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Employees' concerns about change and commitment to change among Italian organizations: the moderating role of innovative work behavior

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Despite being regarded as a critical psychological process influencing the effectiveness of change initiatives, concerns about change have not received empirical attention in the organizational change literature. The present study addresses this issue by examining the relationships among employees' concerns about change (conceptualized as including concerns about the contents and benefits of change, and concerns about mastering the change), commitment to change and innovative work behavior. First, in a hospital undergoing a major administrative change ($N = 435$), concerns about change were generally found to be negatively related to affective and normative commitment to change and positively related to continuance commitment to change. These results were replicated in a chemical and pharmaceutical company undergoing a technological change ($N = 113$), except that concerns about change were unrelated to normative commitment to change. In addition, employees' innovative work behavior moderated the relationship of concerns about change to affective commitment to change such that the relationship was negative when innovative behavior was low but nonsignificant when innovative behavior was high. This study provides scholars and practitioners with a theoretically and empirically grounded framework for assessing employees' concerns about change, and moves research a step forward into identifying the behaviors that organizations should support to counteract this psychological threat.

Keywords: affective; concerns about change; innovative work behavior; normative and continuance commitment to change; organizational change

Introduction

In today's globalized environment, the effectiveness of organizational change, which is crucial for competitiveness, has become increasingly dependent on firms' ability to foster employees' active support for change programs (Armenakis and Bedeian 1999). The growing interest in the understanding of employees' reactions to change reflects the belief among researchers and practitioners that individuals' psychological experience can dramatically affect successful implementation of change initiatives (Herold, Fedor and Caldwell 2007). Over the past decade, research has accordingly shifted from a predominantly macro- or system-level approach to a more micro- or individual-level perspective, with the aim of better understanding the role played by individual factors in enhancing or inhibiting the effectiveness of change processes (Vakola and Nikolaou 2005). Gaining deeper knowledge on individual factors affecting change efforts is

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essential for building strategies that ensure organizational members' involvement and prevent potential failures of change initiatives.

At the individual level, a variety of change-related attitudes and perceptions have been examined, including attitudes toward change (Darwish 2000; Giangreco and Peccei 2005; Elias 2009; Portoghesi et al. 2012), disruptions in sense-making (McKinley and Scherer 2000), ambivalence toward change (Oreg and Sverdlik 2010), openness to change (Iverson 1996; Gagné, Koestner and Zuckerman 2000; Chawla and Kelloway 2004) and commitment to change (e.g. Herscovitch and Meyer 2002; Cunningham 2006; Meyer, Srinivas, Lal and Topolnytsky 2007). These variables represent relevant psychological states that are experienced by employees who undergo critical organizational changes. In the present study, we intend to extend this research by looking at another form of change-related attitude, namely employees' *concerns about change* (Bareil, Savoie and Meunier 2007). As we explain below, we conceptualize concerns about change as reflecting the individual's appraisal of the change as potentially affecting his/her work role (i.e. *concerns about the content of change*), bringing few positive outcomes (i.e. *concerns about benefits of change*) and requiring demanding adjustment to his/her skills (i.e. *concerns about mastering change*). Following the transactional model of stress (Lazarus and Folkman 1984), such appraisal is thought to include both a cognitive and an emotional component. As concerns about change denote a potential barrier to successful implementation of change programs, it is important to assess their contribution to employees' support for change. In this respect, research has acknowledged the importance of commitment to change as a key indicator of employees' willingness to support change (Meyer et al. 2007). Therefore, the first purpose of this study is to propose a measure of concerns about change and examine its relationship with employee commitment to change.

Likewise, from both research and practical perspectives, it is relevant to examine how people can successfully overcome their concerns about change. We argue that the expected negative relationship of concerns about change to employee affective commitment to change (i.e. employees' *desire* to actively work toward supporting change; Meyer et al. 2007) will be reduced if the organization allows people to proactively engage in change-oriented innovative behaviors. Innovative behaviors refer to the voluntary introduction of new and useful ways of doing things within a role, a group or an organization (West and Farr 1990). As such, these behaviors may enable change recipients to cope more effectively with organizational demands during the change (West 1989; Bunce and West 1994) and give them more control on how the change is implemented. Therefore, engagement in innovative endeavors may help reduce the potentially harmful consequences of concerns about change. The second purpose of our research is thus to assess whether the organization's encouragement of innovative work behavior will attenuate the negative consequences of concerns about change on affective commitment to change. In the following few sections, we discuss the theoretical relevance of concerns about change as an underexplored construct in the organizational change literature and develop our hypotheses regarding their relationships to commitment to change, including the moderating role of innovative work behavior. Our predictions were empirically tested in two organizations, i.e. a hospital and a chemical and pharmaceutical company, which were undergoing two substantially different types of change, a major administrative change and a technological change, respectively.

Concerns about organizational change

Employees' reactions to change have received increased attention over the past decade, as indicated by the growing body of studies aimed at assessing variables that affect

change-related outcomes (Judge, Thoresen, Pucik and Welbourne 1999; Wanberg and Banas 2000; Oreg 2006). For example, Oreg (2006) found significant relationships between processual components of resistance to change (affective, behavioral and cognitive resistance) and three outcomes that are critical for the effectiveness of change initiatives, namely job satisfaction, intention to quit and continuance commitment. Similarly, Chawla and Kelloway (2004) reported openness to change to be negatively associated with turnover intentions within two firms undergoing a merger.

Despite that several forms of individual attitudes toward change have been investigated, how individuals appraise change and its implications for themselves has received little attention. Accordingly, we will specifically focus on employees' concerns that arise when firms undergo changes and their potential consequences for employee support for change. Building on Lazarus and Folkman's (1984) transactional stress theory, individuals are thought to develop concerns about the implications of change owing to seeing in change initiatives a potential threat and expecting negative consequences for themselves (Hall and Hord 2001; Bareil and Gagnon 2005). Concerns about change are conceptualized as including an affective component, namely the arisen state of fear and worry; and a cognitive component, indicated by the specific object related to the change. It is also argued that concerns about change represent both the appraisal of the extent to which the organizational change is threatening for oneself (primary appraisal) and the judgment as to whether one has the ability to fulfill the requirements of the change (secondary appraisal; cf. Lazarus and Folkman 1984). We further contend that the extent to which an employee experiences a state of concerns is a function of the specific characteristics of the change that are subjectively perceived, and will be likewise subject to variations across time throughout the change process (Bareil and Gagnon 2005).

On the basis of these assumptions and prior studies (Bareil and Gagnon 2005; Meunier, Bareil and Savoie 2008), we propose a model of concerns about change that includes three specific components: concerns about the content of change, concerns about the benefits of change and concerns about mastering the change. *Concerns about the content of change* refer to worries about the impact of the occurring change on one's role. When experiencing this kind of concerns, employees fear the change will provoke harmful consequences on their role, e.g. losing their decisional power or degrading their position within the organization. When experiencing *concerns about benefits of change*, employees worry that the change will not bring the expected benefits for individuals or the organization. For example, employees might fear their change efforts will not be adequately rewarded or that too much time will pass before they will get the desired benefits. Finally, when feeling *concerns about mastering change*, employees are worried about not being able to successfully face the change, such as properly fulfilling new tasks, learning new ways of doing things and being enabled to effectively contribute to the change initiative. The first and second components specifically involve a primary appraisal process (i.e. assessment of the threat), while the third one captures a secondary appraisal process (i.e. assessment of one's ability to cope with change).

Individuals can experience different levels and forms of concerns throughout the change process; levels and forms of concerns can vary across individuals, depending on both personal and situational influences; and concerns can affect the effectiveness of change efforts by provoking negative consequences on a number of change-related processes and outcomes (e.g. commitment to change), at both the individual and the organizational levels. Results from previous studies partially support these assumptions. For example, Bareil et al.'s (2007) study indicated that employees from a health-care organization, which underwent three major changes, reported two types of discomfort with change: a disposition-based pattern of discomfort for 23% of respondents, for whom the

level of concerns remained stable across the change process; and a situation-driven pattern of discomfort for 77% of respondents, for whom the level of discomfort varied during change. In another study, Meunier et al. (2008) found concerns about change to be negatively associated with active and passive support for change, and positively linked to passive and active forms of resistance.

Owing to their specific characteristics and expected role in shaping employees' reactions to change, concerns about change differ in a number of ways from other related constructs (i.e. resistance to change, commitment to change, general attitudes toward change and general negative appraisal of change). For example, concerns about change differ from general negative appraisals of organizational changes (Fugate, Kinicki and Prussia 2008), as the latter exclusively focus on employees' perceptions of threat and harm related to the change (i.e. primary appraisal), thereby discarding the evaluation of what one is able to do in order to affectively cope with the change (i.e. secondary appraisal). In accordance with the transactional model of stress, concerns about change, as discussed above, entail both types of appraisals, thus providing a potentially wider understanding of how personal evaluations of the change can affect attitudinal and behavioral reactions. In particular, consistent with prior research on appraisals and coping (e.g. Folkman and Lazarus 1985; Terry 1994; Folkman, Lazarus, Dunkel-Schetter, DeLongis and Gruen 1996), secondary appraisals are likely to shape the individual's decision about whether to use problem-focused coping, which represents an effective strategy to deal with change, particularly in its early stages (e.g. Fugate, Kinicki and Scheck 2002).

Similarly, although both concerns about change and general attitudes toward change imply an evaluation of organizational change, the latter can entail either positive or negative evaluations, or even both of them (as in the case of ambivalence toward change; see Oreg and Sverdlik 2010). In contrast, as far as primary appraisals are concerned, concerns about change are exclusively focused on negative evaluations, which are more frequent in the context of organizational change (Scheck and Kinicki 2000; Fugate et al. 2008) and are typically detrimental to employees and organizations (e.g. Armstrong-Stassen 1994; Weeks, Roberts, Chonko and Jones 2004). Hence, as our aim was to assess the harmful consequences of negative reactions to change for employees as well as the buffering role of individual resources, concerns about change are expected to be more salient than general attitudes in the context of this study.

On a related matter, concerns about change can be distinguished from resistance to change (Piderit 2000; Oreg 2006). Both constructs incorporate an affective and a cognitive component within the individual's appraisal system. However, while resistance to change also includes a behavioral dimension, reflecting one's intention to act against the change, concerns about change are solely focused on the evaluative components, which makes it possible to directly assess how employees' worries and concerns can affect their subsequent determination to resist the change. This is meaningful from a theoretical and practical perspective because behavioral intentions play a critical role in explaining the actions people take in response to undergoing changes and, as a consequence, acknowledging that such volitional reactions can be affected by concerns about change would inform researchers and practitioners of their harmful effects.

Finally, concerns about change are different from commitment to change (Herscovitch and Meyer 2002). In fact, although commitment to change, like concerns, reflects a personal evaluation of the occurring change, it does not directly take into account such evaluative component, as concerns do. Rather, commitment is specifically focused on employees' determination to go along with the change. This allows assessing how concerns about change can relate to different forms of commitment, hence affect the

likelihood that change initiatives will receive the necessary support from members of the organization and that change-related outcomes will be successfully accomplished.

The above discussion highlights the importance of extending current knowledge of negative reactions to organizational change by directly focusing on employees' concerns about change, which have been largely overlooked in the change literature. Specifically, following up on previous research findings, the first goal of this study is to assess the hindering role of all three forms of concerns on employees' commitment to organizational change, which, as discussed above, is a critical element for the successful implementation of change initiatives. Specific hypotheses are discussed in the following section.

Concerns about change and commitment to change

Defined as a 'force (mind-set) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative' (Herscovitch and Meyer 2002, p. 475), commitment to change represents an inclination to support change and proactively act to enhance the effectiveness of change programs. On the basis of the three-component model of commitment (Allen and Meyer 1990; Meyer and Allen 1991), Herscovitch and Meyer (2002) reported evidence for the existence of three distinct mindsets that can bind employees to subsequent change-supportive courses of action: affective commitment, which denotes the *desire* to provide support for the change; normative commitment, which reflects a sense of *obligation* for supporting the change; and continuance commitment, which is based on the recognition that there are *costs* associated with failure to support the change.

While the impact of commitment to change has been investigated on a variety of outcomes, such as innovation implementation (Michaelis, Stegmaier and Sonntag 2009), behavioral support for change (Meyer et al. 2007), improved performance (Parish, Cadwallader and Busch 2008) and coping behaviors (Cunningham 2006), the role exerted by individuals' appraisal of the change itself (e.g. concerns about change) on shaping commitment to change has not received much attention yet. In particular, studies aimed at investigating antecedents of commitment to change focused on situational variables, such as leadership style (Matthew 2009; Michaelis et al. 2009; Michaelis, Stegmaier and Sonntag 2010), trust in supervisor and human resource practices (Conway and Monks 2008), or individual differences (Kruglanski, Pierro, Higgins and Capozza 2007), such as self-efficacy (Herold et al. 2007) and locus of control (Chen and Wang 2007; Elias 2009). One study investigated the relationship between reactions to the change itself – i.e. affective, behavioral and cognitive resistance – and organizational commitment, indicating a negative link between cognitive resistance to change and continuance commitment (Oreg 2006).

It has been shown that high levels of concerns about change result in employees providing lower support for the change and higher resistance (Meunier et al. 2008). Accordingly, as commitment to change represents a psychological state that is highly conducive to change-supportive behaviors and outcomes (Herscovitch and Meyer 2002), we expect that concerns about change will be significantly associated with commitment to change. Because concerns denote a reaction that is likely to occur during periods of change, low levels of discomfort with occurring changes are expected not to deter employees' commitment to change initiatives. However, if people experience a strong sense of discomfort either for their inability to adaptively face the change, for the potential failure of the expected benefits or for the negative impact of change on their role (i.e. the three dimensions of concerns discussed above), then they will be less likely to voluntarily engage in the change initiative.

In particular, worries and fear about the change might be negatively related to employees' desire to work toward the change (affective commitment), as well as their sense of duty or responsibility for supporting it (normative commitment). Accordingly, we expect all the components of concerns about change to be negatively associated with affective and normative commitment to change. Conversely, as continuance commitment to change is often conceived as an adverse element within the change process (Sinclair, Tucker, Cullen and Wright 2005), with several studies reporting negative relationships between continuance commitment to change and various change-related antecedents and consequences (e.g. Parish et al. 2008), we expect concerns about change to be positively associated with this commitment form.¹ Hence, the following hypotheses are proposed:

- Hypothesis 1a:* Concerns about change (i.e. content, benefits and mastery aspects) will be negatively related to affective commitment to change.
- Hypothesis 1b:* Concerns about change (i.e. content, benefits and mastery aspects) will be negatively related to normative commitment to change.
- Hypothesis 1c:* Concerns about change (i.e. content, benefits and mastery aspects) will be positively related to continuance commitment to change.

The moderating role of innovative work behavior

Several attempts have been made in the recent past to identify contextual variables that might help to alleviate the negative effects of resistance to change, with most studies stressing the crucial role played by situational factors such as participation in the change process (Sagie and Koslowsky 1996; Wanberg and Banas 2000), level and quality of change communication (Hargie and Tourish 1996; DiFonzo and Bordia 1998; Bordia, Hunt, Paulsen, Tourish and DiFonzo 2004; Gilley, Dixon and Gilley 2008), rewards (Oreg 2006), quality of relationships with leaders (Goltz and Hietapelto 2002; Furst and Cable 2008; Van Dam, Oreg and Schyns 2008; Levay 2010) and change in leadership strategies (Geller 2002; Szabla 2007). For example, Oreg and Berson (2011) have recently shown that the relationship between employees' dispositional resistance to change and resistance intentions was moderated by transformational leadership such that individuals who were high in resistance to change exhibited lower levels of resistance intentions when transformational leadership was high.

This study extends the above research stream by investigating the role of innovative work behavior as a buffer of the expected negative relationship between concerns about change and affective commitment to change. Innovative behavior represents the voluntary introduction of new ways of doing things within a role, a group or an organization (West and Farr 1990; Basu and Green 1997). Innovative behavior has often been suggested to be an effective coping strategy that individuals can enact to face organizational demands, such as a heavy workload (West 1989; Bunce and West 1994). Indeed, a number of researchers provide evidence that, under certain conditions, increased job demands could stimulate individual adaptive responses to cope with heavy workload. For example, Janssen (2000) found a positive relationship between job demands and innovative work behavior when employees perceived high effort–reward fairness. Similarly, Leung, Huang, Su and Lu (2011) found that when perceived support for innovation was high, role stress (operationalized in terms of role conflict and role ambiguity) was positively associated with individual innovative performance. Overall, these findings suggest that when some contextual characteristics are met, employees can use efficient strategies as a mechanism to successfully face job-related demands.

Because organizational changes are high-demanding events that provoke feelings of uncertainty, stress and anger, concerns about change might also arise as a consequence of increased change-related requests. In these conditions, however, if employees receive opportunities to engage in innovative endeavors, they will plausibly find useful coping strategies that will counteract the detrimental effects of their concerns about change, i.e. such conditions would help them adapt to the change, thereby reducing the negative relationship between concerns about change and affective commitment to change. In other words, we expect that the possibility to engage in innovative work behavior will boost employees' coping abilities, hence enabling them to find solutions to their concerns, which should buffer the negative relation between concerns and affective commitment to change. Consistent with this reasoning, research has stressed the relevant role played by coping behaviors in providing positive change-oriented outcomes, such as participation in the change process, readiness for change and support for change (Cunningham 2006). In summary, we expect innovative work behavior to interact with affective commitment to change such that at high levels of innovative work behavior, the relationship between concerns and affective commitment to change would be weaker. Hence, the following hypothesis is proposed:

Hypothesis 2: The relationship between concerns about change (i.e. content, benefits and mastery aspects) and affective commitment to change will be moderated by innovative work behavior such that this relationship will be weaker among individuals who are highly engaged in innovative behavior.

Note that we do not expect innovative work behavior to moderate the relationship between concerns about change and normative and continuance commitment to change. Indeed, research has demonstrated that innovation primarily influences attitudes that have an affective or emotional foundation (e.g. Choi, Sung, Lee and Cho 2011; such as affective commitment) rather than more cognitive ones (which is presumably more the case of normative and continuance commitment). We conducted two studies to test our hypotheses. First, we developed our measure of concerns about change on an independent sample (see Study 1's 'Method' section). Then, Study 1 assessed the construct and predictive validities of the measure of concerns about change. To this end, we examined the structure of the scale and the components' relationships with affective, normative and continuance commitment to change. Study 2 attempted to replicate Study 1's findings on a different sample and additionally examined the moderating role of innovative work behavior in the relationship between concerns and affective commitment to change.

Study 1

Method

Organizational context

Study 1 was conducted among nurses working in a public hospital located in Northern Italy. This hospital is central in the region where it is located and is recognized as a highly qualified national health center in virtue of the activities that are conducted in different areas such as research, assistance and training. The hospital, which has more than 5000 employees (i.e. university and hospital doctors, nurses, health-care professionals, technical/professional staff and administrative personnel), pursues its core mission (i.e. recover, preserve and promote the health status of people) by applying scientific

knowledge and exploiting innovative technologies, ensuring quality of care and adopting a humanitarian philosophy to patient care. Of importance is that several activities of excellence (e.g. transplants, neurosurgery, cardiac surgery, thoracic surgery and oncology) are carried out by the operational units that provide patient services (i.e. diagnosis and treatment). Specialized activities are also conducted, which cover outpatient clinics, and diagnostic and laboratory activities.

When this study was conducted, the hospital was undergoing a major organizational change aimed at facilitating flexible adjustment of services to patient needs and improving the quality and efficiency of patient care. This specifically implied the development of a new operational unit gathering doctors and nurses from different departments. Before the change, nurses were associated with a single department, where they worked on specific, predefined tasks led by one department head (i.e. a doctor). After the change, nurses, rather than being associated with a specific department, were requested to collaborate with different doctors, within the same newly created operational unit, in order to provide services to various hospital departments, depending on the requirements. Nurses were further provided with computer screens that, by enabling more efficient nurse–patient interactions, were expected to speed up responses to patient demands and increase staff effectiveness.

In order to gather information about how the change was perceived, some preliminary interviews were conducted with nurses working in the new operational unit (i.e. the hospital staff most affected by the change). These employees revealed that they worried a lot about the change, namely regarding the lack of adequate training programs, which, they thought, the organization would have had to provide before initiating the change, with the aim of fostering the learning of the core tasks and activities within the new operational unit and of enabling effective adoption of the computer screens. As a consequence, most of the nurses interviewed expressed cynicism and skepticism with regard to the effectiveness of the change in terms of how well services to patients would be improved. For example, when asked to express her feelings about the change, one of the nurses said:

I wonder how I can trust this change. Despite the program has been presented to the staff, we still have to learn new tasks. As a result, we cannot assess the utility of this program before it is effectively introduced, and we are even unprepared to correct faulty procedures in spite of unforeseen difficulties.

Similarly, another nurse expressed the following concern:

What worries me is the introduction of the new operational unit. I have never met my new colleagues, and none of us has received a specific training on our team activities. Thus, I fear that the coordination of tasks with the staff of this unit might not be accurate and that some conflicts may arise in the new group.

Sample and procedure

For this study, 503 nurses were invited to participate via a letter from the human resource management department. In order to encourage voluntary participation to the survey, the following procedures were adopted. First, invitation letters contained a statement that clearly specified that the organization's management was interested in knowing nurses' opinions and feelings about the change. Additionally, the human resource management director required the head of each unit to be responsible for: (a) meeting nurses into groups of participants during shift changes so that the purpose of the research could be presented, (b) delivering questionnaires directly to employees, assisted by a member of the research team and (c) using frequent reminders. Participants were requested to return their completed questionnaires in a sealed envelope to a box provided for that purpose. The questionnaires took 15 minutes to complete. We received 437 questionnaires, 2 of which

were not usable because of incomplete information. Accordingly, the final sample involved 435 participants, which constituted a response rate of 86.48%. Of the participants, 76% were female, 16% were male and the remaining 8% did not report their gender. Participants' age averaged 37.79 years ($SD = 8.17$) and their organizational tenure averaged 14.54 years ($SD = 8.78$).

Measures

Concerns about change. Because no current measures actually exist that assess multiple components of concerns about change, we developed a new measure aimed at assessing three specific forms of concerns, namely concerns about contents of change, concerns about benefits of change and concerns about mastering change. Based on the theoretical conceptualization of these elements (Bareil and Gagnon 2005; Bareil et al. 2007; Meunier et al. 2008) and previous discussion with academics and practitioners who were experts in change management, an initial pool of 22 items was created. Six items were designed to measure concerns about contents, eight for concerns about benefits and eight for concerns about mastering the change. This preliminary version of the scale was administered to an independent sample of 186 employees from various firms that were undergoing different organizational restructurings (i.e. a downsizing, a delayering and a company's splitting into independent business units). For each item, participants were asked to indicate the extent to which they felt worried about the possible occurrence of a number of consequences brought about by the change they were undergoing. All responses were rated on a scale ranging from 1 ('Not at all') to 5 ('To a great deal'). Based on the results from an exploratory factor analysis (oblique rotation) conducted on these data, four items were eliminated due to low factor loadings, another four items were removed because of low item-total correlations and three items were dropped due to high cross-loadings. The item set was thus reduced to 11 items (3 items for concerns about content, 4 items for concerns about benefits and 4 items for concerns about mastering). This final set of items was used in the present study (see Appendix for a full description of the items). Reliability coefficients were 0.87 for concerns about contents of change, 0.83 for concerns about benefits of change and 0.84 for concerns about mastering change.

Commitment to change. Commitment to change was measured using high-loading items from Herscovitch and Meyer's (2002) scales of affective, continuance and normative commitment to change. Psychometric qualities of these scales were supported in a study conducted by Portoghese et al. (2012) in the Italian context. Affective commitment was measured with the five (out of six) highest loading items (e.g. 'I believe in the value of this change'; $\alpha = 0.83$), continuance commitment with the four (out of six) highest loading items (e.g. 'I have no choice about go along with this change'; $\alpha = 0.77$) and normative commitment was assessed using the four (out of six) highest loading items (e.g. 'I feel a sense of duty to work toward this change'; $\alpha = 0.70$). All responses were provided on a scale ranging from 1 ('strongly disagree') to 5 ('strongly agree').

Control variables. We controlled for age and organizational tenure in regression analyses as previous research had found them to correlate, albeit slightly, with one or more forms of commitment to change (Herscovitch and Meyer 2002).

Results and discussion

We first examined the structure of our data using confirmatory factor analysis via LISREL 8.72 (Jöreskog, Sörbom, Du Toit and Du Toit 2001) with a covariance matrix as input and

the maximum likelihood (ML) method of estimation. Results revealed that the hypothesized six-factor model including concerns about change and commitment to change dimensions yielded a good fit to the data: $\chi^2(142) = 369.442$, CFI = 0.93, RMSEA = 0.06, SRMR = 0.07. This model was further compared with three alternative models where the items of concerns about change were merged with those of affective, normative and continuance commitment to change. As can be seen from Table 1, the hypothesized model provided a better fit to the data than all three alternative models ($p < 0.01$), thereby indicating that the three dimensions of concerns were distinguishable from one another and from commitment to change dimensions. We further examined our measures' discriminant validity using Fornell and Larcker's (1981) rule of thumb that latent factors should account for more variance in their items than the proportion of variance they share with other constructs. All constructs within the hypothesized model met this criterion (results are available upon request). Overall, these findings suggest our measures were reasonably discriminant.

Table 2 reports the descriptive statistics and correlations for Study 1 variables. All scales displayed good reliability, based on Nunnally's (1978) criterion of 0.70. Importantly, despite that the three types of concerns were significantly related to each other, correlation coefficients did not exceed 0.50, which further supported the uniqueness of the constructs. As can be seen, age and organizational tenure were unrelated to commitment to change, suggesting that their inclusion as controls would not be necessary. Nonetheless, as prior research has shown (e.g. Amabile, Barsade, Mueller and Staw 2005), predictors can contribute additively to the dependent variable, such that the amount of variance explained by their additive effect would be significantly higher than that accounted for by their separate effects. We therefore opted for keeping age and organizational tenure as control variables. We then conducted multiple regression analyses to assess whether concerns about change predicted the three types of commitment to change.

Hypotheses 1a and 1b predicted that concerns about change would be negatively related to affective and normative commitment to change, respectively, while Hypothesis 1c predicted that these concerns would be positively related to continuance commitment to

Table 1. Study 1: fit indices for confirmatory factor analyses.

| <i>Model</i> | χ^2 | <i>df</i> | $\Delta\chi^2$ | Δdf | <i>CFI</i> | <i>RMSEA</i> | <i>SRMR</i> |
|--|-----------|-----------|----------------|-------------|------------|--------------|-------------|
| Hypothesized six-factor model | 369.442* | 142 | – | – | 0.93 | 0.06 | 0.07 |
| Three-factor models | | | | | | | |
| Combining concerns about change and affective commitment to change | 1077.481* | 154 | 120.43* | 12 | 0.73 | 0.12 | 0.11 |
| Combining concerns about change and normative commitment to change | 797.466* | 154 | 428.02* | 12 | 0.81 | 0.10 | 0.09 |
| Combining concerns about change and continuance commitment to change | 620.248* | 154 | 250.81* | 12 | 0.86 | 0.08 | 0.08 |

Note: $N = 435$. CFI, comparative fit index; RMSEA, root-mean-square error of approximation; SRMR, standardized root-mean-square residual.

* $p < 0.01$.

Table 2. Study 1: descriptive statistics and correlations.

| Variables | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------------------------------------|-------|------|--------|-------|---------|---------|--------|--------|--------|--------|
| (1) Age | 37.79 | 8.17 | — | | | | | | | |
| (2) Organizational tenure | 14.54 | 8.78 | 0.84** | — | | | | | | |
| (3) Concerns about contents of change | 2.31 | 0.86 | 0.02 | 0.00 | (0.87) | | | | | |
| (4) Concerns about benefits of change | 2.90 | 0.84 | -0.02 | -0.01 | 0.47** | (0.83) | | | | |
| (5) Concerns about mastering change | 2.25 | 0.78 | 0.06 | 0.06 | 0.49** | 0.46** | (0.84) | | | |
| (6) Affective commitment to change | 3.07 | 0.85 | 0.05 | -0.00 | -0.16** | -0.24** | -0.06 | (0.83) | | |
| (7) Normative commitment to change | 3.41 | 0.82 | 0.01 | 0.02 | -0.13** | -0.11* | -0.11* | 0.41** | (0.77) | |
| (8) Continuance commitment to change | 2.47 | 0.79 | 0.07 | 0.08 | 0.23** | 0.33** | 0.40** | 0.04 | 0.06 | (0.70) |

Note: N = 435. Internal consistency coefficients (Cronbach's α) appear along the diagonal in parentheses.

* $p < 0.05$; ** $p < 0.01$.

Table 3. Study 1: multiple regression analysis predicting affective, normative and continuance commitment to change.

| <i>Variable</i> | <i>Affective commitment to change</i> | <i>Normative commitment to change</i> | <i>Continuance commitment to change</i> |
|-----------------------------------|---|---|---|
| Age | 0.13 | 0.07 | 0.09 |
| Organizational tenure | -0.10 | -0.07 | -0.04 |
| Concerns about contents of change | -0.16** | -0.12* | 0.21** |
| Concerns about benefits of change | -0.24** | -0.11* | 0.33** |
| Concerns about mastering change | -0.06 | -0.11* | 0.40** |
| R^2 | 0.07** | 0.03* | 0.19** |

Note: $N = 435$. Entries are standardized regression coefficients.

* $p < 0.05$; ** $p < 0.01$.

change. As can be seen from Table 3, concerns about contents ($\beta = -0.16, p < 0.01$) and benefits of change ($\beta = -0.24, p < 0.01$) were negatively related to affective commitment to change, whereas concerns about mastering change was unrelated to it ($\beta = -0.16, n.s.$). Hypothesis 1a is thus partly supported. In contrast, Hypothesis 1b was fully supported as concerns about contents ($\beta = -0.12, p < 0.05$), benefits of change ($\beta = -0.11, p < 0.05$) and mastering change ($\beta = -0.11, p < 0.05$) were all negatively related to normative commitment to change. Finally, consistent with Hypothesis 1c, concerns about contents ($\beta = 0.21, p < 0.01$), benefits of change ($\beta = 0.33, p < 0.01$) and mastering change ($\beta = 0.40, p < 0.01$) were all positively related to continuance commitment to change.

To summarize, findings from Study 1 reveal that concerns about change comprise three interrelated dimensions that are empirically distinct from each other as well as from the three dimensions of commitment to change: concerns about contents of change, concerns about benefits of change and concerns about mastering change. Importantly, concerns about change were found to be significantly and meaningfully related to affective, normative and continuance commitment to change.

Study 2

Method

Organizational context

Study 2 was conducted in an Italian chemical–pharmaceutical multinational company, which earned a strong reputation over the last few years for its high-quality products, flexibility and customer service. Established in a relatively small town of Northern Italy, it operates in four continents – Europe, North America and South America and Asia – with more than 2000 employees in 15 different countries, representing a multinational enterprise which managed to strengthen its competitive position on the market. The firm comprises a pharmaceutical division, a chemical division and an industrial incubator, responsible for hard and soft facilities management, and administrative and IT services, respectively. The need for increased flexibility and efficiency has encouraged the company's management to steer its organizational structure toward an increasingly integrated model in which departments, teams, suppliers and distributors can operate more effectively, both internally and externally.

At the time this study was conducted, the company was undergoing a technological change aimed at replacing current information technology systems with an integrated enterprise resource planning (ERP) system. This management software covered the company's main business operations and its internal cycles concerning planning, product manufacturing, sales, supplies and logistics, and ensuring strong cross-integration throughout the organization. The project, which involved all of the company's production and business/distribution facilities, was argued to be strategic and innovative, because it allowed the company to significantly improve its business strategy and to set the stage for managing future evolutions of the firm's business. Specifically, this technological change was expected by the firm's management to bring about the following benefits: simplification of accounting tasks; centralized control of changes; improved allocation of resources, thanks to simplified computations; automatic planning of production; and reduction of costs on two business lines, managed by a single software solution.

Preliminary interviews were conducted with key users of the ERP system, in order to get a deeper understanding of how the technological change was perceived by those members of the organization who were directly affected by it. In this respect, most of the interviewed employees, beyond recognizing several of the expected benefits mentioned above, pointed out the fact that the ERP system did not actually allow either much flexibility in implementation and usage or modifications in the software structure, which hindered customization and subsequent integration of the system with the business process. Accordingly, the interviewed employees expressed concerns regarding an imbalance between the business benefits of the implemented change and the costs (both monetary and nonmonetary) associated with it.

Sample and procedure

For this study, 273 employees, who were the end and key users of the ERP system, were invited to participate via an e-mail from the human resource management department. Questionnaires, accompanied with a letter provided by the research team that explained the purpose of the study, were mailed to the prospective participants. Employees were asked to return completed surveys to the research team in a sealed envelope supplied by the human resource management department. Participation was voluntary, and anonymity of responses was assured. Yet, unlike in Study 1, the firm did not follow any specific procedure that would have encouraged employees to respond to the survey. A total of 132 questionnaires were returned, 19 of which were unusable because of incomplete information. Thus, the final sample comprised 113 participants, which resulted in a final response rate of 41.39%.

Because of privacy-related impediments, we were not able to collect any information about gender, education or position within the organization. Of the respondents, 33% were aged between 30 and 40 years, 30% were between 40 and 50 years, 26% were over 50 years and 11% were under 30 years. All participants were requested to respond anonymously to a multi-section survey. After explaining the purpose of the survey, a member of the research team distributed the questionnaires, which took 20 minutes to complete.

Measures

Concerns about change. We used the same 11-item scale adopted in Study 1 to measure concerns about change. Confirmatory factor analysis of these items revealed that the theorized three-factor model yielded a good fit to the data: $\chi^2(41) = 67.50$, CFI = 0.97, RMSEA = 0.06, SRMR = 0.05. Furthermore, the three-factor model outperformed

alternative two-factor models which merged: (a) concerns about contents with concerns about benefits ($\Delta\chi^2 [2] = 120.43, p < 0.01$); (b) concerns about contents with concerns about mastering ($\Delta\chi^2 [2] = 14,657, p < 0.01$); and (c) concerns about benefits with concerns about mastering ($\Delta\chi^2 [2] = 97.88, p < 0.01$), respectively, and a one-factor model ($\Delta\chi^2 [3] = 232.37, p < 0.01$). These findings provide additional support to the three-factor representation of concerns about change (items' standardized loadings are reported in Appendix). Furthermore, as for Study 1, intercorrelations among the three types of concerns were significant but did not exceed 0.50, which supported the distinctiveness of the constructs. Reliability coefficients were 0.87 for concerns about contents of change, 0.77 for concerns about benefits of change and 0.81 for concerns about mastering change.

Commitment to change. We used the same high-loading items from Herscovitch and Meyer's (2002) scales as those included in Study 1 to measure commitment to change. Reliability coefficients for affective, normative and continuance components were 0.76, 0.70 and 0.77, respectively.

Innovative work behavior. Innovative work behavior was assessed using a nine-item scale developed by Janssen (2000). Sample items include 'Creating new ideas for difficult issues', 'Making support for innovative ideas' and 'Transforming innovative ideas into useful applications' ($\alpha = 0.90$). Employees were asked to indicate the extent to which they were encouraged to engage in these innovative behaviors throughout the change process. Responses to items ranged from 1 ('not at all') to 5 ('to a great deal').

Results and discussion

Prior to testing hypotheses, we examined the distinctiveness of our study variables using confirmatory factor analysis. To reduce the complexity of our measurement model, we averaged items across dimensions of concerns about change and used them as distinct indicators of their corresponding latent factor. Accordingly, the construct of concerns about change was captured by three indicators reflecting the subscales of concerns about contents of change, concerns about benefits of change and concerns about mastering change. This procedure allowed us to compensate for the small sample size ($N = 113$) and still examine whether the overall construct of concerns about change was distinguishable from commitment to change dimensions and innovative work behavior. Indeed, the use of item parcels is consistent with the current literature, which suggests that a large sample is not required *per se* to obtain stable parameter estimates with ML estimation (Bentler and Yuan 1999; Nevitt and Hancock 2004). In particular, as scholars have documented, item parceling decreases the likelihood that parcels will be affected by the method effects associated with individual items, and increases the odds that they will meet the assumptions of normality in ML approaches to confirmatory factor analysis (Marsh and Hau 1999; Hau and Marsh 2004). Additionally, the use of parcels increases the sample size to parameters ratio (Little, Cunningham, Shahar and Widaman 2002). On the basis of these arguments, the parceling procedure was thought to be particularly suitable for our study, as it helped to address the limitations due to the small sample size and, consequently, ensured a reliable assessment of the parameters of the measurement model.

As can be seen from Table 4, the hypothesized five-factor model displayed a reasonably good fit to the data, $\chi^2 (179) = 270.583, CFI = 0.90, RMSEA = 0.07, SRMR = 0.08$, and outperformed any simpler representation of the data ($p < 0.01$; see Table 4). As in Study 1, we examined whether latent factors accounted for more variance in their items than the proportion of variance they shared with the other constructs (Fornell

Table 4. Study 2: fit indices for confirmatory factor analyses.

| <i>Model</i> | χ^2 | <i>df</i> | $\Delta\chi^2$ | Δdf | <i>CFI</i> | <i>RMSEA</i> | <i>SRMR</i> |
|---|----------|-----------|----------------|-------------|------------|--------------|-------------|
| Hypothesized five-factor model | 270.583* | 179 | – | – | 0.90 | 0.07 | 0.08 |
| Four-factor models | | | | | | | |
| Combining affective and normative commitment to change | 330.835* | 183 | 60.25* | 4 | 0.84 | 0.09 | 0.10 |
| Combining concerns about change and continuance commitment to change | 317.142* | 183 | 46.56* | 4 | 0.85 | 0.08 | 0.10 |
| Three-factor model (all commitments to change vs. concerns about change vs. innovative work behavior) | 423.271* | 186 | 152.69* | 7 | 0.74 | 0.11 | 0.13 |
| Two-factor model (all commitments to change and concerns about change vs. innovative work behavior) | 472.304* | 188 | 201.72* | 9 | 0.68 | 0.12 | 0.13 |
| One-factor model | 561.792* | 189 | 291.21* | 10 | 0.58 | 0.13 | 0.14 |

Note: *N* = 113. CFI, comparative fit index; RMSEA, root-mean-square error of approximation; SRMR, standardized root-mean-square residual.
**p* < 0.01.

and Larcker 1981). All constructs within the hypothesized five-factor model met this criterion (results are available upon request). Overall, these findings suggest our measures were distinguishable from one another.

Table 5 reports the descriptive statistics and correlations for Study 2 variables. All scales displayed good reliability, and the three dimensions of concerns about change were significantly associated with commitment to change.

Table 6 presents the results of moderated multiple regression analyses for affective, continuance and normative commitment to change. In this respect, because of the relatively small sample size, we set a p -value of 0.10 to estimate the level of significance of both main and interaction effects. To make things comparable to Study 1, we entered age and job tenure as two control variables at Step 1, and the three dimensions of concerns at Step 2. Results are shown in Table 6 (Model 2 column). As can be seen, affective commitment to change was negatively related to concerns about contents ($\beta = -0.19$, $p < 0.05$) and benefits of change ($\beta = -0.31$, $p < 0.01$), but was unrelated to concerns about mastering change ($\beta = -0.10$, n.s.), yielding partial support for Hypothesis 1a. In contrast, contrary to Hypothesis 1b, concerns about contents ($\beta = 0.07$, n.s.), benefits of change ($\beta = 0.05$, n.s.) and mastering change ($\beta = 0.07$, n.s.) were not significantly related to normative commitment to change. Finally, consistent with Hypothesis 1c, concerns about contents ($\beta = 0.14$, $p < 0.10$), benefits of change ($\beta = 0.46$, $p < 0.01$) and mastering change ($\beta = 0.11$, $p < 0.10$) were all positively related to continuance commitment to change.

Hypothesis 2 was tested using moderated multiple regression analyses. As recommended by Aiken and West (1991), we centered predictors prior to computing interaction terms. Innovative work behavior was introduced at Step 3 and the interaction term (concerns about change \times innovative work behavior) at Step 4. As indicated in Table 6 (Model 4 column), innovative work behavior significantly interacted with concerns about contents ($\beta = 0.20$, $p < 0.05$) and benefits of change ($\beta = 0.20$, $p < 0.05$) in predicting affective commitment to change, while concerns about mastering change did not ($\beta = 0.21$, n.s.). Simple slope analyses further revealed that when innovative work behavior was low (1 SD below the mean), concerns about contents and concerns about benefits were negatively associated with affective commitment to change ($\beta = -0.22$, $p < 0.05$, for concerns about contents; $\beta = -0.46$, $p < 0.01$, for concerns about benefits), whereas when innovative behavior was high (1 SD above the mean), they had no relationship with affective commitment to change ($\beta = -0.04$, n.s., for concerns about contents; $\beta = -0.14$, n.s., for concerns about benefits; see Figures 1 and 2). Conversely, the standardized regression coefficient associated with the concerns about mastering change \times innovative work behavior interaction term was not statistically significant ($\beta = 0.21$, n.s.).

Overall, these findings provide partial support for Hypothesis 2 as innovative work behavior appeared to buffer the negative relationship of concerns about contents and benefits, but not mastering change, to affective commitment to change. Finally, Table 6 also reveals that, as expected, innovative work behavior did not moderate the relationship of concerns about change dimensions to normative and continuance commitment to change.

In summary, these findings extend those obtained in Study 1. First, results from confirmatory factor analysis supported the hypothesized three-factor structure of concerns about change. Second, Study 2 yielded further support to Hypotheses 1a and 1c, which predicted negative and positive relationships of concerns about change with affective and continuance commitment to change, respectively. In contrast, Hypothesis 1b, which stated

Table 5. Study 2: descriptive statistics and correlations.

| Variables | M | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------------------------------------|------|------|--------|-------|---------|---------|--------|--------|--------|--------|--------|
| (1) Age | 2.71 | 0.97 | — | | | | | | | | |
| (2) Organizational tenure | 2.95 | 1.18 | 0.56** | — | | | | | | | |
| (3) Concerns about contents of change | 1.83 | 0.85 | -0.20* | -0.02 | (0.87) | | | | | | |
| (4) Concerns about benefits of change | 2.07 | 0.71 | -0.10 | 0.07 | 0.46** | (0.77) | | | | | |
| (5) Concerns about mastering change | 1.81 | 0.71 | -0.02 | 0.13 | 0.44** | 0.43** | (0.81) | | | | |
| (6) Affective commitment to change | 4.16 | 0.56 | 0.02 | -0.06 | -0.25** | -0.34** | -0.14 | (0.76) | | | |
| (7) Normative commitment to change | 3.42 | 0.84 | 0.25** | 0.18 | 0.08 | 0.08 | 0.12 | 0.17 | (0.77) | | |
| (8) Continuance commitment to change | 2.43 | 0.99 | 0.11 | 0.05 | 0.11 | 0.40** | 0.13 | -0.19* | 0.37** | (0.70) | |
| (9) Innovative work behavior | 3.27 | 0.59 | 0.17 | 0.03 | -0.12 | 0.00 | -0.18 | 0.25** | 0.26** | -0.03 | (0.90) |

Note: N = 113. Internal consistency coefficients (Cronbach's α) are presented along the diagonal in parentheses.

* $p < 0.05$; ** $p < 0.01$.

Table 6. Study 2: moderated multiple regression analyses predicting affective, normative and continuance commitment to change.

| Variable/Model | Affective commitment to change | | | | Normative commitment to change | | | | Continuance commitment to change | | | |
|--|--------------------------------|---------|---------|---------|--------------------------------|-------|---------|---------|----------------------------------|---------|---------|---------|
| | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| Step 1 (controls) | | | | | | | | | | | | |
| Age | 0.08 | -0.01 | -0.07 | -0.07 | 0.22* | 0.26* | 0.21*** | 0.21*** | 0.12 | 0.20*** | 0.21*** | 0.21*** |
| Organizational tenure | -0.10 | -0.04 | -0.01 | -0.03 | 0.05 | 0.02 | 0.04 | 0.05 | -0.01 | -0.09 | -0.09 | -0.10 |
| ΔR^2 | 0.01 | | | | 0.07* | | | | 0.01 | | | |
| Step 2 | | | | | | | | | | | | |
| Concerns about contents of change | | -0.19* | -0.08 | -0.09 | 0.07 | 0.07 | 0.09 | 0.09 | | 0.14*** | 0.09 | 0.07 |
| Concerns about benefits of change | | -0.31** | -0.36** | -0.37** | 0.05 | 0.05 | 0.01 | 0.01 | | 0.46** | 0.47** | 0.46** |
| Concerns about mastering change | | -0.10 | -0.05 | -0.06 | 0.07 | 0.07 | 0.08 | 0.08 | | 0.11*** | 0.07 | 0.07 |
| ΔR^2 | | 0.12** | | | 0.02 | | | | | 0.18** | | |
| Step 3 | | | | | | | | | | | | |
| Innovation work behavior (IWB) | | | 0.28** | 0.27** | | | 0.25* | 0.25* | | -0.06 | -0.06 | -0.06 |
| ΔR^2 | | | 0.07** | | | | 0.06* | | | 0.00 | 0.00 | |
| Step 4 | | | | | | | | | | | | |
| Concerns about content of change \times IWB | | | | 0.20* | | | | -0.01 | | | | 0.06 |
| Concerns about benefits of change \times IWB | | | | 0.20* | | | | 0.07 | | | | 0.05 |
| Concerns about mastering change \times IWB | | | | 0.21 | | | | 0.08 | | | | -0.04 |
| ΔR^2 | | | | 0.04* | | | | 0.00 | | | | 0.00 |

Notes: $N = 113$. Except for the ΔR^2 rows, entries are standardized regression coefficients.
 *** $p < 0.01$; ** $p < 0.05$; * $p < 0.10$.

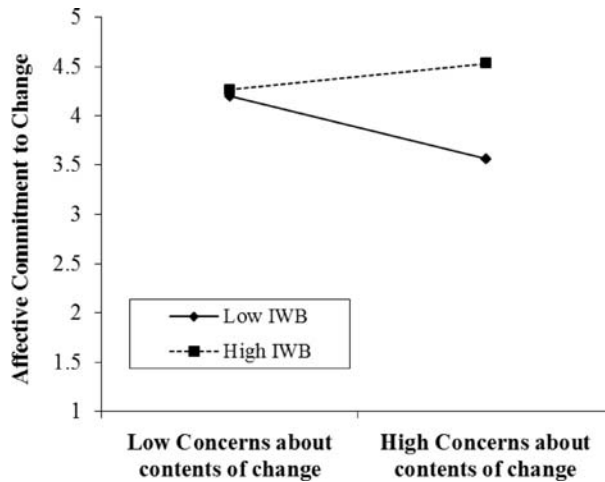


Figure 1. Study 2: interaction between concerns about contents of change and innovative work behavior in predicting affective commitment to change. Note: IWB, innovative work behavior.

that concerns about change would be negatively related to normative commitment to change, was not supported in Study 2. Finally, results from moderated multiple regression analyses also substantially supported Hypothesis 2, thereby emphasizing the critical role of change-oriented innovative endeavors in attenuating the harmful consequences of concerns about change on affective commitment to change.

General discussion

The studies described in the present article examined the factor structure of a measure of concerns about change, investigated whether the experience of concerns did effectively relate to individual behavioral intentions to move along a change initiative and assessed whether the opportunity to engage in innovative courses of action could help employees to

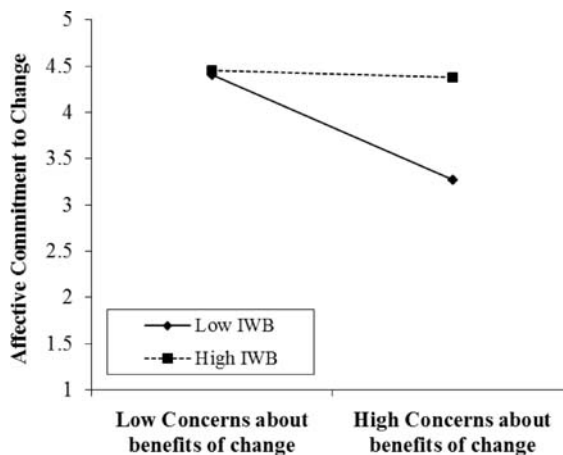


Figure 2. Study 2: interaction between concerns about benefits of change and innovative work behavior in predicting affective commitment to change. Note: IWB, innovative work behavior.

overcome their concerns about change. Overall, our findings supported our predictions by: (1) providing support for the three-factor structure of concerns about change, (2) showing relationships between concerns and employees' commitment to change, and (3) identifying innovative work behavior as a moderator of the concerns–affective commitment to change relationship. We now discuss these results in detail.

First, consistent with expectations, concerns were shown to be a multidimensional construct, entailing three components: concerns about the content of change, concerns about benefits of change and concerns about mastering change. As such, consistent with Lazarus and Folkman's (1984) transactional model of stress, concerns about change effectively reflected both an assessment of the degree to which the change is threatening (primary appraisal) and whether individuals perceive to have the skills to successfully adjust to the change (secondary appraisal).

Second, concerns were generally found to be negatively associated with affective commitment to change and positively linked to continuance commitment to change, in both studies, whereas the hypothesized negative relationship with normative commitment was supported in Study 1 only. A plausible explanation for the latter finding may reside in the nature of the organizational context for the studies. In Study 1, we surveyed employees from a public hospital undergoing a major change, while Study 2 was conducted in a chemical–pharmaceutical company that was implementing a new technology (i.e. an ERP system). It may be that change initiatives within hospitals affect more readily normative commitment to change. More precisely, hospital employees who experience concerns about change may feel that the change affects the quality of service to patients, which may be experienced as a moral obligation in the health sector. As perceived obligation is the cornerstone of normative commitment, this may explain why concerns about change were (negatively) related to normative commitment to change in Study 1. In a similar vein, these slightly different results could be explained by differences in the nature of the change across the two organizations. A major organizational change (i.e. in Study 1) may indeed be more likely than a technological change to increase the unbalance between the disruptions provoked by the change itself and the need to preserve continuity with current procedures and practices (Palmer, Dunford and Akin 2009). Due to the lack of specific training, hospital employees actually felt unable to effectively adapt to such a major organizational change. Thus, they may have experienced increased worries of not being able to offer a high-quality service to patients, and, consequently, felt a reduced sense of obligation to support the change initiative.

Another unexpected result was that worries about mastering change were unrelated to the affective dimension of commitment to change in both studies. Retrospectively, this finding might not be surprising, given that individual feelings about being able to deal with difficult tasks have often been found not to be significantly associated with affective commitment to the organization or to the change itself (e.g. Wanberg and Banas 2000; Neves 2009). For example, Meyer, Stanley, Herscovitch and Topolnytsky's (2002) meta-analysis showed that self-efficacy was only weakly associated with affective commitment, and Neves (2009) found that self-efficacy was unrelated to affective commitment to change. In this sense, the relationship between feelings about mastering change and affective commitment to change might be moderated by certain contextual variables.

Third, results indicated that innovative work behavior moderated the relationship between concerns and affective commitment to change, such that employees who had opportunities to engage in innovative endeavors were immune to the negative consequences of concerns on affective commitment to change. Consistent with the extant literature on job demands and innovation (West 1989; King, de Chermont, West, Dawson

and Hebl 2007), this finding reveals that when an important change occurs, employees can alleviate their feelings of worry and discomfort when the organization encourages employees to adopt new working methods, procedures or ways of doing things to better deal with intense change-related demands.

Overall, our findings from moderated multiple regression analyses add to the literatures on both change and innovation, in that they extended our knowledge on individual-level factors that can increase the likelihood of attenuating psychological threats to the effectiveness of change efforts. To our knowledge, innovative behavior had only been considered within the change literature as the outcome of successful change initiatives (i.e. innovation implementation; see Klein and Knight 2005; Michaelis et al. 2009, 2010). In the present study, however, innovative behavior did not refer to the employees' adoption of innovations that had been introduced by firms, but rather to employees being encouraged to voluntarily develop new and useful ideas that help to deal with intense, stressful demands that accompany the change process. Accordingly, our results stressed the importance of being offered opportunities to engage in self-initiating innovative, proactive behaviors for overcoming psychological barriers to the successful achievement of change-related objectives.

Results from moderated multiple regression analyses additionally revealed that individual engagement in innovative endeavors was not sufficient to alleviate the negative effects of concerns about mastering change on affective commitment. Yet, this finding might be explained if we consider that innovation is by nature a relatively risky, controversial and unpredictable activity, which is likely to bring about costs and failures, beyond the expected benefits (Janssen, van de Vliert and West 2004). Indeed, employees who come up with novel and useful ideas for effectively coping with change-related problems and demands might also encounter several obstacles within the work environment (e.g. resistances from coworkers or supervisors when promoting innovative ideas and unforeseen disturbances during the implementation of innovation), which can undermine the effectiveness of their innovative efforts and reduce the likelihood of successfully mastering the change (Baer and Frese 2003; Bledow, Anderson, Frese, Erez and Farr 2009). These arguments have been supported by a number of studies indicating that the effectiveness of innovative endeavors was contingent upon the presence of a context that is innovation-supportive and rewards individual efforts to meet organizational demands (Janssen 2000, 2004; Leung et al. 2011). With respect to our findings, it could hence be that innovative behavior alone is not sufficient to inhibit the negative consequences of concerns about mastering change and that employees who engage in innovative behavior would also need to be supported by the organization in implementing new ways of facing change-related demands. This would suggest that certain contextual variables (i.e. coworker or supervisor support, resources, participation or quality of communication) might interact with innovative work behavior to decrease the negative impact of such concerns on employees' desire to actively sustain the change initiative.

Limitations and directions for future research

Although our research provided several interesting findings, it is not without limitations. First, because Study 2 was conducted on a relatively small sample within a single organizational change context, it is hazardous to generalize our findings to other contexts. Future research might therefore replicate these findings on a larger sample and in different industries of both the private and the public sectors. Second, all data were collected from the same source through self-report measures at the same time, such that our results could be influenced by common method variance. Nevertheless, our latent constructs accounted

for more variance in their respective items than the proportion of variance they shared with the other constructs, which represents a stringent criterion of discriminant validity (Fornell and Larcker 1981). Third, as regards Study 2, it would be worth using supervisory ratings instead of self-rated measures of innovative work behavior in future studies. With respect to Study 1, because it is difficult to obtain ratings other than those obtained via self-report measures regarding concerns about change and commitment to change, a useful remedy would be to separate the measurement of the predictor and criterion variables, which is particularly important in the study of relationships among psychological or affective states (Podsakoff, MacKenzie, Lee and Podsakoff 2003).

Fourth, because of privacy-related constraints, we could not control for the effects of some relevant demographic characteristics in Study 2 (i.e. gender, education and position within the organization). As these variables might significantly affect the strength and/or directions of the relationships among independent and dependent variables, they should be included in future studies aimed at corroborating our findings. Fifth, future studies should investigate plausible causal relationships among concerns about change and commitment to change through longitudinal designs. In this regard, because concerns about change represent state-based psychological reactions that are bound to vary depending on the state of progress of the change process, an interesting avenue for future research would be to examine changes in the experience of concerns over time and to assess how these variations are related to relevant change-related attitudes and behaviors.

In addition, given the relevant role exerted by innovative work behavior in alleviating potentially harmful effects of concerns about change, future research should devote more attention to this issue by assessing what conditions, at both individual and organizational levels, can foster employees' engagement in innovative courses of action. This would allow better understanding of how innovative responses can be adequately stimulated, promoted and supported within the context of change. Furthermore, because concerns represent a relatively new construct within the change literature, further research should be carried out in order to gain deeper knowledge on the effects of such reactions on subsequent change-related behaviors and outcomes, such as support for change initiatives, turnover intentions, job satisfaction and implementation behaviors.

It would be also interesting to examine whether the experience of negative psychological states (i.e. concerns about change), beyond exerting a negative impact on employees' desire to support the change initiative, is also likely to be channeled toward positive responses to change when certain individual or situational favorable conditions are met. Indeed, contrary to the long-held assumption among researchers and practitioners that resistance is a dysfunctional obstacle to organizational changes, some scholars have demonstrated that negative reactions to change are not necessarily detrimental, and that there are circumstances under which they can positively contribute to change initiatives (Knowles and Linn 2004; Ford, Ford and D'Amelio 2008; Battistelli, Montani and Odoardi 2013). Future studies should hence assess the role of those individual and contextual moderators that are likely to redirect concerns about change toward adaptive, change-supportive conducts.

Practical implications

Despite that there is still poor knowledge about the best practices that firms can implement to successfully overcome employees' concerns about change, managers and practitioners can draw important implications from this study. Firms and their top management should be aware of the role individuals' worries about changes can exert throughout the change

process. Recognizing that employees are likely to experience concern and discomfort about a change initiative and that such psychological states can dramatically impact the effectiveness of change efforts can help organizations to better plan change-related strategies that are aimed at properly managing such potentially harmful reactions. For example, our measure of concerns provides human resource professionals with a practical tool that assesses which aspects of a change initiative employees may perceive as being threatening. As a consequence, firms can gain a double advantage: on the one hand, they can give employees the opportunity to voice their worries about organizational changes, which can lead to increased perceived fairness and, ultimately, enhance personal willingness to contribute to the change program (Osterloh 2007; Michel, Stegmaier and Sonntag 2010); on the other hand, they can more effectively implement the lines of action required to address individuals' concerns, by tailoring these interventions to the specific patterns of discomfort that have been detected.

Additionally, the results of the current study, by stressing the importance of engaging in innovative endeavors for alleviating concerns about change, imply that firms should support and increase employees' coping skills by creating favorable innovation-supportive environments, such as developing innovation climates (King et al. 2007) and providing extensive training programs on creative- and innovation-relevant skills (Amabile, Conti, Coon, Lazenby and Herron 1996; Shipton, West, Dawson, Birdi and Patterson 2006). These strategies will effectively allow individuals to develop and introduce new working methods, processes or procedures that would help them to better face change-related demands.

Conclusion

The present study extended research on employee reactions to change by both highlighting the harmful consequences of employees' concerns about change and stressing the critical role of innovative work behavior in attenuating such psychological reactions. Our findings contributed to the change literature by showing that concerns about change are highly conducive to affective, normative and continuance commitment to change. Furthermore, we contributed to the innovation literature by showing that concerns about change significantly interacted with innovative behavior in predicting affective commitment to change, such that employees' engagement in innovative courses of actions could buffer the negative effects of concerns. These findings suggest that promoting and encouraging innovation in the workplace represents a valuable means for coping with intense change-related demands, thereby enhancing individual and organizational involvement in the change initiatives.

Note

1. This proposition may apparently contradict the findings reported by Oreg (2006), who, as mentioned above, found a negative relationship between cognitive evaluations of the change and continuance organizational commitment. However, this inconsistency can be explained by the fact that organizational commitment and commitment to change relate to different targets, i.e. the organization and the change, respectively. This suggests that employees who report negative cognitive appraisals of the change, as in Oreg's (2006) study, might regard the costs associated with the change initiative as being higher than those associated with leaving the organization. Consequently, these employees would be more likely to believe it is preferable to leave the organization, which is indeed what Oreg (2006) found. In contrast, our study does not assess the impact of negative appraisals of the change on employees' desire to remain in the firm. Rather, it examines their effect on the willingness to work toward a change initiative. In this regard, in line

with our earlier arguments, and consistent with the current organizational change literature, employees who worry about change initiatives should be more likely to refrain from supporting the change. Accordingly, we expect concerns about change to be positively, rather than negatively, associated with continuance commitment to change.

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Appendix: Completely standardized factor loadings for the three-factor model of concerns about change

| <i>Factor/item</i> | <i>Estimate</i> | |
|---|-----------------|----------------|
| | <i>Study 1</i> | <i>Study 2</i> |
| I am concerned: | | |
| <i>Concerns about content of change</i> | | |
| About the impact of this new change on my role | 0.81 | 0.92 |
| About my new responsibilities | 0.87 | 0.89 |
| About my position being degraded | 0.68 | 0.71 |
| <i>Concerns about benefits of change</i> | | |
| About putting too much energy into this change considering my outcomes | 0.75 | 0.63 |
| That the firm will not get benefits from this change | 0.54 | 0.64 |
| That I will not get personal benefits from this change | 0.59 | 0.82 |
| About time passing by before I will get the expected benefits from this change | 0.68 | 0.62 |
| <i>Concerns about mastering change</i> | | |
| About not understanding exactly what competences will be necessary for facing new tasks | 0.76 | 0.78 |
| About not being really able to face new tasks | 0.85 | 0.88 |
| About not being able to learn new ways of doing things | 0.67 | 0.49 |
| About not being enabled to contribute to the implementation of this change | 0.51 | 0.79 |

Note: $N = 435$ (Study 1); $N = 113$ (Study 2). All the item loadings were significant at $p < 0.01$ in both studies.