PSYCHOLOGICAL CHANGE CLIMATE AS A CRUCIAL CATALYST OF
READINESS FOR CHANGE: A DOMINANCE ANALYSIS

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ABSTRACT

Purpose: The aim of this inquiry was to explore the relationships between four psychological change climate dimensions (trust in top management, history of change, participation in decision making, and quality of change communication) and readiness for change.

Design/methodology/approach: By means of a large scale survey administered in 56 Flemish public and private sector organizations, we collected in total 1,559 responses. These data were used to test the hypotheses about the role of context (i.e. trust in top management and history of change) and process factors of change (i.e. participation in decision making and quality of change communication) in engendering readiness for change.

Findings: In general the results of the hierarchical regression analyses supported the four hypotheses. This implies that trust in top management, a positively perceived change history, participation in decision making and excellent change communication, have positive correlations with readiness for change. Furthermore, different patterns are observed with respect to the relative contribution of process and context factors in explaining the overall readiness for change and the three sub dimensions (i.e. emotion, cognition and intention). Despite these differences, a major conclusion is that the perceived change process and change context are salient antecedents of people's attitude towards change.

Originality/value: This study contributes to the literature by looking at the combined effects and relative contributions of change communication, participation in decision making, trust in top management and history of change on readiness for change. In addition, readiness for change is measured as a multidimensional construct comprised of an emotional, cognitive and intentional component, whereas previous inquiries considered it as a one-dimensional construct.

KEYWORDS: Readiness for change, Psychological Change Climate, Context Factors of Change, Process Factors of Change, Dominance Analysis

INTRODUCTION

Several studies observed that management usually focuses on technical elements of change with a tendency to neglect the equally important human element (Backer, 1995; Beer and Nohria, 2000; Bovey and Hede, 2001; George and Jones, 2001). Despite the popularity of the technological change approach, several studies demonstrated that adopting this perspective does not always lead to successful change (Beer and Nohria, 2000; Clegg and Walsh, 2004). On the contrary, many organizational changes result in outright failure because the employees in the organization are not ready for change. Therefore in order to successfully lead an organization through major change it is important for management to consider both the human and technical side of change. Some authors even go one step further in stating that if people in an organization are not motivated or ready for change, the organizational change is simply doomed to fail (Antoni, 2004; George and Jones, 2001; Porras and Robertson, 1992). From this observation, researchers in the area of organizational change have begun to direct their observation to a range of variables that may foster change readiness (e.g. Armenakis et al., 1993; Chonko et al., 2002; Eby et al., 2000; Oreg, 2006; Jones et al., 2005).

According to Holt and colleagues (2007) readiness for change is manageable. Several OD models (Lewin, 1951; Kotter, 1995; Mento et al., 2002) suggest that the potential sources of readiness for change lie both within the individual and the individual's environment. In addition we observed that instruments appear to measure readiness for change from one of several perspectives, namely, the process, the context, the content, and individual attributes (Holt et al., 2007). The importance of these four drivers of change has been widely acknowledged (Armenakis and Harris, 2002; Bommer et al., 2005; Judge et al., 1999). Studies that considered the combined effect of these four enablers, however, are limited in their scope (Eby et al., 2000; Oreg, 2006; Wanberg and Banas, 2000). More specifically, the results are often based on data restricted to a single organization or sector, leading to very specific conclusions about the impact of change context and change process factors.

Based upon this shortcoming, this contribution explored the effect that change climate exerts on readiness for change in a heterogeneous sample of 56 public and private sector companies. Special attention is drawn to the context and process factors of the change climate because a better understanding of how employees perceive the context and the process of change, will advance our knowledge of the central role change climate plays in the management of programs of planned organizational change.

READINESS FOR CHANGE: A MULTIDIMENSIONAL CONSTRUCT

Armenakis and colleagues (1993) defined readiness for change as involving people's beliefs and intentions regarding the extent to which changes are needed and their perception of individual and organizational capacity to successfully make those changes. It is the cognitive precursor to behaviors of either resistance or support. Although we completely agree with this description of readiness for change, this definition does not cover the whole range of possible change reactions employees' exhibit. Therefore we concur with the suggestion that future research would benefit from assessing readiness for change as a function of attitudes, whereby researchers distinguish among cognitions, emotions and intentions (Piderit, 2000).

A multidimensional view of readiness for change is better able to capture the complexity of 'readiness for change' and provide a better understanding of the relationships between readiness for change and its antecedents. Whereas some variables may have their primary influence on how people feel about change, others may have more impact on what they do, and yet others on what they think about it. Emotional involvement to change, cognitive commitment to change and intention to change reflect three different manifestations of people's evaluation of the change situation (McGuire, 1985). The emotional or affective component refers to how one feels about change; the cognitive component involves what one thinks about change; and the intentional component is the energy and support one puts in the change process.

THE PSYCHOLOGICAL CHANGE CLIMATE

In a recent discussion the need to incorporate context into the study of organizational phenomena has been strongly suggested (Johns, 2006). The context of change in this paper is conceived as the conditions and environment within which employees function. In other words, it refers to the climate perceived by employees during the change process. Noting the powerful role workplace perceptions have on individuals' attitudes and beliefs (Eby et al., 2000; Cunningham et al., 2002), we assume that the unique individual interpretation of the change climate is a crucial catalyst for successful change.

According to Michela and colleagues (1995) psychological climate refers to the perceptual and experiential components of a reciprocal interaction between the organizational environment and the employee. It is conceptualized as "an individual's psychologically meaningful representations of proximal organizational structures, processes and events" and "as a means of explaining an individual's motivational and affective reactions to change"

(Parker et al., 2003). To put it differently, we call psychological climate a set of summary or global perceptions held by individuals about their organization's internal environment – a feeling about actual events based upon the interaction between actual events and the perception of those events (James and Jones, 1974). As such, we propose that the psychological change climate is based on the interpretation of the change context and process.

A number of recommendations about how climate should be measured have been made (Parker et al., 2003). Psychological climate is measured along dimensions such as trust, disengagement, hindrance, esprit, intimacy, aloofness, production emphasis, trust, consideration, support, reward orientation, etc. Not all elements of climate, however, are potent in the degree to which they determine change attitudes. Glick (1985) even argued that climate dimensions should be selected depending on the researcher's criterion variables.

SELECTION OF CLIMATE DIMENSIONS: A SET OF PROCESS AND CONTEXT FACTORS OF CHANGE

In the process of identifying the climate dimensions as potential sources of readiness for change, we reviewed studies that examined the determinants of employees' positive attitude toward organizational change. The selection of papers was confined to publications after 1993, since that was the year in which Armenakis and colleagues (1993) published their seminal work on organizational readiness for change. Next, we screened the abstracts of these papers and included those studies that considered readiness for change as a criterion variable and addressed at least one of the following categories as salient antecedents of readiness for change: organizational climate, process and context factors of change. Finally, we checked the bibliographies for additional references. For our final analysis we added several inquiries that did not refer to the term 'readiness for change' in their title but examined related constructs (Iverson, 1996; Miller et al., 1994; Vakola and Nikolaou, 2005; Wanberg and Banas, 2000). This procedure resulted in the analysis of 16 articles (see appendix for entire list).

This list is not exhaustive of research on readiness for change (for a complete review see Holt et al., 2007). However, we also believe that our selection of papers, which in general are frequently cited studies, provide a good representation of high quality scholarly research. As such these inquiries gave us a first and trustworthy indication of the crucial enablers of readiness for change.

In analyzing these sources, we noted that trust or trustworthy work relationships, quality of change communication, and participation in decision making are salient drivers of

readiness for change. Two of those constructs are strongly linked to the implementation process of change: (1) participation in decision making and (2) quality of shared change information. Trust in top management refers to the conditions or context under which change is occurring. These three antecedents of change climate only cover how current change is perceived. However, change climate is also shaped through previous experiences and beliefs about past events. Thus, the history of change is another aspect that should be incorporated when observing an organization's change climate. Moreover, research on employees' cynicism about change has revealed how the history of organizational change affects the way change is perceived (Reichers et al., 1997; Wanous et al., 2000). In summary, past change experiences are alive in the present and may shape how people act and react in the future (Pettigrew et al., 2001). Therefore it is crucial to take into account that both current and past events condition current and future attitudes toward change.

ANTECEDENTS OF READINESS FOR CHANGE

Context factors

Trust in top management. In mainstream management literature trust is described 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, 1998; Korsgaard et al., 1995). Trust in top management is found to be critical in implementing strategic decisions (Korsgaard et al., 1995) and an essential determinant of employee's openness toward change (Eby et al., 2000; McManus et al., 1995; Rousseau and Tijoriwala, 1999).

One of the most difficult things employees experience when confronted with change is the uncertainty, the ambiguity, the complexity and stressfulness associated with the process and outcomes (Difonzo and Bordia, 1998). Trust can reduce these negative feelings, because it is a resource for managing risk, dispersing complexity, and explaining the unfamiliar through the help of others (McLain and Hackman, 1999). Therefore, readiness for change will be strongly undermined when the behavior by important role models (i.e. leaders) is inconsistent with their words (Kotter, 1995; Simons, 2002). So, management provides an important behavioral example for facilitating employee adjustment during organizational change (Bandura, 1986). When management does not act into accordance with what they say, employees will perceive them as lacking trustworthiness. Furthermore they will attach less credence to the message that change is necessary, loose confidence in the realization of

change benefits, and in conclusion their motivation to support change will drop (Kotter, 1995). From the argument put forth above, we believe that:

Hypothesis 1: Trust in top management is positively related to readiness for change.

History of change. Although an organization's change history is critical (Pettigrew et al. 2001), very few studies actually considered this as an enabler of readiness for change. Despite the limited interest for this variable, it has been found that past failures may limit or even doom efforts at new organizational changes. People tend to develop cynicism about new organizational change, because of negative experiences in the past (Reichers et al., 1997; Wanous et al., 2000). In short, some studies showed that an unsuccessful change history is negatively correlated with the motivation or effort put into making changes.

The expectancy theory (Vroom, 1964) is a very relevant framework because it assumes that beliefs or expectancies about the likelihood of successful organizational change are crucial drivers of employee's motivation to change. The frame of reference to determine the likelihood of successfulness is the past change record. In summary, readiness for change is affected by the track record of successful implementation of organizational changes (Schneider et al., 1996). A positive experience with previous change projects will stimulate employee's readiness; a negative will inhibit their readiness (Bernerth, 2004). Based on these arguments, we propose:

Hypothesis 2: A positive perceived history of change is positively related to readiness for change.

Process factors

Participation in decision making. One of the earlier works that noted the significance of participation of employees in the change process is the landmark study of Coch and French (1948) on 'Overcoming resistance to change'. Through a variety of experiments at the Harwood Manufacturing Plant, they observed that groups that were allowed to participate in the design and development of change had a much lower resistance than those who did not.

Leana (1986) expresses a view that participation is a special type of delegation by which management share authority with employees. Early and Lind (1987) consider this process as means by which employees are given a voice to express themselves. This style of

management affords employees the opportunity to gain some control over important decisions and is in fact a way designed to promote ownership of plans for change (Manville & Ober, 2003). The basic notion is that people will behave in ways that will produce effective change if they can be made to feel part of the decision, rather than depending on the decisions made by others (Dirks et al., 1996).

When employees' commitment towards change needs to be established, it all comes to creating a sense of perceived control over the change process (Cunningham et al., 2002). For example, McNabb and Sepic (1995) found that lack of participation was a major cause of disappointing results with organizational renewal. Employees must believe that their opinions have been heard and given respect and careful consideration (Reichers et al., 1997). Self-discovery through active participation in decision making, combined with the symbolic meaning of organizational leaders demonstrating their confidence in the wisdom of employees, can produce a genuine sense of control over the organizational change and therefore engender increased readiness for change. Consistent with this discussion, we formulate the following hypothesis:

Hypothesis 3: Participation in decision making is positively related to readiness for change

Quality of change communication. The challenge that constantly returns in all change projects is management's struggle to overcome employees' persistent attitude to avoid change. The answer not only lies in the participative leadership style of management but also in the communication with organizational members. Indeed, several authors claim that communication of change is the primary mechanism for creating readiness for change among organizational members (Armenakis and Harris, 2002; Bernerth, 2004; Miller et al., 1994).

Communication is vital to the effective implementation of organizational change (Bordia et al., 2004; Schweiger and Denisi, 1991). Poorly managed change communication often results in widespread rumors, which often exaggerate the negative aspects of the change and build resistance towards change. Thus the quality of communication will often determine how employees fill in the blanks of missing change information. If the quality is poor, people tend to develop more cynicism (Reichers et al., 1997). For instance, the absence of timely communication by management or organizational silence creates situations in which employees may learn about the change from external organizational sources such as news media (Richardson and Denton, 1996). Receiving such initial information from outsiders may

surprise employees and bias their perception of change formulation and implementation by management. Accordingly management should try to keep such surprises to a minimum, because people who feel excluded from such essential information are more likely to develop cynical attitudes towards organizational change (Reichers et al., 1997). Therefore routine notice about what is happening is an absolute must.

Not only the fact that change projects should be announced in a timely fashion, and preferably by management, at least as important is why the change is happening. In other words, management should answer the question why change is crucial. The lack of a perceived need for change among change recipients is found to be a key source of resistance, and also an important barrier to the successful implementation of change (Pardo del Val and Martinez Fuentes, 2003). In the light of these findings, Bommer and colleagues (2005) noted that articulating a clear and timely change vision is essential in order to develop a felt need to change. Employees need to experience a 'felt need' that is strong enough to create a state of dissonance between the current situation and what is required (Armenakis et al., in press). Without transparent, clear and accurate communication, a transformation effort can easily dissolve into a list of confusing and incompatible projects that can take the organization in the wrong direction or nowhere at all (Kotter, 1995). To conclude, the quality of communication will contribute to the justification of the reasons why change is necessary, reduces the change related uncertainty and plays a crucial role in shaping employees' readiness for change. Thus:

Hypothesis 4: Good quality of change communication is positively related to readiness for change.

METHOD

Data collection procedure

In this study a self-administered survey was carried out in 56 Belgian companies. Before questionnaires were sent out, we first approached top management to explain our intentions to gather data from a random sample of employees in their organizations. Upper management also acknowledged that each firm was undergoing an important change process. Questionnaires were first pretested on a sample of ten people. The ten respondents were asked to determine whether the items used for each variable were relevant? This exercise was done to increase the content validity of the research instrument.

In the main study, managerial and non-managerial personnel were asked to respond to statements related to four psychological change climate dimensions (i.e. trust in top management, history of change, participation in decision making and quality of change communication) and readiness for change (emotional dimension, cognitive dimension and intention dimension). Respondents were given the option of returning the surveys in a sealed envelope via mail, or directly to the research team. A member of the research team visited the company one week following survey distribution. This encouraged staff to return surveys to the researcher at this time.

Population

A two stage sampling procedure was used to select our participants. First a stratified sample of public and private sector organizations was drawn from the most important business areas in Belgium. In total 56 organizations were included for analysis. Approximately 63 per cent of the sample involved private sector organizations (n = 35). The core activities of the subset of private sector organizations were very distinct incorporating high technology firms (e.g. biotechnology), manufacturing firms (e.g. textile, metal industry, etc), firms from the pharmaceutical industry but also service delivering companies such as financial institutions. The functions carried out by public sector organizations involve education, health services, environmental protection, and law enforcement.

In the second step of the sampling procedure we asked the human resource managers of each company to use their databases to generate a random sample of managerial and non-managerial employees of their organizations. Respondents completed the questionnaire voluntarily. A total of 1,559 individuals participated in this inquiry, including responses of 930 people holding a managerial position and 629 people holding a non-managerial job position. In addition, 827 responses were collected from the private sector and 732 responses from the public sector. The average response rate within organizations was 36 per cent. After cleaning the initial dataset for response patterns and missing values, a total of 1,488 respondents were included in our analyses.

Measures and scales

Multi-item measures were used to ensure adequate measurement of each variable. In some cases scales were adapted from pre-existing measures, while others were developed for this study. Reliability of the measures was assessed using Cronbach's alpha coefficient, and these are presented in Table 1. As can be seen from this table, all measures used were considered to have adequate internal consistency. For each item from the survey measure, as listed in Table 2, the respondents were asked to indicate to what extent the statements were applicable to their situation on a five-point Likert type scale (i.e. 1 = totally disagree and 5 = totally agree).

Insert Table 1 about here

Dependent variables (DV's). The readiness for change variables were gauged by scales adapted from Boonstra and Bennebroek-Gravenhorst (1998), Metselaar (1997) and Oreg (2006). The emotional dimension (EMORFC), the cognitive dimension (COGRFC), and the intentional dimension (INTRFC) consist of three items (see Table 2) and demonstrated good internal consistency (see Table 1).

Insert Table 2 about here

Independent variables (IV's). Trust in top management (TRUST) was assessed with a three-item scale (see Table 2) based on instruments developed and used by Albrecht and Travaglioni (2003), and Kim and Mauborgne (1993). The internal consistency of this scale was good (see Table 1). The measurement of the second context variable 'history of change' (HISTORY) was adapted from Metselaar (1997) and is comprised of four items (α = .73).

The process variable 'participation in decision making' (PARTD) was measured with a six-item scale (see Table 2). Items were borrowed from Lines (2004) and Wanous and colleagues (2000). The reliability of this scale was found to be more than adequate (α = .78). Finally, to measure 'quality of change communication' (QUALCOM) we used six items from Miller and colleagues (1994). This scale also yielded good internal reliability (α = .83).

Assessing adequacy of measurement model

To assess the dimensional structure of readiness for change and the psychological change climate constructs we subjected all items to a confirmatory factor analysis. This analysis was performed on the entire sample using the Analysis of Moment Structures program (AMOS Version, 6.0). The aim of this procedure was to establish the construct validity of the items used to measure the latent variables. The measurement model, consisting of seven correlated latent factors (three dimensions of readiness for change and four psychological change climate dimensions), fitted the data very well with exception for the chi-square statistic. This chi-square statistic was significant ($\chi^2 = 1300.36$, p < .001), indicating a difference between the hypothesized model and actual structure. However, because structural equation modelling is extremely sensitive to sample size, in judging goodness of fit, the chi-square statistic should be divided by the degrees of freedom (referred to as the normed chi-square, NC, Kline, 2004). Although there is no clear-cut value to use for NC in conducting a goodness of fit, Kline (2004) reported that researchers have used values ranging from 2.0 to 5.0. Our NC falls within that range ($\chi^2 = 1300.36$/ df = 329, 3.93). Besides this NC fit index we also calculated fit indices that are less affected by sample size. Our first measure of absolute fit was the 'Goodness-of-Fit Index' (GFI = .94). The value of this index was higher than the generally accepted .90 level. Also our 'Root Mean Square Residual' (RMR = .04) was smaller than the .10 value, and the 'Root Mean Square Error of Approximation' (RMSEA = .05) was considerably lower than the recommended level of .08. In addition, both incremental fit indices 'Normed Fit Index' (NFI = .92) and 'Tucker-Lewis Index (TLI = .93)' were above the recommended .90 level.

Despite that all abovementioned indices suggested that the data fitted our CFA model, we examined the Modification Indexes (MI) as an important source of information related to misspecification. In reviewing these MI's we believe there was no reason for re-specification of our initial model. The standardized factor loadings ranged from .44 to .88 (see Table 2) and the equivalent unconstrained regression weight estimates were statistically significant. According to Kline (2004) a standardized value higher than .50 on its respective factor demonstrates a reasonably high factor loading. Since all standardized values were found to be higher than .50 on their respective factors, with exception for the items PARTD4, PARTD5 and PARTD6 (see Table 2), we believe that our measures did an excellent job at representing their underlying latent structure.

RESULTS

Descriptive statistics

In Table 1 all means, SD's and correlations among the variables measured are displayed. A first observation was that for all scales the respondents on average scored significantly higher than the theoretical midpoint (lowest 3.09 through highest 4.17). In addition, strong correlations (ranging from .33 to .83) were found between the subscales of readiness for change and the overall scale that measured readiness for change (composite measure of three subscales, OVRFC). Strong ties were observed between those dimensions, indicating that important dynamics occur between the ways people think (COGRFC), feel (EMORFC), and act towards change (INTRFC). CFA provided evidence to measure the affective, the cognitive and the intentional dimensions of readiness for change as separate constructs, however, the high intercorrelations among these dimensions also suggested a composite measure of readiness for change. This overall measure involved the simple average of the sum of scores of responses for the total set of nine items.

Measuring the degree and impact of multicollinearity

Before going further with testing our hypotheses, multicollinearity tests were performed. A first indicator for checking possible collinearity is the correlation matrix. The maximum correlation found between our independents was .54. We also calculated (1) the VIF values, and (2) used the condition indices and the regression coefficient variance-decomposition matrix to check the impact of collinearity. The VIF values indicated inconsequential collinearity. No VIF values exceeded the recommended cut-off value of 10. In the second step we examined the condition indices. No condition index was greater than 30.0, making it unnecessary to examine the regression coefficient variance-decomposition matrix. Based upon these tests one can assume that multicollinearity was unlikely.

Hierarchical regression analyses

To test our hypotheses we conducted four hierarchical regression analyses with the composite measure (OVRFC) and the three component measures (COGRFC, EMORFC and INTRFC) as DV's. The context variables and process variables were entered respectively in step 2 and step 3 of our regression analyses. In step 1 we controlled for the position held by the respondents (managerial versus non-managerial, JOB POSITION), and the sector in which

they were employed (i.e. public versus private sector, SECTOR). Because literature noted that people's perceptions and work motivations differed depending on sector and job position, controlling for both characteristics was necessary. Several authors have argued that the preponderance of the external market oriented emphasis and flexibility orientation of private sector create the perfect environment to become more tolerant for innovation and implementation of change (Boyne, 2002; Bozeman & Kingsley, 1998). With respect to job position, hierarchical differentiation theory advanced that managerial and non-managerial respondents perceive change differently. This was also corroborated by Strebel (1998), who noted that managers often view change as an opportunity for the business and themselves, whereas employees typically consider change as something disruptive, intrusive and likely to involve loss.

As displayed in Table 3, the total amount of variance explained by the set of six variables accounted for respectively 89 per cent in OVRFC, 42 per cent in COGRFC, 27 per cent in EMORFC, and 14 per cent in INTRFC. As expected the control variables that were included in our analyses had significant effects in six of the eight tests. People working in the public sector reported lower scores on OVRFC, COGRFC, EMORFC and INTRFC. In addition, people holding a non-managerial position within their companies had only lower scores on OVRFC and COGRFC, but non-significant differences were observed in the case of EMORFC and INTRFC.

Insert Table 3 about here

Consistent with our hypotheses, we found that both HISTORY and TRUST were significantly related to employees' attitudes about change. Positive correlations were noted for employees that believed their companies have an excellent change record and OVRFC, COGRFC, EMORFC, INTRFC (hypothesis 2). The regression analyses also revealed positive and significant relationships between TRUST and OVRFC, COGRFC and EMORFC (hypothesis 1). No such relationship was noted for INTRFC.

Finally, our hypotheses with regard to the process factors PARTD and QUALCOM were supported (hypotheses 3 and 4). Both change climate variables were significantly and positively related to our four DV's (OVRFC, COGRFC, EMORFC and INTRFC).

Dominance analyses: Determining the relative importance of our predictors

An aspect of any multiple regression analysis is the determination of the importance of various predictors (Budescu, 1993). However, several articles by Kruskal (1987), Kruskal and Majors (1989) and Budescu (1993) argued that hierarchical regression analysis is limited in its capacity for indicating the relative importance of more than one set of study variables to prediction. In particular, the problem with hierarchical regression analysis is that very different results can be obtained depending on the order of entrance of variables into the equation. This can be highly problematic when the predictors are interrelated (which is often the case in the real world), and when the order of entry of sets of variables is not clearly specified by theory (Cohen and Cohen, 1983; Eby et al., 2000). In other words, when one wants to check the relative importance of context or process variables on RFC, one may reach different conclusions depending on the order in which variables were entered.

An alternative technique for determining the relative importance of sets of predictors is dominance analysis (Budescu, 1993). Dominance analysis was applied in the Eby and colleagues (2000) study and involved a two step procedure. The first step was a 'qualitative way' of looking at dominance. Dominance is defined as the pairwise relationship that can be tested for all p(p-1)/2 pairs of variables included in the model. For each dependent variable we computed 7 separate regression equations based on all possible ordering of sets of variables. Pairwise dominance of each set of variables was determined by comparing each pair of sets, across all rows (submodels) for which both variable sets were non-empty (see Table 4). Consistency of responses across all possible pairings was indicative of dominance. Inconsistency of responses across all possible pairings indicated equally important predictors (Budescu, 1993). For example, in row 1 of Table 4 with OVRFC as DV, set B was greater than sets C and A, and set C was greater than set A. In row 2, set B was greater than set C. In row 3, set C was greater than set A. Finally in row four, set B was found greater than set A. In sum, all pairwise comparisons were consistent, indicating that the context factors (set B) were dominant to the process factors (set C) and the control variables (set A). This implies that the context factors of change (i.e.TRUST and HISTORY) were the most useful set in predicting OVRFC, followed by the set of process variables (set C) and control variables (set A).

Insert Table 4 about here

Similar pairwise comparisons and analyses were conducted for the DV's COGRFC, EMORFC and INTRFC. A similar pattern as in OVRFC emerged for COGRFC. Again the context of change climate was more important than the process factors followed by the set of control variables. In the case of INTRFC and EMORFC, however, we observed that the process variables were dominant over the other sets of predictors. No consistent pairwise comparisons were found between sets A and B, indicating that the context factors and control variables were equally important (Budescu, 1993).

After having qualitatively identified dominance or equality across pairs in step 1, step 2 of the dominance analysis involved a quantitative assessment of the relative contribution of each set of predictors. This quantitative measure of importance [M(Cxi)] yielded a useful decomposition of the models' squared multiple correlation (R^2) (Budescu, 1993). We computed the average (R^2) for the three sets of variables, across all possible ordering sets (see Table 5). The context variables accounted for 51.3 per cent of the total explained variance in OVRFC, the process variables accounted for 47.1 per cent and the control variables only for 1.6 per cent of the total variance. In the case of COGRFC, we observed that 51.9 per cent of the total explained variance was attributed to the context factors, 40.4 per cent to the process factors and 7.7 per cent to the control variables. The dominant set of predictors 'process variables of change climate' with INTRFC as DV, accounted for 60.6 per cent of the total explained variance, followed by the context variables and control variables that each accounted for 19.7 per cent. Finally, we computed that 58.9 per cent of the total explained variance in EMORFC was for the account of the process variables, 26.3 per cent for the account of the context variables and 14.8 per cent for the account of the control variables.

Insert Table 5 about here

DISCUSSION

The aim of this paper was to explore the role and relationships of psychological change climate in understanding the way organizational members feel, think and act when confronted with organizational change. More specifically, this study examined the potential effects of trust in top management, history of change, participation in decision making and quality of change communication on employees' readiness for change. In support of our expectations we found that both context and process factors of the change climate were strongly correlated with the cognitive, emotional and intentional dimension of readiness for change. Although regression analyses demonstrated that the context factors and process factors - with exception for TRUST and INTRFC - had significant and positive correlations with the four DV's, dominance analysis revealed that the relative contribution of these two groups of psychological change climate variables was different across the four outcome variables. In particular, the findings showed that both process factors PARTD and QUALCOM were the most important set of predictors in explaining EMORFC and INTRFC, whereas in the case of OVRFC and COGRFC the context factors HISTORY and TRUST were the most crucial variables. These differences provide a reason for the measurement of readiness for change as a multifaceted construct (Holt et al., 2007; Armenakis et al., 2007; Piderit, 2000).

The control variables in this study

A first important remark is that this study confirmed the role of sector in shaping employees feelings, cognitions and intentions about change. A fairly broad cross section of people working for Belgian organizations undergoing change reported significant differences between the public and private sector pertaining OVRFC and its three dimensions. Keeping in mind the boundaries and limitations of this study, the findings add modified support to the descriptive literature which asserted differences between the private and public sectors. This study is in particular promising because research on differences in the internal context of private and public sector organizations is largely unknown (Boyne, 2002). Although Boyne's seminal work (2002) provided limited support of sharp differences between public and private management, the differences they found partly explain the differences we encountered. More specifically, the level of bureaucracy in the public sector is likely to be a major factor in the emergence of organizational climates that focus on stability and controllablity. In other words, typical features of public agencies like extensive formal control mechanisms (Rainey,

Backoff & Levine, 1976), the lack of rewards or incentives for successful innovations, and the penalties for violation of established procedures (Fottler, 1985), are likely to constrain the readiness for change.

A second observation for the set of control variables is that JOB POSITION was significantly related to OVRFC and COGRFC. In concordance with previous studies, the managerial – non-managerial position people hold should not be neglected in the prediction of any type 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 lead to differences in the perception of readiness for change (Armenakis et al., 1993). In the context of change, managers are held responsible for the communication of change, the announcement of change, and the introduction of change. To put it differently, they operate as change strategists and change agents and perceive change as an opportunity for the business and themselves. Non-managerial personnel, however, are often those who undergo and experience direct consequences of change, seeing change as disruptive. In short, our findings support Strebel's (1998) observation that management is more likely to report higher levels of readiness for change than people in non-managerial positions.

The process factors and context factors of psychological change climate

This study confirmed that the degree of buy-in in change among change recipients was a function of their perceptions about trust in top management, history of change, quality of change communication and participation in decision making. These four psychological change climate variables are closely tied to what Armenakis and colleagues (2007) described as change recipient beliefs that play a key role in the ultimate success or failure of organizational change initiatives.

Trust in top management refers to 'the principal support belief'. This belief addresses questions such as 'Do the principals of companies genuinely support the change?' Also a common phrase related to this support is "walking the talk". Simmons (2002) called this 'behavioral integrity' and formulated it as the alignment or misalignment of words and deeds. A recurring recommendation made by organizational change gurus is the key role of executive management in shaping an atmosphere of trust, a general feeling that employees can count on

the management team to do what is best for the organization and its members (Kotter, 1995; Zander, 1950). In alignment with those gurus and several empirical studies (Gomez and Rosen, 2001; Schneider et al., 1996) we call for the necessity of establishing trusting relationships between management and employees as a starting basis for adopting organizational change initiatives.

In building a belief of trust in top management, crucial roles are taken by participation in decision making and the communication of change (McElroy, 2001; Sekhar and Anjaiah, 1996). Both process factors are respectively linked to what literature describes as beliefs of efficacy and beliefs of discrepancy (Armenakis et al., 2007). The belief of efficacy in the context of change is defined as the perceived capability to implement the change initiative (Bandura, 1986), and found to exert a positive influence on the buy-in attitude of change recipients (Devos et al., in press; Jimmieson et al., 2004). Through active participation people gradually build a sense of ownership and control over the change project. Also the context variable 'history of change' and in particular the successful track record of implementing change fosters efficacy beliefs. Finally, the quality of communication helps establishing the belief that a need for change exists (i.e. discrepancy belief). Literature is replete of studies demonstrating that change recipients' discrepancy beliefs can be encouraged through the information provided by change agents why an organizational change is needed (e.g. Armenakis and Harris, 2002; Bommer et al., 2005; Miller et al., 1994).

Because the context factors TRUST and HISTORY are less directly manageable change aspects than the process factors PARTD and QUALCOM, change agents should be attentive in creating conditions that allow participation of the front office in strategic decisions and also encourage a climate of timely, open and honest information sharing. In summary, management has to possess certain skills to facilitate employees' adjustment to change. Both skills 'involvement of employees in change related decision making' but also 'timely and unambiguous change communications' are features of transformational leadership (Podsakoff et al., 1990). In a recent paper, transformational leadership was found to be one of the most effective leadership styles to install the necessary conditions for a readiness for change climate (Bommer et al., 2005).

To build a climate for thriving change throughout the organization, managers should facilitate working conditions that allow employees' involvement in decision making, promote open and honest communication about change, establish trustworthy relationships with employees, and contribute to a successful change history. Although these psychological change climate variables are measured at the individual level, through social interaction these

perceptions may coalesce at the organizational level. Patterson and colleagues (2005) identified trust in top management, participation in decision making, and the quality of change communication as organizational climate dimensions that represent the 'human relations climate model'. In their study, Jones and colleagues (2005) suggested that the human relations culture exerts a positive effect on readiness for change. Eby and colleagues (2000) also observed that flexible policies and procedures, which are artefacts of the human relations culture, were positively related to employees' evaluations of whether or not their organization was ready to cope with changes. This brings us to the important question whether management should put its energy into influencing the perceptions of all employees on change climate. We believe the challenge is going to be the alignment of the mindsets among opinion leaders, who are the role models of how others within the company should feel, think and act in times of change.

Limitations, suggestions for future research directions and concluding remarks

Although this inquiry yields some interesting findings, it suffers a number of limitations and therefore requires further research. Data for both predictor and criterion variables were collected in one survey, raising the concern for monomethod bias. 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. However, this criterion is very unreliable in assessing common method variance, because in the case of large sample sizes even small correlations become strongly significant. Instead we performed Harman's one factor model test (Harman, 1976). A model with separate factors for the scales was preferred over a common factor model, indicating that common method variance was not such a large validity threat in this inquiry.

A second limitation is the cross sectional character of the study. Survey data were only collected once, after organizational change had been underway. This non-experimental research design made it difficult to draw causal inferences, however we believe literature provides evidence that readiness for change is affected by the psychological climate. For example, a recent experimental simulation study demonstrated that similar context and process variables had causal effects on openness to change (Devos et al., in press). Therefore, we believe that the use of multiple research strategies like cross sectional survey designs in combination with experiments provide an alternative to the often time-consuming longitudinal research design as a way to uncover causal relationships. Despite this alternative, we also

concur with the argument that if we really want to unravel the organizational change process, the collection of data before, after and during the organizational changes will be required (Van de Ven & Huber, 1990).

Due to the correlational nature of this study we cannot infer the relationships that exist between the emotional, cognitive and intentional dimensions of readiness for change. Future studies should therefore embed readiness for change into the framework of the 'Theory of Planned Behavior (TBP)' (Ajzen, 1991). This theory assumes that people's evaluation of the change outcome (i.e. affect and cognition) determines their intentions. To our knowledge, the paper of Jimmieson, White and Zadjdlewicz (2007) on predicting employee intentions to identify with a re-branded hotel was a first attempt to utilize the TPB as a framework for understanding readiness for change.

A fourth point, is that further theoretical and empirical work is needed concerning the construct validity of overall readiness for change and its three dimensions. Should we consider readiness for change as a one-dimensional or multidimensional construct? Although Holt and colleagues (2007) provided us with a reliable and valid instrument, no distinction was made between emotional, cognitive and intentional responses.

Despite the limitations of this study, the results reported should be regarded as a preliminary step in assessing the impact of psychological change climate on the three dimensions of readiness for change. One of the crucial contributions of this study is that we adopted a positive psychology approach, rather than following the mainstream, which assumes that employees automatically resist change (Dent and Goldberg, 1999). To put it differently, we believe that organizational change research that emphasizes on the strengths rather than weaknesses and malfunctioning will provide some new interesting insights that expand our knowledge of the pertinent role of human functioning in the organizational change process (Abrahamson, 2004; Seligman and Csikszentmihaly, 2000). To our knowledge this inquiry is one of the very few studies that acquired data on the relationships of context and process factors with readiness for change in a large and heterogeneous set of companies, whereas previous studies were limited to collecting data in one company or sector. Furthermore, relying on the technique of dominance analysis (Budescu, 1993) allowed us to compute the relative contribution of our IV's in predicting the DV's. Based upon these analyses we may conclude that both process and context factors of change explain a substantial amount of variance in readiness for change. Another point is that this inquiry focused at the receiver's end of the change process, rather than examining change from the change agent or change strategist's perspective. Finally, we believe our inquiry is a significant

contribution to the stream of literature that highlights the importance of the human dimension in change (Antoni, 2004; George and Jones, 2001; Porras and Robertson, 1992).

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TABLE 1:

Study variables and correlations

	M	SD	1	2	3	4	5	6	7	8
OVRFC	3.47	.52	(.87)							
COGRFC	3.55	.68	.83	(.70)						
INTRFC	4.17	.62	.33	.38	(.88)					
EMORFC	3.64	.75	.45	.52	.60	(.85)				
TRUST	3.14	.73	.60	.48	.21	.35	(.72)			
HISTORY	3.37	.64	.76	.50	.18[a]	.28	.49	(.73)		
PARTD	3.48	.69	.75	.42	.21	.26	.43	.29	(.78)	
QUALCOM	3.09	.76	.56	.48	.31	.47	.54	.34	.47	(.83)

Note: [a] For this sample size, $p < .001$ for $r = .18$
OVRFC: overall readiness for change; COGRFC: cognitive dimension of readiness for change; INTRFC: intention dimension of readiness for change; EMORFC: emotion dimension of readiness for change; TRUST: trust in top management; HISTORY: history of change; PARTD: participation in decision making; QUALCOM: quality of change communicatrion.

TABLE 2:

Factor loadings of items on their respective constructs

	Items	Factor loadings
Emotional component of readiness for change		
I find change refreshing	EMORFC1	.78
I have a good feeling about the change	EMORFC2	.81
I experience change as a positive process	EMORFC3	.83
Intention component of readiness for change		
I am willing to make a significant contribution to change	INTRFC1	.79
I want to devote myself to the process of change	INTRFC2	.88
I am willing to put energy into the process of change	INTRFC3	.86
Cognitive component of readiness for change		
Most change projects that are supposed to solve problems around here will not do much good*	COGRFC1	.67
Overall the proposed changes are for the better	COGRFC2	.70
I think that most of the changes will have an negative effect on the clients we serve*	COGRFC2	.62
History of change		
Our organization has always been able to cope with new situations	HISTORY1	.56
Past changes generally were successful	HISTORY2	.76
Announced changes usually came to nothing in the past*	HISTORY3	.68
Our company has proven to be capable of major changes	HISTORY4	.54
Trust in top management		
The executive management fulfills its promises	TRUST1	.70
The executive management consistently implements its policy in all departments	TRUST2	.69
The two way communication between the executive management and the departments is very good	TRUST3	.67
Participation in decision making		
Decisions concerning work are taken in consultation with the staff members who are affected	PARTD1	.82
Changes are always discussed with the people concerned	PARTD2	.84
Front line staff and office workers can raise topics for discussion	PARTD3	.57
Our department provides sufficient time for consultation	PARTD4	.47
Problems are openly discussed	PARTD5	.47
It is possible to talk about outmoded regulations and ways of working	PARTD6	.44
Quality of change communication		
I am regularly informed about how the change is going	QUALCOM1	.76
Information provided on change is clear	QUALCOM2	.77
Information concerning the changes reaches us mostly as rumors*	QUALCOM3	.58
There is a good communication between project leaders and staff members concerning the organization's policy towards changes	QUALCOM4	.72
We are sufficiently informed of the progress of change	QUALCOM5	.59
It is clear how the objectives of change can be put into practice	QUALCOM6	.56

* reversed scoring

TABLE 3:

Hierarchical regression analysis predicting OVRFC, COGRFC, EMORFC and INTRFC

	OVRFC	COGRFC	EMORFC	INTRFC
	b(SE)[a]	b(SE)	b(SE)	b(SE)
Step 1 Control Variables				
JOB POSITION	-.044(.009)***	-.133(.028)***	.008(.035)	.046(.031)
SECTOR	-.054(.009)***	-.161(.028)***	-.277(.035)***	-.203(.031)***
Step 2 Context Variables				
HISTORY	.443(.008)***	.328(.024)***	.116(.030)***	.061(.027)*
TRUST	.038(.008)***	.113(.024)***	.060(.030)*	-.004(.027)
Step 3 Process Variables				
PARTD	.395(.008)***	.186(.023)***	.073(.029)*	.108(.026)***
QUALCOM	.056(.008)***	.167(.023)***	.354(.028)***	.185(.025)***
Adjusted R^2	.891	.416	.269	.136

Note: [a] beta regression weights displayed in this table are those computed based on the full model; *** p<.001; **p<.01; *p<.05
OVRFC: overall readiness for change; COGRFC: cognitive dimension of readiness for change; INTRFC: intention dimension of readiness for change; EMORFC: emotion dimension of readiness for change; TRUST: trust in top management; HISTORY: history of change; PARTD: participation in decision making; QUALCOM: quality of change communicatrion.

TABLE 4:

Dominance analysis with variable sets

		Additional contribution of		
DV: OVRFC, Variable set[a]	R^2	Set A	Set B	Set C
-	0	.032	.644	.609
Set A	.032	-	.625	.583
Set B	.644	.013	-	.243
Set C	.609	.006	.278	-
Set A, set B	.657	-	-	.234
Set A, set C	.615	-	.275	-
Set B, set C	.887	.004	-	-
Total R^2 (set A, set B, set C)	.891	-	-	-
DV: COGRFC, Variable set	R^2	Set A	Set B	Set C
-	0	.053	.325	.277
Set A	.053	-	.296	.248
Set B	.325	.023	-	.072
Set C	.277	.024	.120	-
Set A, set B	.348	-	-	.068
Set A, set C	.301	-	.115	-
Set B, set C	.397	.019	-	-
Total R^2 (set A, set B, set C)	.416	-	-	-
DV: INTRFC, Variable set	R^2	Set A	Set B	Set C
-	0	.029	.051	.102
Set A	.029	-	.045	.101
Set B	.051	.023	-	.057
Set C	.102	.028	.006	-
Set A, set B	.074	-	-	.058
Set A, set C	.130	-	.002	-
Set B, set C	.108	.024	-	-
Total R^2 (set A, set B, set C)	.132	-	-	-
DV: EMORFC, Variables set	R^2	Set A	Set B	Set C
-	0	.053	.133	.222
Set A	.053	-	.115	.203
Set B	.133	.035	-	.105
Set C	.222	.034	.016	-
Set A, set B	.168	-	-	.101
Set A, set C	.256	-	.013	-
Set B, set C	.238	.031	-	-
Total R^2 (set A, set B, set C)	.269	-	-	-

Notes: [a]Set A = control variables (SECTOR and JOB POSITION), Set B = context variables of psychological change climate (TRUST and HISTORY), Set C = process variables of psychological change climate (PARTD and QUALCOM)

TABLE 5:

Quantitative measures of importance for sets of variables

	[a]Set A	Set B	Set C
DV: OVRFC			
[b]K = 0	.032	.644	.609
K = 1	.010	.452	.413
K = 2	.004	.275	.234
M (Cxi)	.014	.457	.419
Relative percentage	1.6%	51.3%	47.3%
DV: COGRFC			
K = 0	.053	.325	.277
K = 1	.024	.208	.160
K = 2	.019	.115	.068
M (Cxi)	.032	.216	.168
Relative percentage	7.7%	51.9%	40.4%
DV: INTRFC			
K = 0	.029	.051	.102
K = 1	.026	.026	.079
K = 2	.024	.002	.058
M (Cxi)	.026	.026	.080
Relative percentage	19.7%	19.7%	60.6%
DV: EMORFC			
K = 0	.053	.133	.222
K = 1	.035	.066	.154
K = 2	.031	.013	.101
M (Cxi)	.040	.071	.159
Relative percentage	14.8%	26.3%	58.9%

Notes: [a]Set A = control variables (SECTOR and JOB POSITION), Set B = context variables of psychological change climate (TRUST and HISTORY), Set C = process variables of psychological change climate (PARTD and QUALCOM). [b] (K = 0, 1, 2; where K are the number of additional sets taken into account). M(Cxi) indicates the average usefulness of each set of variables. Relative percentages indicates the relative importance of each set of variables to overall prediction.

APPENDIX 1:

Antecedents of readiness for change

	Context	*Process*
Armenakis, Harris & Mossholder (1993) Key construct: readiness for change	1) social and interpersonal dynamics (interaction management – employees)	1) message communication - persuasive communication - management of information 2) active participation
Miller, Johnson & Grau (1994) Key construct: openness to change		1) communication of information - information about change - helpfulness of information
Iverson (1996) Key construct: employee acceptance of organizational change	1) IR climate (i.e. degree of cooperation management – union, fairness of interaction) 2) environmental opportunity (i.e. jobs available external to organization) 3) role conflict (i.e. inconsistency in job roles)	
Hanpachern, Morgan & Griego (1998) Key construct: readiness for change	1) social dynamics and relationships with management (i.e. load versus power)	
Eby, Adams, Russell & Gaby (2000) Key construct: readiness for change	1) trust in peers 2) flexibility in policies and procedures (i.e. climate)	1) participation
Wanberg & Banas (2000) Key construct: openness to change		1) communication of information (change specific information) 2) participation
Armenakis & Harris (2002) Key construct: readiness for change		1) message communication - persuasive communication - management of information 2) active participation
Chonko, Jones, Roberts & Dubinsky (2002) Key construct : readiness for change	1) environmental turbulence 2) organizational climate & culture 3) organization policies 4) learning orientation	
Cunningham C., Woodward, Shannon, MacIntosh, Lendrum, Rosenbloom & Brown (2002) Key construct: readiness for change	1) active job (i.e. high decision latitude job, high autonomy, high learning opportunities) 2) shift work	
Bernerth (2004) Key construct: readiness for change		1) message communication
Jones, Jimmieson & Griffiths (2005) Key construct: readiness for change	1) human relations culture	1) reshaping capabilities - involvement - information
Madsen, Miller & Johns (2005) Key construct: readiness for change	1) work relationships	
Vakola & Nikolaou (2005) Key construct: positive attitude towards change	1) work relationships	
Desplaces (2007) Key construct: readiness for change	1) objective and subjective work setting 2) perceived organizational support	
Narayan, Steele-Johnson, Delgado & Cole (2007) Key construct: readiness for change	1) choice 2) social support	
Holt, Armenakis, Feild & Harris (2007) Key construct: readiness for change	1) internal context: assessing discrepancy	1) process: assessing leadership support