scale developed by Devos et al. (2002) (e.g. Employees are rewarded for looking for new solutions). The reliability coefficient for this scale was .72. The measurement of history of change (8 items) is based on a scale developed by Metselaar (1997). An example item of this scale is 'I have been actively involved in the implementation process of previous change projects (cronbach alpha = .82).

Finally to measure trust in top management we employed the scale developed by Kim and Mauborgne (1993). An example item is 'Bilateral communication between top management and subsidiary units is excellent.' The cronbach alpha for this scale was .81.

4.2.4 Personality factor. With respect to locus of control, the seven-item locus of control scale was excerpted from Rotter (1966). This scale yielded good internal reliability (cronbach alpha = .72) (e.g. 'Capable people who fail to become leaders have not taken advantage of their opportunities').

### **4.3 Statistical analysis**

In order to examine our data we employed multilevel analysis. Multilevel analysis is a general term referring to statistical methods appropriate for the analysis of data sets comprising several types of unit of analysis (Snijders and Bosker, 1999). Each level of analysis corresponds to a population (e.g. population of individuals, teams, organisations, etc.).

Multilevel models are models specifically geared toward the statistical analysis of data that have a hierarchical or clustered structure (Hox, 1995). In a nested data structure, the most detailed level or lowest level of analysis is called level 1. Since our data set involves two levels (individual (level 1) and organisation (level 2)), applying multilevel random coefficient modeling (MRCM) analysis seems the logical method of analysis. Ignoring the possible dependencies originating from the grouping of individuals (such as employees in organisations) can lead to a host of invalid inferences including inflation of Type I error rates, ecological validity problems, among others (Beretvas and Kamata, 2005; Raudenbush and Bryk, 2002). These problems can be solved through the use of multilevel random coefficient modeling or hierarchical linear modeling in which the clustering of units within groups is modeled. One of the most important advantages of MRCM over OLS regression procedures is its ability to model random error at all levels of analysis simultaneously, which is an advantage due to the fact that MRCM relies on maximum likelihood procedures to estimate coefficients (Nezlek, 2001). In MRCM, coefficients describing phenomena at one level of analysis are analysed at another.

In essence, a regression equation is estimated for each unit of analysis at one level, and these coefficients also become the dependent variables in regression equations at the next level of analysis. As a result of that, multilevel analysis provides information concerning how much variance is to be found at each level, and how much variables can explain the variance at their own level.

Multilevel analysis is a step-by-step process in which several models are tested. Analysts also strongly advise first to run simple models before testing more complex ones (Nezlek, 2001; Snijders and Bosker, 1999). In this study we first conducted a totally unconditional model (Model A) with emotional involvement to change and commitment to change as dependent variables. The unconditional model is also called the null model because this model does not include no term other than the intercept at any level. Although such models do not test hypotheses per se, they describe how much of the total variance in the dependent variables can be attributed at the individual and organisational level (Table II). In the second model (model B) the demographic variable 'leadership position' was added to model A. Thereafter, locus of control was added to model B (model C). The context factors (trust in top management, risk-taking reward orientation, history of change and private versus public sector) were added together to model C (model D). Finally, both process factors (support of top management toward change and participation) were included in model D (model E). The proportion of variance explained by these variables (intraclass correlation coefficients) is shown in Table II. SPSS linear mixed models was used to run random intercept models. We decided to keep the residual variance of the slopes fixed, after testing cross-level interaction models where the four context variables and process variables were entered separately. These models allowed us to determine whether the slopes varied as a function of the level 2 variable (organisation). The results of these analyses showed this was not the case. In other words, the relationships (i.e. slopes) of the context variables (trust in top management, risk taking reward orientation, history of change and sector) and the process variables (support of top management and participation) with the dependent variables did not vary significantly across the different organisations.



## 5. RESULTS

### 5.1 Descriptive statistics

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Insert Table I About Here

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The overall means, standard deviations and bivariate correlations measured are displayed in Table I. An important finding to note is that on average the 1,559 respondents score significantly higher than the theoretical midpoint for all scales included in this inquiry (with exception for locus of control). This implies that all respondents in this sample are quite motivated to support change, despite the fact they are confronted with change (emotional involvement,  $M = 3.51$ ; commitment to change,  $M = 4.15$ ). A second important outcome to note is the strong correlation found between emotional involvement and commitment to change ( $r = 0.62$ ;  $p < 0.001$ ). This is not entirely unexpected as affect (i.e., emotional involvement) is found to be an important antecedent of intention (Metselaar and Cozijnsen, 1997). Huy (1999) also asserted that emotional involvement reinforces employees' commitment and intentions toward organisational change. Similar correlations were found for trust in top management with support of top management toward change ( $r = .60$ ;  $p < 0.001$ ), participation ( $r = .64$ ;  $p < 0.001$ ), and history of change ( $r = .58$ ;  $p < 0.001$ ). An explanation for these strong positive correlations is that trust in top management, and therefore also the decrease of psychological uncertainty related to the implementation of change, is determined by the level of participation in decision-making, support of top management during times of change and previous successful experiences of employees with change.

### 5.2 Model assessment

5.2.1 Model fit. To assess the fit of the models in this inquiry we compared models B through E against the baseline model A (unconditional model). Two models are considered nested if one model can be thought of as a restricted form of the other. The likelihood ratio test is then used to compare the nested models. For each model, we obtained the value of the Likelihood,  $L$ , which is the probability of obtaining the observed data if the model were true.

The likelihood ratio test statistic is computed as  $-2 \log L_1 - (-2 \log L_2)$  which under the null hypothesis follows a chi-squared distribution on  $q$  degrees of freedom, where  $q$  is the difference in the number of parameters between the two models. A lower  $-2 \log$  likelihood value implies a better fit. Model E yielded the best fit for both facets of readiness to change (Table III).

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Insert Table II & III About Here

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5.2.2 Explained variance. In order to calculate level 2 (organisation) variance in commitment to change and emotional involvement we compute the variance partition coefficient (VPC) (Goldstein, 2003). This coefficient is interpreted as the proportion of the total residual variation that is due to differences between groups (i.e. organisations). In the baseline models (model A) for both samples the explained variance in commitment to change due to organisation effects ranges between 24% and 27% (Table II). For emotional involvement the level of explained variance due to organisational effects is lower (approximately 20%). From Table II we also infer that the variance partition coefficients (based on model A) decrease when adjusted for other variables (model B through E). A reduced VPC for models B through E in comparison to the crude VPC (model A) is expected if the explaining variable is important in relation to the outcome.

Covariance parameters or random effects for model E, when compared to model A, indicate that a substantial amount of within organisation variance (residual variance) in means for emotional involvement (ranging between .21 and .29) and commitment to change (ranging between .14 and .15) has been reduced. Compared to model A we also note that in the case of the full model (model E), there is a significant reduction in unexplained variance between organisation means for emotional involvement (ranging between .43 and .65) and cognitive commitment (ranging between .43 and .59).

### **5.3 The relationship of the personality, context and process variables with commitment to change.**

Because model E – the model including the demographic variable, the personality variable, the context variables and process variables – yields the best fit in sample 1 and 2, we used this model to test our hypotheses. In sample 1 with the dependent variable commitment to change, we found significant effects for leadership position, history of change (context), private versus public sector (context), participation (process) and support of top management (process) (Table IV). Studying the parameter estimates for sample 1 shows that people in a managerial position experience more commitment to change (partial support for hypothesis 8). The level of commitment to change was also found to be higher among people in the private sector when compared to the public sector (support for hypothesis 6). Regarding the internal context variable ‘history of change’ it should be noted that experiences of successful changes lead to stronger commitment to change (support for hypothesis 5). Finally, the process variables support of top management and participation affect commitment to change in a positive way. In other words, stronger support of top management and participation during times of change often result in higher levels of commitment to change (support for hypothesis 1 and 2). Similar findings were observed in sample 2. The effect of leadership position, however, was not found to be significant.

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Insert Table IV About Here

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To conclude strong effects were found in both samples for the context variables (history of change and sector) and both process variables (participation and support top management). Locus of control (personality variable) nor the other context variables (risk taking reward orientation and trust in top management) yielded significant results. The effects of leadership position on commitment to change are only partially confirmed.

#### **5.4 The relationship of the personality, context and process variables with emotional involvement.**

As for the dependent variable ‘emotional involvement to change’ model E also yielded the best fit. Leadership position, locus of control, nor the context variables trust in top management and risk-taking reward orientation have significant relationships with emotional involvement. Parallel to the findings for commitment to change, people working in the private sector experience more emotional involvement during times of change than people working in the public sector (support for hypothesis 6). This was confirmed in sample 1 and sample 2 (Table V). We also found strong support for the assumption that a successful history of change affects emotional involvement in a positive way (support hypothesis 5). Furthermore in both samples we observed that participation has a positive correlation with emotional involvement (support for hypothesis 2). Support of top management was only found to have a positive effect on emotional involvement in sample 1 (partial support for hypothesis 1). Finally, an important remark should be made with respect to the effects of trust in top management on emotional involvement (Table V). In both samples model D indicates positive significant relationships between trust in top management and emotional involvement. However, when the process variables are added the effect becomes non-significant. The reason for this is probably due to the strong positive correlations of trust in top management with both process variables (i.e. participation ( $r = .64$ ) and support of top management ( $r = .60$ )). The zero-order correlation of trust in top management with emotional involvement is strongly significant ( $r = .38$ ;  $p < 0.001$ ), whereas the partial correlation controlling for both process variables is not ( $r = .04$ ;  $p = .19$ ). These correlations indicate that the effects of trust in top management become insignificant in model E because of the strongly shared common variance with both process variables in explaining emotional involvement.

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Insert Table V About Here

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In summary, the same set of variables seems to affect both facets of readiness to change (commitment to change and emotional involvement) in a similar manner. Very important to note is that the process of change, the way how change is implemented, is a crucial factor in the prediction of emotional involvement and commitment to change. Furthermore some context variables (i.e. history of change and sector) explain an important part of the variation in readiness to change. However, other internal context variables like a risk-taking reward oriented climate and trust in top management did not yield significant effects in the full model (model E). Finally, the effects of leadership position and locus of control are marginal.

## **6. DISCUSSION**

The aim of this study was to examine the contribution of process, context and individual factors on two components of readiness to change (i.e. emotional involvement and commitment to change). A second focus of this inquiry was to determine the individual and organisational level variance explained in readiness to change. Supporting our expectations we found that several context and process variables play an important role in understanding emotional involvement to change and commitment to change. Results of the multilevel analyses show the necessity to involve the variation at organisational level apart from the individual level variation when studying different components of readiness to change.

### **6.1 The process variables: support of top management towards change and participation**

The results of our analyses indicated that two process variables related to a specific change project play a central role in employees' emotional involvement to change and commitment to change: support of top management towards change and participation in the change project.

A theoretical basis that support by management can be a very important indicator for employees to assess the probability of a successful implementation and institutionalization of change can be found in the referent cognitions theory (RCT) (Folger, 1986). RCT suggests that employees will look to managers for cues during times of change to see if support for change exists.

If managers are behind the change effort, employees will elicit greater willingness and motivation to change. Accordingly, the positive correlations we noted for 'support of management toward change' with 'emotional involvement' and 'commitment to change', support this literature.

Apart from the necessity of top management support, an important tool to increase readiness to change among employees involves active participation. If practitioners are interested in more effective and continuous change, they should consider implementing well-designed and well-developed interventions geared toward facilitating and enhancing positive social relationships in their organisations. Through participation people get the opportunity to have impact regarding a proposed change, and gradually build the skills, knowledge and efficacy necessary to cope effectively with continuous change. In other words, participation of employees in change contexts is useful because it creates a feeling of psychological ownership (Dirks et al., 1996). Dirks et al. (1996) suggested that an employee's ownership over his or her job, organisations, or change process can play a role in either facilitating or impeding change. In short, in order to increase acceptance of change, managers need to listen to employees' suggestions and heed their advice.

In summary, the manager has to possess certain skills, competencies to carry through change. In other words, management can play a major role in getting people motivated to change through their leadership style in times of change. Supportive behaviour and involving employees in change related decision-making are both features of transformational leadership. According to several scholars transformational leadership is linked to the notion of organisational change (Bommer et al., 2005; Bass, 1985). Transformational leadership theory holds that employees change, or become transformed, through inspirational actions performed by their leaders. In addition, adopting this leadership style can also contribute to the development of a climate conducive to change by introducing rewards for risk-taking behaviour, stimulating participation in decision-making, autonomy, and etc.

In summary, transformational leadership is probably one of the most effective leadership styles to create the necessary conditions for a readiness to change climate, since typical transformational leadership behaviours include articulating a vision of the future, fostering the acceptance of group goals, communicating high performance expectations, providing intellectual stimulation, modeling appropriate behaviour, participation in decision-making and displaying supportive leader behaviour (Podsakoff et al., 1990).

## **6.2 The context variables: history of change and private versus public sector**

Besides the importance of how change is implemented to advance our understanding of readiness, also important to consider is the history of change in organisations. As Schneider et al. (1996) mentioned that readiness to change is influenced by the track record of successfully implementing major organisational changes. A positive experience with previous change projects will stimulate the employees' readiness, a negative one will inhibit their readiness. The results of this study also support that history of change is a major factor influencing readiness to change. A theoretical foundation for this finding lies in Bandura's 'Social Learning Theory' (1982). This theory posits that past experiences cause people to develop expectations about their ability to perform a task prior to actually making an attempt, but also suggests that there is little reason to be fearful of events in which one has been successful in the past. Contextually, employees learn from outcomes of past change experiences, and this learning provides a feedback loop in which outcomes of past actions serve to revise beliefs and expectations about the future. Given success in the past, individuals can reasonably expect to succeed in similar endeavours (Bernerth, 2004).

Apart from the significance of history of change this study argues that there is a difference between the public and the private sector regarding readiness to change. This outcome also contributes to the debate whether public and private sector are more dissimilar than similar (Boyne, 2002). Buelens and Van den Broeck (2007) have noted that people in the public and private sector differ with respect to work motivations, supporting our finding that the motivation to be committed to change differs significantly between both sectors.

The working conditions, contextual factors inherent to both sectors represent catalysts for change and underlie the importance of creating readiness for change in the organisation. These include conditions that shape organisational members' perceptions of change. Especially lesser control, stronger bureaucracy, lack of goal clarity, and the power of politicians in the public sector involve less favourable conditions to establish a climate of readiness toward change. In other words, if the basic conditions to create a climate conducive to change are not present, change initiatives will likely fail (McNabb and Sepic, 1995). Devos and Bouckennooghe (2006) found that employees in both sectors differ significantly with respect to risk-taking reward orientation, level of perceived support by top management, and perceived control over environment during times of change. According to several authors change resistance is assumed to be low when a supportive, participative, entrepreneurial, and risk-taking culture is present (Chonko et al., 2002; Burnes and James, 1995), characteristics that are consistent with the human relations culture and open systems culture (Jones et al., 2005). Eby et al. (2000) also observed that flexible policies and procedures, were positively related to employees' evaluations of whether or not their organisation was ready to cope with change events.

Our finding that employees in public sector organisations show less readiness to change is very interesting in times where the call to pursue public service improvement is a major topic on the policy agenda of many governments (Boyne, 2004; Boyne et al., 2002; Boyne et al., 2004; Parys, 2003). During the last two decades, governments across the world have been changing public services through reorganisation and restructuring in an attempt to attain higher performance and quality (Parys, 2003; Pollit and Bouckaert, 2000). In addition, managers in the public sector have been encouraged to adopt private sector management models (Box, 1999; Ferlie et al., 1996). In consequence best practice models, which have proven their effectiveness in the private sector, such as 'Total Quality Management', 'Management by Objectives', and etc. have been extolled as key routes to quality improvement and higher efficiency in the public sector (Boyne et al., 2002). However, this evolution towards New Public Management has not always resulted in performance improvement and expected successes (Boyne, 1996; Ranson and Stewart, 1994; Ring and Perry, 1985). Why 'New Public Management' often fails could be due to the fact that the values underlying this model are in conflict with the common values and beliefs shared among employees in the public sector.



Boyne (2002) has noted that public and private sector employees differ significantly from each other when it concerns the values they hold.

### **6.3 The personality characteristic locus of control**

Although locus of control has been described as a variable affecting innovative behaviour (Boone et al., 1996; Brockhaus, 1982; Van de Ven et al., 1984), this inquiry demonstrated that this personality characteristic has no significant influence on the involvement in a change project. The meaning of personality characteristics to organisational change, as such, remains obscure. Judge et al. (1999) found a significant relation between locus of control and coping with change, whereas other scholars (Wanous et al., 1997) have indicated that personality-based predispositions are of minor importance in attitudes about organisational change. It is possible that personality has an effect on attitudes towards change and innovation in general, and that this effect becomes irrelevant in specific change projects, due to the decisive effect of the way the change project is managed.

### **6.4 Conclusion, limitations and future research directions**

This article has introduced and tested an overarching model of readiness to change, where readiness is conceptualised as a two faceted concept: emotional involvement and commitment to change. As the findings indicate, similar relationship patterns emerge between the antecedent categories and both components of readiness to change. In addition, this study's model has shown that a significant amount of variation in emotional involvement and commitment to change can be explained by the organisational level. However, important to note is that the largest part of variation in readiness to change is still explained by the individual level. This is not totally unexpected because readiness to change is in the first place a phenomenon that emerges at an individual level (Armenakis et al., 1993).

Although this study yields some interesting findings, it suffers a number of limitations and therefore requires some further research. First, data for both predictor and criterion variables could only be collected in one survey, thus raising the concern for monomethod bias.

Nevertheless, if relationships in the study were found only because independent and dependent variables were assessed in the same survey, we would expect practically all of the relationships in the model to be significant. This was not the case (Table IV and V), and therefore the concern for common method variance in this study is expected to be limited. However, this does not imply that there is no need for examining readiness to change by means of other research strategies and perspectives. The development of a coherent theory of readiness to change can be promoted by triangulation in research strategies (Scandura and Williams, 2000).

A second limitation of this inquiry is the fact that the data have a cross-sectional character. The survey data were collected only once, after organisational change had already been underway. Because of this, carefulness is needed when making interpretations about the directions of relationships found between the study's variables. Although previous theory and research exists to support the directionality, suggested in this paper, other directions cannot be precluded. Therefore longitudinal research is required, studying organisations before, after and during organisational changes. It has long been argued that organisational change should be conducted longitudinally (Van de Ven and Huber, 1990). However, research that observes the change process along a temporal dimension has remained scant (Armenakis and Bedeian, 1999; Pettigrew et al., 2001). The value and need for this kind of research is also stressed by Pettigrew (1990). He argues that the theoretical and the practical soundness of useful research on change requires the appreciation of conditions (antecedents) and ending results (output variables) together with a temporal analysis of the change process. In the light of these considerations a fruitful path for research providing insight into the dynamics of organisational change would be the longitudinal analysis of how change evolves into actual change behaviour taking into account its context, and personal perceptions related to the change event.

Third, the limited role certain internal context factors play in readiness to change (i.e. risk-reward orientation and trust in management) might depend on the type of change that is being implemented. This inquiry, however, did not make a distinction between the different types of change that occurred in this sample of organisations. Therefore future research should focus on the relevance of these context variables for different kinds of change being implemented.

Fourth, further empirical and theoretical work is needed concerning the construct validity of emotional involvement and commitment to change. Is it more valid to consider readiness to change as a unifaceted construct or should it be multifaceted. Although Oreg (2003) has demonstrated the multifaceted structure of resistance to change and developed a reliable and valid instrument, this has not been the case yet for readiness to change. Another interesting avenue for research involves the causal relationship that exists between both components of readiness to change. Is emotional involvement a mediating variable between process and context variables on the one hand, and commitment to change on the other hand?

To conclude, further research that attempts to understand the meaning of different factors that influence effective change is essential, because organisational change remains a necessary condition to survive in an ever more competitive environment.

## REFERENCES

- Argyris C. (1990). *Overcoming Organizational Defences: Facilitating Organizational Learning*. Boston: Allyn and Bacon.
- Armenakis A.A. and Bedeian A.G. (1999). 'Organizational change: A review of theory and research in the 1990's'. *Journal of Management*, **25**, 293-315.
- Armenakis A.A. and Harris S.G. (2002). 'Crafting a change message to create transformational readiness'. *Journal of Organizational Change Management*, **15**, 169-83.
- Armenakis A.A., Harris S.G. and Mossholder K.W. (1993). 'Creating readiness for organizational change'. *Human Relations*, **46**, 681-703.
- Ashford S. J. (1988). 'Individual strategies for coping with stress during organizational transitions.' *Journal of Applied Behavioral Science*, **24**, 19-36.
- Ashford S. J., Lee C., and Bobko P. (1989). 'Content, causes, and consequences of job insecurity: A theory-based measure and substantive test.' *Academy of Management Journal*, **32**, 803-29.
- Backer T.E. (1995). 'Assessing and enhancing readiness to change: implications for technology transfer'. In Backer T.E., David, S.L. and Soucy, G. (Eds.), *Reviewing the Behavioral Science Knowledge Base on Technology Transfer*. Rockville, MD: National Institute on Drug Abuse, 21-41.
- Bandura A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, **37**, 122-47.
- Bass B.M. (1985). *Leadership and performance beyond expectation*. New York: Free Press.
- Beer M., and Nohria N. (2000). 'Cracking the code of change.' *Harvard Business Review*, **78**, 133-41.
- Beretvas N.S. and Kamata A. (2005). 'The multilevel measurement model: Introduction to the special issue'. *Journal of Applied Measurement*, **6**, 247-254.

Bernerth J. (2004). 'Expanding our understanding of the change message'. *Human Resource Development Review*, **3**, 36-52.

Bommer W.H., Rich G.A. and Rubin, R.S. (2005). 'Changing attitudes about change: longitudinal effects of transformational leader behavior on employee cynicism about organizational change'. *Journal of Organizational Behavior*, **26**, 733-53.

Boone C., De Brabander B. and Van Witteloostuijn A. (1996). CEO locus of control and small firm performance: An integrative framework and empirical test. *Journal of Management Studies*, **33**, 667-99.

Boonstra, J.J. and Bennebroek Gravenhorst, K.M. (1998). 'Power dynamics and organizational change. A comparison of perspectives'. *European Journal of Work and Organizational Psychology*, **7**, 97-120.

Bordia P., Hobman E., Jones E., Gallois C. and Callan V. J. (2004). 'Uncertainty during organizational change: Types, consequences and management strategies.' *Journal of Business and Psychology*, **18**, 507-32.

Box R.C. (1999). 'Running government like a business: Implications for public administration theory and practice'. *American Review of Public Administration*, **29**, 19-43.

Boyne G.A. (1996). 'The intellectual crisis in British public administration: Is Public management the problem or the solution?' *Public Administration*, **74**, 679-94.

Boyne G.A. (2002). 'Public and private management: what's the difference?' *Journal of Management Studies*, **39**, 97-122.

Boyne G.A. (2004). 'A '3Rs' strategy for public service turnaround: Retrenchment, repositioning and reorganization.' *Public Money and Management*, April, 97-103.

Boyne G.A., Gould-Williams J.S., Law J. and Walker R.M. (2002). 'Best Value – Total quality management for local government?' *Public Money and Management*, July – September, 9-16.

Boyne G.A., Martin S. and Walker R.M. (2004). 'Explicit reforms, implicit theories and public service improvement.' *Public Management Review*, **6**, 189-210.

Bozeman B. and Kingsley, G. (1998). 'Risk culture in public and private organizations.' *Public Administration Review*, **58**, 109-18.

Brockhaus R.H. (1982). 'Psychological and environmental factors which distinguish the successful from the unsuccessful entrepreneur: A longitudinal study.' *Academy of Management Proceedings*, 368-72.

Buelens M. and Van den Broeck, H. (2007). 'An analysis of the differences in work motivation between public and private sector organizations.' *Public Administration Review*.

Burke W.W. and Litwin, G.H. (1992). 'A causal model of organizational performance and change.' *Journal of Management*, **18**, 523-45.

Burke W.W. and Trahan, W. (2000). 'Business climate shifts: Profiles of change makers.' Boston, MA: Butterworth Heinemann.

Burnes B. and James H. (1995). 'Culture, cognitive dissonance, and the management of change'. *International Journal of Operations and Production Management*, **15**, 14-33.

Bushe G. (1988). 'Developing cooperative labor-management relations in unionized factories: A multiple case study of quality circles and parallel organizations within joint quality of work life projects.' *Journal of Applied Behavioral Science*, **24**, 129-50.

Cappelli P and Sherer P.D. (1991). 'The missing role of context in OB: The need for a meso-level approach.' *Research in Organizational Behavior*, **13**, 55-110.

Cascio W.F. (1995). 'Whither industrial and organizational psychology in a changing world of work.' *American Psychologist*, **50**, 928-39.

Clegg C., and Walsh S. (2004). 'Change management: Time for a change.' *European Journal of Work and Organizational Psychology*, **13**, 217-39.

Chonko L.B., Jones E., Roberts J.A. and Dubinsky A.J. (2002). 'The role of environmental turbulence, readiness for change, and salesperson learning in the success of sales force change.' *Journal of Personal Selling and Sales Management*, **22**, 227-45.

Cunningham G. B. (2006). 'The relationships among commitment to change, coping with change, and turnover intentions.' *European Journal of Work and Organizational Psychology*, **15**, 29-45.

Cunningham C. E., Woodward C.A., Shannon H.S., MacIntosh J., Lendrum B., Rosenbloom D. and Brown J. (2002). 'Readiness for organizational change: A longitudinal study of workplace, psychological and behavioural correlates. *Journal of Occupational and Organizational Psychology*, **75**, 377-392.

Damasio A.R. (1994). *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: Avon Books, Inc.

Devos G. and Bouckennooghe D. (2006). 'Individual and organizational facets of change in the public and private sector: A comparative study'. Vlerick Leuven Gent Management School Working Paper Series.

Devos G., Vanderheyden K. and Van den Broeck H. (2002). 'A framework for assessing commitment to change: Process and context variables of organizational change.' Vlerick Leuven Gent Management School Working Paper Series.

Dirks K.T., Cummings L.L. and Pierce J.L. (1996). Psychological ownership in organizations: Conditions under which individuals promote and resist change. *Research in Organizational change and Development*, **9**, 1-23.

Eby L.T., Adams D.M., Russell J.E.A. and Gaby S.H. (2000). 'Perceptions of organizational readiness for change: Factors related to employees' reactions to the implementation of team-based selling'. *Human Relations*, **53**, 419-42.

Eisenberger R., Huntington R., Hutchinson S., and Sowa D. (1986). 'Perceived organizational support.' *Journal of Applied Psychology*, **71**, 500-7.

- Fay D., and Lührmann H. (2004). 'Current themes in organizational change.' *European Journal of Work and Organizational Psychology*, **13**, 113-19.
- Ferlie E., Ashburner L., Fitzgerald L. and Pettigrew A. (1996). *The New Public Management in Action*. Oxford: Oxford University Press.
- Folger, R. (1986). 'Rethinking equity theory: A referent cognitions model.' In H.W. Bierhof, R.L. Cohen and J. Greenberg (Eds.). *Justice in Social Relations*. New York: Plenum, 145-62.
- Folger R. and Konovsky M.K. (1989). Effects of procedural and distributive justice on reactions to pay raise decisions. *Academy of Management Journal*, **32**, 115-30.
- Frijda N.H., Kuipers P. and ter Schure E. (1989). 'Relations among emotion, appraisal, and emotional action readiness.' *Journal of Personality and Social Psychology*, **57**, 212-28.
- Galpin, T.J. (1996). *The Human Side of Change*. Jossey-Bass Inc.
- George J.M., and Jones G.R. (2001). 'Towards a process model of individual change in organizations.' *Human Relations*, April, 419-44.
- Goldstein H. (2003). *Multilevel Statistical Models*. London: Edward Arnold.
- Goldstein J. (1988). 'A far from equilibrium systems approach to resistance to change.' *Organizational Dynamics*, **17**, 16-26.
- Gordon S. S., Stewart W. H. Jr., Sweo R., and Luker W. A. (2000). 'Convergence versus strategic reorientation: The antecedents of fast-paced organizational change.' *Journal of Management*, **26**, 911-45.
- Greenwood R. and Hinings C. R. (1996). 'Understanding radical organizational change: Bringing together the old and the new institutionalism.' *Academy of Management Review*, **21**, 1022-54.



- Härenstam A., Bejerot E., Leijon O., Schéele P., Waldenström K. and The MOA Research Group (2004). 'Multilevel analyses of organizational change and working conditions in public and private sector.' *European Journal of Work and Organizational Psychology*, **13**, 305-343.
- Herscovitch L. and Meyer, J.P. (2002). 'Commitment to organizational change: Extension of a three component model'. *Journal of Applied Psychology*, **87**, 474-87.
- Howard A. (1995). *The Changing Nature of Work*. San Francisco: Jossey-Bass.
- Hox J.J. (1995). *Applied Multilevel Analysis*. Amsterdam: TT-Publikaties.
- Hui C., and Lee C. (2000). 'Moderating effects of organization-based self-esteem on organizational uncertainty: Employee response relationships.' *Journal of Management*, **26**, 215-32.
- Huy Q.N. (1999). 'Emotional capability, emotional intelligence, and radical change'. *Academy of Management Review*, **24**, 325-45.
- Jacobson E. H. (1957). *The effect of changing industrial methods and automation on personnel*, Symposium on Preventive and Social Psychiatry. Washington, DC.
- Jansen K. J. (2000). 'The emerging dynamics: Resistance, readiness, and momentum.' *Human Resource Planning*, **23**, 53-4.
- Jones R.A., Jimmieson N.L. and Griffiths A. (2005). 'The impact of organizational culture and reshaping capabilities on change implementation success: The mediating role of readiness for change'. *Journal of Management Studies*, **42**, 361-86.
- Johns G. (2001). 'In praise of context.' *Journal of Organizational Behavior*, **22**, 31-42.
- Johns G. (2006). 'The essential impact of context on organizational behavior'. *Academy of Management Review*, **31**, 386-408.
- Judge T.A., Thoresen C.J., Pucik V. and Welbourne T.M. (1999). 'Managerial coping with organizational change: A dispositional perspective'. *Journal of Applied Psychology*, **84**, 107-22.

Judson A. (1991). *Changing Behavior in Organizations: Minimizing resistance to change*. Cambridge, MA: Basil Blackwell.

Kim W. and Mauborgne R. (1993). 'Procedural justice, attitudes, and subsidiary top management compliance with multinational's corporate strategic decisions.' *Academy of Management Journal*, **36**, 502-26.

Korsgaard A.M., Schweiger D.M., and Sapienza H.J. (1995). 'Building commitment, attachment and trust in strategic decision-making teams: The role of procedural justice.' *Academy of Management Journal*, **38**, 60-84.

Kotter, J.P. (1995). 'Leading change: Why transformation efforts fail'. *Harvard Business Review*, **73**, 59-67.

Lau C.M and Woodman R.W. (1995). 'Understanding organizational change: A schematic perspective.' *Academy of Management Journal*, **38**, 537-54.

Lakshman C. (2005). 'Top executive knowledge leadership: Managing knowledge to lead to change at GE.' *Journal of Change Management*, **5**, 429-46.

Lewin K. (1948). *Resolving Social Conflicts Selected Papers on Group Dynamics*. New York: Harper and Brothers.

Lewin K. (1951). *Field Theory in Social Science*. New York: Harper and Row.

Luhmann N. (1979). *Trust and Power*. Chichester: Wiley.

Madsen S.R., Miller D. and Cameron J. (2005). 'Readiness for organizational change: Do organizational commitment and social relationships in the workplace make a difference?' *Human Resource Development Quarterly*, **16**, 213-33.

McGuire W.J. (1985). 'Attitudes and attitude change.' In G. Lindzey and E. Aronson (Eds.), *Handbook of Social Psychology*. New York: Random House.

McLain D.L. and Hackman K. (1999). 'Trust, risk and decision-making in organizational change.' *Public Administration Quarterly*, **23**, 152-76.

McManus S.E., Russell J.E.A., Freeman D.M. and Rohricht M.T. (1995). 'Factors related to employees' perceptions of organizational readiness for change.' Paper presented at the annual meeting of the Academy of Management, Vancouver, BC, Canada.

McNabb D.E and Sepic F.T. (1995). 'Culture, climate and total quality management: Measuring readiness to change'. *Public Productivity and Management Review*, **18**, 369-86.

Metselaar E.E. (1997). *Assessing the willingness to change: Construction and validation of the DINAMO*. Doctoral dissertation, Free University of Amsterdam.

Metselaar E. E. and Cozijnsen A. J. (1997). *Van Weerstand naar Veranderingsbereidheid*. Amstelveen: Holland Business Publications.

Miller V. D., Johnson J. R. and Grau J. (1994). 'Antecedents to willingness to participate in planned organizational change.' *Journal of Applied Communication Research*, **22**, 59-80.

Mowday R.T. and Sutton R.I. (1993). 'Organizational Behavior: Linking individuals and groups to organizational contexts.' *Annual Review of Psychology*, **44**, 195-229.

Msweli-Mbanga P. and Potwana N. (2006). 'Modelling participation, resistance to change, and organizational citizenship behaviour: A South African case.' *South African Journal of Business Management*, **37**, 21-29.

Nezlek J.B. (2001). 'Multilevel random coefficient analyses of event- and interval-contingent data in social and personality psychology research.' *Personality and Social Psychology Bulletin*, **27**, 771-85.

Oreg S. (2003). 'Resistance to change: Developing an individual differences measure.' *Journal of Applied Psychology*, **88**, 587-604.

Oreg S. (2006). 'Personality, context, and resistance to organizational change.' *European Journal of Work and Organizational Psychology*, **15**, 73-101.

Parys, M. (2003). 'Staff participation in the Belgian public sector reform'. *International Public Sector Management*, **16**, 446-57.

- Pettigrew A.W. (1990). 'Longitudinal research on change: Theory and practice.' *Organization Science*, **1**, 267-92.
- Pettigrew A.M., Woodman R.W. and Cameron K.S. (2001). 'Studying organizational change and development: Challenges for future research.' *Academy of Management Journal*, **44**, 697-13.
- Piderit S. K. (2000). 'Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change.' *Academy of Management Review*, **25**, 783-94.
- Podsakoff P.M., MacKenzie S.B., Moorman R.H. and Fetter R. (1990). 'Transformational leader behaviors and their effects on followers' trust in leader, satisfaction and organizational citizenship behaviors.' *Journal of Management*, **22**, 259-98.
- Pollard T. M. (2001). 'Changes in mental well-being, blood pressure and total cholesterol levels during workplace reorganization: The impact of uncertainty.' *Work and Stress*, **15**, 14-28.
- Pollitt C. and Bouckaert G. (2000). *Public Management Reform*. Oxford: Oxford University Press.
- Prochaska J. O., Velicer W. F., Rossi J. S., Goldstein M. G., Marcus B. H., Rakowski W., et al. (1994). Stages of change and decisional balance for 12 problem behaviors. *Health Psychology*, **13**, 39-46.
- Quirke B. (1996). *Communicating Corporate Change*. McGraw-Hill:England.
- Ranson S. and Stewart J. (1994). *Management for the Public Domain*. London: St Martin's Press.
- Raudenbush S.W. and Bryk A.S. (2002). *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks, CA: Sage Publications.
- Reichers A.E., Wanous J.P. and Austin J.T. (1997). 'Understanding and managing cynicism about organizational change'. *Academy of Management Executive*, **11**, 48-59.

- Ring P.S. and Perry J.L. (1985). 'Strategic Management in public and private organizations: Implications of distinctive contexts and constraints'. *Academy of Management Review*, **10**, 276-86.
- Roberts K.H. and O'Reilly C.A. (1974). Measuring organizational communication. *Journal of Applied Psychology*, **59**, 321-26.
- Romanelli E. and Tushman M. (1994). 'Organizational transformation as punctuated equilibrium: An empirical test.' *Academy of Management Journal*, **37**, 1141-66.
- Rosenblatt, Z., Talmud, I. and Ruvio, A. (1999). A gender-based framework of the experience of job insecurity and its effects on work attitudes. *European Journal of Work and Organizational Psychology*, **8**, 197-217.
- Rotter, J.B. (1966). 'Generalized expectancies for internal versus external control of reinforcement'. *Psychological Monographs*, **80**, whole no. 609.
- Rowden R. W. (2001). 'The learning organization and strategic change.' *S.A.M. Advanced Management Journal*, **66**, 11-24.
- Scandura, T.A., and Williams, E. (2000). Research methodology in management: Current practices, trends, and implications for future research. *Academy of Management Journal*, **43**, 1248-64.
- Schein E.H. (1980). *Organizational Psychology*. Englewood Cliffs, NJ: Prentice Hall.
- Schneider B., Brief A.P. and Guzzo, R.A. (1996). 'Creating a climate and culture for sustainable organizational change'. *Organizational Dynamics*, **24**, 7-19.
- Self D.R., Armenakis A.A. and Schaniger W.S. Jr. (2001). 'Employee reactions to organizational change content, process, and context: A simultaneous analysis.' Unpublished paper.
- Seligman M. P., and Csikszentmihalyi M. (2000). 'Positive psychology.' *American Psychologist*, **55**, 5-14.

Senge P. (1990). *The Fifth Discipline: The Art and Practice of the Learning Organization*. Garden City, NY: Doubleday.

Snijders T. and Bosker R. (1999). *Multilevel Analysis*. London: Sage.

Strebel P. (1998). 'Why do employees resist change?' In *Harvard Business Review on Change*. Boston, MA: Harvard Business School Press, 139-57.

Trade-Leigh, K.E. (2002). 'Case study: Identifying resistance in managing change.' *Journal of Organizational Change Management*, **15**, 138-55.

Van den Ven A.H., & Huber G.P. (1990). 'Longitudinal field research methods for studying processes of organizational change.' *Organization Science*, **20**, 213-19.

Van de Ven A.H., Hudson R. and Schroeder D.M. (1984). 'Designing new business startups: entrepreneurial, organizational and ecological considerations.' *Journal of Management*, **10**, 87-107.

Van de Ven A.H. and Poole M.S. (1995). 'Explaining development and change in organizations.' *Academy of Management Review*, **20**, 510-40.

Vakola M., Tsaousis L. and Nikolaou L. (2003). 'The role of emotional intelligence and personality variables on attitudes toward organizational change.' *Journal of Managerial Psychology*, **19**, 88-110.

Van Maanen J. and Barley S. (1985). 'Cultural organization: Fragments of a theory'. In P.J. Frost, L.F. Moore, M.R. Louis, C.C. Lundberg and Martin, J. (Eds.), *Organizational Culture*. Beverly Hills, CA: Sage, 31-54.

Wanberg C.R. and Banas J.T. (2000). 'Predictors and outcomes of openness to changes in a reorganizing workplace'. *Journal of Applied Psychology*, **85**, 132-42.

Wanous J.P., Reichers A.E. and Austin J.T. (1997). Cynicism about organizational change. Measurement, antecedents, and correlates. *Group and Organization Management*, **25**, 132-153.

Zajonc R.B. (1980). 'Feeling and thinking : Preferences need no inferences.' *American Psychologist*, **35**, 151-75.

**TABLE I****Means, standard deviations and bivariate correlations**

	Mean (SD)	1	2	3	4	5	6	7
1. Emotional involvement	3.51 (.62)	1						
2. Commitment to change	4.15 (.76)	.62	1					
3. Trust in top management	3.13 (.72)	.38	.28	1				
4. Risk-taking reward orientation	3.10 (.69)	.30	.26	.48	1			
5. History of change	3.33 (.61)	.40	.30	.58	.51	1		
6. Locus of control	2.94 (.59)	.20	.15 <sup>a</sup>	.24	.34	.23	1	
7. Support of top management	3.57 (.71)	.39	.42	.60	.42	.48	.21	1
8. Participation	3.12 (.69)	.52	.40	.64	.43	.49	.21	.64

<sup>a</sup>r = .15, p < .001

**TABLE II**

**Proportion of variance attributable to organisational level, calculated from five models of multilevel analysis in two samples**

	<i>Model A<sup>1</sup></i>	<i>Model B</i>	<i>Model C</i>	<i>Model D</i>	<i>Model E</i>
<b>Outcome variables</b>	%	%	%	%	%
Emotional involvement					
a. sample 1	19.64	18.11	16.81	15.05	9.67
b. sample 2	19.55	18.42	17.37	17.30	16.28
Commitment to change					
a. sample 1	26.51	25.81	25.22	20.75	14.89
b. sample 2	23.57	22.36	21.46	20.25	17.24

<sup>1</sup> Model A: Proportion of total variance attributable to organisational level (remainder up to 100% attributable to individual level)

Model B: Proportion of total variance attributable to organisational level adjusted for leadership position

Model C: Proportion of total variance attributable to organisational level adjusted for leadership position and locus of control

Model D: Proportion of total variance attributable to organisational level adjusted for leadership position, locus of control and context factors

Model E: Proportion of total variance attributable to organizational level adjusted for leadership position, locus of control, context and process factors



**TABLE III**

**Model fit**

	<i>-2 log likelihood</i>	<i>number of parameters</i>	<i>Δ chi-square</i>	<i>level of significance</i>
Sample 1, dependent variable emotional involvement				
<b>Model A</b> <sup>1</sup>	1,354.730	3	-	-
<b>Model B</b>	1,350.571	4	4.159, df(1)	0.05
<b>Model C</b>	1,340.637	5	14.093, df(2)	0.001
<b>Model D</b>	1,259.574	9	95.156, df(6)	0.001
<b>Model E</b>	1,210.314	11	144.416, df(8)	0.001
Sample 2, dependent variable emotional involvement				
<b>Model A</b>	1,519.746	3	-	-
<b>Model B</b>	1,518.148	4	1.598, df(1)	n.s.
<b>Model C</b>	1,508.867	5	10.879, df(2)	0.01
<b>Model D</b>	1,387.758	9	131.988, df(6)	0.001
<b>Model E</b>	1,299.797	11	219.949, df(8)	0.001
Sample 1, dependent variable commitment to change				
<b>Model A</b>	1,052.195	3	-	-
<b>Model B</b>	1,046.416	4	5.779, df(1)	0.05
<b>Model C</b>	1,050.323	5	1.872, df(2)	n.s.
<b>Model D</b>	996.050	9	56.145, df(6)	0.001
<b>Model E</b>	960.057	11	92.138, df(8)	0.001
Sample 2, dependent variable commitment to change				
<b>Model A</b>	1,289.653	3	-	-
<b>Model B</b>	1,286.365	4	3.288, df(1)	n.s.
<b>Model C</b>	1,283.592	5	6.061, df(2)	0.05
<b>Model D</b>	1,232.101	9	57.552, df(6)	0.001
<b>Model E</b>	1,189.586	11	100.067, df(8)	0.001

<sup>1</sup>Model A: random intercept

Model B: random intercept + leadership position

Model C: random intercept + leadership position + locus of control

Model D: random intercept + leadership position + locus of control + trust in top management + risk-taking reward orientation + history of change + sector

Model E: random intercept + leadership position + locus of control + trust in top management + risk-taking reward orientation + history of change + sector + support of top management + participation

**TABLE IV**

**Summary of the results of the multilevel analyses. Relationships between explanatory variables and commitment to change**

Sample 1	<i>Model A</i>		<i>Model B</i>		<i>Model C</i>		<i>Model D</i>		<i>Model E</i>	
<b>Fixed effects</b>	estimates	t-value	estimates	t-value	estimates	t-value	estimates	t-value	estimates	t-value
Intercept	4.215***	81.189	4.113***	68.273	4.014***	30.385	2.988***	17.307	2.639***	15.467
Leadership position (1= management; 2 = non-managerial)	---	---	.173**	3.133	.170**	3.078	.146**	2.764	.119*	2.335
Locus of control	---	---	---	---	.034	.842	-.021	-.542	-.023	-.603
History of change	---	---	---	---	---	---	.257***	5.555	.178***	3.865
Trust in top management	---	---	---	---	---	---	.078	1.890	-.065	-1.417
Risk-taking reward orientation	---	---	---	---	---	---	-.039	-.980	-.066	-1.706
Sector (1 = private sector; 2 = public sector)	---	---	---	---	---	---	.353***	3.893	.302***	3.876
Support of top management Participation	---	---	---	---	---	---	---	---	.231***	5.22
	---	---	---	---	---	---	---	---	.115*	2.47
<b>Random effects</b>	estimates	Wald Z	estimates	Wald Z	estimates	Wald Z	estimates	Wald Z	estimates	Wald-Z
Within-organization variance	.283***	16.852	.279***	16.842	.280***	16.818	.255	16.780	.242***	16.743
Between-organization variance	.102***	3.734	.097***	3.702	.094***	3.645	.067	3.365	.042**	2.904
<b>Sample 2</b>										
<b>Fixed effects</b>	estimates	t-value	estimates	t-value	estimates	t-value	estimates	t-value	estimates	t-value
Intercept	4.188***	78.535	4.101***	67.451	3.792***	29.855	2.846***	17.195	2.513***	15.163

Leadership position (1= management; 2 = non-managerial)	---	---	.151**	2.703	.138*	2.463	.113*	2.095	.095	1.845
Locus of control	---	---	---	---	.106**	2.738	.024	.601	.018	.474
History of change	---	---	---	---	---	---	.184***	3.790	.098*	2.034
Trust in top management	---	---	---	---	---	---	.097*	2.294	-.048	-1.050
Risk-taking reward orientation	---	---	---	---	---	---	.047	1.175	.006	.161
Sector (1 = private sector; 2 = public sector)	---	---	---	---	---	---	.232*	2.396	.184*	2.090
Support of top management	---	---	---	---	---	---	---	---	.129**	3.055
Participation	---	---	---	---	---	---	---	---	.248***	5.451
<b>Random effects</b>	estimates	Wald Z	estimates	Wald Z	estimates	Wald Z	estimates	Wald Z	estimates	Wald Z
Within-organization variance	.332***	18.017	.330***	17.986	.328***	17.964	.300***	17.888	.282***	17.883
Between-organization variance	.102***	3.520	.095**	3.398	.090**	3.330	.076**	3.133	.059**	2.984

\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001

**TABLE V**

**Summary of results of the multilevel analyses. Relationships between explanatory variables and emotional involvement**

Sample 1	<i>Model A</i>		<i>Model B</i>		<i>Model C</i>		<i>Model D</i>		<i>Model E</i>	
<b>Fixed effects</b>	estimates	t-value	estimates	t-value	estimates	t-value	estimates	t-value	estimates	t-value
Intercept	3.61***	61.860	3.499***	50.505	2.929***	17.823	1.429***	6.759	1.033***	4.999
Leadership position (1= management; 2 = non-managerial)	---	---	.195**	2.793	.180**	2.612	.118	1.810	.080	1.299
Locus of control	---	---	---	---	.192***	3.779	.089	1.806	.074	1.567
History of change	---	---	---	---	---	---	.347***	5.981	.260***	4.583
Trust in top management	---	---	---	---	---	---	.148**	2.894	-.060	-1.068
Risk-taking reward orientation	---	---	---	---	---	---	.014	.290	-.031	-.656
Sector (1 = private sector; 2 = public sector)	---	---	---	---	---	---	.259*	2.581	.235**	2.781
Support of top management	---	---	---	---	---	---	---	---	.119*	2.177
Participation	---	---	---	---	---	---	---	---	.359***	6.267
<b>Random effects</b>	estimates	Wald Z	estimates	Wald Z	estimates	Wald Z	Estimates	Wald Z	estimates	Wald-Z
Within-organization variance	.475***	16.900	.472***	16.885	.465***	16.883	.402***	16.773	.376***	16.812
Between-organization variance	.116***	3.555	.105**	3.432	.094**	3.362	.071**	2.996	.040*	2.540
<b>Sample 2</b>										
<b>Fixed effects</b>	estimates	t-value	estimates	t-value	estimates	t-value	Estimates	t-value	estimates	t-value
Intercept	3.549***	61.585	3.463***	51.498	2.977***	20.411	1.505***	8.349	1.120***	6.785

Leadership position (1= management; 2 = non-managerial)	---	---	.150*	2.302	.129*	2.000	.085	1.428	.050	.904
Locus of control	---	---	---	---	.168***	3.717	.036	.822	.030	.731
History of change	---	---	---	---	---	---	.321***	5.961	.204***	3.983
Trust in top management	---	---	---	---	---	---	.157**	3.357	.003	.073
Risk-taking reward orientation	---	---	---	---	---	---	.051	1.140	-.007	-.160
Sector (1 = private sector; 2 = public sector)	---	---	---	---	---	---	.272*	2.690	.247*	2.661
Support of top management	---	---	---	---	---	---	---	---	-.041	-.909
Participation	---	---	---	---	---	---	---	---	.489***	9.933
<b>Random effects</b>	estimates	Wald Z	estimates	Wald Z	estimates	Wald Z	Estimates	Wald Z	estimates	Wald Z
Within-organization variance	.462***	18.135	.461***	18.115	.454***	18.102	.376***	18.046	.329***	18.044
Between-organization variance	.112***	3.516	.104**	3.406	.096**	3.330	.079**	3.237	.064**	3.218

\* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001