RUPRECHT-KARLS-UNIVERSITY HEIDELBERG
FACULTY OF BEHAVIORAL AND CULTURAL STUDIES

AFFECT AT WORK -
The Impact of Emotion Regulation on Employees' Well-being, Proactive and Adaptive Performance

Inauguraldissertation zur Erlangung des akademischen Grades eines Dr. phil. im Fach Psychologie, eingereicht an der Fakultät für Verhaltens- und Empirische Kulturwissenschaften der Ruprecht-Karls-Universität Heidelberg

EVA MARIA SCHRAUB

Submission: March 2011
Defense: July 26, 2011

Assessors:
Prof. Dr. Karlheinz Sonntag
Prof. Dr. Ralf Stegmaier

ACKNOWLEDGEMENTS

Making it a time I wouldn't want to miss, several people inspired, encouraged and supported me during the years of my dissertation project.

I am especially grateful to:

… my supervisor Prof. Dr. Karlheinz Sonntag, for the trust you had in me and for the freedom you allowed in my research

… my second assessor Prof. Dr. Ralf Stegmaier, for your advice and your sense of humor

… my colleagues at the department of Work and Organizational Psychology, for challenging discussions, the great team spirit, and all the chocolate

… Ursula Spellenberg and the other colleagues at Daimler AG, for the pleasant and successful cooperation in our research projects

… our interns and student assistants, for your outstanding support

… Sarah Keimer, Katja Schanz, Vera Clavairoly, Julia Kirchberg, Melanie Milovac, and Lisa Ritzenhoefer – thanks to your dedication it was a pleasure to supervise your theses

… the participants of my studies, for sharing your experiences

… Dr. Alexandra Michel, for your constructive feedback on this dissertation

… Dr. Veronika Buech, for jointly living through our PhD ups and downs, your friendship, and the great Klausenpfad neighborhood

… Dr. Meir Shemla, for being a constructive, reliable and appreciative cooperation partner

… Barbara Zimmermann, for inspiring professional exchanges, exciting trips into the 'world of science', and your critical feedback on this dissertation

… my friends, especially to Dr. Carina Vogel, Jasmin Ly, Andreas Reinhard, and Anne Kampschulte, for being there to both discuss work and get it out of my head - you greatly contributed to my work-life-balance

… my godmother Thea Pacyna and my grandaunt Pauline Spill, for your deep care

… and my parents Marlene and Erhard Schraub, for always encouraging me to make new experiences, for believing in me, and for your unconditional love and support.

This dissertation is dedicated to my parents.

DANKSAGUNG

Dass ich die letzten Jahre nicht missen möchte, verdanke ich einigen Personen, die mich in dieser Zeit der Arbeit an meiner Promotion inspiriert, ermuntert und unterstützt haben.
Mein besonderer Dank gilt:

… meinem Betreuer Prof. Dr. Karlheinz Sonntag, für das Vertrauen, das Sie mir entgegenbrachten und für die Freiheiten, die ich in meiner Forschung hatte
… meinem Zweitgutachter Prof. Dr. Ralf Stegmaier, für Deine Ratschläge und Deinen Humor
… meinen Kollegen in der Abteilung für Arbeits- und Organisationspsychologie, für spannende Diskussionen, den großartigen Zusammenhalt im Team und all die Schokolade
… Ursula Spellenberg und den weiteren KollegInnen der Daimler AG, für die angenehme und erfolgreiche Kooperation in unseren Forschungsprojekten
… unseren Hilfskräften und PraktikantInnen, für Eure großartige Unterstützung
… Sarah Keimer, Katja Schanz, Vera Clavairoly, Julia Kirchberg, Melanie Milovac und Lisa Ritzenhoefer – dank Eurer Leidenschaft und Eures Engagements war es eine Freude, Eure Diplom- und Bachelorarbeiten zu betreuen
… den TeilnehmerInnen meiner Studien, für das Teilen Ihrer Erfahrungen
… Dr. Alexandra Michel, für Dein konstruktives Feedback zu dieser Dissertation
… Dr. Veronika Buech, für das gemeinsame Durchleben der Höhen und Tiefen unserer Doktoranden-Zeit, Deine Freundschaft und die tolle Nachbarschaft im Klausenpfad
… Dr. Meir Shemla, für Deine konstruktive, verlässliche und wertschätzende Art der Zusammenarbeit in unseren gemeinsamen Projekten
… Barbara Zimmermann, für den inspirierenden fachlichen Austausch, spannende Reisen in die ‘Welt der Wissenschaft’ und Dein kritisches Feedback zu dieser Dissertation
… meinen Freunden, besonders Dr. Carina Vogel, Jasmin Ly, Andreas Reinhard und Anne Kampschulte, dafür dass Ihr da wart, meine Arbeit zu diskutieren und sie zu vergessen – Ihr habt sehr zu meiner ‘work-life-balance’ beigetragen
… meiner Patentante Thea Pacyna und meiner Großtante Pauline Spill, für Eure Fürsorge
… und meinen Eltern Marlene und Erhard Schraub, dafür, dass Ihr mich immer zu neuen Erfahrungen ermuntert habt, dass Ihr an mich glaubt und für Eure bedingungslose Liebe und Unterstützung.

Diese Dissertation ist meinen Eltern gewidmet.

PUBLICATION-BASED DISSERTATION

This dissertation is based on three articles that are can be found in Appendix A. These are,

Schraub, E.M., Michel, A., Shemla, M., & Sonntag, Kh. (under review). The Roles of Leader Emotion Management and Team Conflict for Team Members' Proactive Behavior: A Multilevel Perspective. *European Journal of Work and Organizational Psychology.*

Schraub, E.M., Stegmaier, R. & Sonntag, Kh. (2011). The Impact of Change on Adaptive Performance: Does Expression Suppression Moderate the Indirect Effect of Strain? *Journal of Change Management, 11* (1), 21-44.

Schraub, E.M., Clavairoly, V., & Sonntag, Kh. (under review). Emotion Regulation as a Determinant of Recovery Experiences and Well-Being: A Day-Level Study. *International Journal of Stress Management.*

CONTENT

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

This dissertation addresses intra- and interpersonal effects of emotion regulation on contextual work performance. Based on a comprehensive framework that was deducted from theories on affect and organizational behavior, four empirical studies in applied settings address the question of how emotion regulation at work affects well-being as well as proactive and adaptive performance.

The studies examine different forms of emotion regulation (intra- and interpersonal regulation, habitual and situational regulation) and their intra- and interpersonal effects. They rely on cross-sectional and longitudinal surveys that partly use a multilevel approach.

A **pre-study** examines direct relationships between self-rated habitual intrapersonal emotion regulation strategies at work (expressive suppression, reappraisal) and supervisor-ratings of individuals' adaptive and proactive performance in an explorative way. Hierarchical multiple regression analyses of data from a cross-sectional work sample (N = 83) indicate that the habitual use of expressive suppression is inversely related and the habitual use of reappraisal is not significantly related to the ratings of proactive and adaptive performance.

Study 1 analyzes how the situational application of intrapersonal emotion regulation strategies (expressive suppression, reappraisal) impacts the effects of negative emotional work experiences on individuals' recovery and well-being. Multilevel analyses of repeated-measurement data from a two-week diary of a student sample ($N_{participants}$ = 63, N_{data} = 726) reveal that both reappraisal and expressive suppression *buffer* prolonged adverse effects of negative emotional experiences.

Study 2 addresses the joint impact of perceived changes and habitual intrapersonal emotion regulation at work (expressive suppression) on individuals' self-rated well-being and adaptive performance. Bootstrapping analyses of cross-sectional data from a work sample (N = 153) show that negative effects of change on both criteria are buffered if employees do not fully express their emotions at work.

Study 3 focuses on the impact of team conflict and of leaders' emotion management on employees' well-being and proactive performance. Multilevel analyses on longitudinal data from 59 work teams indicate that task conflict (rated by team members) is detrimental for team members' positive affect (self-rated) and, thereby, for their proactive performance (rated by a colleague). Leader emotion management (rated by team members), in contrast, positively impacts team members' positive affect and their proactive performance. The study further

shows that the better the team leaders' emotion management, the lower the relationship conflict (rated by team members) in their teams.

The dissertation provides a comprehensive and yet differentiated contribution on different forms and consequences of emotion regulation at work and considers its dynamic nature. Addressing relations that are of relevance for understanding organizational behavior, but that have rather been neglected by previous research, it extends the literature on both emotion regulation and work performance.

Key words:
emotion regulation - emotion management - affect - adaptive performance - proactive performance - well-being - work stressors

GERMAN ABSTRACT (ZUSAMMENFASSUNG)

Die vorliegende Dissertation befasst sich mit intra- und interpersonalen Konsequenzen von Emotionsregulation auf kontextuelle Arbeitsleistung. Basierend auf einem umfassenden Modell, das aus Theorien zu Affekt und organisationalem Verhalten abgeleitet wurde, untersuchen vier empirische angewandte Studien, wie Emotionsregulation bei der Arbeit das Wohlbefinden sowie proaktive und adaptive Leistungsmaße beeinflusst.

In den Studien werden verschiedene Formen der Emotionsregulation (intra- und interpersonale Regulation, Regulationsstil und situativ angewandte Regulation) und deren intra- und interpersonale Effekte betrachtet. Die Studien beruhen auf Querschnitts- und Längsschnitts-Befragungen und haben zum Teil einen Mehrebenenansatz.

Eine **Vorstudie** untersucht direkte Zusammenhänge zwischen dem selbst eingeschätzten intrapersonalen Regulationsstil (Unterdrückung des Emotionsausdrucks, Umdeutung von Situationen) und der durch die Führungskraft eingeschätzten adaptiven und proaktiven Leistung auf explorative Weise. Hierarchische multiple Regressionsanalysen von Querschnittsdaten einer arbeitenden Stichprobe (N = 83) zeigen auf, dass die gewohnheitsmäßige Unterdrückung des Emotionsausdrucks negativ und die gewohnheitsmäßige Umdeutung von Situationen nicht signifikant mit den Leistungsmaßen zusammenhängt.

Studie 1 betrachtet, wie sich die situative Anwendung intrapersonaler Emotionsregulations-Strategien (Unterdrückung des Emotionsausdrucks, Umdeutung von Situationen) auf Effekte negativer emotionaler Arbeitsererlebnisse auf die Erholung und das Wohlbefinden auswirkt. Mehrebenenanalysen wiederholter Messdaten eines zweiwöchigen Tagebuchs einer Studierendenstichprobe ($N_{Teilnehmer}$ = 63, N_{Daten} = 726) zeigen, dass sowohl die situative Unterdrückung des Emotionsausdrucks, als auch die situative Umdeutung der entsprechenden Situation nachteilige Effekte von negativen emotionalen Erlebnissen abpuffern.

Studie 2 befasst sich mit dem gemeinsamen Einfluss von wahrgenommenen Veränderungen und intrapersonalem Regulationsstil (Unterdrückung des Emotionsausdrucks) auf selbsteingeschätztes Wohlbefinden und adaptive Leistung. Bootstrapping-Analysen von Querschnittsdaten einer arbeitenden Stichprobe (N = 153) zeigen, dass negative Effekte von Veränderungen auf beide abhängige Variablen abgepuffert werden, wenn die Angestellten den Ausdruck ihrer Emotionen bei der Arbeit zumindest zum Teil unterdrücken.

Studie 3 befasst sich mit den Einflüssen von Team-Konflikten und dem Emotions-Management der Führungskraft auf das Wohlbefinden und die proaktive Leistung von Angestellten. Mehrebenenanalysen von Längsschittsdaten aus 59 Arbeitsteams weisen darauf hin, dass Aufgabenkonflikte (eingeschätzt durch die Teammitglieder) sich negativ auf den positiven Affekt (selbst eingeschätzt) und damit negativ auf die proaktive Leistung der Teammitglieder (eingeschätzt durch einen Kollegen) auswirken. Das Emotions-Management der Führungskraft (eingeschätzt durch die Teammitglieder) beeinflusst den positiven Affekt der Teammitglieder und ihre proaktive Leistung hingegen positiv. Die Studie verdeutlicht desweiteren, dass Beziehungskonflikte (eingeschätzt durch die Teammitglieder) umso geringer sind, je besser das Emotions-Management der Führungskraft eingeschätzt wird.

Die Dissertation leistet einen umfassenden und dennoch differenzierten Beitrag zu Formen und Konsequenzen der Regulation von Emotionen bei der Arbeit und berücksichtigt deren dynamische Eigenschaften. Durch die Betrachtung von Zusammenhängen, die relevant sind für das Verständnis organisationalen Verhaltens, aber die in bisheriger Forschung größtenteils vernachlässigt wurden, erweitert sie die Literatur zu den Themen Emotionsregulation und Arbeitsleistung.

Schlagworte:
Emotionsregulation - Emotions-Management - Affekt - adaptive Leistung - proaktive Leistung - Wohlbefinden - Arbeitsstressoren

1 INTRODUCTION

Throughout the last three decades, an ‘affective revolution’ has taken place within organizations (Barsade, Brief, & Spataro, 2003). Practitioners have realized that emotions, moods, and affective competences greatly impact employees’ attitudes, behaviors, and well-being. They noticed that work satisfaction, organizational commitment, turnover intentions, and people’s motivation and engagement are to a great extent determined by affective experiences at the workplace. Apparently, employees are not only driven by monetary benefits, but also by the way their job makes them feel. Thus, the focus of human resource practices like personnel marketing and leadership development has turned to work characteristics and experiences that make employees feel good with their jobs (e.g., organizational culture, positive supervisor feedback).

However, negative emotional experiences such as undesired changes at the workplace, conflicts with coworkers or failures in goal attainment cannot entirely be avoided at work. Thus, people frequently apply emotion regulation techniques to deal with their emotions: They may decide to share their emotional experiences with others, to see the situation in a different light, to seek out certain experiences and avoid others, and so on. Besides negative ones, positive emotions can also be regulated so as to experience more and longer lasting positive feelings - for example by sharing positive experiences (cf. Gable, Reis, Impett, & Asher, 2004). Employees who are competent in emotion regulation may also be considered better team players, as they often not only know how to control their own emotions, but also notice and acknowledge others’ emotions (cf. Lopes, Salovey, Côté, & Beers, 2005). It is therefore not surprising that enthusiasm for the concept of emotion regulation is high among practitioners (Jordan, Murray, & Lawrence, 2009) and that competences in emotion regulation are being considered in recruiting processes (Ashforth & Saks, 1996; Lynn, 2008).

In organizational research, the role of affect had long been neglected. Influential theoretical developments of the late 20th and early 21st century (Broaden-and-Build Theory, Fredrickson, 2001; Affective Events Theory, Weiss & Cropanzano, 1996), however, have induced a still continuing line of research on antecedents and consequences of affective experiences in organizations. This research stream meanwhile treats the most distinct psychological constructs, such as culture, justice, performance, stress, and power. It examines affective processes and mechanisms not only on the individual, but also on the group and organizational level (Elfenbein, 2008). Thereby, researchers revealed that affective experiences are a persistent part of everyday working life (Barsade & Gibson, 2007) that

influence for example decision making, work behavior, absenteeism, and turnover (e.g., George & Jones, 1996; Isen, 1993; Isen, Daubman, & Nowicki, 1987; Pelled & Xin, 1999; Staw, Sutton, & Pelled, 1994). This being said, one still finds that on an empirical level, much remains to be explored with regard to affective influences and competences in occupational settings.

For example, *affective determinants of contextual, change-oriented behavior*, such as adaptive and proactive performance, have been proposed (Parker, Bindl, & Strauss, 2010; Rank & Frese, 2008) but are not yet well understood. Such behavior, however, has become highly important in the face of today's highly competitive work environments, in which many organizations are pressured to be innovative, have decentralized work structures, and are organized around self-managed work teams (Campbell, 2000; Frese & Fay, 2001; Griffin & Hesketh, 2003; Pulakos, Arad, Donovan, & Plamondon, 2000; Sonnentag & Frese, 2002). Identifying the drivers of active and change-oriented contextual performance would allow organizations to promote this kind of behavior.

Another research stream on affect in organizations that warrants further investigation is *emotion regulation*. Although the body of research on intra- and interpersonal emotion regulation strategies has grown in the last years, much of what has been learnt comes from short-term experiential laboratory studies (Bono & Vey, 2005). Moreover, results of applied research are so far unequivocal (see, e.g., Brown, Westbrook, & Challagalla, 2005; Lok & Bishop, 1999; Sanz-Vergel, Demerouti, Moreno-Jiménez, & Mayo, 2010). Also, the mechanisms by which emotion regulation works in the face of today's work demands (e.g., changes, teamwork) need to be explored in greater detail to learn how employees can be selected and/ or trained to perform well in terms of, for example, adapting and showing initiative (cf. Rank & Frese, 2008).

Given the lack of empirical research on the effects of affect and emotion regulation on important contextual performance dimensions in contemporary workplaces, the present dissertation aims at identifying some of the processes by which emotion regulation can explain proactive and adaptive performance. In the contexts of different work-related stressors (i.e., work-related daily negative events, changes at the workplace, and team conflict), this dissertation addresses the role of emotion regulation strategies with regard to its effects on a person's own and others' well-being and performance. The two main research aims are:

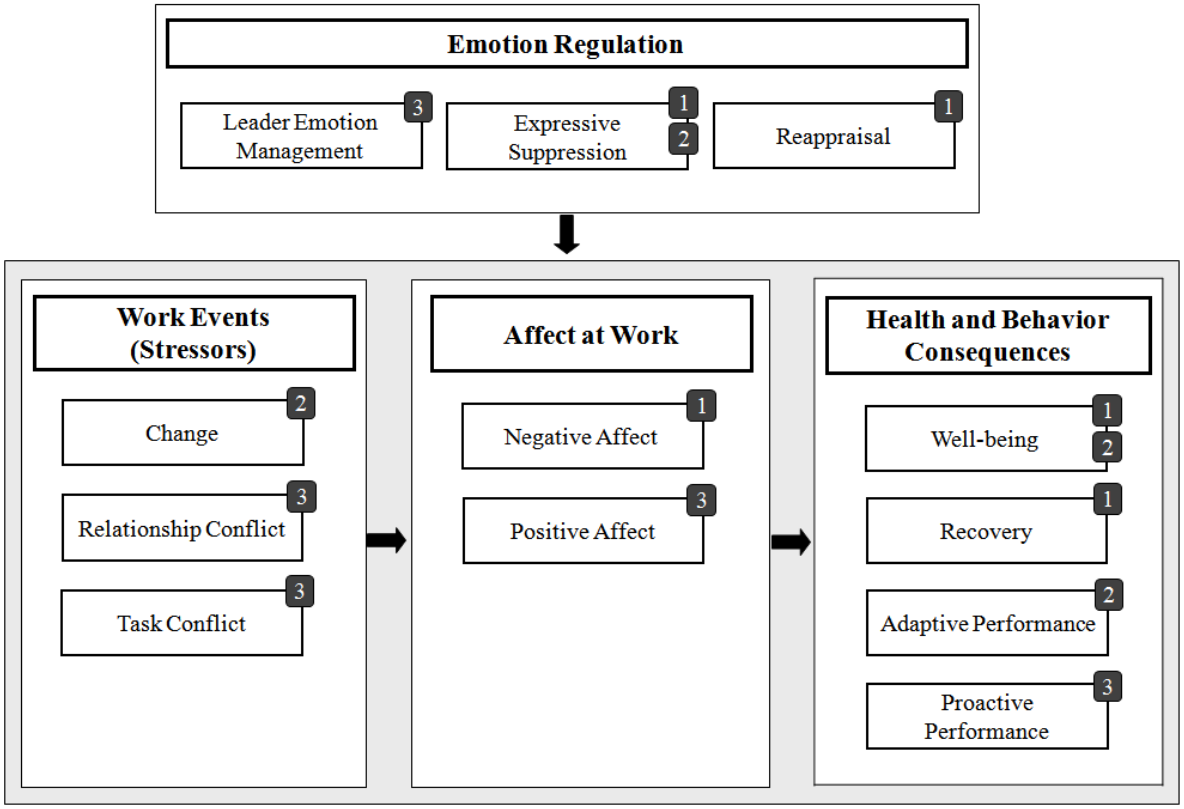
I. Shedding light on contexts and mechanisms that explain how emotion regulation affects *one's own* well-being and contextual performance in the occupational setting.

II. Shedding light on contexts and mechanisms that explain how emotion regulation affects *others*' well-being and contextual performance in the occupational setting.

To address these aims, a pre-study and three consecutive studies that are characterized by different foci and methodological approaches were designed:

The pre-study, first of all, captures the relationship between the *habit to use two strategies of emotion regulation* at the workplace and proactive and adaptive performance in an explorative way. Study 1 addresses how the *situational application* of these same strategies predicts well-being in a diary design. Study 2 examines how the *habit to suppress one's emotional expression* at the workplace affects adaptive performance during change in a cross-sectional design. Study 3, finally, addresses *interpersonal effects* of emotion regulation in teams in a longitudinal design.

By specifically examining intrapersonal and interpersonal effects of emotion regulation in the context of different stressors, this dissertation contributes to a differentiated picture of the relationship between emotion regulation and performance. To guide further reading, Figure 1 gives an overview on the antecedents and consequences of the affective states that are addressed. It depicts all constructs examined in the different studies.



Note. Numbers indicate the study in which the construct was examined.

Figure 1.1 Framework Integrating the Constructs of the Present Dissertation

The further structure of this dissertation is as follows: In Chapter 2, the theoretical background of the research is described and its central constructs are defined. In Chapter 3, so far unresolved issues are pointed out and the development of the research questions is explained. Chapter 4 provides a description of the methodological approach, that is, of the applied designs and statistical methods. In Chapter 5, the pre-study is summarized. Chapter 6 gives an overview and summary of the three main studies of this dissertation, which are provided in full length in Chapter 9. In Chapter 7, all results are subjected to a general discussion, in which limitations and strengths of this dissertation are mentioned. This chapter also presents suggestions for further research and practical implications of this dissertation.

2 THEORETICAL BACKGROUND

This chapter provides the theoretical background of the present dissertation. The central constructs – affect, emotion regulation, and performance – are explained and findings of the existent literature are described.

2.1 Affect in the Workplace

Affect influences organizational behavior in multiple ways (cf. Barsade & Gibson, 2007). While the term 'emotions in the workplace' is often used to recapitulate these influences, a more precise picture develops if one distinguishes between *affective traits*, *states*, and *competences*, which are summarized under the umbrella term of *affect*.

Affective traits (or *affectivity*), first of all, are relatively stable personality characteristics that determine the perception of situations (cf. Watson & Clark, 1984). The most frequently distinguished affective traits are positive and negative affectivity, which are tendencies to experience positive and negative feelings, respectively (e.g., Watson, Clark, & Tellegen, 1988; Weiss & Cropanzano, 1996).

Affective states (or *feelings*), on the other hand, encompass the two concepts emotion and mood. *Emotions* are discrete, short-term, and intense reactions to a stimulus or event (e.g., Beal, Weiss, Barros, & MacDermid, 2005; Fisher & Ashkanasy, 2000; Frijda, 1993; Lazarus, 1991). They are characterized by physiological, experiential, motivational and cognitive components (Izard, 1991; Mayer, Salovey, Caruso & Sitarenios, 2001) and signal that an event is relevant for significant personal goals (Hänze, 2002). *Moods*, on the other hand, are longer and more diffuse experiences; one typically lacks awareness of the eliciting stimulus (Elfenbein, 2008). Moods can be left behind by emotions that fade (meaning that the original trigger or antecedent is no longer salient), and can be elicited by stimuli of rather low intensity (e.g., Cropanzano, Weiss, Hale, & Reb, 2003). They can also be elicited by dispositional affective traits (Lazarus, 1991). Consequently, and unlike emotions, people oftentimes are not aware of being in a certain mood, and do not realize that this mood is actually impacting their behavior (Forgas, 1992).

Both affective traits and affective states are typically structured according to the two dimensions of positive and negative affect. According to Watson and Tellegen (1985), these two dimensions are independent and unipolar.

Affective competences, finally, encompass abilities that are related to the perception and management of one's own and others' emotions and moods. Several constructs describing

such competences have been developed during the last decade (cf. Conte, 2005) and have received great attention by researchers and practitioners. One prominent construct is emotion regulation (e.g., Gross, 1998b; Mikolajczak, Nelis, Hansenne, & Quoidbach, 2008). Because it is one of the focal constructs of this dissertation, emotion regulation will be described and discussed in more detail in Chapter 2.3.

2.2 Theories on Affect in the Workplace

Among the theories that explain organizational behavior, a few ones that focus on antecedents and consequences of affective experiences have become quite influential. In the following paragraph, the Affective Events Theory, the Broaden-and-Build Theory of positive emotions, the CWB-OCB emotion model (i.e., a model on counterproductive work behavior, organizational citizenship behavior, and emotion) as well as the Transactional Stress Model are described in more detail. Although further theories are used to deduct the hypotheses of the different studies, the frameworks presented in this chapter provide the theoretical basis of the present dissertation project as a whole.

While Affective Events Theory has guided numerous studies on antecedents and consequences of affect in organizations, it does not specify differential effects of positive and negative affective experiences. Such a specification is proposed by the Broaden-and-Build and the CWB-OCB emotion theories. The Transactional Stress Model, finally, offers a stress-strain perspective on emotion regulation in organizations.

2.2.1 Affective Events Theory

"In the last decade of the twentieth century, researchers became involved in in-depth analyses of the causes and consequences of specific emotions and moods at work" (Wegge, Dick, Fisher, West, & Dawson, 2006, p. 238). In this tradition, Weiss and Cropanzano (1996) presented their Affective Events Theory (AET) as a framework for studying emotions, moods, attitudes, and behaviors at work (see Figure 2.1).

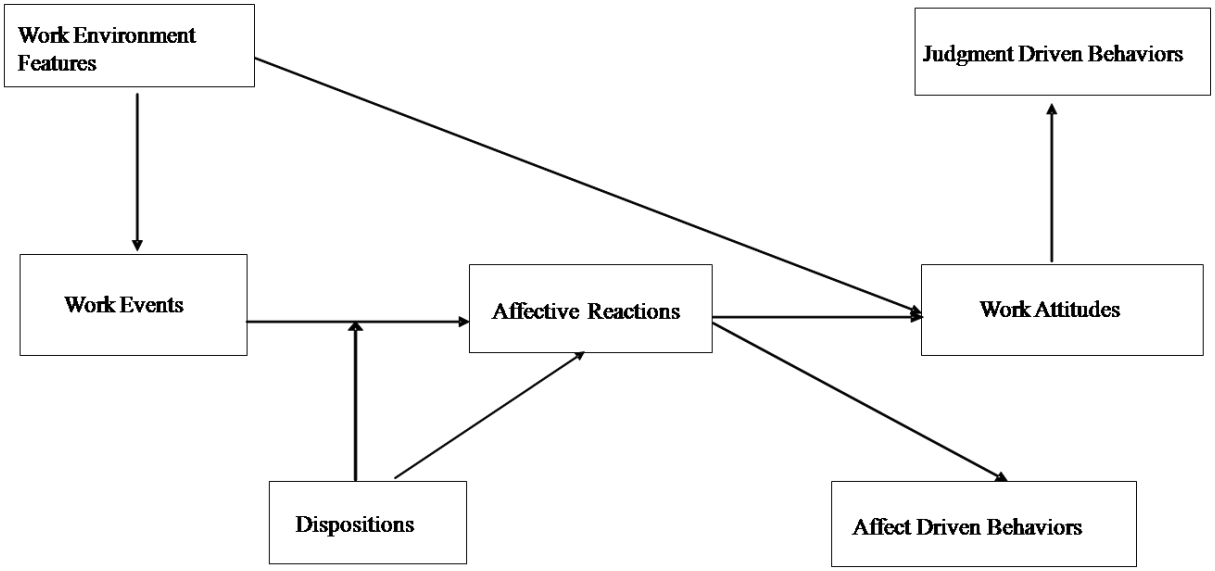


Figure 2.1 Affective Events Theory (Weiss & Cropanzano, 1996, p. 12)

The authors of this theory state that *work events* (e.g., interactions with colleagues) are evaluated and interpreted. Depending on their appraisal (i.e., their relevance and valence), these work events evoke *affective reactions* (i.e., moods and emotions), which are important drivers of attitudes and behavior. Affective reactions, in turn, are determined by personality *dispositions* (e.g., positive and negative affectivity; Watson & Clark, 1984). These dispositions directly influence affective experiences at work, since they determine which experiences an individual most likely perceives, looks for and accepts (Wegge & Neuhaus, 2002). The cumulative experience of positive and negative feelings while working, in turn, is proposed to influence *work attitudes* (e.g., job satisfaction, organizational commitment). While Weiss and Cropanzano (1996) state that *judgment driven behaviors* (e.g., turnover) develop out of work attitudes in a more rational and intentional way, they propose that some behaviors, so called *affect driven behaviors* (e.g., organizational citizenship behaviors), are directly driven by momentary feelings rather than by attitudes.

AET has received ample empirical support in diverse samples (e.g., Wegge, et al., 2006; Wegge & Neuhaus, 2002). Studies indicate, for example, that emotions predict organizational citizenship behaviors and workplace deviance over and above trait affect (e.g., George, 1991). In a study on organizational change, Paterson and Cary (2002) found that change management (a work event) predicted change anxiety (an affective reaction) and thereby determined change acceptance and trust in management (work attitudes). Fisher (2002) revealed that positive affective reactions to work events predicted affective commitment (a work attitude) and helping behavior (affect driven behavior).

For the present dissertation, AET serves as a general framework. Following its prediction that work events evoke affective reactions, it is expected that organizational changes and team conflict as perceived work events should impact employees' positive and negative affect. According to the theory's prediction that affective reactions directly drive certain work behaviors, it is further hypothesized that employees' positive and negative affect determine their adaptive and proactive performance. However, AET lacks a specification on how positive and negative affect differentially impact these behaviors. Therefore, two further models that offer such a specification are drawn on: the Broaden-and-Build theory and the CWB-OCB emotion model.

2.2.2 Broaden-and-Build Theory

In her Broaden-and-Build Theory of positive emotions, Fredrickson (1998, 2001) assumes that positive emotions broaden one's attentional and cognitive horizon, on which an increase in personal resources may be built. For example, joy at the workplace may trigger the urge to discover new things and to be creative by enlarging one's scope of attention and cognitive capacity at that moment. This process may then initiate positive upward spirals, meaning that discovering new things and having lots of new ideas will build longer lasting social, intellectual, psychological, and even physical personal resources.

Findings supporting the Broaden-and-Build Theory demonstrate that the experience of positive emotions leads to creative and flexible thoughts and actions (e.g., Isen, et al., 1987; Richards, 1994). Fredrickson and Joiner (2002) found that positive emotions enhanced not only people's current, but also their future emotional well-being.

In this dissertation, the Broaden-and-Build Theory is used to make predictions on how affective experiences predict proactive performance. As the theory suggests that self-initiated, future-oriented behavior, which characterizes proactive performance, benefits from positive affective states, it is expected that positive affect should instill proactive behavior. This expectation is examined in Study 3.

Although it does specify the mechanisms by which positive affect induces certain forms of behavior, the Broaden-and-Build Theory does not make precise assumptions about negative affect. In line with the approach-avoidance concept (e.g., Fiedler, 2001), Fredrickson merely indicates that negative emotions rather cause adverse effects of positive emotions, meaning that they narrow people's perceived cognitive and behavioral options (e.g., 'fight or flight'; Fredrickson & Joiner, 2002). A further model, the CWB-OCB emotion model, is

therefore drawn on to obtain a specification of how negative affect may influence employees' contextual performance.

2.2.3 The general CWB-OCB emotion model

Spector and Fox (2002) developed a framework of two major processes that explain extrarole (or contextual) behavior, which is voluntary behavior beyond the mere fulfillment of assigned tasks. They differentiate *organizational citizenship behavior* (OCB; Organ, 1997), that is, "voluntary altruistic or helpful acts that have the potential to enhance organizations" (e.g., helping behavior; Spector & Fox, 2002, p. 269), from *counterproductive work behavior* (CWB), that is, "voluntary, potentially destructive or detrimental acts that hurt colleagues or organizations" (e.g., absenteeism; Spector & Fox, 2002, p. 270). According to the authors, negative affect and positive affect differentially determine these two types of contextual behavior (see Figure 2.2).

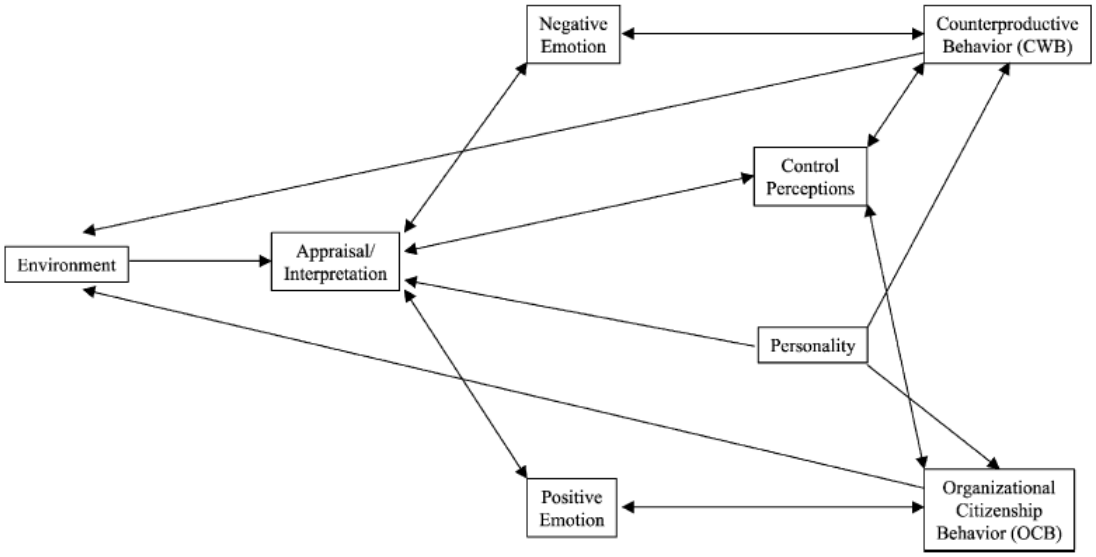


Figure 2.2 The General CWB–OCB Emotion Model (Spector & Fox, 2002, p. 275)

Similar to AET, the framework delineates that the appraisal of work events (i.e., the environment) elicits affective reactions (i.e., positive and negative emotions), which directly evoke affect driven behaviors (i.e., CWB and OCB). Extending AET, the CWB-OCB emotion model further specifies how negative and positive affect differentially impact such behaviors: It states that *negative emotions* may elicit *CWB*, whereas *positive emotions* are more likely to trigger *OCB*. As AET, Spector and Fox (2002) also propose that both processes are associated with personality: Due to seeing things in a different light, negative affectivity renders negative

emotions and a CWB tendency more probable, while positive affectivity increases the likelihood of positive emotions and of acting in an OCB-like fashion.

Support for the emotion-behavior predictions of the model comes from a variety of studies showing that negative affect tends to be related to CWB and that positive affect tends to be related to OCB (cf. Grandey, 2008). George and colleagues, for example, examined the relation between affect and specific OCB behaviors (such as prosocial behavior); they report positive effects of positive affect (George, 1991; George & Brief, 1992). Pelled and Xin (1999) showed that negative mood was positively associated with turnover and absenteeism, whereas positive mood was negatively related to these forms of withdrawal behaviors. Lee and Allen (2002) revealed that the negative emotion hostility predicted CWB, whereas both positive emotions and a broader measure of positive affect predicted OCB.

In the present dissertation, the CWB-OCB emotion model's predictions are drawn on to infer that positive affective experiences should induce proactive performance, which is a form of contextual performance, just like OCB (Sonnentag & Frese, 2002). Furthermore, and although it does not consider the role of emotion regulation, it can be used to argue why emotion regulation is required at work and should be addressed in organizational research. One the one hand, the adequate regulation of negative feelings at work should prevent behavior like CWB that is detrimental for organizational success. On the other hand, emotion regulation might enhance positive affect and thereby contextual performance. Based on these expectations, the present dissertation addresses the question of whether emotion regulation strategies indeed affect adaptive and proactive performance.

As all previously described models lack an integration of the function of emotion regulation, a further model, the Transactional Stress Model, is used to complement these models. It delineates how coping, a concept that is closely related to emotion regulation, may affect well-being and behavior.

2.2.4 The Transactional Stress Model

Lazarus and Folkman's (1984) Transactional Stress Model describes how an individual's affect, well-being and behavior depend on cognitive evaluations of a certain situation, and on the application of coping strategies (see Figure 2.3).

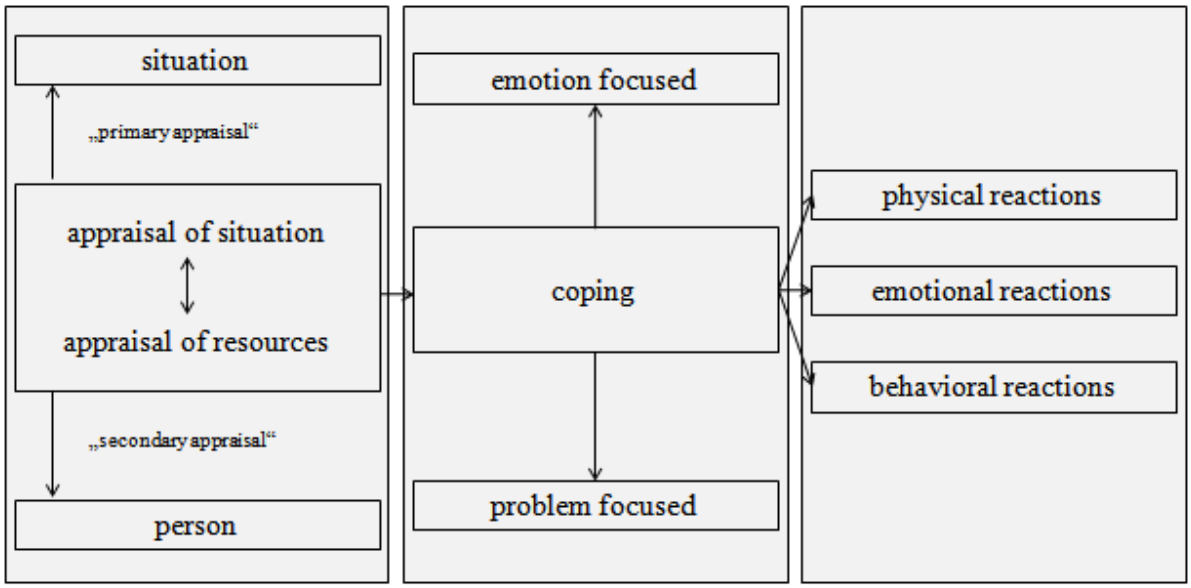


Figure 2.3 The Transactional Stress Model (Lazarus & Folkman, 1984; adopted from Renneberg, Erken, & Kaluza, 2009, p. 140)

According to this model, emotional reactions can be explained by two interactive processes: In the *primary appraisal process* individuals appraise an event with regard to their goals and concerns. Similar to the predictions of AET and the CWB-OCB emotion model, the Transactional Stress Model states that this appraisal determines the emotions that are aroused: Relevant and positive events (e.g., a salary raise) evoke positive emotions due to potentially beneficial consequences, whereas relevant and negative events (e.g., conflict within the team) arouse negative emotions due to potentially harmful consequences. In the *secondary appraisal process* individuals evaluate the availability of resources to cope with the situation: If the individuals perceive to have adequate resources, they should rather take an active coping approach, whereas they should behave passively if they believe to have insufficient resources. The *applied coping strategies*, in turn, lead to the experience of strain if not adaptive. In sum, the framework explains why work events such as changes at the workplace or team conflict can lead to different behavioral reactions for different individuals. There is considerable empirical evidence that has tested and validated the theory's assumptions, showing that if perceived demands exceed perceived resources, this imbalance often results in strain reactions (cf. Zapf & Semmer, 2004).

Because of the Transactional Stress Model's predictions and due to the overlap between emotion regulation and coping (see Chapter 2.3), a general assumption of the present dissertation is that an individual's emotion regulation strategies affect this individual's well-

being and behavior. In the different dissertation studies, it is explored how emotion regulation may influence affective experiences, well-being, and behavioral consequences.

After having defined affect and introduced theoretical arguments on affective mechanisms at work in the above sections, the next paragraph explains the second focal construct of this dissertation: emotion regulation. Following theory and definitions, its overlap and differentiation from the coping construct are discussed.

2.3 Emotion Regulation

In order to understand what emotion regulation is and how it works it is important to have a basic idea of the framework that this psychological construct is embedded in: the emotion process. A great many emotion and social psychologists have been studying the emotion process as an interconnected line of chronological processes. In short, as stated by Elfenbein (2008), during the emotion process an individual *automatically registers* an eliciting stimulus and experiences a feeling state and physiological changes. These experiences affect the individual's attitudes, cognitions, behaviors, and emotional expressions. Emotional expressions, finally, may become eliciting stimuli for interaction partners, thus moving the emotion process from the intrapersonal to the interpersonal level. As an example, one can imagine an employee facing a supervisor evaluation to notice being nervous and having sweaty hands. Fearing possible outcomes of the evaluation, this employee might work extra hours. His/her concerned appearance, in turn, might evoke uncertainty and sympathy in colleagues.

For each stage of the emotion process, there are distinct, inter- and intrapersonally varying and *controlled intrapersonal emotion regulation* processes (Elfenbein, 2008). These processes range from deliberately selecting only specific situations (e.g., situations that induce positive emotions) to regulating one's emotional expression (e.g., suppressing the expression of negative emotions). Gross (1998a) classified these strategies, developing a process model of intrapersonal emotion regulation. In this well-established model, *antecedent-focused emotion regulation* is distinguished from *response-focused emotion regulation* (see Figure 2.4).

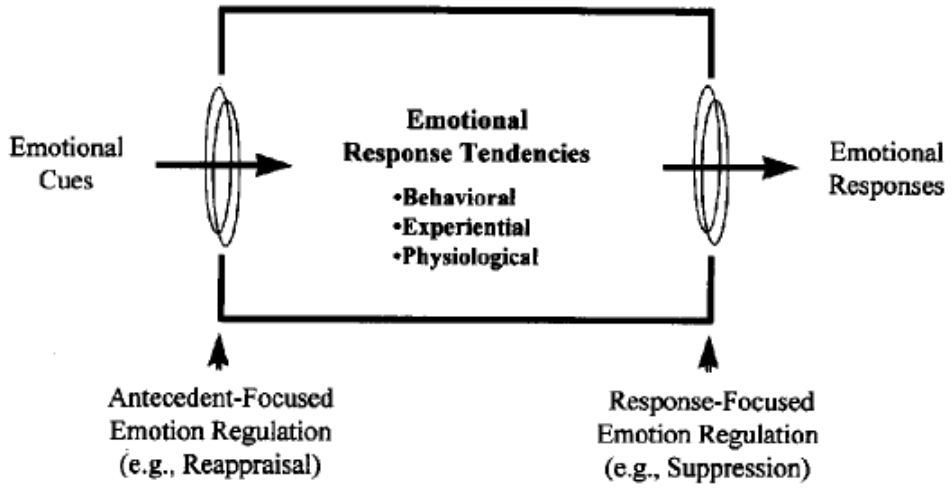


Figure 2.4 Process Model of Emotion Regulation (Gross, 1998a, p. 226)

Antecedent-focused emotion regulation takes place before one has behaviorally, experientially, or physiologically responded to an emotion-eliciting stimulus. An example would be to reappraise a situation so as to find some positive aspects in it. Response-focused emotion regulation, in contrast, refers to regulatory actions that are taken once the emotion has been generated. Response-focused strategies aim at increasing or decreasing emotional expressions after the emotional response tendencies to a stimulus have already been elicited. A frequently applied strategy of response-focused regulation is expressive suppression (Gross, 1998a), which is also known under synonymous labels such as 'emotional inhibition' (Roger & Nesshoever, 1987) and 'emotional suppression' (Gross & Levenson, 1993)[1]. An example for the application of this strategy would be hiding one's frustration from colleagues.

For an overview, the central constructs related to controlled emotion regulation that are frequently distinguished in the literature are described in Table 2.1. All of these controlled regulation processes may - at least to some degree - be consciously influenced, so that individual and group norms are prevailing over the automatic processing (Frijda, 1988; Gross, 2001b). However, controlled regulation strategies can also become automatic after their excessive use (Gross, 1998b).

[1] In the present dissertation, the label 'expressive suppression' is used, because it best describes that it is the overt *expression* of emotion (and not the experience) that is suppressed.

Table 2.1 Definition of Focal Constructs Related to Controlled Intrapersonal Emotion Regulation

Antecedent-focused emotion regulation	**Situation selection**	Preferred exposure to situations that evoke positive affective states and restricted exposure to situations that may result in experiencing negative emotions.
	Situation modification	Altering the situation itself in order to cope with its emotional impact, for example changing the topic of a conversation when feeling uncomfortable with the current discussion.
	Attentional deployment	Consciously focusing on a specific aspect of a situation.
	Reappraisal (also called 'cognitive change')	Regulating the attention one is giving to a potentially emotional event, thus interpreting a situation in terms of personal relevance (e.g., changing one's emotional schemas, focusing on a particular point within the situation, or completely ignoring it). In literature on emotional labor (for more detail on this kind of emotion regulation, see footnote [2]), this strategy is often labeled 'deep acting' (Hochschild, 1983).

[2] As a specific form of emotion regulation, Hochschild (1979) introduced the term *emotional labor* for the development of a visible expressive display to comply with explicit organizational norms, called display rules. Besides other contexts, for example work in hospitals, such explicit display rules typically characterize work in the service sector, where customers are to be served in a friendly way (e.g., by sales personnel, flight attendants, or call center agents). Employees are following a sort of script that incorporates display rules about adequate expressions (e.g., Grove, Fisk, Giacalone, & Rosenfeld, 1989), and are in most cases (excluding e.g., police officers) expected to always demonstrate a positive mood, no matter what might be at stake (Bettencourt, Gwinner, & Meuter, 2001). Under the umbrella term of emotional labor, the consequences of reappraisal, experience regulation, and display regulation have been analyzed where individuals need to deal with emotions as part of their job (cf. Elfenbein, 2008). As this type of emotion regulation is extensively researched, it is not in the focus of the present dissertation.

Table 2.1 (cont.)

Response-focused emotion regulation (response modulation)	**Experience Regulation**	Deliberate changes in one's emotional state; related to the concept of psychodynamic defense mechanisms: for example, denying or suppressing certain emotions, as well as physical reactions, such as eating, drinking alcohol, or exercising.
	Display regulation	Changing one's expressive reaction to an emotional event without changing the underlying emotion, e.g., de-intensifying or masking one's anger. One major strategy in this category is 'expressive suppression' (i.e, the suppression of external emotion expression). In the literature on emotional labor, display regulation is referred to as 'surface acting' (Hochschild, 1983).

What are the consequences of these different strategies? Experience regulation, first of all, has been related to a range of adverse effects on well-being, including heightened physiological arousal, reduced access to one's inner feelings, and a strong 'back-bouncing' of the negative feelings once control is lifted (Elfenbein, 2008). For other regulation strategies, the picture is not that clear. Gross (2001), who studied both *reappraisal* and *expressive suppression* as the two main forms of emotion regulation, described that expressive suppression decreased the emotional expression, but not the intensity of the felt emotion. It even increased physiological activation, supposedly due to the effort made to inhibit emotion-expressive behavior. Moreover, Gross (2001) and others found that expressive suppression had negative impacts on cognitive processes (it impaired memory) and on social relationships. As he found reappraisal to have opposite and more beneficial effects, Gross (2001) argued that emotion regulation processes tend to be more effective and successful the earlier in the emotion process they are deployed. Grandey (2000) suggested that both processes may be deployed concurrently, a phenomenon that has lately been examined in research on emotional labor. In this context, all possible kinds of correlations (i.e., positive, negative, null) between these two strategies of emotion regulation have been reported (e.g., Diefendorff, Croyle, & Gosserand, 2005; Goldberg & Grandey, 2007; Gosserand & Diefendorff, 2005), leaving an overall unclear picture of the research matter.

Considering that intrapersonal emotion regulation strategies are often applied for dealing with negative affective experiences, the question of how the construct of emotion regulation can be differentiated from the coping construct may arise. Thus, in the next paragraph the latter construct is introduced briefly, and similarities and differences between coping and emotion regulation are discussed.

Emotion regulation versus coping

In their seminal work, Lazarus and Folkman (1984) were among the first scholars who explored the concept of coping in depth. They defined it as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus & Folkman, 1984, p. 141). The authors distinguished between problem-focused coping, defined as "coping that is directed at managing or altering the problem causing distress" (Lazarus & Folkman, 1984, p. 150), and emotion-focused coping, defined as "coping that is directed at regulating emotional response to the problem" (Lazarus & Folkman, 1984, p. 150). With respect to the wording, a conceptual overlap between emotion-focused coping and emotion regulation appears to exist. Emotion-focused coping strategies, such as selective attention, avoidance, or cognitive reappraisal (Lazarus & Folkman, 1984), are obviously forms of emotion regulation (cf. Table 2.1). However, a closer examination of the coping literature reveals that the classification of these strategies is not without ambiguity: A coping taxonomy that builds on Lazarus and Folkman's differentiation (Steptoe, 1991) defines these same strategies as being forms of cognitive problem-focused coping. Moreover, other scholars distinguish between approach and avoidance coping (e.g., Tobin, Holroyd, Reynolds, & Wigal, 1989). Approach coping is defined as "engaged coping strategies in which the goal is to reduce, eliminate, or manage the internal or external demands of a stressor" (Nes & Segerstrom, 2006, p. 236), whereas avoidance coping refers to "disengaged coping, in which the goal is to ignore, avoid, or withdraw from the stressor or its emotional consequences" (Nes & Segerstrom, 2006, p. 236). In this classification, cognitive reappraisal would belong to the approach coping strategies, whereas the denial of the situation and the suppression of the emotional experience would belong to the avoidance coping strategies (Nes & Segerstrom, 2006).

As demonstrated, the classification of specific emotion regulation strategies within the broader coping dimensions is not clear. From the coping literature, one can therefore not conclude how specific emotion regulation strategies work. Additionally, there are some

further distinctions between the two constructs. One such distinction is that coping describes an attempt to deal with a stressor that is considered negative. By applying some form of coping, individuals aim at reducing this stressor or the negative emotional experience associated with it. Emotion regulation, in contrast, may be applied to regulate not only negative but also positive emotional experiences (Kalat & Shiota, 2007). For example, sharing one's positive feelings about the successful termination of a project with colleagues would probably increase one's positive affect (cf. Gable, et al., 2004). Another distinction to the coping construct is that emotion regulation may mean to only modify one's emotional expression, without changing one's emotional experience (e.g., when a supervisor demonstrates anger to impress and activate an employee while actually feeling not that angry). In sum, coping and emotion regulation can be considered closely related psychological constructs. Results from a recent empirical study by Watson and Sinha (2008) indicate that the two constructs of emotion regulation and coping indeed appear to be both independent and overlapping. To specify their contribution in explaining well-being and contextual performance, the focus of the present dissertation is on distinct emotion regulation strategies.

Apart from regulating *their own* emotions through the intrapersonal emotion regulation strategies described above, people may also intend to change *others'* emotions. The strategies used for the latter are called *interpersonal emotion regulation*. While most research on emotion regulation sticked to intrapersonal regulation, Niven, Totterdell, and Holman (2009) aimed at classifying interpersonal emotion regulation strategies. They had 378 different strategies generated, using self-report questionnaires and diaries from working and student samples. From this pool of strategies, they identified two major forms of interpersonal regulation: One focuses on the (positive versus negative) engagement, the other one on the relationship (characterized by acceptance versus rejection). An example of an affect-improving, positive engagement strategy would be allowing another person to vent (i.e., to express and/or discuss their negative feelings; Brown, et al., 2005). An affect-worsening, relationship-oriented strategy would be to always put one's own feelings first.

In higher-order constructs of emotional competences (e.g., some emotional intelligence conceptualizations; cf. Jordan & Lawrence, 2009), intra- and interpersonal emotion regulation are found to be combined to form an *emotion management* dimension. Figure 2.5 portrays the distinction of the emotion regulation dimensions as it is used in the present dissertation.

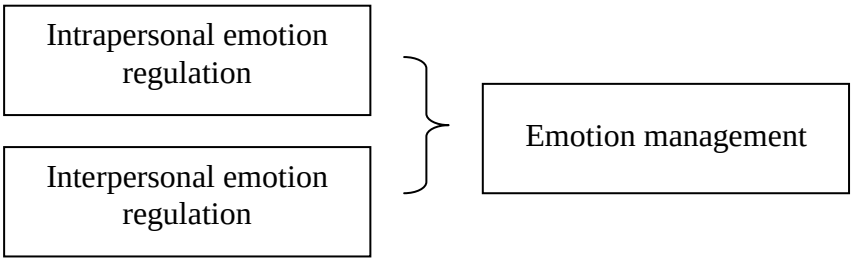


Figure 2.5 Dimensions of Emotion Regulation

Having described two of the focal constructs of this dissertation, affect and emotion regulation, in the above sections, the next subchapter deals with the third and last of its focal constructs: contextual work performance.

2.4 Work Performance

With regard to this century's globalized and highly competitive work environment, scholars have acknowledged the new requirements of the modern workplaces by the development of new performance concepts (Campbell, 1999; Fay & Sonnentag, 2010; Frese, 2008; Frese & Fay, 2001; Sonnentag & Frese, 2002). In contrast to traditional workplaces, contemporary work is characterized by constant changes, reduced supervision, new technology, vertical integration, and frequent cooperation (By, 2005; Frese, 2008; Sonnentag & Frese, 2002). Resulting from these complicated and dynamic work environments, jobs are increasingly complex and non-routine (Han & Williams, 2008). Employees, thus, are expected to go beyond task descriptions, instructions, and orders (Campbell, 2000). Contextual performance in different forms such as constant learning, the adaptation to changes as well as an active, future-oriented and engaged approach towards work is requested (Frese, 2008; Griffin & Hesketh, 2003; Griffin, Parker, & Neal, 2008). Contextual performance is defined as behaviors that support organizational success, but that do not belong to the employees' core task requirements (Borman & Motowidlo, 1993).

Following from these contemporary work characteristics and behavior requirements, this dissertation focuses on two change-oriented, contextual performance concepts that are both highly relevant in today's work context and yet under-researched in terms of their affect-related antecedents: adaptive and proactive performance. In the next sections, these two performance concepts are introduced.

2.4.1 Adaptive Performance

While the need to extend existing performance concepts by adding an 'adaptive performance' dimension has meanwhile been stressed by various scholars (e.g., Campbell, 1999), the debate of whether this performance dimension rather represents contextual performance or a unique performance concept is not yet over (cf. Allworth & Hesketh, 1999; Johnson, 2001). Integrating some aspects of the debate, Griffin, Neal, and Parker developed a Model of Positive Work Role Behavior (2007). They distinguish between three sub-dimensions of work performance: proficiency, adaptivity, and proactivity. While proficiency resembles task performance ("fulfills the prescribed or predictable requirements of the role", Griffin, et al., 2007, p. 330), contextual performance is split into two further sub-dimensions: adaptivity ("copes with, responds to, and supports change") and proactivity ("initiates change, is self-starting and future-directed" , Griffin, et al., 2007, p. 330).

Thus, it can be concluded that adaptive performance can be distinguished from other types of performance. The difficulty in establishing and agreeing on a concrete definition of adaptive performance is, however, exacerbated by the fact that adaptive performance requirements may vary depending on the nature of the job. While a job in sales, for example, may require employees to adapt to the needs and characteristics of different clients, someone working in an international context may face the challenge of adapting to traveling, whereas someone working in the home office needs to adapt to working with new communication media. The variety of behaviors that can be considered adaptive performance (e.g., flexibility, versatility) further enhances the elusiveness of the concept. Research on organizational change, for example, operationalized adaptive performance as specific change-supportive behaviors such as innovation implementation (e.g., Michel, Stegmaier, & Sonntag, 2010; Orth, 2002), or focused on peoples' adaptation to specific tasks which had been changed (Ployhart & Bliese, 2006).

Scholars who understand adaptive performance as a broader set of behaviors often rely on the behavioral taxonomy developed by Pulakos and colleagues (2000), which is also used in the present dissertation. This taxonomy includes behaviors such as dealing with uncertain and unpredictable work situations, demonstrating interpersonal adaptability, and learning new work tasks, technologies, and procedures.

Besides adaptive performance, this dissertation focuses on proactive performance as a criterion. This type of work performance is therefore described in the next section.

2.4.2 Proactive Performance

Proactive performance represents an emergent form of behavior, which can include a variety of actions that are difficult to pre-specify (Griffin, et al., 2007). It is considered a form of contextual performance (Sonnentag & Frese, 2002). Crant (2000, p. 436) defined proactive behavior as "taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions". As described in the last section, Griffin and colleagues (2007) distinguish proactive behavior from proficient and adaptive behavior in their Model of Positive Work Role Behavior.

Proactive performance, just like adaptive performance, has been operationalized and assessed in various ways (Crant, 2000). Besides other concepts (e.g., taking charge; Morrison & Phelps, 1999), an illustrative example of a proactive performance concept is personal initiative (Frese, Kring, Soose, & Zempel, 1996). Going beyond formal work requirements, personal initiative describes future-oriented, goal-directed, persistent and self-started behaviorss that are carried out consistent with the organization's mission (Frese, et al., 1996).

Having presented the theoretical background of this dissertation in the present chapter, the next chapter delineates the development of its research questions.

3 DEVELOPMENT OF RESEARCH QUESTIONS

This dissertation aims at enhancing present knowledge on the interplay between different affect-related predictors and employees' proactive and adaptive performance. In the following sections, a review of the current state of the literature on this topic is given and the deduction of the research questions is described.

3.1 Unresolved Issues Concerning Affect and Performance in the Workplace

The existing literature on organizational and performance outcomes of affective traits and states reveals a complex picture (see also Chapter 2). Positive affect, on the one hand, exerts beneficial effects in many ways, including organizational commitment, negotiation performance, interpersonal behavior, organizational citizenship behavior, flexible and creative thinking, quick decision making, and well-being (e.g., Fiedler, 2001; George, 1991; Isen, 1993; Isen, et al., 1987; Spering, Wagener, & Funke, 2005; Staw, et al., 1994; Tugade, Fredrickson, & Barrett, 2004). In line with the predictions of Broaden-and-Build Theory (Fredrickson, 2001; see Chapter 2.2), a meta-analysis conducted by Lyubomirsky, King, and Diener (2005) even demonstrated that positive affect not only led to higher performance, but also enhanced success across life domains: It positively influenced interpersonal relations such as friendship and marriage as well as different measures of satisfaction.

Negative affect, on the other hand, has been linked to primarily negative work-related outcomes. A meta-analysis conducted by Thoresen, Kaplan, Barsky, Warren, and de Chermont (2003) revealed that negative affect was negatively associated with job satisfaction, commitment, and personal accomplishment, and positively related to burnout and turnover intentions. However, it should not remain unnoted that a discussion about the conditions under which negative affect can be conducive for certain types of performance has developed during recent years. Scholars assume and have found that - by indicating a deficient status quo - negative affect can instill creative behavior, initiative, and innovation under certain circumstances (cf. Martin, Ward, Achee, & Wyer, 1993; Rank & Frese, 2008). Furthermore, individuals in a negative mood can yield more favorable results when analytical thinking, thorough information seeking, or critical evaluation are demanded (Fiedler, 2001; Isen & Baron, 1991; Spering, et al., 2005; Staw, et al., 1994).

Besides these established findings, much of the relation between antecedents and outcomes of affective states in the work context remains yet to be explored. In particular, emotion regulation as a means to modulate affective reactions, and its effects on contextual

performance concepts such as proactive and adaptive behavior, are considered topics that warrant further research. These topics are therefore discussed in the following sections.

3.1.1 Behavioral and Performance Consequences of Emotion Regulation

A first topic that is not yet well understood is the relation between emotion regulation and work behaviors. For the important role that affective traits and states play for all different kinds of performance and according to the predictions of both the Transactional Stress Model (Lazarus & Folkman, 1984) and the Affective Events Theory (Weiss & Cropanzano, 1996), it seems very likely that emotion regulation should influence not only people's affective well-being, but also their contextual performance. In the last decade, researchers started exploring these relationships. The results of a review of this literature are presented in Table 3.1[3]. The table shows that in terms of the regulation strategies reappraisal and expressive suppression, which have most frequently been studied, reappraisal always yielded beneficial results (Gross & John, 2003; Raftery & Bizer, 2009; Shiota, 2006). However, inconsistent findings are being reported for expressive suppression. This strategy has been negatively associated with memory, social relationships, well-being, and job satisfaction in several studies (due to space and relevance, not all of them were included in Table 3.1; e.g.,Côté & Morgan, 2002; Gross & John, 2003; Richards, 2004; Richards & Gross, 1999, 2000b; Roberts, Levenson, & Gross, 2008; Srivastava, Tamir, McGonigal, John, & Gross, 2009). Most of these studies stem from researchers around Gross. However, empirical evidence of insignificant or even positive effects of expressive suppression has also been reported (e.g., Lok & Bishop, 1999). Consedine, Magai, and Horton (2005) demonstrated that its effects apparently depend on cultural background.

[3] The table excludes research on emotional labor, because this type of emotion regulation is not in the focus of this dissertation.

Table 3.1 Overview of Studies Examining Effects of Intrapersonal Emotion Regulation on Well-being and Performance

Sample Size and Context	Design	Focus	Results
Befahr and Cronin (2010)			
- N = 224 undergraduate students - N = 75 nurses - N = 184 undergraduate students	two laboratory experiments, one field experiment	Conditions under which the verbal expression of one's feelings ('venting') may be an adaptive strategy	- Verbal expression of emotions can be adaptive if it's about a work event and if listener's response is insightful (showing understanding; unburdening) - Insightful response caused venters to rethink their beliefs, useful for problem solving, made venters feel better - Verbal expression of emotions was more effective the more the listener emotionally understood the venter and the more challenging the answer
Sanz-Vergel, Demerouti, Moreno-Jiménez, and Mayo (2010)			
N = 49 individuals with different occupations in Spain	diary study	Influences of emotional expressions at work and at home for work-family conflict and facilitation as well as well-being	- The expression of positive emotions (especially at home) had beneficial effects on work-family conflict and facilitation as well as well-being - The expression of negative emotions did not affect work-family issues, but had direct and moderating negative effects on exhaustion
Raftery and Bizer (2009)			
N = 144 undergraduate students	experiment	Impact of emotion regulation on response to negative feedback and cognitive performance	- Habitual reappraisers: those who received negative feedback on a first test completed a second test better than did people who received moderate feedback - Habitual suppressors: their performance was not influenced by feedback
Cole, Walter, and Bruch (2008)			
N = 61 work teams of an international company	team study (questionnaire)	Impact of nonverbal emotional expression on team performance	- Negative team affective tone mediated the relationship between dysfunctional team behavior and performance when teams' nonverbal negative emotion expression was high but not when it was low

Table 3.1 (cont.)

Sample Size and Context	Design	Focus	Results
Shiota (2006)			
N = 91 undergraduate students (psychology course)	diary study	The relation between individual differences in coping and well-being	- Positive reappraisal and creating positive sensory events: positively associated with well-being (i.e., energy, strength, enjoyment, and engagement) - Eating: unrelated to well-being - Seeking social support: negatively associated with negative activation, but unrelated to positive activation - Problem-focused coping: unrelated to both positive and negative activation - Entertainment media: negatively associated with well-being
Brown, Westbrook, and Challagalla (2005)			
- N = 7 salespeople from one company - N = 161 salespeople from two companies	- exploratory interviews - questionnaire	Coping strategies as moderators of the relationship between negative emotion and work performance	- Verbal expression: amplified the adverse effects of negative emotion - Self-control: buffered the adverse effects of negative emotion and had a negative direct effect on outcomes - Task focus: positive direct effect on performance, but no buffering (moderating) effect
Consedine, Magai, and Horton (2005)			
N = 1364 women (50–70 years) from six ethnic groups, living in the US	questionnaire	Relation between individual differences in emotion regulation, ethnicity, and (physical) health	In general: - Trait anger and emotion inhibition predicted poorer health - Defensiveness predicted better health With regard to ethnicity: - Trait anger positively associated with health in all groups other than US-born European Americans - Emotion inhibition positively related to health for immigrated Eastern Europeans

Table 3.1 (cont.)

Sample Size and Context	Design	Focus	Results
Gross and John (2003)			
N = 210 undergraduates	questionnaire	Consequences of individual differences in emotion regulation for well-being	- Habitual reappraisers: fewer symptoms of depression, higher levels of environmental mastery, personal growth, self-acceptance, and positive relations with others - Habitual suppressors: more depressive symptoms, less satisfied with life, less satisfied both with themselves (lower self-esteem, less optimistic) and their relationships, more pessimistic about their future
Lok and Bishop (1999)			
N = 327 adult Singapureans	questionnaire	Effects of individual differences in emotion regulation on stress and health complaints	- Rehearsal: positively related to stress and health complaints - Emotion inhibition: negatively related to stress and unrelated to health complaints - Aggression control: unrelated to stress and health complaints - Benign control: negatively related to stress and health complaints
Richards and Gross (1999)			
N = 58 female undergraduate students	two laboratory experiments	Consequences of required expressive suppression on memory and cardiovascular activation	- Expressive suppression decreased incidental memory for information presented during the suppression period and increased cardiovascular activation

As Table 3.1 further shows, existent research has mostly focused on direct effects of intrapersonal emotion regulation. However, a few studies also focused on moderating effects of emotion regulation strategies. Specifically, three studies that examined emotion regulation in the organizational context (i.e., Brown, et al., 2005; Cole, et al., 2008; Sanz-Vergel, et al., 2010) could be identified. All of these three studies analyzed moderating effects of *emotional expression* at work. Interestingly, although the studies used different designs and outcomes, all studies revealed that if people expressed negative emotions, stress was more strongly related to negative outcomes: In a diary study, Sanz-Vergel and colleagues (2010) found that when negative emotions were verbally expressed at work, recovery after work breaks was more positively related to exhaustion at night. A team study from Cole and colleagues (2008) demonstrated that team members' suppression of nonverbal emotional expressions diminished an adverse effect of negative team affective tone on performance. Brown and colleagues (2005), finally, showed that the expression of one's negative feelings to others amplified the adverse impact that negative emotions after a critical work event had on work performance.

Altogether, from a close examination of the literature on emotion regulation in organizations, three topics were identified that are deemed of relevance for enhancing theory and practice. All of them have not yet been sufficiently addressed. The three topics are,

(1) The existence of unequivocal findings for response-focused emotion regulation

Antecedent-focused intrapersonal emotion regulation strategies - by preventing emotional dissonance (i.e., a difference between felt and expressed emotion) - are acknowledged as being superior to response-focused regulation strategies (Elfenbein, 2008; Goldberg & Grandey, 2007; Gross & Levenson, 1993; Richards & Gross, 1999). As reported above, a range of negative consequences has been reported for people who frequently suppress the expression of their emotions. However, it has also been stated that verbally expressing negative emotions induces a continuing engagement with the adverse situation, and that this cognitive and emotional engagement can undermine recovery (Sonnentag & Fritz, 2007). Furthermore, strategies such as reappraisal require effort to regulate one's emotions all the same. Indeed, a meta-analysis by Bono and Vey (2005) shows a differentiated picture of emotion regulation, attitudes, and organizational outcomes. The results of this analysis support the statement that altogether, there is not one superior or inferior strategy, just a more or less appropriate one, depending on the particular situation (Gross, 1998a). Based on the positive results that have been reported for expressive

suppression in the work context (see Table 3.1), it appears that the particular outcomes of this response-focused strategy, which is applied when the emotions are already fully experienced, need to be examined in more detail and in different contexts.

On a different note, it needs to be mentioned that emotion regulation in occupational settings has most frequently been studied in the service context (e.g., Goldberg & Grandey, 2007; Grandey, Fisk, & Steiner, 2005; Hess & Cossette, 2010). However, the expression of emotions in this context is characterized by limited individual control due to formal display rules. Scholars have thus begun to address emotion regulation related to a much wider set of emotion eliciting instances at work than emotional labor (Côté, 2005). For validated results, the scarce research in this domain needs to be complemented.

(2) A lack of understanding concerning interpersonal consequences of emotion regulation

Being among the first scholars to address the issue of intra- versus interpersonal effects of emotion regulation, Côté (2005) proposed a social interaction model of emotion regulation. He argued that several major limitations would exist in a merely intrapersonal effects approach: First, the presence of an interaction partner renders display regulation more probable. Second, the interaction partners' reactions should not be neglected. Thus, Côté argued that *interpersonal effects* of *intrapersonal emotion regulation* should be taken into account.

Considering the collaborative nature of many jobs (i.e., the prevalence of teamwork), a topic that warrants as much attention is the effects of *emotion management* (i.e., of both intra- and interpersonal emotion regulation). It has been noted, for example, that the frequent exposition to changes such as downsizing, mergers, acquisitions, and new technology makes the management of their employees' emotions one major challenge for today's managers (Barclay, Skarlicki, & Pugh, 2005). While earlier organizational research addressed a range of interpersonal emotion strategies, including interpersonal influence (e.g., Buss, 1992), social support (e.g., House & Kahn, 1985), energizing (Cross, Baker, & Parker, 2003), and bullying (Neuman & Baron, 1998), the active management of others' emotions, particularly in leadership, remains a fruitful field of research (Humphrey, Pollack, & Hawver, 2008). So far, researchers have just begun to focus on its effects in greater detail (e.g., Kaplan, Cortina, & Ruark, 2010; Pescosolido, 2002; Williams, 2007). Being considered highly relevant for organizational performance (Pescosolido, 2002; Van Knippenberg, Van Knippenberg, Van Kleef, & Damen, 2008), emotion management and its interpersonal effects thus seem a

promising piece in the puzzle of psychological constructs that explain organizational behavior.

(3) A domination of emotion regulation research by trait approaches

Most studies on emotion regulation have conceptualized emotion regulation as a trait or habit. Although it has already been eleven years since Grandey (2000) suggested that emotion regulation strategies may be deployed concurrently, this phenomenon has only lately been examined in the service context. Indeed, some authors reported positive correlations between reappraisal and response-focused regulation (e.g., Goldberg & Grandey, 2007; Grandey, 2003). Other authors, however, reported negative or insignificant correlations between these two strategies of emotion regulation (e.g., Diefendorff, et al., 2005; Gosserand & Diefendorff, 2005), leaving an overall unclear picture of the research matter. First attempts to help clarifying this picture address emotion regulation in a more dynamic way: Based on the assumption that the same employee may use different strategies at different times, Hess and Cossette (2010), for example, examined four emotion regulation styles as predictors of the consequences of emotion regulation. They found that people using a flexible style (i.e., flexible application of different strategies) and an authentic style (i.e., intention to feel the desired emotion, or reappraisal) had more beneficial job attitudes and greater motivation than people with a expressive suppression style (i.e., suppression of all emotion expressions) and a non-regulatory style (i.e., acting authentically without regulation). Only recently, however, have researchers started to examine short-term consequences of the situational use of different emotion regulation strategies, namely reappraisal and expressive suppression (Sanz-Vergel, et al., 2010).

3.1.2 Affect and Contextual Performance

A second topic that has only received limited attention in existent research is the relation between affective experiences, their regulation, and contextual performance. Theoretical models such as the Broaden-and-Build Theory (Fredrickson, 2001), the CWB-OCB emotion model (Spector & Fox, 2002) and the approach-avoidance concept (e.g., Fiedler, 2001) suggest that positive affect should rather enhance and that negative affect should rather reduce contextual performance such as proactive and adaptive behavior.

With regard to adaptive performance, findings on emotions during organizational change indicate that if negative emotions such as fear or anxiety are aroused, employees react

with withdrawal and turnover intentions rather than putting much effort into adaptation (e.g., Kiefer, 2005). With regard to proactive performance, research indicates that it can be facilitated by both positive and negative affect (Lazarus, 1991; Parker, 2007; Rank & Frese, 2008). However, the underlying mechanisms of such influence are still unclear. Only recently, Parker, Bindl and Strauss (2010) delineated why positive affect can be suggested to be a beneficial motivational state for this type of performance. Besides referring to theoretical propositions, they argue that positive affect seems to enhance proactive self-efficacy beliefs (i.e., beliefs to be able to set and strive for proactive goals) and the reasons to behave proactively (cf. Parker, et al., 2010). Other scholars (e.g., Frese, 2008) point out that negative state affect might also be conducive for proactive and change-oriented behavior under certain conditions, because it indicates that something needs to be changed (cf. Martin, et al., 1993). Fay and Sonnentag's (2002) finding that the stressors 'time pressure' and 'situational constraints' had positive effects on personal initiative in a longitudinal study supports this reasoning. However, as affect was not examined in Fay and Sonnentag's (2002) study, the question of whether the respective stressors actually induced negative affect remains unanswered. Grant and Ashford (2008), thus, noted that greater attention should be dedicated to the influences of affective experiences on proactive performance.

Whatever the relations between different affective states and these two active performance concepts empirically look like, examining the role of emotion regulation strategies on these performance dimensions promises to be interesting: For example, if negative emotions may impede adaptive behavior, will the suppression of the expression of such emotions curb or amplify these effects? Following the predictions of the Transactional Stress Model (Lazarus & Folkman, 1984) and Emotion Regulation Theory (Gross, 1998a), direct and moderating effects of emotion regulation can be thought of.

From the state-of-the-art review of the literature portrayed above, several research questions that guided the present dissertation were deduced. In the following section, these research questions are introduced. Besides scientific literature, organizational and societal developments were considered when work stressors and samples for the different dissertation studies were selected.

3.2 Research Questions

As theoretical propositions on possible relationships between emotion regulation and contextual performance were lacking, an explorative pre-study was conducted to examine

whether direct relationships existed between emotion regulation on the one hand and proactive and adaptive performance on the other hand. In the further and main studies of this dissertation (Studies 1-3), the role of emotion regulation in the face of specific stressful circumstances was more closely addressed. Hereby, both intrapersonal and interpersonal criteria in terms of well-being and performance were considered.

Apart from Study 3, which examined interpersonal effects of emotion management, all studies drew on Gross' (1998a) conceptualization of antecedent- and response-focused emotion regulation. Diefendorff (2008) noted that a focus on specific strategies, rather than on categories of emotion regulation, would be better suited to find out how employees regulate their emotions at work. This focus was set on the two strategies of reappraisal and expressive suppression, because these are frequently distinguished in the emotion regulation literature to which this dissertation aims to contribute.

3.2.1 Study 1

Being part of everyday life, negative emotional experiences (i.e., *emotional strain*) during work events may influence our well-being, attitudes, and behaviors (Fisher & Ashkanasy, 2000; Fredrickson & Joiner, 2002; Weiss & Cropanzano, 1996). To prevent or alleviate such experiences, the stress literature lately rediscovered the importance of recovery from work (Meijman & Mulder, 1998). A number of studies showed that recovery experiences play a crucial role in alleviating negative stress effects and enhancing well-being (e.g., Binnewies, Sonnentag, & Mojza, 2009; De Bloom, et al., 2010; Demerouti, Bakker, Geurts, & Taris, 2009; Fritz & Sonnentag, 2006). At the same time, researchers examining the stress-strain relationship from a coping perspective started to examine the effects of conscious intrapersonal emotion regulation on well-being (e.g., Gross, 2001a; Gross & Levenson, 1997; Mikolajczak, Menil, & Luminet, 2007; Oginska-Bulik, 2005). In this respect, studies mostly indicate that antecedent-focused strategies such as reappraisal lead to more beneficial health and cognitive outcomes than display-focused strategies such as expressive suppression (e.g., Brotheridge & Lee, 2002; Grandey, et al., 2005; Gross, 2001b; Richards & Gross, 2000a). As delineated above, this research has mostly focused on habitual emotion regulation and needs to be complemented by a state focus.

In Study 1, these two domains of the organizational stress literature, recovery and emotion regulation, were integrated and a closer look was taken at the interplay between negative emotions during a work-related event, emotion regulation, recovery experiences, and

well-being. The dissertation thus contributes to the exploration of the mechanisms that explain the effects of emotion regulation and to the request to discover antecedents of daily recovery (Sonnentag, 2003). As personal and situational characteristics interact in their effects (cf. Bolger & Zuckerman, 1995; Côté, 2005), it was assumed that the effects negative affective events on recovery experiences and well-being depend on peoples' emotion regulation. The first research question is the following:

Research Question 1: *How does situational emotion regulation impact recovery experiences and well-being after negative emotional experiences at work?*

3.2.2 Study 2

Changes in the work environment such as technological innovations or the restructuring of work units have become "an ever-present element that affects all organizations" (By, 2005, p.378) and require employees to be highly adaptable (Chen *et al.*, 2005; Pulakos *et al.*, 2000). However, while intended to increase productivity and performance, organizational changes often evoke negative reactions such as cynicism, burnout, mistrust, reduced performance, and intentions to quit (Caldwell, Herold, & Fedor, 2004; Schaubroeck, May, & Brown, 1994). A current claim is, thus, that deeper insight on the determinants of employees' adaptation is needed (Parent, 2010).

With the intention to contribute to such insight, emotion regulation was addressed as a predictor of adaptive performance in Study 2. Theory and empirical studies indicate that organizational changes are highly emotive events (Basch & Fisher, 2000; Kiefer, 2002) and that emotion regulation determines strain during such challenging events (Lok & Bishop, 1999). Consequently, emotion regulation was expected to determine employees' strain and adaptive performance during change. Because response-focused emotion regulation appears to have stronger relations to strain than antecedent-focused strategies (Côté & Morgan, 2002), a response-focused strategy, namely expressive suppression, was in the focus of Study 2. The second research question that was formulated is:

Research Question 2: *Does habitual expressive suppression influence employees' strain and adaptive performance during experienced changes at the workplace?*

3.2.3 Study 3

Organizations have increasingly structured work around teams (Salas, Cooke, & Rosen, 2008) and at the same time reduced supervision. In such a setting, employees' proactive behavior is of utter importance to high performance (Bindl & Parker, 2010; Sonnentag, 2003; Sonnentag & Frese, 2002). However, team research so far neglected the role of affective states and processes in teams for this type of performance. Few and contrasting findings on the relationship between leader behavior and employees proactive behavior (cf. Bindl & Parker, 2010; Griffin, Parker, & Mason, 2010), moreover, indicate another yet related topic that warrants further research. Therefore, in Study 3, these issues were addressed in combination. Leadership researchers contend that leaders' emotion management (i.e., the management of their own and of their employees' emotions) impacts employees' performance (Huy, 2002; Pescosolido, 2002; Van Knippenberg, et al., 2008). As a team represents a highly interactive work context, it was focused on two interpersonally relevant factors related to affective states in teams. More specifically, leader emotion management and team conflict (Gamero, González-Romá, & Peiró, 2008) were examined as determinants of team members' proactive behavior. The third research question reads as follows:

Research Question 3: *What are the roles of leader emotion management and of team conflict for employees' positive affect and proactive performance in a team setting?*

To adequately address the three research questions, different study designs (diary, cross sectional, longitudinal), methods (self-rating, peer-rating), and statistical procedures (hierarchical linear regression analysis, bootstrapping, multilevel modeling) were employed. These are introduced in the following chapter.

4 METHODOLOGICAL APPROACH OF DISSERTATION STUDIES

When deciding to conduct a quantitative analysis of affect in organizations, the question one wants to answer should be put into focus: If one is interested in a relationship between constructs within a particular population, a cross-sectional or longitudinal *between-person design* that assesses aggregated data represented by a single score for each participant and construct could be chosen. Such between-person designs can rise in sophistication if the influence of higher levels, such as the group or organizational level, is also taken into account (Klein & Kozlowski, 2000). The design would thereby be multilevel with person-level data being nested in group-level data.

If one is interested in the influence of daily or weekly fluctuations of experiences and behavior within persons instead, a *within-person design* should be applied. This would involve the repeated assessment of the same constructs from the same participants and is therefore often labeled 'diary design' (Ohly, Sonnentag, Niessen, & Zapf, 2010). Resulting in repeated measurement data, within-person designs allow the elimination of interpersonal variance by calculating separate correlations for each participant (DeLongis, Folkman, & Lazarus, 1988). Thus, this design is multilevel, resulting in day-level or week-level data being nested in person-level data.

Because both of these multilevel approaches were used in the present dissertation, the concept of multilevel modeling is introduced in the next section. Hereafter, the data analytical methods that were applied in the various studies pertaining to this dissertation are described. Further information on samples, scales, and proceedings are to be found in Chapters 5 and 6, in which the different studies are summarized.

4.1 Multilevel Modeling

Research on affective experiences especially benefits from multilevel data. First, affective experiences have a clear interpersonal connotation. Thus, the consideration of higher-level contextual influences such as leadership or team climate helps finding conditions that determine certain affective experiences or their consequences. Studies focusing on constructs that describe higher-level phenomena, such as team studies, thereby help to understand antecedents of affective experiences and behavior that extend the predictive power of individual-level constructs (cf. Kozlowski & Ilgen, 2006). Second, emotions and moods are short-term experiences that vary within persons. Their effects are, thus, best captured by eliminating interpersonal variance in the base level of such experiences. Diary studies, which

allow to differentiate between intrapersonal and interpersonal variance, and to control for the latter, offer a fruitful approach for the examination of short-term processes (cf. Ohly, et al., 2010).

Consequently, the present dissertation does not only adhere to cross-sectional between-person designs, which are still the predominant form of organizational research (Ohly, et al., 2010). Instead, this approach was only used in the pre-study and in Study 2. The other two studies, Studies 1 and 3, were conducted as longitudinal multilevel studies. One of them, Study 1, examined the impact of negative emotions and emotion regulation on recovery and well-being in a within-person diary design. The other, Study 3, considers the influence of leader and team characteristics (i.e., team-level data) on positive mood and proactive behavior in teams in a multilevel between-person design. Both the pre-study and Study 3 relied on peer-reports of the dependent variable to reduce artificially inflated relationships due to self-report bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Figure 4.1 presents an overview of the studies' data structure.

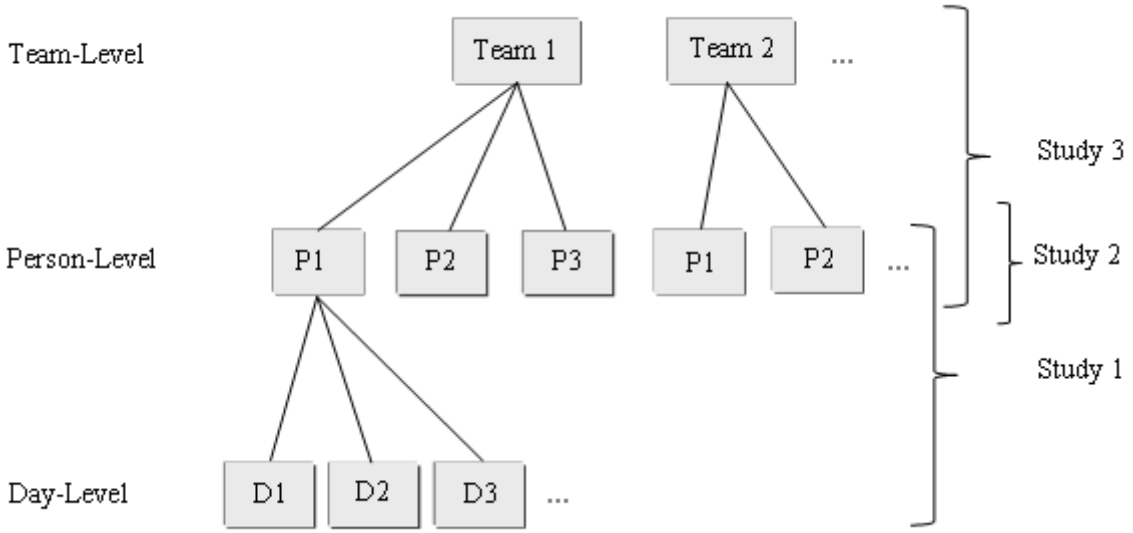


Figure 4.1 Hierarchical Data Structure of the Present Dissertation

4.2 Data Analyses

4.2.1 Descriptive Statistics

Prior to all inferential analyses, descriptive characteristics (e.g., means, standard deviations), normal distribution and intercorrelations of all scales were inspected to make sure that these were at appropriate levels. As a measure of the scales' internal consistency,

Cronbach's Alpha was calculated. To test for appropriate factor structures of the data, exploratory and confirmatory factor analyses were conducted. Exploratory factor analyses were carried out with SPSS 17.0 (Studies 1 and 2). The confirmatory analysis was conducted with AMOS 17.0 (Study 3). It compares the fit of different models, using the item covariance matrix as the input matrix and estimating the model parameters by means of maximum likelihood methods. In order to assess model fit, the following fit indices were computed: Comparative Fit Index (CFI), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI), and the Root Mean Square Residual (RMSEA). The factor structure of the hypothesized model is corroborated if the hypothesized model shows a good fit to the data. This fit should, furthermore, be significantly better than the one of alternative models.

4.2.2 Hierarchical Multiple Regression Analyses

Associations between variables on the same levels can be addressed with hierarchical multiple regression analyses. For both the explorative analyses in the pre-study and the testing of one hypothesis of Study 3, the step-wise regression technique was applied (Aiken & West, 1991) using SPSS 17.0. In the first step, all control variables were included in the regression equation. Hereby, one controls for the effects of these variables. In a second step, the hypothesized predictors were entered into the regression equation. A hypothesized predictor contributes to explaining the dependent variable if (a) its regression weight is significant, and if (b) all predictors inserted in this second step explain an additional amount of variance (ΔR^2) in the dependent variable.

4.2.3 Multilevel Analyses

The more sophisticated multilevel designs of Studies 1 and 3 provide nested data. The diary design of Study 1 resulted in repeated-measurement data in which day-level data are nested in persons (see Figure 4.1). The team design of Study 3, in contrast, resulted in person-level data that were nested in teams (see Figure 4.1). To prevent errors resulting from aggregation or disaggregation, such multilevel data should be analyzed with multilevel random coefficient modeling (MRCM; also called hierarchical linear modeling, HLM; cf. Netzlek, Schröder-Abé, & Schütz, 2006; Raudenbush & Bryk, 2002). This method offers the advantage of considering different levels of analysis simultaneously, such that interrelations on different levels are statistically independent of each other (Netzlek, et al., 2006). In the analyses, each data level is being treated as a formally independent sub-model. Thus, hierarchical linear modeling analyses were applied in Studies 1 and 3, for which HLM 6.0

(Raudenbush, Bryk, Cheong, Congdon, & du Troit, 2004) was used. All variables were standardized to facilitate the interpretation of results by obtaining standardized regression coefficients.

In multilevel modeling, the first step is to fit an unconditional model, the intercept-only model (also called the 'null model'), which contains no explanatory variables and breaks the variance of the outcome variable into two components: within-group variance and between-group variance. This intercept-only model informs the researcher whether there is enough variance in the dependent variable on both levels of analysis to be explained by a number of predictors. It also provides a value of deviance that serves as a benchmark with which other models are compared (Hox, 2002). For each dependent variable, at least three different nested models are compared: the null model, model 1, and model 2. In the null model, the intercept is the only predictor; in model 1, all control variables are entered, and in model 2, the predictors are included. Further models may include mediators or moderators. In the studies of the present dissertation, all parameters were estimated using the Full Maximum Likelihood estimation method, which has the advantage of allowing the differences of the deviances of various models to be computed based on the likelihood function. Examining the difference of the respective likelihood ratios, which follows a chi-square distribution, the final models including all predictors fitted the data significantly better than the previous models.

Hypotheses about indirect effects were tested using Sobel's (1982) *z*-test. Partial estimates and standard errors of the multilevel analyses (with controls entered beforehand) were used for this test.

Data Aggregation

In Study 3, responses from study participants needed to be aggregated to obtain team-level data. To justify such aggregation, construct validity of the team-level composition variables has to be examined. To assess agreement among judgments on a particular variable, R_{wg} values, that is within-group interrater reliability statistics, were used (James, Demaree, & Wolf, 1984). The R_{wg} index was calculated separately for each team, and compares the observed group variance to an expected variance from random responding. It varies from zero to one. Moreover, intraclass correlation coefficients (ICC_1s) were calculated to assess the amount of within- and between-team variance in each variable. ICC_1 estimates represent the amount of variance in individuals' responses that can be explained by group membership (between-group variance; Bliese, 2000).

4.2.4 Bootstrapping

For the cross-sectional data of Study 2, the bootstrapping procedure (Preacher & Hayes, 2004; Preacher, Rucker, & Hayes, 2007) was applied. This regression technique offers two advantages: First, it does not require normal distribution, so that power problems due to non-normal sampling distributions of indirect effects are avoided. Second, it allows testing for a moderated indirect effect, such as the one that was proposed to exist in Study 2, with a moderate sample size.

As the variables of Study 2 were assessed with different response scale ranges, the continuous measures were mean-centered prior to the inferential analyses (Aiken & West, 1991). Then, the hypothesized moderated indirect effects were tested relying on a macro provided by Preacher and colleagues (2007). The procedure to test moderated indirect effects includes tests for the following four conditions: (a) a significant effect of the independent variable on the mediating variable, (b) a significant interaction between the independent variable and the moderator in predicting the mediating variable, (c) a significant effect of the mediating variable on the dependent variable, and (d) a different conditional indirect effect of the independent variable on the dependent variable across low and high levels of the moderator. The last condition, which is the essence of moderated indirect effects, establishes whether a statistically significant indirect effect between the independent variable and the dependent variable is contingent on (i.e., differs in strength as a result of) the value of the proposed moderator (Preacher, et al., 2007).

5 PRE-STUDY

As indicated by the research questions that were delineated in Chapter 3, the main interest of this dissertation was to examine the effects of emotion regulation in the face of different work events. However, as research on effects of intrapersonal emotion regulation on proactive and adaptive performance is so far lacking, the existence of a direct relationship between these constructs was examined in the first place. This pre-study is described in the present chapter.

5.1 Introduction

Existing literature shows that in general, antecedent-focused emotion regulation has less negative consequences for well-being, social relationships and other outcomes than response-focused emotion regulation (Elfenbein, 2008; Goldberg & Grandey, 2007; Gross & Levenson, 1993; Richards & Gross, 1999). However, knowledge on how these strategies affect work performance in general and adaptive and proactive performance in particular, is lacking. If, as some scholars hypothesized, negative emotions may induce proactive behavior (Fay & Sonnentag, 2002; Frese, 2008), will the reduction of negative emotions through the habitual use of reappraisal actually restrain proactive performance? Or will the habitual use of reappraisal, in contrast, lead to less negative experiences at work, thereby enhancing people's positive mood and their adaptive and/or proactive performance? Will the suppression of negative emotions keep negative emotions from spreading and from being dwelled upon and thus enhance performance, as some scholars suggest (Brown, et al., 2005; Cole, et al., 2008), or will it consume a person's resources so that they cannot engage in contextual and future-oriented behaviors?

To provide a first answer on these questions, a multi-source study was conducted. In this study, employees were asked about their own emotion regulation. Additionally, the employees' supervisors were asked to rate the employees' adaptive and proactive performance. In the next sections, the design, procedure and method of this study will be delineated and its results will be presented together with a brief discussion (for a general discussion on all studies of this dissertation, see Chapter 7).

5.2 Method

A sample of 83 employees and their direct supervisors from two middle-sized Croatian companies and one small-sized German business provided data for testing the relationships

between the two emotion regulation strategies on the one hand, and performance ratings on the other hand. From four companies that were approached, the management of three businesses agreed to participate. None of their employees refused to participate. Two subsamples of 43 participants (seven supervisors) and 29 employees (six supervisors), respectively, worked at medium-sized companies in the pharmaceutical and nutrition technology industries in Croatia. Another 11 participants were architects employed at an architects' office in Germany (two supervisors). Because analyses of variance indicated that the three businesses neither differed in participants' demographics nor in their ratings of the focus study variables, the subsamples were combined into one sample. However, company was inserted as control variable in the regression analyses. Of all participants, 54% were female and 46% were male. Their age was normally distributed, with 7% of the employees being 18 to 25 years old, 61% being 26 to 35 years old, 17% being 36 to 45 years old, 12% being 46 to 55 years old, and 2% being 56 to 65 years old.

While the architects' office in Germany received questionnaires that were partly taken from German scales (Personal Initiative Scale, PANAS, and Work Emotion Regulation Questionnaire; in this order taken from Frese, Fay, Hilburger, & Leng, 1997; Krohne, Egloff, Kohlmann, & Tausch, 1996; Menges, 2007), all other scales were translated into German and Croatian language and back-translated (Brislin, 1980). With Cronbach's Alpha being greater than .70, the reliability off all scales was adequate, considering the small item numbers and uni-dimensionality of the scales (Cortina, 1993). All internal consistencies can be found in Table 5.1.

- *Proactive and adaptive performance* were assessed through supervisor ratings of their employees' personal initiative, voice, and adaptive performance. For all performance measures, first-person statements (self-report) were changed to third-person statements (peer-report) for the supervisor ratings. The supervisors' instruction reads as, "Thinking about this particular employee, to what extent do you agree with the following statements?" Supervisors rated their agreement on a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'.
  - *Personal initiative* was assessed with a validated 7-item scale (Frese, et al., 1997). One sample items is "He/She actively attacks problems".
  - *Voice* was assessed with a 6-item scale developed by Van Dyne and LePine (1998). A sample item is "He/She develops and makes recommendations concerning issues that affect this work group/division".

- *Adaptive performance* at work was assessed with ten items of Griffin and Hesketh‘s (2003) scale, which had already been used by Pulakos and colleagues (2000). A sample item is “He/She adjusts easily to new work processes and procedures”.

- *Emotion Regulation.* The measures of reappraisal and expressive suppression were taken from Menges’ (2007) adaptation of the Emotion Regulation Questionnaire (Gross & John, 2003) to the work context. Ratings for both scales were made on a seven-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’.
  - *Reappraisal* was assessed with six items; a sample item is “At work, I control my emotions by changing the way I think about the situation I’m in.”
  - *Expressive suppression* was measured with four items; a sample item is “When I experience negative emotions at work, I don’t show them.”
- *Controls.* To rule out their influence on performance ratings, the employees’ company, gender, autonomy, proactive personality, and positive and negative affectivity were controlled for.
  - *Autonomy* was assessed with three items of the Factual Autonomy Scale (Spector & Fox, 2003); a sample item is “How often does someone tell you what you are to do?”. Ratings were given on a five-point Likert scale ranging from ‘never’ to ‘every day’ (reversed coding).
  - *Proactive Personality* was assessed with seven items taken from Bateman and Crant (1993); a sample item is “I am always looking for better ways to do things”. Ratings were made on a five-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’.
  - *Positive and negative affectivity* were measured with a short form of Watson and colleagues‘ Positive and Negative Affectivity Schedule (PANAS; 1988), which consists of five items to measure context-free positive affectivity and negative affectivity each. A sample is „Thinking about yourself and how you normally feel at work, to what extent do you generally feel attentive?“ Ratings were made on a five-point Likert scale ranging from ‘strongly disagree’ to ‘strongly agree’.

5.3 Results

The correlations depicted in Table 5.1 indicate that from all control variables, autonomy and positive affectivity were positively and mostly significantly related to the performance measures. Proactive personality, in contrast, was not related to the proactive

performance measures of voice and personal initiative. From the emotion regulation strategies, expressive suppression at work showed negative and significant correlations with the performance measures, whereas reappraisal was not significantly related to any of the performance measures. The two emotion regulation styles were positively related to each other (r = .35, p < .01) - that is, people who report to reappraise stressful situations apparently also suppress their emotional expressions at the workplace. Finally, the performance ratings also proved to be substantially and positively interrelated.

In the regression analyses following the descriptive analyses (see Tables 5.2 - 5.4), it turned out that not only positive affectivity, but also negative affectivity predicted the supervisor's ratings of proactive behavior (i.e., voice and personal initiative). When emotion regulation was entered in the regression in a second step after the control variables, expressive suppression turned out to have a clear and significant negative influence on voice (β = -.36, p < .01), personal initiative (β = -.29, p < .01), and adaptive performance (β = -.35, p < .01). The effects of reappraisal, in contrast, were positive but insignificant. Thus, the additional explained variance of the performance measures (voice: ΔR^2 = 11%, personal initiative: ΔR^2 = 7%, and adaptive performance: ΔR^2 = 11%) can mainly be attributed to the use of expressive suppression at work.

Table 5.1 Means, Standard Deviations, and Intercorrelations between Pre-study Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Gender[1]												
2. Positive affectivity	4.00	0.43	-.07	(.75)								
3. Negative affectivity	1.95	0.51	.11	-.36**	(.71)							
4. Autonomy	2.65	0.82	-.08	.24*	.10	(.80)						
5. Proactive Personality	3.98	0.78	-.18	.26*	-.22*	-.00	(.78)					
6. Expressive Suppression	3.60	1.14	-.04	-.16	-.04	.16	-.00	(.76)				
7. Reappraisal	4.55	1.21	.13	-.21	.08	.07	.21	.35**	(.90)			
8. Voice	3.50	0.87	-.12	.30*	.10	.34**	.05	-.42**	-.12	(.89)		
9. Personal Initiative	3.51	1.03	-.15	.28*	.13	.31**	.07	-.33**	-.08	.86**	(.91)	
10. Adaptive performance	3.62	0.65	.00	.16	.08	.24*	.01	-.32**	.03	.59**	.72**	(.89)

Note. [1] 1=female, 2=male. ** p<.01, * p<.05, Cronbach's Alphas on the diagonal

Table 5.2 Results of Hierarchical Regression Predicting Voice

		β	Δ R^2	R^2	Adj. R^2	F (2,61)
Step 1:	Autonomy	.31**				
	Proactive Personality	.01				
	Positive affectivity	.33*				
	Negative affectivity	.27*				
	Gender	-.17				
	Firm	-.07				
Step 2:	Expressive Suppression	-.36**				
	Reappraisal	.09	.11**	.36	.27	5.29**

N = 83, * $p < .05$; ** $p < .01$

Table 5.3 Results of Hierarchical Regression Predicting Personal Initiative

		β	Δ R^2	R^2	Adj. R^2	F (2,61)
Step 1:	Autonomy	.28*				
	Proactive Personality	.03				
	Positive affectivity	.28*				
	Negative affectivity	.29*				
	Gender	-.17				
	Firm	.07				
Step 2:	Expressive Suppression	-.29*				
	Reappraisal	.11	.07	.31	.22	2.95

N = 83, * $p < .05$; ** $p < .01$

Table 5.4 Results of Hierarchical Regression Predicting Adaptive Performance

		β	Δ R^2	R^2	Adj. R^2	F (2,61)
Step 1:	Autonomy	.21				
	Proactive Personality	.01				
	Positive affectivity	.16				
	Negative affectivity	.16				
	Gender	-.01				
	Firm	.05				
Step 2:	Expressive Suppression	-.35**				
	Reappraisal	.23	.11*	.20	.09	4.01*

N = 83, * $p < .05$; ** $p < .01$

5.1 Discussion

The aim of this pre-study was to explore the direct relationship between emotion regulation and proactive and adaptive performance. It extends prior research, which so far did not address the contribution of emotion regulation to employees' contextual, change-oriented work behaviors.

In both the correlation and the regression analyses, the emotion regulation strategy of expressive suppression was found to be negatively related to proactive and adaptive performance. Reappraisal, in contrast, was positively but not significantly related to the performance measures. The different directions of the relationships between the two emotion regulation strategies with performance ratings are interesting insofar as the two regulation strategies were positively related to each other, but apparently evoked differential effects on performance ratings.

Four mechanisms on how these effects may have occurred can be thought of: First, expressive suppression may have impeded proactive and adaptive engagement due to emotional dissonance (Ashforth & Humphrey, 1993; Hochschild, 1983): The incongruence between one's feelings and expression may have occupied peoples' resources. Second, cognitive load (Raftery & Bizer, 2009) due to suppression efforts may have consumed resources. Third, it may be that expressive suppression might have come along with inauthentic displays (cf. Côté, 2005), thereby leading to less favorable supervisor ratings. Reappraisal, in contrast, may have reduced negative emotions just enough to prevent them from impairing performance. Fourth, two other findings point to another possible explanation: Supervisor ratings might have been biased in such a way that supervisors actually rated their experienced interaction quality with the respective employee rather than proactive and adaptive performance. One finding suggesting this is that the control variable of proactive personality was not related to proactive behavior, which is in contrast to prior research (e.g., Bateman & Crant, 1993; Parker, Williams, & Turner, 2006) and may suggest that the proactive behavior rating was not valid. Another finding that points into this direction is that the performance ratings were substantially positively interrelated. Thus, although supervisor ratings can be regarded a particular strength of this study, as they obviate issues of common-method-bias (Podsakoff, et al., 2003), future studies should include more than one performance rating and control for interaction frequency and quality so that ratings become more objective. Besides controlling for dispositional affect, as it was done in this study, it is suggested that future studies should also assess state affect. This would lead to a more

complete picture of the relationship between emotion regulation and performance, as it would allow disentangling the effects of emotion regulation from the effects of affective experiences. As Semmer, Tschan, and Messerli (2009) found in a diary study, negative effects of expressive suppression can indeed be overestimated when negative emotions are not controlled for.

May they be biased by interaction quality or not: Supervisors' judgments are one of the major evaluation criteria when it comes to work performance and its monetary and career consequences. From this point of view, the conclusion drawn from this study's results is that the expression of emotional experiences should not be suppressed at work. However, this study does not provide a differentiated picture on the effects of emotion regulation, such as moderation or interpersonal effects. One might, for example, ask "Which consequences do affective events have if emotional experiences are regulated by suppressing one's emotions? Are these generally negative, in line with the negative direct outcomes found in the present study?" These and further questions concerning emotion regulation in the work context are addressed in the three main studies of this dissertation, which are described in the next chapter.

6 OVERVIEW AND SUMMARY OF DISSERTATION STUDIES

The main body of this dissertation consists of three studies that were consecutively conducted in the order in which they are presented here. The complete manuscripts of these studies are currently under review (Study 1), have been published (Study 2), or are conditionally accepted (Study 3). They are provided in full length in Chapter 9. In the present chapter, the three studies are summarized.

6.1 Study 1: Emotion Regulation as a Determinant of Recovery Experiences and Well-Being: A Day-Level Study

Schraub, E.M., Clavairoly, V., & Sonntag, Kh. (under review). Emotion Regulation as a Determinant of Recovery Experiences and Well-Being: A Day-Level Study. International Journal of Stress Management.

Study 1 addressed the research question "*How does situational emotion regulation impact recovery experiences and well-being after negative emotional experiences at work?"* It examined whether emotion regulation functions as a moderator of the consequences of negative affective experiences on a daily basis. Although the study focused on the same emotion regulation strategies as the pre-study, namely expressive suppression and reappraisal, these strategies were conceptualized as *situationally applied strategies* rather than habits in the present study. The negative affective states that were assessed were negative work-related emotions, labeled *emotional strain* in this study. Based on Ego Depletion Theory (Baumeister & Muraven, 2000) and the Job Demands-Resources Model (Bakker & Demerouti, 2007; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007), it was assumed that work-related emotional strain, experienced during the day, impedes recovery experiences in the evening and thereby affective well-being at bedtime. Moreover, it was argued that the type of regulation strategy that people applied during the experience of emotional strain should buffer (reappraisal) or enhance (suppression) negative effects of emotional strain on recovery experiences. The framework of the study is depicted in Figure 6.1.

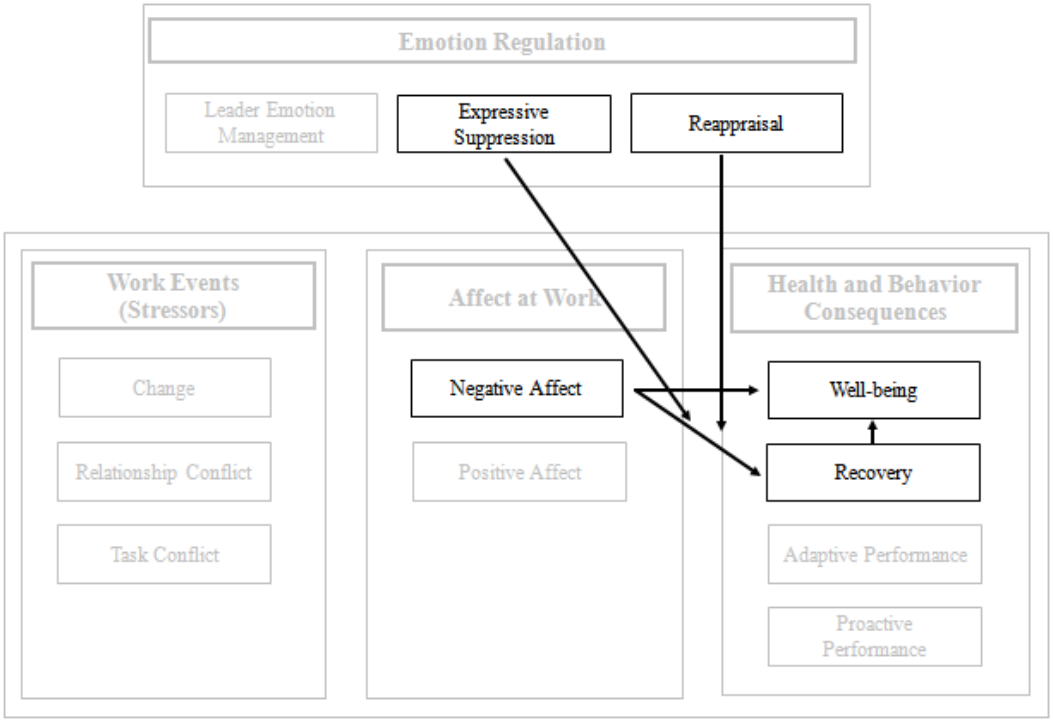


Figure 6.1 Framework of Study 1

6.1.1 Theoretical and Empirical Background

Existent research indicates that high work demands increase the risk of not being able to relax after work (Cropley & Purvis, 2003; Rau, 2006; Sonnentag & Bayer, 2005). Recovery experiences, however, are important predictors of well-being (cf. Demerouti, et al., 2009). It seems, thus, that recovery is often impeded at precisely the times when it is most needed, and that the determinants that impede or facilitate recovery experiences after demanding and stressful days need to be better understood.

According to Ego Depletion Theory (Baumeister & Muraven, 2000), one can assume that during experiences of emotional strain (i.e., negative emotional experiences such as anger or anxiety; Chang, Johnson, & Yang, 2007), resources are needed for self-control and will be depleted for at least some time after the experience. For the regeneration of depleted resources, recovery experiences - which can be achieved by either refraining from any activities or by actively engaging in recovery activities (Geurts & Sonnentag, 2006) - are needed. However, prolonged cognitive engagement, a likely reaction to significant stressful experiences, may impede recovery (cf. Geurts & Sonnentag, 2006). Therefore, it is suggested that recovery experiences will be reduced after experiences of emotional strain. As recovery experiences during after-work hours restore lost resources and positively affect peoples' well-

being (Demerouti, et al., 2009), a further assumption is that affective well-being at bedtime will be reduced after work-related experiences of emotional strain. Prior findings that revealed a spillover of negative affect from the work domain to the family domain support this assumption (e.g., Williams & Alliger, 1994). The first two hypotheses are:

Hypothesis 1: Emotional strain during a significant work-related event negatively affects affective well-being at bedtime.

Hypothesis 2: Recovery experiences mediate the negative relationship between work-related emotional strain and affective well-being at bedtime.

As a personal resource that may buffer this negative relationship, the focus is on emotion regulation strategies, which are applied to change the intensity, duration, or expression of activated emotions (Gross, 1998b). Reviewing the emotion regulation literature, it is observable that most empirical studies are either experimental (e.g., Gross, 1998a), focus on emotional labor, or analyze individual differences (e.g., Ciarrochi, Dean, & Anderson, 2002; Giardini & Frese, 2006; Raftery & Bizer, 2009). However, in environments in which display rules are weaker and more informal than they are in the service context (cf. Bono & Vey, 2005), people may determine for themselves when and how to regulate their emotions. Moreover, theories on interpersonal effects of emotion regulation (Côté, 2005; Van Kleef, 2009) and the independence of emotion regulation styles suggest that people may apply different and sometimes concurrent emotion regulation strategies depending on the context. To both complement and extend prior studies, *situational regulation* efforts were chosen instead of individual differences in this diary study.

Concerning the effects of emotion regulation, the strategy of reappraising the situation is expected to buffer negative effects of emotional strain because it changes peoples' interpretations of the respective situation and, thereby, their emotional experience. Experiences of emotional strain should therefore be reduced, leaving resources available for recovery experiences. In contrast, expressive suppression is supposed to evoke mainly negative outcomes because it consumes cognitive resources that otherwise would be available for other tasks (Raftery & Bizer, 2009). Because of this heightened cognitive load, this regulation strategy is expected to interfere with recovery experiences. The next two hypotheses are:

Hypothesis 3: Reappraisal buffers the negative impact of emotional strain on recovery experiences.

Hypothesis 4: Expressive suppression enhances the negative impact of emotional strain on recovery experiences.

6.1.2 Method

Hypotheses were tested with a sample of undergraduate students from a German university. For two reasons, this sample seemed adequate for examining this study's hypotheses: First, students have no formally defined working time, so their schedules resemble work structures with flexible hours. This setting is an interesting one as in an unregulated work-life-situation, recovery becomes even more difficult (Ahrentzen, 1990; Cropley, Dijk, & Stanley, 2006; Sonnentag & Kruel, 2006). Second, students are an important sample to address with regard to the topic of recovery as they often face high stress levels (Cooke, Bewick, Barkham, Bradley, & Audin, 2006; Obergfell & Schmidt, 2010). In the respective German university, in particular, curricula had changed and financial subsidizations had been shortened.

From 67 full-time undergraduate psychology students who volunteered to participate in the study, 65 completed both a paper-and-pencil questionnaire containing questions about demographics and personal traits and a structured paper-based diary. Within the latter, they were asked to answer a one-page questionnaire each night before going to bed on 14 consecutive days.

As two participants had to be excluded due to being on holiday while participating in the study, the final sample consisted of 63 participants (51 females and 12 males) with an average age of 21 years (*SD* = 2.9 years). All of them were full-time students, working on study assignments for between 3 and 12 hours per day, with an average working time of 4.8 hours per day (*SD* = 2.1).

The focus study variables emotional strain, recovery experiences, emotion regulation and affective well-being at bedtime were assessed in the diary, whereas control variables were assessed in the general questionnaire. Participants were instructed to refer to their studies when asked for work-related experiences. Items that did not exist in a German version were translated into German by two independent translators (one native English speaker) using the back-translation procedure to assure semantic equivalence (Brislin, 1980). All scales yielded adequate reliability (Cronbach's Alpha between .80 and .93). Items were taken from the following scales:

- *Emotional strain.* Analogous to the procedure used by Gable and colleagues (2004), participants were asked to recapture their most significant work-related emotional experience of the respective day and to briefly describe it. Their emotional strain during this event was then assessed with items from a translated and adapted version of Fisher's (2000) job emotion scale (Cole, Bruch, & Vogel, 2006). The participants had to rate their experience of emotions such as "frustration" in relation to the emotional work event. Cronbach's Alpha indicated a reliability of $\alpha = .89$.
- *Recovery experiences.* Recovery experiences (i.e., the extent to which the participants detached from their studies and relaxed in the evening) were assessed with items from Sonnentag, Binnewies and Mojza's (2008) recovery experience questionnaire in its German version. A sample item is "Tonight, I was able to forget about university work". In an exploratory factor analysis without rotation, all items converged on one factor with an eigenvalue greater than one. This factor accounted for 72.8% of the variance. Cronbach's Alpha of the scale was $\alpha = .93$.
- *Emotion regulation.* For the assessment of the participants' emotion regulation, items from the German version (Abler & Kessler, 2009) of Gross and John's (2003) emotion regulation questionnaire were adapted to situational emotion regulation. The participants were asked to indicate to what extent they reappraised the situation (four items, e.g., "I controlled my emotions by changing the way I think about the situation I was in") and suppressed the expression of their feelings (two items, e.g., "I kept my emotions to myself") during the work-related event they had described beforehand. Corroborating the measures' discriminant validity, two factors with eigenvalues greater than one emerged in a principal components analysis with oblique rotation, accounting for 78.0% of the variance. The internal consistency was $\alpha = .89$ for reappraisal (Cronbach's Alpha) and $r = .80$ for expressive suppression (Spearman's correlation coefficient).
- *Affective well-being.* Affective well-being was assessed at bedtime with six items (Warr, Butcher, & Robertson, 2004) such as "At the moment, I feel happy". Cronbach's Alpha for this scale was $\alpha = .83$.
- *Controls.* To ensure that day-level affective well-being could actually be explained by the day-level predictors, the socio-demographic data age and gender, as well as dispositional affectivity were controlled for. Dispositional affectivity was measured

using Krohne, Egloff, Kohlmann, and Tausch's (1996) validated German version of the Positive and Negative Affect Schedule (PANAS; Watson, et al., 1988).

In the multilevel analyses, the person-level control variables positive and negative affectivity were centered at the grand mean and all day-level predictors at the respective person mean.

6.1.3 Results

Participants reported 726 work-related events altogether. All correlations pointed in the hypothesized directions.

Multilevel analyses supported Hypothesis 1: The intensity of emotional strain during a significant work-related event negatively predicted affective well-being at bedtime, and did so beyond the effects of negative and positive affectivity.

In support of Hypothesis 2, multilevel models and the Sobel Test (Sobel, 1982) revealed that recovery experiences partially mediated the negative relationship between emotional strain and affective well-being.

In Hypotheses 3 and 4, different moderating effects of reappraisal and expressive suppression on the negative impact of emotional strain on recovery experiences were postulated. The effect of reappraisal was supposed to be buffering (Hypothesis 3), whereas the effect of emotional suppression was hypothesized to be enhancing (Hypothesis 4). Again, models of multilevel estimates were computed, this time to test the prediction of recovery experiences. These estimates and an inspection of the simple slopes revealed that as expected in Hypothesis 3, reappraisal buffered the negative impact of emotional strain on recovery experiences. However, in contrast to Hypothesis 4, expressive suppression did not enhance the negative impact of emotional strain on recovery experiences, but had a buffering impact as well. Thus, the negative relationship between emotional strain and recovery experiences was weaker if either reappraisal or expressive suppression were used.

6.1.4 Discussion

The study revealed a negative effect of work-related emotional strain on affective well-being at bedtime. This negative relationship was partially mediated by recovery experiences. The use of reappraisal to regulate one's emotions buffered the negative impact of emotional strain on recovery experiences, as did the use of expressive suppression.

The study extends previous research on predictors of recovery (e.g., Cropley & Purvis, 2003; Sonnentag & Bayer, 2005) by revealing that emotional strain inhibits recovery experiences. It further adds to recovery research by showing that emotion regulation seems to have similar beneficial effects as job control (cf. Cropley, et al., 2006) and can be perceived as a psychological resource that helps to maintain well-being: Both reappraisal and expressive suppression helped in detaching and relaxing from work-related strain.

Concerning the literature on emotion regulation, this study's results complement previous findings that highlight reappraisal as a healthy form of emotion regulation (e.g., John & Gross, 2004; Mauss, Cook, Cheng, & Gross, 2007). Apparently, reappraisal helps to down-regulate negative emotions in such a way that resources are freed for making recovery experiences. Unexpectedly, it was found that expressive suppression, which is considered a rather unhealthy way of emotion regulation when applied chronically (John & Gross, 2004; Srivastava, et al., 2009), also buffered negative effects of emotional strain. However, few findings exist that give rise to the question of whether expressive suppression should generally be considered detrimental (e.g., Befahr & Cronin, 2010; Cole, et al., 2008). In the present study, the unexpected positive effect of expressive suppression may be explained by focusing on intrapersonal variation, that is, by defining expressive suppression as situational emotion regulation rather than as habitual regulation. Suppressing one's emotional expression during the experience of increased emotional strain, in this case, turned out to be a wise decision. This finding may imply that it is only the habitual use of this regulation strategy that has detrimental effects.

By examining effects of situational and dynamic emotion regulation in an applied setting, another new aspect was added to emotion regulation literature. It turned out that more than 80% of the variance in emotion regulation was intrapersonal variance. Thus, contextual and state antecedents seem to be stronger predictors of momentary emotion regulation than individual differences are. As discussed above, such a state focus may lead to different outcomes than a habitual focus.

As a *limitation* of this study, it needs to be noted that findings from a sample of undergraduate students cannot be directly applied to employees in a work setting. Although the results are considered relevant for the current generation of university students, future studies with a more demographically diverse sample are recommended to generalize the results to the working population.

A particular *strength* of the present study is its diary design. Reducing probability for retrospective biases (Alliger & Williams, 1993), the diary method more adequately captures emotional experiences and well-being than do assessments at only one or two points of time, because emotions and well-being change in short intervals. Further, lagged effects of intrapersonal variance in experiences and emotion regulation can only be detected by repeated time- or event-contingent measurement, as it was used in this study.

Future research might contribute to this study by taking the context of emotion regulation (e.g., the interaction partner, the setting) into account. This would reveal whether inconsistent findings related to expressive suppression may depend on, for example, the interaction partner (cf. Côté, 2005). Guided by the conservation of resources theory (Hobfoll, 1989), a next step of research could also be to investigate what helps people to preserve the positive effects of recovery experiences. A methodological issue that may be improved in future research is data collection. A time-contingent assessment with higher frequency (e.g., three times per day) or an event-contingent assessment would allow the capture of events, emotions and behavior even closer to their occurrence and with higher internal validity.

Practical implications which can be derived from this study's results are that university staff should think about integrating a preventive module on healthy studying techniques in introductory courses, in which the topics of emotion regulation and recovery experiences could be integrated. This way, students would learn to reflect on their work-life-balance, which might also benefit them in their future careers.

6.2 Study 2: The Effect of Change on Adaptive Performance: Does Expressive Suppression Moderate the Indirect Effect of Strain?

Schraub, E.M., Stegmaier, R., & Sonntag, Kh. (2011). The Impact of Change on Adaptive Performance: Does Expression Suppression Moderate the Indirect Effect of Strain? Journal of Change Management, *11* (1), 21-44.

Study 2 addressed the research question "*Does habitual expressive suppression influence employees' strain and adaptive performance during experienced changes at the workplace?"* It examined effects of intrapersonal emotion regulation during change. Specifically, the focus was on employees' change experiences at work as a situational stressor, which was assumed to evoke psychological strain and to thereby affect performance. Furthermore, it was argued that the individuals' tendency to suppress the expression of

emotions at the workplace affects their psychological and behavioral reactions to change. The framework of the study is depicted in Figure 6.2.

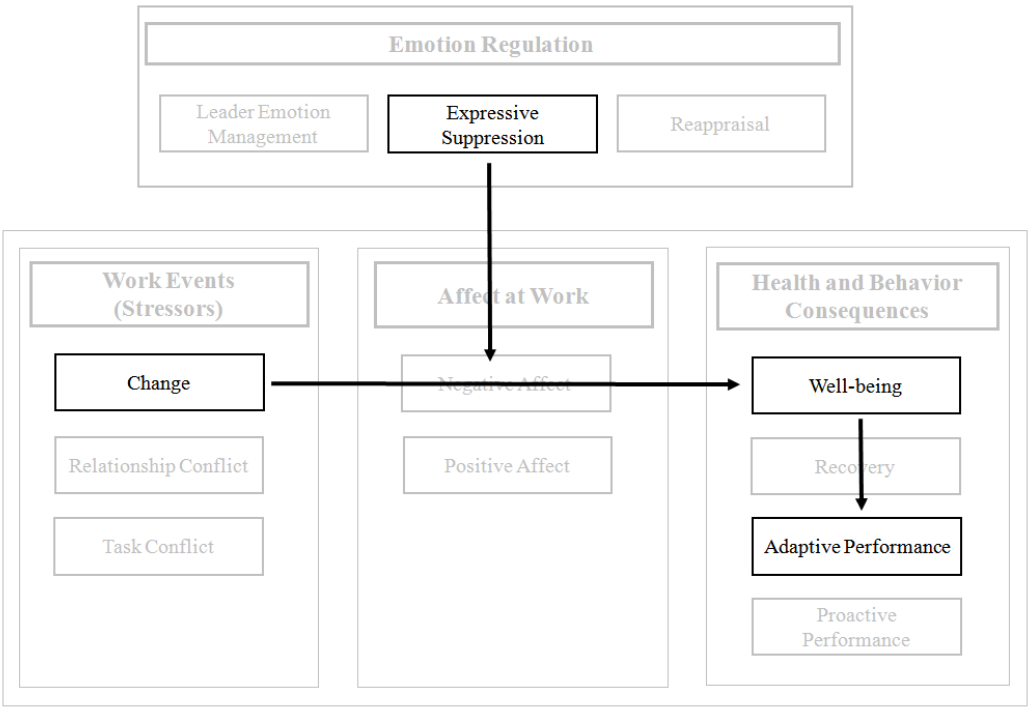


Figure 6.2 Framework of Study 2

6.2.1 Theoretical and Empirical Background

The multiple and ongoing changes organizations are engaged in today have fostered the acknowledgement of adaptive performance as a key competency for employees (Griffin & Hesketh, 2003). While employees are generally required to support organizational changes, for example by implementing new behaviors (Armenakis & Bedeian, 1999), changes at the workplace in fact often evoke strain among employees (Parent, 2010). Such reactions to organizational changes can be explained by the primary appraisal process described in Lazarus and Folkman's (1984) Transactional Stress Model. In a number of studies, the primary appraisal of change has been related to cognitive evaluations and affective reactions of ambiguity and uncertainty (e.g., Ashford, 1988; Rafferty & Griffin, 2006). The secondary appraisal process of the model states that individuals evaluate the availability of resources to cope with a situation (Lazarus & Folkman, 1984). If demands exceed perceived resources, this imbalance can result in long-lasting strain (cf. Zapf & Semmer, 2004).

Expecting that changes which are perceived as greater exert a more proximal impact, greater adaptation demands and a greater potential for threat and uncertainty than do lesser

changes (Ashford, Lee, & Bobko, 1989; Caldwell, et al., 2004; Riolli & Savicki, 2006), it is expected that:

Hypothesis 1: The perceived extent of change will be positively associated with employee strain.

In this study, adaptive performance is addressed as a set of individual behaviors (e.g., dealing with uncertainty), as called for by Robertson and colleagues (1992). While these behaviors are considered important for facilitating successful change (Griffin & Hesketh, 2003), the study of adaptive performance as a set of behaviors has not yet received much attention in change research. However, it should allow conclusions on general adaptive performance, which supports change beyond the fulfillment of specific task requirements.

Considering the consequences of strain during change, a reduction of adaptive employee behavior can be expected. As stated by Resource Allocation Theory (Kanfer & Ackerman, 1989), attentional resources are limited. If these resources are devoted to the self due to experienced strain, there will be a lack of energy for the tasks ahead (Cohen, 1980). Accordingly, studies on employee well-being and performance have generally demonstrated negative effects of strain (cf. Sonnentag, 2002; Wright & Cropanzano, 1998, 2000). In a meta-analysis, LePine and colleagues (2005) found that stressors were indirectly and negatively related to performance via strain. As a result, it can be assumed that experienced strain should negatively relate to adaptive performance:

Hypothesis 2: Employee strain will be negatively associated with adaptive performance.

Although greater changes impose greater adaptation demands on employees (Ashford, 1988), the conclusion that greater changes evoke higher adaptive performance does not follow from that. Considering that change affects the work environment by both increasing job demands and by potentially increasing job resources, the job demands-resources model (Bakker & Demerouti, 2007) suggests that two pathways by which the experienced extent of change can differently affect adaptive performance should exist. First, associated job demands should enhance strain and thereby decrease adaptive performance. Second, if the change is well-managed, that is, supported by the provision of job resources such as role clarity, management availability, colleague support, communication, and participation (By & Dale, 2008; Saksvik, et al., 2007; Schweiger & Denisi, 1991), these job resources should enhance motivation and thereby increase adaptive performance. Due to these possible positive and

negative pathways, a direct relationship between extent of change and adaptive performance is rather unlikely.

While the positive pathway is not addressed in this study, the expected negative pathway is that perceived extent of change will be positively related to employees' strain (Hypothesis 1), and that strain, in turn, will be negatively related to adaptive performance (Hypothesis 2). It follows that there will be an indirect negative relation between change and adaptive performance if strain is experienced. Consequently, it is expected that:

Hypothesis 3: There will be an indirect negative relationship between perceived extent of change and adaptive performance via employee strain.

According to Affective Events Theory and Broaden-and-Build Theory, affective experiences lead to specific action tendencies and determine work behaviors (Frijda, 1986; Weiss & Cropanzano, 1996). Also, emotion regulation strategies are related to work performance and strain (e.g., Brown, et al., 2005; Goldberg & Grandey, 2007; Tugade & Fredrickson, 2007) and several studies have shown that employees' coping strategies (including an emotion-focused component) are related to employees' acceptance of change and their adaptation to change in particular (e.g., Ashford, 1988; Fugate, Kinicki, & Prussia, 2008; 2002; Judge, Thoresen, Pucik, & Welbourne, 1999; Riolli & Savicki, 2006).

From the person-situation approach, it can be suggested that coping is an interactive process between person and situation (Briner, Harris, & Daniels, 2004). Thus, the effect of change as an affective event should depend on the regulation strategy the employee applies. The recently developed Personal Resources Adaptation Model (Van den Heuvel, Demerouti, Bakker, & Schaufeli, 2010) explicitly presumes that the interaction between personal resources and job demands determines adaptive performance in a change environment. Consequently, individual differences in the affective competency to regulate emotions should moderate the effects of change on employees' reactions to the change.

In this study, the so far neglected effects of expressive suppression during change are examined. The focus is on non-compulsory expressive suppression, which occurs without formal display rules. It can be suggested that expressive suppression at work reduces continuing cognitive engagement with the situation and one's feelings. Thus, the impact of perceived extent of change on strain should be reduced. Based on the assumption that more extensive changes lead to higher strain (Hypothesis 1), the following moderation effect is expected:

Hypothesis 4: The positive association between perceived extent of change and employee strain will be weaker for individuals who suppress the expression of emotions at work.

If an indirect relationship exists between extent of change and adaptive performance via strain (Hypothesis 3) and if change is less strongly related to strain for employees who suppress the expression of emotions than for those who express their feelings at work (Hypothesis 4), it follows that expressive suppression should also influence the indirect relationship between extent of change and adaptive performance. Therefore, it is expected that:

Hypothesis 5: Expressive suppression will moderate the indirect relationship between experienced extent of change and adaptive performance in such a way that the relationship will be weaker for individuals high on expressive suppression at work than for individuals low on expressive suppression at work.

The proposed research model (see Figure 6.2) provides a pattern of a moderated indirect effect (e.g., Muller, Judd, & Yzerbyt, 2005; Preacher, et al., 2007). It predicts that the indirect effect between extent of change and adaptive performance through strain is contingent on employees' expressive suppression.

6.2.2 Method

Data were collected by an online survey. A screenshot of this survey is depicted in Figure 6.3. The only requirements for participation were to be employed in an organization and not to work in customer service. To assure standardized data collection procedures, all participants received an e-mail that explained the purpose and procedures of the study. In return for their voluntary participation, they were offered feedback on the results.

Of the 301 people initially contacted, 153 completed the survey and were included in the sample. The response rate was 51%. Participants belonged to a variety of industries, including finance and consulting (10.5%), manufacturing (20.3%), public services (19.6%), health and social work (13.7%), education and research (18.3%), and IT (13.1%). The sample represented 45% females and 55% males, most of whom were German (96%). Most respondents were between 20 and 40 years old (85%) and had obtained a university degree (59%). Mean tenure in the organization was 5.7 years (SD = 7.1). Participants had performed the same jobs, not necessarily for the same employers, for 6.7 years on average (SD = 7.9).

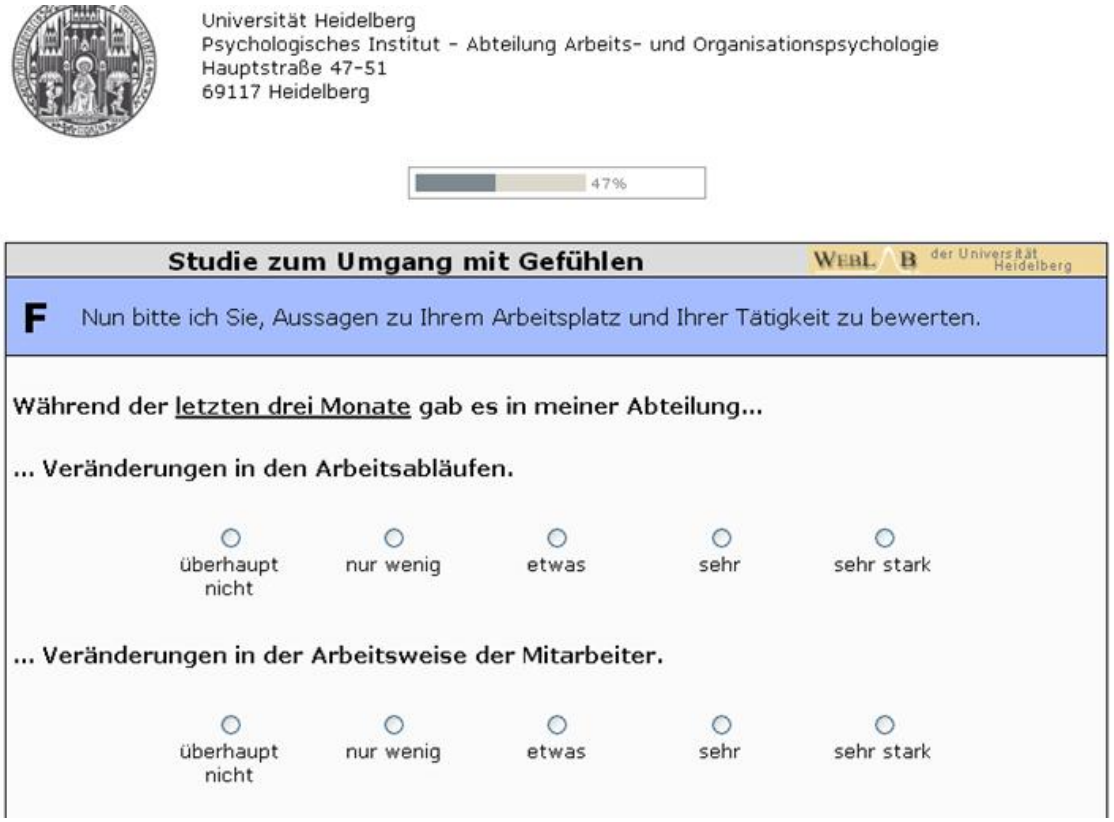


Figure 6.3 Sample Screenshot of Online Survey (Study 2)

As the survey was conducted in German, items from English scales were translated as described in Study 1 (Brislin, 1980). Considering that the scales did not have more than six items and proved to be unidimensional in factor analyses, all scales yielded adequate reliability (Cronbach's Alpha between .75 and .88 for the focus study variables; Cortina, 1993). Items were taken from the following scales:

- *Change.* Perceived extent of change was measured with three items taken from Caldwell and colleagues (2004). Participants indicated the extent to which they experienced changes in their work unit in the last three months. The questions asked for changes in "processes and procedures", in "the way people do their jobs", and in "people's daily routines". The internal consistency of this scale was $\alpha = .88$.
- *Strain.* Employees' strain was assessed using Mohr and colleagues' (2005) irritation scale, which consists of three items measuring *cognitive irritation* (e.g., "Even at home, I had to think about difficulties at work.") and five items measuring *emotional irritation* (e.g., "I was easily upset."). The subscales were significantly related ($r = .52$, $p < .001$). Cronbach's Alpha for the composite scale was $\alpha = .88$.

- *Expressive suppression.* Expressive suppression was measured with four items from the emotion regulation questionnaire (Gross & John, 2003), adapted to the work context (Menges, 2007). Participants should indicate emotion regulation when dealing with colleagues and supervisors. A sample item is "When I experience negative emotions at work, I don't show them." The scale yielded an internal consistency of $\alpha = .75$.
- *Adaptive Performance.* To assess adaptive performance, six behavioral items from Pulakos and colleagues' (2000) scale were used, which had been employed in prior organizational research (DeArmond, et al., 2006; Han & Williams, 2008). The items were transformed from third to first person and the time frame that the employees were instructed to refer to was the last three months. A sample item is "I effectively adapted my goals, plans, and priorities to deal with changes." Cronbach's Alpha was $\alpha = .76$.
- *Controls.* Age, gender, education, tenure, and job experience were included to account for differences in participants' responses. Further, it was controlled for a possible impact of emotional stability and the job characteristics of autonomy and task interdependence. Emotional stability was assessed two items (Muck, Hell, & Gosling, 2007). Both autonomy (Semmer, Zapf, & Dunckel, 1999) and task interdependence (Pearce & Gregersen, 1991) were assessed with two items each.

Before testing the hypotheses, an exploratory factor analysis was conducted to determine the dimensionality of the measures. The items of the study variables extent of change, expressive suppression, irritation, and adaptive performance were submitted to a principal components analysis with oblique rotation. Corroborating the measures' discriminant validity, four factors emerged with eigenvalues greater than 1, accounting for 66.3% of the variance. Each item loaded on its appropriate factor, with primary loadings greater than .48 and cross-loadings lower than .23.

6.2.3 Results

An inspection of the correlations revealed that the study variables correlated significantly and in the expected directions. Supporting Hypothesis 1, perceived extent of change was positively associated with strain, as indicated by a significant unstandardised regression coefficient ($B = 0.22$, $t = 2.41$, $p < .05$). Also, as proposed in Hypothesis 2, the inverse relation between strain and adaptive performance was supported

($B = 0.18$, $t = 3.10$, $p < .01$). Finally, as proposed in Hypothesis 3, bootstrap results revealed that extent of change had a significant negative indirect effect on adaptive performance with a 95% confidence interval (bias corrected and accelerated) around the indirect effect not containing zero. The Sobel test corroborated this result (Sobel, 1982). As bootstrapping results do not answer the question whether an indirect or a mediated effect occurred, the direct relationship between extent of change and adaptive performance was inspected. Because this relationship was not significant, the alternative existence of a mediated effect instead of an indirect effect was not suggested by the data. In sum, Hypotheses 1–3 received empirical support.

The prediction of Hypothesis 4 was that the positive relation between extent of change and strain would be stronger for individuals low on expressive suppression than for individuals high on expressive suppression. Indeed, the cross-product term between extent of change and expressive suppression on strain was significant. A graphical plot and significance test (Aiken & West, 1991) supported Hypothesis 4: T-test results indicated that the slope for low expressive suppression significantly differed from zero, whereas the slope for high expressive suppression did not differ from zero. Thus, perceived extent of change was only significantly and negatively related to strain for employees who scored low on expressive suppression at work.

To assess the conditional indirect effects model proposed by Hypothesis 5, the conditional indirect effect of extent of change on adaptive performance through strain was examined at three values of expressive suppression: the mean and one standard deviation above and below the mean, respectively. The expected direction of the indirect conditional effect was supported. The indirect and negative effect of extent of change on adaptive performance through strain was observed when the level of expressive suppression was low, but not when it was moderate or high.

6.2.4 Discussion

This study demonstrates that the perceived extent of change in the work unit can affect employee strain and adaptive performance when employees express their emotions at work. More specifically, negative effects of the perceived extent of change in the work unit on strain and adaptive performance depend on the level of expressive suppression at work. They are weaker (and not significant) for moderate and high expressive suppression compared to low expressive suppression.

The study extends prior research in several ways. First, it presents new information on a mechanism that predicts adaptive performance by the identification of an indirect, moderated psychological process: Employees' strain turned out to be a predictor of adaptive performance. Understanding such processes is important for managers and practitioners because smooth adaptation leaves the maximum amount of resources for the tasks ahead; it is therefore essential for supporting task performance during changes.

Second, the study responds to the claim that there is a lack of research on specific change characteristics (Rafferty & Griffin, 2006). It identifies perceived extent of change in the work unit as a further — and thus far neglected — predictor of adaptive performance.

Third, this study contributes to present change research by identifying a strategy of emotion regulation that supports adaptation in a change context. Data show that more extant changes are associated with more strain and less adaptive performance only if employees openly show their emotions to colleagues and supervisors, and not if they keep these emotions to themselves, at least to a certain extent. This finding corroborates the supposition that expressing negative emotions implies a prolonged cognitive engagement with the negative experience, which impairs detachment (Brown, et al., 2005; Sonnentag & Fritz, 2007). A further possible explanation of the present and similar findings (e.g., Sanz-Vergel, et al., 2010) draws on theories on interpersonal effects of emotion regulation (Côté, 2005; Van Kleef, 2009). These point out that the effects of emotion regulation on one's well-being may not be similar across contexts and situations, but depend on the way others react to one's emotional expression (Côté, 2005; Frijda, 1988). The suppression of, for example, feelings of uncertainty might thus have prevented other colleagues from 'catching' these feelings, resulting in more positive interactions. Furthermore, revealing negative emotions possibly increases feelings of vulnerability and may be interpreted as a lack of control by others, especially at the workplace. The suppression of negative emotions at work may thus have left employees feeling more competent. Assuming that greater changes in the work unit are accompanied by negative feelings like uncertainty and insecurity rather than by positive ones, the findings confirm prior research on emotion regulation and performance (e.g., Brown, et al., 2005).

Fourth, by its focus on perceived change in the work unit, this study extends former change research that mainly focused on employees' reactions to downward-cascading organization-level change. The surveyed employees worked in different jobs and industries in Germany, and faced diverse continuous or episodic changes in their work units. The results

and conclusions can therefore be generalized to different work unit changes, jobs, and industries in cultures similar to the German one (see House, Hanges, Javidan, Dorfman, & Gupta, 2004).

As *limitations* of this study, two potential methodological biases need to be mentioned: As all data were provided by a common source, the existence of artifactual covariance between the variables cannot be ruled out (Podsakoff, et al., 2003). However, the likelihood of inflated results due to such common-method bias was reduced by demonstrating that the moderator, expressive suppression, was not significantly correlated to perceived extent of change or strain. A second bias, the self-serving bias, might have influenced the performance ratings in particular. Although confidence in the present data is supported by findings that demonstrate high correlations between self-report and objective performance measures (Hurst, Young, Donald, Gibson, & Muyselaar, 1996), the assessment of adaptive performance through more objective ratings is recommended. Furthermore, the cross-sectional design of this study does not allow causal inferences. A longitudinal design should be applied to clarify causality and validate the present study's results. Moreover, it should be taken into account that the strain measure that was used in this study (i.e., irritation) assesses milder forms of psychological strain (Mohr, et al., 2005). The assessment of for example physical strain (e.g., physiological arousal) or burnout (Maslach, Schaufeli, & Leiter, 2001) might have resulted in a different picture. Finally, the assumption that greater and more complex changes produce more threat and insecurity (Kiefer, 2005) can be challenged by the view that changes can elicit multiple positive and negative emotions due to this complexity (Elfenbein, 2008). For a more precise interpretation, it can be suggested that the benefits and threats that employees associate with the change, as well as the regulation of distinct affective states, should be evaluated.

In *further research*, a closer examination of job demands and concomitant job resources is desirable. Apparently, changes were accompanied by job resources that balanced negative effects on adaptive performance. If job demands and resources during change were assessed together, the co-existence of positive and negative pathways could be verified, and their strengths be compared. Interesting approaches concerning interpersonal effects of emotion regulation would be the assessment of implicit display rules (see Diefendorff & Greguras, 2009), of interaction partners' reactions towards expressive suppression during changes, and of inauthentic displays, which may result from expressive suppression and

which have been adversely related to social relationships and well-being (e.g., Gross & John, 2003; Richards, 2004; Srivastava, et al., 2009).

Several *practical implications* can be deducted from this study. By pointing out significant influences of the extent of change that employees experience altogether, the present findings imply that neither episodic nor continuous change should be left out of managers' focus. It is the idea behind continuous change that multiple small changes can cumulate and result in substantial change (Weick & Quinn, 1999). Good planning and sequencing of change implementations should help to avoid an accumulation of changes. Furthermore, managers should pay close attention to the subjective change experiences of their employees. As indicated by Smollan and Sayers (2009), the acknowledgement of emotions during change enhances employees' engagement with the change. Job resources should be offered to balance existing demands and to motivate employees, so that they adapt well to changes. Moreover, managers should act as role models and teach their employees not to overreact spontaneously in a public work setting, but to express their emotions in a thoughtful way instead. Hereby, both leaders and employees would benefit from the buffering effect of expressive suppression at work when facing something new.

6.3 Study 3: The Roles of Leader Emotion Management and Team Conflict for Team Members' Proactive Behavior: A Multilevel Perspective

Schraub, E.M., Michel, A., Shemla, M., & Sonntag, Kh. (under review). The Roles of Leader Emotion Management and Team Conflict for Team Members' Proactive Behavior: A Multilevel Perspective. European Journal of Work and Organizational Psychology.

Study 3 addressed the research question "*What are the roles of leader emotion management and of team conflict for employees' positive affect and proactive performance in a team setting?"* Its aim was to extend team research in several ways. First, it was examined to what extent leader emotion management influences the quality of relationships and positive mood in the team, thereby responding to the call to study mediating psychological processes that explain how leaders affect their followers' behavior (Van Knippenberg, et al., 2008). Second, the need to better understand antecedents of proactive behavior (Fritz & Sonnentag, 2009) by investigating effects of team conflict and leader emotion management was addressed. Third, previous research about conflict at work by specifically examining cross-level effects of team-level constructs (i.e., leader emotion management and team conflict) on individual-level constructs (i.e., positive mood at work and proactive behavior) was extended.

The design was longitudinal with three measurement points. The research framework of this study is depicted in Figure 6.4.

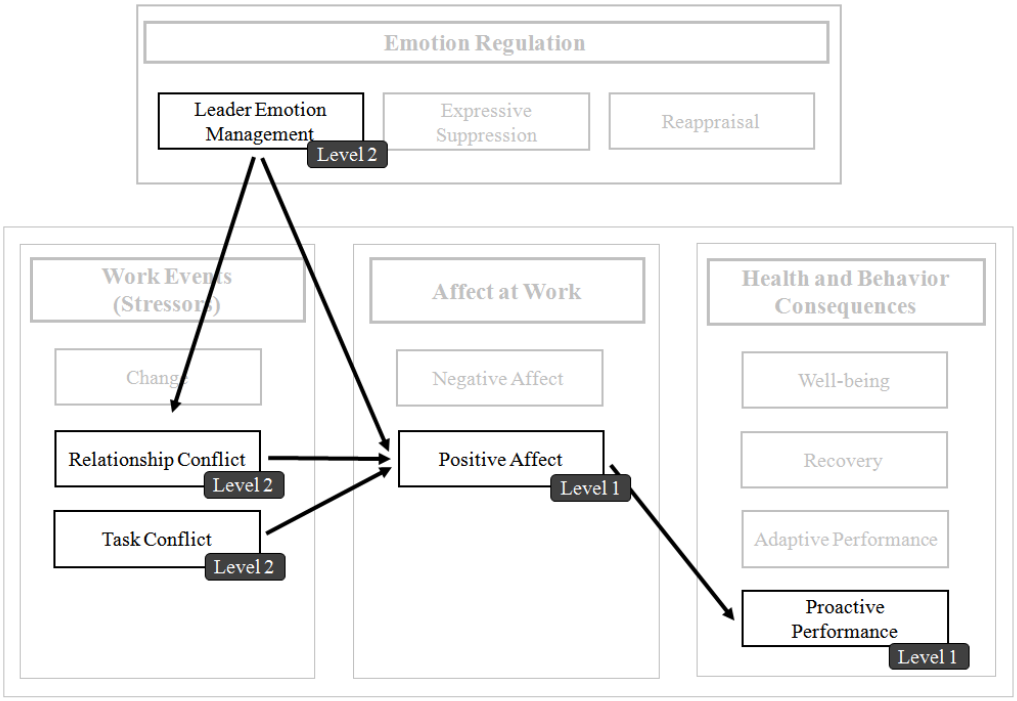


Figure 6.4 Framework of Study 3

6.3.1 Theoretical and Empirical Background

Emotion management (i.e., the regulation of one's own and others' emotions) has been identified as a major competence for improving relationships and effective team functioning at work (Jordan & Lawrence, 2009; Weisinger, 1998). In the team context, it can be defined as characteristics and behaviors such as respecting different opinions, overcoming frustration with fellow team members, being contagious in one's enthusiasm, and cheering up fellow team members (Jordan & Lawrence, 2009). As influential leadership theories posit the existence of emotional links between leaders and followers (cf. Bass & Riggio, 2006; Conger, Kanungo, & Menon, 2000; Shamir, House, & Arthur, 1993), it is expected that leader emotion management should influence team members' experiences and behavior in several ways. First, leaders may manage their own emotions by holding back their immediate reactions to first judge whether the expression of their emotions will be productive or damaging to working relationships. By reflecting on their own behavior, leaders can thus protect positive

relationships within the team. Second, a good regulation of their own emotions (e.g., overcoming frustration) should also go along with more positive than negative emotional expressions; these positive expressions can be contagious and instill positive affective states in followers (Conger, et al., 2000; Sonnentag & Frese, 2003; Van Knippenberg, et al., 2008). Third, leaders' regulation of team members' emotions might prevent the occurrence of relationship conflict in emotionally charged situations which naturally occur in teams (Yang & Mossholder, 2004). In addition, this management of team members' emotions should also reinforce team members' positive mood, specifically through the encouragement of positive emotions such as enthusiasm and motivation (Van Knippenberg, et al., 2008). Positive mood, in turn, can be expected to enhance proactive behavior as it has been positively related to self-efficacy, aspirations, and performance goals (Ilies & Judge, 2005; Saavedra & Earley, 1991). In sum, the following relationships are proposed to exist:

Hypothesis 1: Leader emotion management is negatively related to relationship conflict in the team.

Hypothesis 2: Leader emotion management is positively related to team members' proactive behavior via team members' positive mood.

In this study, team conflict is addressed as a work stressor. Team conflict is a fundamental and inevitable aspect of teamwork (Levi, 2001), which can be defined by distinguishing between *task* and *relationship conflict*. According to Jehn, task conflict comprises "disagreements among group members about the content of the tasks being performed, including differences in viewpoints, ideas, and opinions" (1995, p. 258). Relationship conflict, on the other hand, describes "interpersonal incompatibilities among group members, which typically include tension, animosity, and annoyance" (Jehn, 1995, p. 258). An information-processing perspective of conflict suggests that too little and too much team conflict impedes performance (De Dreu & Weingart, 2003). Nevertheless, there is an ongoing debate regarding whether - and in which way - task and relationship conflict each affect performance (e.g., De Dreu & Weingart, 2003; Jehn, 1995; Simons & Peterson, 2000). So far, findings are controversial (e.g., De Dreu & Weingart, 2003; Van Woerkom & Sanders, 2010). Attempting to clarify elements of this debate, this study draws on Weiss and Cropanzano's (1996) Affective Events Theory, which proposes affective events to be related to affect driven performance via affective experiences. Both task and relationship conflict are considered to be affective events, because they are inextricably bound with tension, arousal,

and stress (Giebels & Janssen, 2005). By contrast, neither relationship nor task conflict provide much ground for positive emotions. Thus, a reduction of positive mood is expected to be the consequence of both types of team conflict. For the positive relationship which was assumed between positive mood and proactive behavior, it can be expected that both types of team conflict will reduce team members' proactive behavior:

Hypothesis 3: Relationship conflict in the team is negatively related to team members' proactive behavior via team members' positive mood.

Hypothesis 4: Task conflict in the team is negatively related to team members' proactive behavior via team members' positive mood.

6.3.2 Method

The sample of this study consists of teams with three or more members that belonged to either public or private organizations in Germany. Team leaders received a survey package consisting of multiple questionnaires, instruction sheets, and self-addressed return envelopes, which they distributed to all team members. In exchange for their participation, teams were offered aggregated feedback about major results and practical implications of the study. Answering the questions took about 15 minutes for the first questionnaire (Time 1), about 10 minutes for the second questionnaire (Time 2), and about 5 minutes for the evaluation of a colleague (Time 3). The second questionnaire was administered one week after the first. The colleague evaluation was completed a few days after the second survey.

Using existing contacts to organizational practitioners, 72 teams were approached. From these, 64 teams agreed to participate (participation rate of 89%), and 59 teams fulfilled the requirements for the team definition suggested by Ilgen (1999): They had interdependent tasks, common goals and interacted with each other. These 59 teams, with 300 members in total, represented the final sample. Team size was between three and sixteen members, with an average size of five team members (SD = 2.71). In each team, at least 75% of the team members participated in the study. The sample consisted of 45% male and 55% female employees ranging in age from 17 to 65 years (M = 36.4, SD = 9.8). All but nine participants were German citizens. Many participants had obtained a university degree (50%), another 30% had completed an apprenticeship. Tenure within the team was greater than two years for 52% of the participants, between one and two years for 19%, and shorter than one year for 26% of them. The teams belonged to different industries: IT industry (32%), health care and social services (32%), automotive and engineering industry (14%), and food service (9%). The rest worked in areas such as administration, trade, consulting, media, and the arts.

All questionnaires were in the German language. Scales that did not exist in a validated German version were translated according to the procedure described in Study 1 (Brislin, 1980). Internal consistency was sufficient for all scales (Cronbach's Alpha values between .81 and .90 for the focus variables).

- *Leader Emotion Management.* Team leaders' emotion management was measured at Time 2 with eight 'emotion management' items from the short version of the Workgroup Emotional Intelligence Profile (WEIP-S, Jordan & Lawrence, 2009). Because self-reports of individual competencies may be biased by social desirability or may reflect self-identity (Spain, Eaton, & Funder, 2000), the wording of the items was changed to peer-report and relied on employees' ratings of their leaders' emotion management. A sample items is, "He/She gives a fair hearing to team members' ideas". Cronbach's alpha for the scale was $\alpha = .90$.
- *Team Conflict.* The amount of relationship and task conflict was assessed at Time 1 with four items from Jehn's (1995) scale. Participants were asked to what extent they experienced, for instance, "interpersonal tension as an issue in the group". Cronbach's alphas for the scales of relationship and task conflict were $\alpha = .87$ and $\alpha = .81$, respectively.

  Due to high correlations between task and relationship conflict on both the individual and team level ($r = .68$, $p < .01$ and $r = .75$, $p < .01$, respectively), a confirmatory factor analysis was conducted with AMOS 17.0 to ascertain whether the team conflict items measured two distinctive factors. The hypothesized two-factor model with relationship and task conflict as separate factors showed an acceptable fit to the data. An alternative one-factor model did not fit the data adequately. The difference between the chi-squared statistics of the two models was statistically significant ($\Delta\chi^2(1) = 60.27$, $p < .001$), providing support for the two-factor model. These results confirmed the distinctiveness of the correlated team conflict factors.
- *Positive Mood.* Employees' positive mood at work was measured at Time 2 by ten items from the Job-Related Affective Well-Being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000). Team members were instructed to indicate the extent to which any part of their job had made them feel a particular emotion in the last couple of days at work (e.g., "happy"). Cronbach's alpha for this scale was $\alpha = .84$.
- *Proactive behavior.* Team members' proactive behavior was evaluated at Time 3 according to Ohly and Fritz' (2007) procedure, using a peer version of Frese and

colleagues' (1997) 7-item personal initiative scale. A randomly selected team colleague was instructed to rate another employee's personal initiative as it was *at the moment*. A sample item is "He/She actively attacks problems". Cronbach's alpha for the scale was $\alpha = .89$. It was assured that the evaluation would not have consequences for the respective employee and that peer-ratings were anonymous and would be linked to the self-report data by means of a code. Furthermore, it was guaranteed that neither the team leader nor the employee her/himself could see into the evaluations.

- *Controls.* Because of their empirically established relationships with focal study outcomes (Amason & Sapienza, 1997; Korsgaard, Jeong, Mahony, & Pitariu, 2008; Staw, et al., 1994), gender and education (Level 1) as well as team size (Level 2) were controlled for. All demographics were measured at Time 1 with one item each. It was further controlled for individual differences in positive affectivity, which has been related to a range of positive individual outcomes (cf. Lyubomirsky, et al., 2005). Positive affectivity was measured by five items from the short version of the PANAS (Krohne, et al., 1996), which had also been used in the prior dissertation studies. Finally, the job characteristic of autonomy, which influences employees' motivation, satisfaction, and performance (Morgeson, Delaney-Klinger, & Hemingway, 2005), was included. It was measured with three items from Spector and Fox (2003).

In this study, relationships between team-level data and individual-level data were analyzed. More specifically, the effects of the team characteristics 'leader emotion management' and 'team conflict' on the individual-level outcomes 'positive mood at work' and 'proactive behavior' were addressed. Because data from individual team members were nested within teams, multilevel analyses were applied to test all hypotheses but Hypothesis 1. The latter predicted a relationship between two team-level constructs and was tested with a hierarchical multiple regression analysis. All variables were standardized to facilitate the interpretation of results.

As the leader's general behavior towards the group represents an ambient stimulus shared by all team members, leader emotion management was conceptualized as a team-level variable. As all data were assessed at the individual level, team-level data had to be obtained by aggregating individual-level responses for leader emotion management and team conflict. To justify this aggregation, the construct validity of the level-2 composition variables was examined. In addition to scale reliabilities, R_{wg} values and intraclass correlation coefficients (ICC_1s) were computed for the team-level variables leader emotion management and team

conflict. The median R_{wg} values for leader emotion management, relationship conflict and task conflict indicated substantial agreement among team members about the respective variable. ICC_1s for all three measures were significant, indicating sufficient between-team variance (Bliese, 2000). Consequently, an index of team members' ratings was calculated for each team and for each of the three variables.

Analyzing the null models of positive mood and proactive behavior, the amount of variance that could be explained by team-level variables was found to be sufficient for both positive mood and proactive behavior, indicating the presence of a nesting effect in the data. Thus, multilevel analyses were warranted.

6.3.3 Results

An inspection of the correlations reveals that relationship conflict and task conflict were positively related on both the individual and team level. Correlations between most focus variables were significant and in the hypothesized directions. Some controls showed quite strong correlations with the study variables, for instance positive affectivity and positive mood at work. Team size was negatively associated with both types of team conflict.

Hypothesis 1 stated that the leader's emotion management would negatively relate to the level of relationship conflict in the team. Controlling for team size, the regression coefficient for leader emotion management was negative and significant, which supported the hypothesis.

Hypothesis 2 proposed an indirect relationship between leader emotion management and team members' proactive behavior via team members' positive mood. This hypothesis was empirically supported. Hypothesis 3, which stated that relationship conflict would be negatively related to team members' proactive behavior via team members' positive mood, was not supported, as relationship conflict was not related to positive mood. Hypothesis 4 stated that task conflict would be negatively related to team members' proactive behavior via team members' positive mood. As task conflict was found to be negatively related to positive mood, and as positive mood was positively related to proactive behavior, an indirect effect of task conflict on proactive behavior was tested. Indeed, the data indicate that an indirect effect existed between task conflict and proactive behavior.

6.3.4 Discussion

The main goal of this study was to investigate the relationships between leader emotion management, team conflict, and positive mood on the one hand, and team members'

proactive behavior at work on the other hand. Finding that leader emotion management was related to the level of relationship conflict in the team as well as to team members' positive mood and proactive behavior, the empirical evidence of this study suggests that De Dreu and Weingart's question, "Can the negative effects of conflict be mitigated?" (2003, p. 747) can be answered positively. As expected, leaders who were perceived as good 'emotion managers' had less relationship conflict in their teams and a positive influence on their team members' positive mood and proactive behavior. Thereby, these leaders mitigated negative effects of team conflict on team members' mood and associated proactive performance (see also Strauss, Griffin, & Rafferty, 2009). As assumed, leader emotion management positively affected team members' proactive performance by fostering team members' positive mood.

The finding that relationship conflict did not significantly relate to team members' mood may be explained by the fact that even though the two types of team conflict could be discriminated in a confirmatory factor analysis, they correlated strongly. Consistent with an average intercorrelation coefficient of $r = .52$ between the two conflict types, which De Dreu and Weingart (2003) calculated from a review of 30 studies on team conflict, this finding corroborates the assumption that the two conflict types co-occur most of the time (Simons & Peterson, 2000). Thus, it can be assumed that shared variance of both conflict types explains the insignificant effect of relationship conflict in the multilevel analysis. In fact, negative associations between relationship conflict and affect-related measures such as affective commitment and teams' affective climate have been demonstrated before (Gamero, et al., 2008; Thomas, Bliese, & Jex, 2005).

Showing that task conflict reduced team members' positive mood at work, this study extends the conflict literature in the way that it addressed neglected effects of team conflict on employee well-being (De Dreu & Beersma, 2005). The reported negative indirect effect of task conflict on proactive behavior differs from studies that reported insignificant or even positive effects of task conflict on performance (e.g., Jehn, 1997; Schulz-Hardt, Jochims, & Frey, 2002). Nevertheless, it is in line with De Dreu and Weingart's meta-analysis (2003), in which task conflict was strongly and negatively related to team performance and satisfaction. Providing a possible explanation for this study's findings, this meta-analysis further demonstrates that the strength of the negative relationship between task conflict and team performance seems to depend on the correlation between task conflict and relationship conflict: The higher the two conflict types correlated, the stronger were the negative effects of

task conflict. It is therefore concluded that task conflict cannot generally be considered as a functional or stimulating part of the workplace.

The positive relationship between positive mood and proactive behavior supports scholars' assumptions that positive affect prompts employees to set more proactive goals and to persist in achieving them (Parker, 2007). This finding extends research that revealed positive effects of positive mood on motivation, persistence, and innovative behavior at work (George, 1990; Ilies & Judge, 2005; Tsai, Liu, & Chen, 2007) and complements first evidence showing that positive mood fosters proactive behavior (cf. Fritz & Sonnentag, 2009).

As all research, this study also has some *limitations*. One of them is that definite conclusions about causality cannot be drawn, especially because proactive behavior at time 1 was not controlled for. As challenging the status quo, which is an aspect of proactive behavior, might contribute to conflicts in the team, future studies should test for reversed causation and mutual reinforcement of the relationships revealed in the present study. Another critical point might be that team members who are in a positive mood might not necessarily be more proactive, but rather be better liked by their colleagues, thus inflating their peer ratings. Staw, Sutton, and Pelled (1994), for instance, report that expressions of positive emotions at the workplace can lead to greater interpersonal attraction due to 'halo' effects (i.e., overgeneralizations to other desirable traits). The insignificant correlations between employees' positive affectivity and peer-rated proactive behavior, however, point against such biased ratings.

This study proves to have several *strengths*. First, through aggregated measures of team conflict and leader emotion management and peer ratings of employees' proactive behavior, issues of common method variance and inflated associations in the assessment of predictor and outcome variables (cf. Podsakoff, et al., 2003) were avoided. Second, the random assignment of team colleagues to provide the proactive behavior ratings reduced the danger of biased ratings. Third, by asking team members to rate their team leaders' emotion management, self-evaluations of emotional competencies were obviated. These are questionable because they may reflect perceptions of emotional self-efficacy rather than actual competence (Tett, Fox, & Wang, 2005). Finally, the study's multilevel design provided the advantage of being able to analyze variables from different levels simultaneously, which supports the formation of a comprehensive picture of the processes that explain organizational behavior.

An interesting avenue for *further research* on this topic would be investigating of conditions of affective and behavior consequences of team conflict. Among these, team characteristics and team emotion management might be relevant. For example, Yang and Mossholder (2004) and Ayoko and colleagues (2008) found that team emotional intelligence and interactional norms moderated the outcomes of task conflict. Furthermore, measuring the two types of team conflict in all points in time and over a longer period might allow them to be disentangled. As for leader emotion management, other individual-level variables such as affective commitment or self-efficacy should be investigated. Evidence suggests that these variables are influenced by leaders' behavior and that they foster proactive behavior (Strauss, et al., 2009). Also worth investigating are the nonlinear effects of task conflict, positive mood, and proactive behavior. In a curvilinear model, Jehn (1995) found that there was an optimal level of task conflict for the performance of groups working on non-routine tasks. Kluger and DeNisi (1996) report that positive mood can shift attention away from the task and thus lead to a performance loss. Further, the Mood-as-Input Model (Martin, et al., 1993) predicts that positive mood signals that everything is alright and that there is no need to put effort into changing the status quo. Thus, certain levels of both task conflict and positive mood might be optimal to drive proactive behavior. Researchers are encouraged to investigate these relationships more thoroughly, considering nonlinear trends such as curvilinear relationships.

Implications for organizational practice from this study are, first of all, that leader emotion management should be integrated in leader development programs. Studies indicate that emotional competences can indeed be learned (cf. Gowing, O'Leary, Brienza, Cavallo, & Crain, 2006). Further, as different scholars point out that the effects of task conflict depend on team members' emotion management competences (Jordan & Troth, 2004; Yang & Mossholder, 2004), it is suggested that for employees working in teams, emotion management should be considered in HR practices such as personnel selection and training.

7 GENERAL DISCUSSION

In this last chapter, the results of this dissertation are summarized and discussed. First, the research questions are answered based on the results of the different studies, second, it is delineated how the present work contributes to existent literature, third, limitations and strengths of this dissertation are discussed, and fourth, ideas for further research are presented. The chapter concludes with some practical implications.

The aim of this dissertation was to enhance knowledge on intra- and interpersonal effects of emotion regulation at work. Within a framework of different stressors and outcomes, the intrapersonal effects of the situational and habitual use of two specific emotion regulation strategies, namely reappraisal and expressive suppression, as well as the interpersonal effects of emotion management as a broader construct were examined. The methodological approaches of the studies were cross-sectional and longitudinal surveys in applied settings and with different samples. The reason for using different designs and methodological approaches such as multilevel diary and team data was to improve internal and external validity of the respective results.

7.1 Summary of Scientific Findings

In the pre-study, the habitual use of expressive suppression was inversely related and the habitual use of reappraisal was not significantly related to supervisor ratings of proactive and adaptive performance. Due to these relationships, it seems that reappraisal of the situation would be the preferred strategy to recommend. However, direct effects may not be the only way by which emotion regulation affects contextual performance. Indeed, an increasing body of empirical evidence reveals that the *interaction* between person and situation is highly relevant in the applied context (e.g., Clark, Finkel, Tiedens, & Leach, 2004; Cole, et al., 2008; Consedine, et al., 2005). Thus, two of the three main dissertation studies (Studies 1 and 2) addressed moderating effects of the same regulation strategies. The last study (Study 3) extended the picture by exploring interpersonal effects of emotion regulation. Figure 7.1 presents an overview of the results of Studies 1-3. Answers to the three research questions, which are based on these results, are described below.

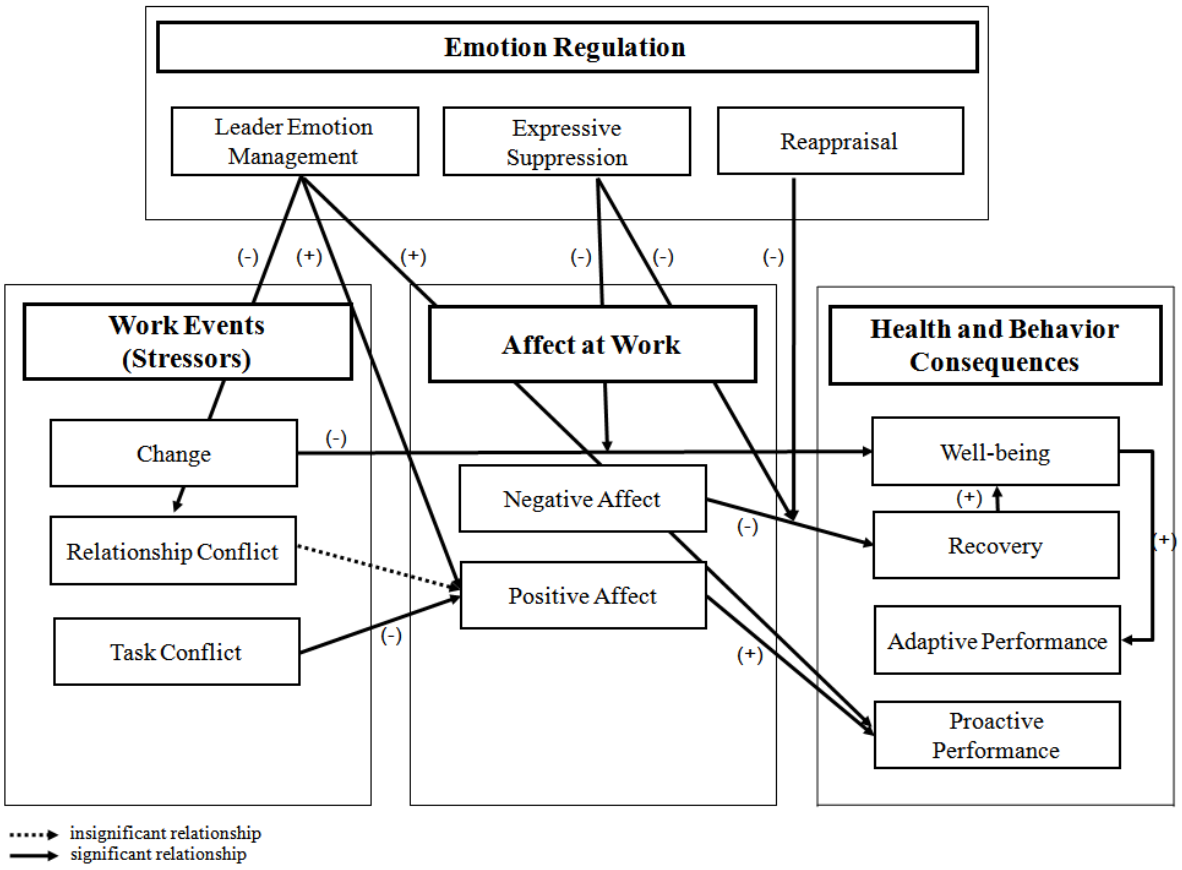


Figure 7.1 Integration of the Results of Studies 1-3

Research Question 1: *How does situational emotion regulation impact recovery experiences and well-being after negative emotional experiences at work?*

Study 1, a diary study with repeated-measurement data, revealed that during work-related emotional strain (i.e., a negative affective state), the situational regulation of one's emotions through both reappraisal and expressive suppression beneficially affected later recovery experiences and bedtime well-being. More specifically, both regulation strategies acted as *buffers* of lagged negative effects of emotional strain. Thus, the *situational* use of both strategies during experiences of above-average work-related emotional strain can be recommended to maintain personal daily well-being.

This study corroborates the implication of the pre-study that reappraisal is a strategy that can be recommended. In addition, it shows that if applied situationally, expressive suppression apparently also yields positive effects.

Research Question 2: *Does habitual expressive suppression influence employees' strain and adaptive performance during experienced changes at the workplace?*

Study 2, a cross-sectional online survey, demonstrated that the extent to which employees felt confronted with changes at work negatively affected their well-being and adaptive performance. For those employees who habitually regulated their affect by suppressing emotional expressions at work at least up to a certain extent, this strategy *buffered* the negative effects of experienced change. This result implies that not only the situational use, but also the *habitual* use of expressive suppression at work may have beneficial effects.

Compared to the results of the pre-study that revealed a generally negative relationship between habitual expressive suppression and adaptive performance, Study 2 demonstrates that in a context of changes at the workplace, expressive suppression can be a strategy that helps employees to maintain their adaptive performance.

Research Question 3: *What are the roles of leader emotion management and of team conflict for employees' positive affect and proactive performance in a team setting?*

In Study 3, a longitudinal team study, it turned out that task conflict in teams was detrimental for the team members' positive affect and, thereby, for their proactive performance. In contrast, leader emotion management was positively related to the team members' positive affect and their proactive performance. The study further showed that the better the team leaders' emotion management, the lower was the relationship conflict in their teams. Apparently, leaders can contribute to a better team climate, higher affective well-being, and active and future-oriented engagement in their teams by addressing their own and their team members' emotions in an appropriate way.

This study complements the previous ones by focusing on interpersonal effects of emotion regulation: It demonstrates that competences in intra- and interpersonal emotion regulation (i.e., emotion management) are not only relevant for one's own, but also for others' experiences and behavior.

7.2 Contribution to the Literature

Based on the exploration of direct effects in a pre-study, the focus of Studies 1 and 2 was on interactions between situations of stress and experiences of emotional strain on the one hand, and the situational and habitual use of emotion regulation strategies on the other hand. In these studies, intrapersonal effects were examined. Study 3 explored some specific interpersonal effects of emotion regulation. Altogether, this dissertation extends previous

research on consequences of emotion regulation in the occupational context as well as research on predictors of contextual performance.

In the following sections, the contributions of this dissertation to the literature are delineated. First, the results are discussed with respect to the literature on emotion regulation. Second, the advancement of the literature on contextual performance concepts is described.

7.2.1 Contribution to the Literature on Emotion Regulation

Reviewing existent literature on emotion regulation in the occupational context, several topics that warranted further research were identified (see also Chapter 3). First of all, *unequivocal findings* existed with regard to *outcomes of specific emotion regulation strategies*. In this respect, the results of the different studies of this dissertation indicate that one cannot easily differentiate between 'good' and 'bad' strategies.

Although prior research already showed that expressive suppression may lead to negative health and well-being outcomes in the long run (Gross & John, 2003; Richards & Gross, 1999; Roberts, et al., 2008; Srivastava, et al., 2009), the present research is among the first studies that relate expressive suppression to work performance (cf. Cole, et al., 2008; Raftery & Bizer, 2009). In the pre-study, the habitual use of expressive suppression at work was found to be directly and negatively related to adaptive and proactive performance ratings. However, it was also demonstrated that expressive suppression had beneficial effects on well-being when applied in a situation of acute work-related emotional strain (Study 1), and that it was beneficial for well-being and adaptive performance when changes were experienced in the work unit (Study 2). Thus, two situations under which it makes sense to not openly express one's emotions were identified.

These results are in line with other empirical findings of a positive moderation effect of the response-focused strategy of expressive suppression (Brown, et al., 2005; Cole, et al., 2008; Sanz-Vergel, et al., 2010). However, they also remain inconsistent due to the negative direct relationship between expressive suppression with active performance concepts that was found in the pre-study and the insignificant relation between expressive suppression and adaptive performance in Study 2. Because the pre-study was mainly conducted in Croatia, whereas Study 2 was conducted in Germany, one reason for these inconsistent findings may be culture. Matsumoto, Yoo, and Nakagawa (2008) showed that values of expressive suppression and its relation to reappraisal were different between cultures. Consequently, outcomes of these strategies may also differ across cultures. Another explanation could be

that, as Clark, Finkel, Tiedens, and Leach (2004) argued, relationship context may play a significant role for the effects of expressive suppression. In situations in which others also experience negative feelings (such as feeling insecure during changes), it may be wise to suppress one's emotional expression to prevent one's emotions from spreading. Further, the frequency of expressive suppression may also be of relevance. Suppressing the expression of one's emotions habitually and in front of all colleagues may result in inauthentic displays, which may lead to worse social relationships and reduced personal well-being (cf. Côté, 2005; Gross & John, 2003; Srivastava, et al., 2009), and consequently to lower performance ratings.

In sum, the studies of this dissertation support and extend prior research implying that both situational context (e.g., relationships, change experiences) and the frequency of using expressive suppression (i.e., habitual vs. situational use) need to be accounted for to determine whether this regulation strategy can be considered beneficial or detrimental.

A second under-researched topic that was identified is that of *interpersonal consequences of emotion regulation*. Answering calls that such consequences needed to be explored in greater detail (Humphrey, et al., 2008; Rimé, 2007), the present dissertation revealed that team leaders' management of their own and of their team members' emotions was beneficial for the team climate (i.e., negatively related to relationship conflict), team members' well-being, and team members proactive performance (Study 3). Whereas evidence on consequences of leaders' positive and negative emotions is considerable (Bono & Ilies, 2006; Lewis, 2000; Lindebaum & Fielden, in press), the present results go further and suggest that leaders' emotion regulation impacts their team members experiences and behavior. Appropriate emotion regulation, thus, appears to be important for not only one's own, but also for others' well-being and performance in a team setting.

A third topic in the field of emotion regulation to which this dissertation contributes is a *situational approach to emotion regulation*. Applied research on emotion regulation has been limited to the examination of how its habitual use affects well-being and performance (for exceptions, see Sanz-Vergel, et al., 2010; Van Gelderen, Heuven, van Veldhoven, Zeelenberg, & Croon, 2007). In this dissertation, situational regulation was differentiated from habitual regulation. In Study 1, not only situational, but also habitual emotion regulation

(i.e., emotion regulation style) was assessed[4]. Between habitual and situational emotion regulation, moderate positive correlations existed for reappraisal (r=.25) and expressive suppression (r=.44). Together with the high intrapersonal variance of situational emotion regulation - more than 80% of the total variance for both strategies -, this finding underlines that situational emotion regulation depends, to a large part, on other factors than habits. Examining the role of situational emotion regulation, as it was done in Study 1, seems therefore warranted. As the study's results indicate, not only reappraisal but also the suppression of a spontaneous emotional expressions may be good decisions during the experience of negative emotions. This result extends research as it implies that on a *situational* level, the response-focused strategy of expressive suppression may not lead to negative results as reported in studies on habitual response-focused emotion regulation (see Chapter 3), but rather buffer negative strain effects. More generally speaking, the reported results may imply, as mentioned above, that context and frequency of response-focused regulation are crucial determinants of the outcomes of this strategy.

7.2.2 Contribution to the Literature on Contextual Performance

One of the aims of this dissertation was to enhance understanding of whether - and in what way - emotion regulation affects the change-oriented contextual performance dimensions of proactive and adaptive performance. In addition to results on intrapersonal effects of emotion regulation on such measures (pre-study, Study 2), interpersonal effects of emotion management on proactive performance were examined (Study 3). For the first time, it was shown that the employees' emotion regulation affected their own proactive and adaptive performance, and that leaders' emotion management (comprising the regulation of one's own and others' emotions) had an impact their team members' proactive performance

What conclusions can be drawn from the direction of the relationships? First of all, the negative direct effects of expressive suppression and the insignificant, but positive direct effects of reappraisal, which were found in the pre-study, indicate that expressive suppression may impede adaptive and proactive performance. Considering that reappraisal changes the emotional experience, so that negative emotions are reduced, and that expressive suppression leaves the emotional experience as it is, the results may indicate that the experience of negative affect at the workplace obviates such active and change-oriented behavior. However,

[4] The assessment of habitual emotion regulation was not mentioned in the manuscript and the study description in Chapter 6, because it was not relevant for the hypotheses that were tested.

models specifying the links between affect and performance, such as the CWB-OCB emotion model (Spector & Fox, 2002; see Chapter 2), do not propose any link between negative affect and desired contextual performance. Moreover, this hypothesis would run counter Martin and colleagues' (1993; Mood-as-Input Model) and Frese's (2008) suggestions. These scholars state that negative affect may *induce* behaviors addressed at changing the status quo, because it signals that a goal is not yet attained.

Considering the finding that expressive suppression was not directly related to adaptive performance in Study 2, another explanation of the contradictory effects may be rater biases: In the pre-study, ratings were made by supervisors (which may be biased by relationship quality, see Chapter 5.1), whereas Study 2 relied on self-ratings (which may be biased by self-enhancement, see Chapter 6.2).

Study 3 revealed two further affective predictors of proactive performance: First, the finding that leaders' emotion management supported team members' proactive performance points to the importance of interpersonal affective processes for employees' proactive performance. This finding extends the literature, as interpersonal effects of emotion regulation on others' performance have apparently not yet been subjected to empirical research. Second, the finding that positive affect enhanced proactive performance reinforces Affective Events Theory (Weiss & Cropanzano, 1996; see Chapter 2) by showing that proactive performance is - at least up to some extent - an affect driven behavior. This finding supports theory and evidence suggesting that positive affect induces proactive behavior (cf. Fritz & Sonnentag, 2009; Parker, 2007). It extends research that revealed positive effects of positive affect on motivation, persistence, and innovative behavior at work (George, 1990; Ilies & Judge, 2005; Tsai, et al., 2007).

Of course, these results are just first indicators of possibly existing relationships, and have to be interpreted considering some limitations, which are described in the next section. Nevertheless, the results demonstrate that emotion regulation plays a significant role for contextual, change-oriented performance.

7.3 Limitations, Strengths, and Future Research Directions

Despite the limitations that were delineated for each of the studies in the respective discussion sections, there are a few general issues that have to be considered when interpreting the results and impact of this dissertation. After a discussion of these limitations and of the strengths of this dissertation, ideas for further research on the topic of this dissertation are presented in the following section.

7.3.1 Limitations and Strengths

As a limitation, the possibility of inflated results due to *common method bias* should be noted (Podsakoff, et al., 2003). However, the use of multiple sources, that is supervisor-, peer-, and agreement-based team-ratings, reduced this issue in the pre-study and in Study 3. In Study 1, controlling for interpersonal variance ruled out such bias due to individual response tendencies in the self-report ratings. In Study 2, the focus on the interaction between two variables in their effect on the criterion speaks against inflated results due to common method bias (cf. Oreg & Sverdlik, 2010): As is was not a correlation, but rather differences among correlations across values of the moderating variable that were of interest, possible inflations would have been canceled out, because all correlations would have been similarly inflated due to common method bias. Thus, self-report biases are considered to be sufficiently addressed. Nevertheless, future studies would benefit from a more objective assessment, especially of performance, which could be achieved by relying on more than one rater.

A second limitation of this research is that *implicit display rule perceptions* (Diefendorff & Greguras, 2009; Diefendorff & Richard, 2003) were not controlled for. Although service workers were explicitly excluded from all samples, because these have to comply with formal display rules that limit their control over emotional expressions, implicit display rules may also determine emotion regulation as well as well-being. However, the fact that correlations were compared within the same organization, where all participants faced similar display rules (Study 1) or between a variety of jobs and industries, where high and low perceptions should cancel each other out (Studies 2 and 3) reduced the probability of this bias.

Third, the *strategies in focus* (i.e., reappraisal, expressive suppression, emotion management) represent just a small selection of the number of emotion regulation strategies that have been identified (cf. Niven, et al., 2009; Parkinson & Totterdell, 1999). Nevertheless, two of these strategies (i.e., reappraisal and expressive suppression) are the ones that have most frequently been examined, so that the present results complement existent findings. Moreover, the findings related to the concept of emotion management imply that sub-dimensions of broader competence concepts like emotional intelligence (e.g., Mayer, Roberts, & Barsade, 2008) should be put into focus, and provide a starting point to more precisely differentiate the features that constitute good emotion management. For future studies, it is recommended to precisely distinguish between different strategies of emotion regulation, which also encompass coping and relaxation strategies (e.g., Shiota, 2006; Stanton, Parsa, &

Austenfeld, 2005; Thayer, Newman, & McClain, 1994), and - if possible - assess many of them in one study to be able to determine their relative impact.

One strength of this dissertation is its comprehensive and yet differentiated picture on different forms of emotion regulation (intra- and interpersonal regulation, habitual and situational regulation) and its intra- and interpersonal effects on different well-being and contextual performance criteria. The dynamic nature of emotion regulation, which has often been neglected, was addressed using repeated-measurement data, so that lagged effects of emotional experiences and their regulation were revealed. Most relationships (see Figure 7.1), for example the effects of leader emotion management on their team members' cooperation and proactive performance, have apparently been addressed for the first time. In sum, the results allow the conclusion that in some contexts, expressive suppression at work can indeed have positive effects, and that emotion management exerts a range of beneficial effects in team settings.

Another strength of this research is of methodological nature: The dissertation did not address emotion regulation as a personal habit only, but focused on multiple levels on which it actually occurs: the person-level (Study 1), the day-level (Study 2), and the team-level (Study 3). These foci on multiple levels and the use of diverse samples contribute to the generalization and the external validity of the results that were obtained. Further, the use of appropriate analytical methods for the respective data (bootstrapping, multilevel modeling) and the inclusion of relevant control models enhanced the internal validity of the results.

7.3.2 Further Research on Affect, Emotion Regulation, and Contextual Performance in Organizations

The relationships that were specified and empirically supported in this dissertation give rise to a number of new questions that may be addressed in future organizational studies. First, the present dissertation showed that the two emotion regulation strategies of reappraisal and expressive suppression both buffered adverse effects of stressful experiences. The direct effects for expressive suppression were unequivocal. To extend these findings, one could distinguish between the regulation of positive emotions and the regulation of negative emotions to specify their differential relations to adaptive and proactive performance. Considering the beneficial effects of positive mood that this dissertation and other studies (Fritz & Sonnentag, 2009) report for proactive performance, the capitalization of positive emotions might result more fruitful than the regulation of negative emotions for this type of

performance. Research on this topic could also explore how emotion regulation contributes to resilience (i.e., the ability to maintain one's well-being in the face of stressful experiences).in organizational settings (cf. Fisk & Dionisi, 2010; Tugade & Fredrickson, 2004; Tugade & Fredrickson, 2007).

Second, the negative direct relationship between habitual expressive suppression and proactive performance warrants further analyses of explaining mechanisms. Interpersonal effects might be a promising starting point for such research (cf. Côté, 2005; Van Kleef, 2009). Expressive suppression may result in inauthentic displays, which may possibly lead to worse social relationships (e.g., Gross & John, 2003; Srivastava, et al., 2009) and worse performance ratings. Examining crossover effects, that is, direct behavioral and emotional reactions of interaction partners, would allow learning more about interpersonal effects of emotion regulation.

Third, the focus of the present dissertation was on the dimensions of positive and negative affective states. Extending this focus, the analysis of discrete emotions such as anger, shame, and happiness would offer a more differentiated picture of the contribution of distinct emotions to contextual performance.

Fourth, the high intrapersonal variance of emotion regulation strategies found in Study 1 leads to the question of which antecedents determine the choice of certain emotion regulation strategies. Although research already addressed this question (e.g., Diefendorff, et al., 2008), this research is not comprehensive and should be complemented by an examination of interaction partners and situational context.

Finally, a topic that was not addressed in this dissertation but that would advance the understanding of organizational work behavior would be the conditions under which negative emotions may eventually lead to positive outcomes such as proactive behavior (Barsade & Gibson, 2007; Lindebaum & Fielden, in press).

Altogether, the understanding of emotion regulation in the occupational context would benefit from research that precisely specifies the antecedents and consequences of different emotion regulation strategies as well as their interrelations. Constructs such research should integrate would be,

- Diverse contexts (e.g., interaction partner, setting, display rules),
- Discrete emotions (e.g., anger, frustration, pride),
- Discrete emotion regulation strategies,
- Diverse outcomes (e.g., own and others' well-being and performance).

7.4 Practical Implications

In combination, the different studies of the present dissertation demonstrate that during stressful work events, appropriate emotion regulation can have beneficial effects for peoples' well-being and performance. As this finding is in line with other research (Boss & Sims, 2008), it is advocated that if organizations decide to offer stress management trainings, these trainings should address the topic of emotion regulation (e.g., Roger & Hudson, 1995). In a training program on emotional competences (cf. Gowing, et al., 2006), it was shown that these can indeed increase through such interventions. Students facing stress in their university work and employees facing changes at work should equally benefit from learning how to deal with their emotions.

A second practically relevant finding is the role of team leaders' emotion management for their team members' well-being and proactive performance. It supports other research showing that leaders' emotional competences do significantly impact followers' experiences, attitudes, and behaviors (Humphrey, et al., 2008; Ozcelik, Langton, & Aldrich, 2008; Pescosolido, 2002; Smollan & Sayers, 2009). Leadership development programs should consider these effects by training (future) leaders on perceiving, acknowledging and regulating their own and their subordinates' emotions. In support of Huy (2002), the results of this dissertation imply that paying close attention to their subordinates' experiences will provide leaders with useful insights into dominant concerns, sources of anxiety, and challenges these employees face. Managing these emotions accordingly should help leaders in motivating their followers to show high contextual performance in terms of adaptation and initiative.

In sum, the results from this dissertation suggest that organizational practitioners who wish to promote cooperation, well-being, and contextual work behaviors are well advised if they acknowledge the power of affective experiences, provide positive experiences (e.g., through positive feedback and appreciation), and foster leaders‘ and employees‘ competences in emotion regulation.

8 REFERENCES

Abler, B., & Kessler, H. (2009). Emotion Regulation Questionnaire - Eine deutschsprachige Fassung des ERQ von Gross und John [Emotion Regulation Questionnaire - A German version of the ERQ by Gross and John]. *Diagnostica, 55*(3), 144-152.

Ahrentzen, S. B. (1990). Managing conflict by managing boundaries: How professional homeworkers cope with multiple roles at home. *Environment and Behavior, 22*(6), 723-752.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA US: Sage Publications.

Alliger, G. M., & Williams, K. J. (1993). Using signal-contingent experience sampling methodology to study work in the field: A discussion and illustration examining task perceptions and mood. *Personnel Psychology, 46*(3), 525-549.

Allworth, E., & Hesketh, B. (1999). Construct-oriented biodata: Capturing change-related and contextually relevant future performance. *International Journal of Selection and Assessment, 7*(2), 97-111.

Amason, A. C., & Sapienza, H. J. (1997). The effects of top management team size and interaction norms on cognitive and affective conflict. *Journal of Management, 23*(4), 495-516.

Armenakis, A. A., & Bedeian, A. G. (1999). Organizational change: A review of theory and research in the 1990s. *Journal of Management, 25*(3), 293-315.

Ashford, S. J. (1988). Individual strategies for coping with stress during organizational transitions. *Journal of Applied Behavioral Science, 24*(1), 19-36.

Ashford, S. J., Lee, C., & Bobko, P. (1989). Content, causes, and consequences of job insecurity: A theory-based measure and substantive test. *Academy of Management Journal, 32*(4), 803-829.

Ashforth, B. E., & Humphrey, R. H. (1993). Emotional labor in service roles: The influence of identity. *The Academy of Management Review, 18*(1), 88-115.

Ashforth, B. K., & Saks, A. M. (1996). Socialization Tactics: Longitudinal Effects of Newcomer Adjustment. *Academy of Management Journal, 39*, 149-178.

Ayoko, O. B., Callan, V. J., & Härtel, C. E. J. (2008). The influence of team emotional intelligence climate on conflict and team members' reactions to conflict. *Small Group Research, 39*(2), 121-149.

Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309-328.

Barclay, L. J., Skarlicki, D. P., & Pugh, S. D. (2005). Exploring the Role of Emotions in Injustice Perceptions and Retaliation. *Journal of Applied Psychology, 90*(4), 629-643.

Barsade, S. G., Brief, A. P., & Spataro, S. E. (2003). The affective revolution in organizational behavior: The emergence of a paradigm. In J. Greenberg (Ed.), *Organizational behavior: The state of the science (2nd ed.).* (pp. 3-52). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Barsade, S. G., & Gibson, D. E. (2007). Why does affect matter in organizations? *Academy of Management Perspectives, 21*(1), 36-59.

Basch, J., & Fisher, C. D. (2000). Affective events-emotions matrix: A classification of work events and associated emotions. In N. M. Ashkanasy, C. E. Härtel & W. J. Zerbe (Eds.), *Emotions in the workplace: Research, theory, and practice.* (pp. 36-48). Westport, CT US: Quorum Books/Greenwood Publishing Group.

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2. ed. ed.). Mahwah, NJ: Erlbaum.

Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior, 14*(2), 103-118.

Baumeister, R. F., & Muraven, M. (2000). Ego depletion: A resource model of volition, self-regulation, and controlled processing. *Social Cognition, 18*(2), 130.

Beal, D. J., Weiss, H. M., Barros, E., & MacDermid, S. M. (2005). An Episodic Process Model of Affective Influences on Performance. *Journal of Applied Psychology, 90*(6), 1054-1068.

Befahr, K., & Cronin, M. A. (2010). *The Efficacy of Venting as a Function of the Response by Third-Party Listeners.* Paper presented at the Academy of Management Annual Meeting, Montréal, Canada.

Bettencourt, L. A., Gwinner, K. P., & Meuter, M. L. (2001). A comparison of attitude, personality, and knowledge predictors of service-oriented organizational citizenship behaviors. *Journal of Applied Psychology, 86*(1), 29-41.

Bindl, U. K., & Parker, S. K. (2010). Proactive work behavior: Forward-thinking and change-oriented action in organizations. In S. Zedeck (Ed.), *APA handbook of industrial and organizational psychology* (Vol. 2, pp. 567-598). Washington, DC: American Psychological Association.

Binnewies, C., Sonnentag, S., & Mojza, E. J. (2009). Feeling recovered and thinking about the good sides of one's work. *Journal of Occupational Health Psychology, 14*(3), 243-256.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions.* (pp. 349-381). San Francisco, CA US: Jossey-Bass.

Bolger, N., & Zuckerman, A. (1995). A framework for studying personality in the stress process. *Journal of Personality and Social Psychology, 69*(5), 890-902.

Bono, J. E., & Ilies, R. (2006). Charisma, positive emotions and mood contagion. *The Leadership Quarterly, 17*(4), 317-334.

Bono, J. E., & Vey, M. A. (2005). Toward understanding emotional management at work: A quantitative review of emotional labor research. In C. E. Härtel, W. J. Zerbe & N. M. Ashkanasy (Eds.), *Emotions in organizational behavior.* (pp. 213-233). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Borman, W. C., & Motowidlo, S. J. (1993). Expanding the criterion domain to include elements of contextual performance. In N. Schmitt, W. C. Borman & Associates (Eds.), *Personnel selection in organizations* (pp. 25-38). San Francisco: Jossey-Bass.

Boss, A. D., & Sims, H. P., Jr. (2008). Everyone fails! Using emotion regulation and self-leadership for recovery. *Journal of Managerial Psychology, 23*(2), 135-150.

Briner, R. B., Harris, C., & Daniels, K. (2004). How do work stress and coping work? Toward a fundamental theoretical reappraisal. *British Journal of Guidance & Counselling, 32*(2), 223-234.

Brislin, R. W. (1980). Translation and content analysis of oral and written material. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of Cross-Cultural Psychology* (Vol. 2, pp. 389-444). Boston: Allyn and Bacon.

Brotheridge, C. M., & Lee, R. T. (2002). Testing a conservation of resources model of the dynamics of emotional labor. *Journal of Occupational Health Psychology, 7*(1), 57-67.

Brown, S. P., Westbrook, R. A., & Challagalla, G. (2005). Good Cope, Bad Cope: Adaptive and Maladaptive Coping Strategies Following a Critical Negative Work Event. *Journal of Applied Psychology, 90*(4), 792-798.

Buss, D. M. (1992). Manipulation in close relationships: Five personality factors in interactional context. *Journal of Personality, 60*(2), 477-499.

By, R. T. (2005). Organisational Change Management: A Critical Review. *Journal of Change Management, 5*(4), 369-380.

By, R. T., & Dale, C. (2008). The successful management of organisational change in tourism SMEs: Initial findings in UK visitor attractions. *International Journal of Tourism Research, 10*(4), 305-313.

Caldwell, S. D., Herold, D. M., & Fedor, D. B. (2004). Toward an Understanding of the Relationships Among Organizational Change, Individual Differences, and Changes in Person-Environment Fit: A Cross-Level Study. *Journal of Applied Psychology, 89*(5), 868-882.

Campbell, D. J. (2000). The proactive employee: Managing workplace initiative. *Academy of Management Executive, 14*, 52-66.

Campbell, J. P. (1999). The definition and measurement of performance in the new age. In D. R. Ilgen & E. D. Pulakos (Eds.), *The changing nature of performance: Implications for staffing, motivation, and development* (pp. 399-427). San Francisco: Jossey-Bass.

Chang, C.-H., Johnson, R. E., & Yang, L.-Q. (2007). Emotional strain and organizational citizenship behaviour: A meta-analysis and review. *Work & Stress, 21*(4), 312-332.

Ciarrochi, J., Dean, F. P., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences, 32*(2), 197-209.

Clark, M. S., Finkel, E. J., Tiedens, L. Z., & Leach, C. W. (2004). Does Expressing Emotion Promote Well-Being? It Depends on Relationship Context. In L. Z. Tiedens & C. W. Leach (Eds.), *The social life of emotions.* (pp. 105-126). New York, NY US: Cambridge University Press.

Cohen, S. (1980). Aftereffects of stress on human performance and social behavior: A review of research and theory. *Psychological Bulletin, 88*(1), 82-108.

Cole, M. S., Bruch, H., & Vogel, B. (2006). Emotion as Mediators of the Relations Between Perceived Supervisor Support and Psychological Hardiness on Employee Cynicism. *Journal of Organizational Behavior, 27*(4), 463-484.

Cole, M. S., Walter, F., & Bruch, H. (2008). Affective mechanisms linking dysfunctional behavior to performance in work teams: A moderated mediation study. *Journal of Applied Psychology, 93*(5), 945-958.

Conger, J. A., Kanungo, R. N., & Menon, S. T. (2000). Charismatic leadership and follower effects. *Journal of Organizational Behavior, 21*(7), 747-767.

Consedine, N. S., Magai, C., & Horton, D. (2005). Ethnic Variation in the Impact of Emotion and Emotion Regulation on Health: A Replication and Extension. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 60*(4), 165-173.

Conte, J. M. (2005). A review and critique of emotional intelligence measures. *Journal of Organizational Behavior, 26*(4), 433-440.

Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance & Counselling, 34*(4), 505-517.

Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology, 78*(1), 98-104.

Côté, S. (2005). A Social Interaction Model of the Effects of Emotion Regulation on Work Strain. *Academy of Management Review, 30*(3), 509-530.

Côté, S., & Morgan, L. M. (2002). A longitudinal analysis of the association between emotion regulation, job satisfaction, and intentions to quit. *Journal of Organizational Behavior, 23*(8), 947-962.

Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management, 26*(3), 435-462.

Cropanzano, R., Weiss, H. M., Hale, J. M. S., & Reb, J. (2003). The Structure of Affect: Reconsidering the Relationship Between Negative and Positive Affectivity. *Journal of Management, 29*(6), 831-857.

Cropley, M., Dijk, D.-J., & Stanley, N. (2006). Job strain, work rumination, and sleep in school teachers. *European Journal of Work and Organizational Psychology, 15*(2), 181-196.

Cropley, M., & Purvis, L. J. M. (2003). Job strain and rumination about work issues during leisure time: A diary study. *European Journal of Work and Organizational Psychology, 12*(3), 195-207.

Cross, R., Baker, W., & Parker, A. (2003). What creates energy in organizations? *Sloan Management Review, 44*, 51-57.

De Bloom, J., Geurts, S. A. E., Taris, T. W., Sonnentag, S., de Weerth, C., & Kompier, M. A. J. (2010). Effects of vacation from work on health and well-being: Lots of fun, quickly gone. *Work & Stress, 24*(2), 196-216.

De Dreu, C. K. W., & Beersma, B. (2005). Conflict in organizations: Beyond effectiveness and performance. *European Journal of Work & Organizational Psychology, 14*(2), 105-117.

De Dreu, C. K. W., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology, 88*(4), 741-749.

DeArmond, S., Tye, M., Chen, P. Y., Krauss, A., Rogers, D. A., & Sintek, E. (2006). Age and Gender Stereotypes: New Challenges in a Changing Workplace and Workforce. *Journal of Applied Social Psychology, 36*(9), 2184-2214.

DeLongis, A., Folkman, S., & Lazarus, R. S. (1988). The impact of daily stress on health and mood: Psychological and social resources as mediators. *Journal of Personality and Social Psychology, 54*(3), 486-495.

Demerouti, E., Bakker, A. B., Geurts, S. A. E., & Taris, T. W. (2009). Daily recovery from work-related effort during non-work time. In S. Sonnentag, P. L. Perrewé & D. C. Ganster (Eds.), *Current perspectives on job-stress recovery* (pp. 85-123). Bingley United Kingdom: JAI Press/Emerald Group Publishing.

Diefendorff, J. M., Croyle, M. H., & Gosserand, R. H. (2005). The dimensionality and antecedents of emotional labor strategies. *Journal of Vocational Behavior, 66*(2), 339-359.

Diefendorff, J. M., & Greguras, G. J. (2009). Contextualizing emotional display rules: Examining the roles of targets and discrete emotions in shaping display rule perceptions. *Journal of Management, 35*(4), 880-898.

Diefendorff, J. M., & Richard, E. M. (2003). Antecedents and consequences of emotional display rule perceptions. *Journal of Applied Psychology, 88*(2), 284-294.

Diefendorff, J. M., Richard, E. M., & Yang, J. (2008). Linking emotion regulation strategies to affective events and negative emotions at work. *Journal of Vocational Behavior, 73*(3), 498-508.

Elfenbein, H. A. (2008). Emotion in organizations: A review and theoretical integration. In A. Brief & J. Walsh (Eds.), *The Academy of Management Annals* (Vol. 1, pp. 315-386). Amsterdam: Elsevier.

Fay, D., & Sonnentag, S. (2002). Rethinking the effects of stressors: A longitudinal study on personal initiative. *Journal of Occupational Health Psychology, 7*(3), 221-234.

Fay, D., & Sonnentag, S. (2010). A look back to move ahead: New directions for research on proactive performance and other discretionary work behaviours. *Applied Psychology: An International Review, 59*(1), 1-20.

Fiedler, K. (2001). Affective states trigger processes of assimilation and accommodation. In L. L. Martin & G. L. Clore (Eds.), *Theories of mood and cognition: A user's guidebook.* (pp. 85-98). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Fisher, C. D. (2000). Mood and emotions while working: Missing pieces of job satisfaction? *Journal of Organizational Behavior, 21*, 185-202.

Fisher, C. D. (2002). Antecedents and consequences of real-time affective reactions at work. *Motivation and Emotion, 26*(1), 3-30.

Fisher, C. D., & Ashkanasy, N. M. (2000). The emerging role of emotions in work life: An introduction. *Journal of Organizational Behavior, 21*, 123-129.

Fisk, G. M., & Dionisi, A. M. (2010). Building and Sustaining Resilience in Organizational Settings: The Critical Role of Emotion Regulation. In J. W. Zerbe, C. E. J. Haertel & N. M. Ashkanasy (Eds.), *Research on Emotion in Organizations* (Vol. 6 - Emotions and Organizational Dynamism, pp. 167-188). Bingley: Emerald Group Publishing Limited.

Forgas, J. P. (1992). Affect in social judgments and decisions: A multiprocess model. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 227-275). San Diego, CA: Academic Press.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*(3), 300-319.

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*(3), 218-226.

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science, 13*(2), 172-175.

Frese, M. (2008). The word is out: We need an active performance concept for modern work places. *Industrial and Organizational Psychology: Perspectives on Science and Practice, 1*(1).

Frese, M., & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. *Research in Organizational Behavior, 23*, 133-188.

Frese, M., Fay, D., Hilburger, T., & Leng, K. (1997). The concept of personal initiative: Operationalization, reliability and validity of two German samples. *Journal of Occupational and Organizational Psychology, 70*(2), 139-161.

Frese, M., Kring, W., Soose, A., & Zempel, J. (1996). Personal initiative at work: Differences between East and West Germany. *Academy of Management Journal, 39*(1), 37-63.

Frijda, N. H. (1986). *The emotions*. New York, NY: Cambridge University Press.

Frijda, N. H. (1988). The laws of emotion. *American Psychologist, 43*(5), 349-358.

Frijda, N. H. (1993). Moods, emotion episodes, and emotions. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions.* (pp. 381-403). New York, NY US: Guilford Press.

Fritz, C., & Sonnentag, S. (2006). Recovery, Well-Being, and Performance-Related Outcomes: The Role of Workload and Vacation Experiences. *Journal of Applied Psychology, 91*(4), 936-945.

Fritz, C., & Sonnentag, S. (2009). Antecedents of day-level proactive behavior: A look at job stressors and positive affect during the workday. *Journal of Management, 35*(1), 94-111.

Fugate, M., Kinicki, A. J., & Prussia, G. E. (2008). Employee coping with organizational change: An examination of alternative theoretical perspectives and models. *Personnel Psychology, 61*(1), 1-36.

Fugate, M., Kinicki, A. J., & Scheck, C. L. (2002). Coping with an organizational merger over four stages. *Personnel Psychology, 55*(4), 905-928.

Gable, S. L., Reis, H. T., Impett, E. A., & Asher, E. R. (2004). What Do You Do When Things Go Right? The Intrapersonal and Interpersonal Benefits of Sharing Positive Events. *Journal of Personality and Social Psychology, 87*(2), 228-245.

Gamero, N., González-Romá, V., & Peiró, J. M. (2008). The influence of intra-team conflict on work teams' affective climate: A longitudinal study. *Journal of Occupational and Organizational Psychology, 81*(1), 47-69.

George, J. M. (1990). Personality, affect, and behavior in groups. *Journal of Applied Psychology, 75*(2), 107-116.

George, J. M. (1991). State or trait: Effects of positive mood on prosocial behaviors at work. *Journal of Applied Psychology, 76*(2), 299-307.

George, J. M., & Brief, A. P. (1992). Feeling good-doing good: A conceptual analysis of the mood at work-organizational spontaneity relationship. *Psychological Bulletin, 112*(2), 310-329.

George, J. M., & Jones, G. R. (1996). The experience of work and turnover intentions: Interactive effects of value attainment, job satisfaction, and positive mood. *Journal of Applied Psychology, 81*(3), 318-325.

Geurts, S. A. E., & Sonnentag, S. (2006). Recovery as an explanatory mechanism in the relation between acute stress reactions and chronic health impairment. *Scandinavian Journal of Work, Environment and Health, 32*(6), 482-492.

Giardini, A., & Frese, M. (2006). Reducing the negative effects of emotion work in service occupations: Emotional competence as a psychological resource. *Journal of Occupational Health Psychology, 11*(1), 63-75.

Giebels, E., & Janssen, O. (2005). Conflict, stress and reduced well-being at work: The buffering effect of third-party help. *European Journal of Work and Organizational Psychology, 14*(2), 137-155.

Goldberg, L. S., & Grandey, A. A. (2007). Display rules versus display autonomy: Emotion regulation, emotional exhaustion, and task performance in a call center simulation. *Journal of Occupational Health Psychology, 12*(3), 301-318.

Gosserand, R. H., & Diefendorff, J. M. (2005). Emotional Display Rules and Emotional Labor: The Moderating Role of Commitment. *Journal of Applied Psychology, 90*(6), 1256-1264.

Gowing, M. K., O'Leary, B. S., Brienza, D., Cavallo, K., & Crain, R. (2006). A Practitioner's Research Agenda: Exploring Real-World Applications and Issues. In V. U. Druskat, F. Sala & G. Mount (Eds.), *Linking emotional intelligence and performance at work: Current research evidence with individuals and groups.* (pp. 245-265). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Grandey, A. (2008). Emotions at work: A review and research agenda. In C. Cooper & J. Barling (Eds.), *The SAGE Handbook of Organizational Behavior* (Vol. 1, pp. 234-261). Thousand Oaks, CA: Sage.

Grandey, A. A. (2000). Emotional regulation in the workplace: A new way to conceptualize emotional labor. *Journal of Occupational Health Psychology, 5*(1), 95-110.

Grandey, A. A. (2003). When 'the show must go on': Surface acting and deep acting as determinants of emotional exhaustion and peer-rated service delivery. *Academy of Management Journal, 46*(1), 86-96.

Grandey, A. A., Fisk, G. M., & Steiner, D. D. (2005). Must 'Service With a Smile' Be Stressful? The Moderating Role of Personal Control for American and French Employees. *Journal of Applied Psychology, 90*(5), 893-904.

Grant, A. M., & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior, 28*, 3-34.

Griffin, B., & Hesketh, B. (2003). Adaptable behaviours for successful work and career adjustment. *Australian Journal of Psychology, 55*(2), 65-73.

Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal, 50*(2), 327-347.

Griffin, M. A., Parker, S. K., & Mason, C. M. (2010). Leader vision and the development of adaptive and proactive performance: A longitudinal study. *Journal of Applied Psychology, 95*(1), 174-182.

Griffin, M. A., Parker, S. K., & Neal, A. (2008). Is behavioral engagement a distinct and useful construct? *Industrial and Organizational Psychology: Perspectives on Science and Practice, 1*(1).

Gross, J. J. (1998a). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*(1), 224-237.

Gross, J. J. (1998b). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*(3), 271-299.

Gross, J. J. (2001a). Emotion Regulation in Adulthood: Timing Is Everything. *Current Directions in Psychological Science, 10*, 214.

Gross, J. J. (2001b). Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science, 10*(6), 214-219.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348-362.

Gross, J. J., & Levenson, R. W. (1993). Emotional suppression: Physiology, self-report, and expressive behavior. *Journal of Personality and Social Psychology, 64*(6), 970-986.

Gross, J. J., & Levenson, R. W. (1997). Hiding feelings: The acute effects of inhibiting negative and positive emotion. *Journal of Abnormal Psychology, 106*(1), 95-103.

Grove, S. J., Fisk, R. P., Giacalone, R. A., & Rosenfeld, P. (1989). Impression management in services marketing: A dramaturgical perspective *Impression management in the organization.* (pp. 427-438). Hillsdale, NJ England: Lawrence Erlbaum Associates, Inc.

Han, T. Y., & Williams, K. J. (2008). Multilevel investigation of adaptive performance: Individual- and team-level relationships. *Group & Organization Management, 33*(6), 657-684.

Hänze, M. (2002). *Emotionen, Ambivalenz und Entscheidungskonflikt [Emotions, Ambivalence, and Decision Conflict]*. Weinheim, Germany: Beltz.

Hess, U., & Cossette, M. (2010). *How is Emotional Labor Performed by Costumer Service Employees? A Matter of Style.* Paper presented at the Academy of Management Annual Meeting, Montréal, Canada.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524.

Hochschild, A. R. (1979). Emotion Work, Feeling Rules, and Social Structure. *American Journal of Sociology, 85*(3), 551-575.

Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. Berkeley: University of California Press.

House, J. S., & Kahn, R. L. (1985). Measures and concepts of social support. In S. Cohen & S. L. Syme (Eds.), *Social support and health* (pp. 79–108). Orlando, FL: Academic Press.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (2004). *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Thousand Oaks, London, New Delhi: Sage Publications.

Hox, J. (2002). *Multilevel Analysis. Techniques and Applications*. Mahwah, NJ: Lawrence Erlbaum Ass.

Humphrey, R. H., Pollack, J. M., & Hawver, T. (2008). Leading with emotional labor. *Journal of Managerial Psychology, 23*(2), 151 - 168.

Hurst, N. W., Young, S., Donald, I., Gibson, H., & Muyselaar, A. (1996). Measures of safety management performance and attitudes to safety at major hazard sites. *Journal of Loss Prevention in the Process Industries, 9*(2), 161-172.

Huy, Q. N. (2002). Emotional balancing of organizational continuity and radical change: The contribution of middle managers. *Administrative Science Quarterly, 47*(1), 31-69.

Ilgen, D. R. (1999). Teams embedded in organizations: Some implications. *American Psychologist, 54*(2), 129-139.

Ilies, R., & Judge, T. A. (2005). Goal Regulation Across Time: The Effects of Feedback and Affect. *Journal of Applied Psychology, 90*(3), 453-467.

Isen, A. M. (1993). Positive affect and decision making. In M. Lewis & J. M. Haviland (Eds.), *Handbook of emotions.* (pp. 261-277). New York, NY US: Guilford Press.

Isen, A. M., & Baron, R. A. (1991). Positive Affect as a Factor in Organizational Behavior. In L. L. Cummings & B. M. Staw (Eds.), *Research in organizational behavior. Volume 13* (pp. 1-53). Greenwich, Conn. and London: JAI Press.

Isen, A. M., Daubman, K. A., & Nowicki, G. P. (1987). Positive affect facilitates creative problem solving. *Journal of Personality and Social Psychology, 52*(6), 1122-1131.

James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology, 69*(1), 85-98.

Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly, 40*(2), 256-282.

Jehn, K. A. (1997). Affective and cognitive conflict in work groups: Increasing performance through value-based intragroup conflict. In C. K. W. De Dreu & E. Van de Vliert (Eds.), *Using conflict in organizations.* (pp. 87-100). Thousand Oaks, CA US: Sage Publications, Inc.

John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality, 72*(6), 1301-1333.

Johnson, J. W. (2001). The relative importance of task and contextual performance dimensions to supervisor judgments of overall performance. *Journal of Applied Psychology, 86*(5), 984-996.

Jordan, P. J., & Lawrence, S. A. (2009). Emotional intelligence in teams: development and initial validation of the short version of the Workgroup Emotional Intelligence Profile (WEIP-S). *Journal of Management and Organization, 15*, 452-469.

Jordan, P. J., Murray, J. P., & Lawrence, S. A. (2009). The application of emotional intelligence in industrial and organizational psychology. In C. Stough, D. H. Saklofske & J. D. A. Parker (Eds.), *Assessing emotional intelligence: Theory, research, and applications.* (pp. 171-190). New York, NY US: Springer Science + Business Media.

Jordan, P. J., & Troth, A. C. (2004). Managing Emotions During Team Problem Solving: Emotional Intelligence and Conflict Resolution. *Human Performance, 17*(2), 195-218.

Judge, T. A., Thoresen, C. J., Pucik, V., & Welbourne, T. M. (1999). Managerial coping with organizational change: A dispositional perspective. *Journal of Applied Psychology, 84*(1), 107-122.

Kalat, J. W., & Shiota, M. N. (2007). *Emotion*. Belmont, CA: Wadsworth.
Kanfer, R., & Ackerman, P. L. (1989). Motivation and cognitive abilities: An integrative/aptitude-treatment interaction approach to skill acquisition. *Journal of Applied Psychology, 74*(4), 657-690.
Kaplan, S., Cortina, J., & Ruark, G. A. (2010). Oops... We Did It Again: Industrial-Organizational's Focus on Emotional Intelligence Instead of on Its Relationships to Work Outcomes. *Industrial and Organizational Psychology, 3*(2), 171-177.
Kiefer, T. (2002). Understanding the emotional experience of organizational change: Evidence from a merger. *Advances in Developing Human Resources, 4*(1), 39-61.
Kiefer, T. (2005). Feeling bad: Antecedents and consequences of negative emotions in ongoing change. *Journal of Organizational Behavior, 26*(8), 875-897.
Klein, K. J., & Kozlowski, S. W. J. (Eds.). (2000). *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions.* San Francisco, CA US: Jossey-Bass.
Kluger, A. N., & DeNisi, A. (1996). Effects of feedback intervention on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin, 119*(2), 254-284.
Korsgaard, M. A., Jeong, S. S., Mahony, D. M., & Pitariu, A. H. (2008). A multilevel view of intragroup conflict. *Journal of Management, 34*(6), 1222-1252.
Kozlowski, S. W. J., & Ilgen, D. R. (2006). Enhancing the Effectiveness of Work Groups and Teams. *Psychological Science in the Public Interest, 7*(3), 77-124.
Krohne, H. W., Egloff, B., Kohlmann, C.-W., & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der 'Positive and Negative Affect Schedule' (PANAS) [Research with a German version of the PANAS]. *Diagnostica, 42*(2), 139-156.
Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
Lee, K., & Allen, N. J. (2002). Organizational Citizenship Behavior and Workplace Deviance: The Role of Affect and Cognitions. *Journal of Applied Psychology, 87*(1), 131-142.
LePine, J. A., Podsakoff, N. P., & LePine, M. A. (2005). A meta-analytic test of the challenge stressor-hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal, 48*(5), 764-775.
Levi, D. (2001). *Group Dynamics for Teams*. Thousands Oaks, CA: Sage.
Lewis, K. M. (2000). When leaders display emotion: How followers respond to negative emotional expression of male and female leaders. *Journal of Organizational Behavior, 21*(Spec Issue), 221-234.
Lindebaum, D., & Fielden, S. (in press). 'It's good to be angry': Enacting anger in construction project management to achieve perceived leader effectiveness. *Human Relations*.
Lok, C.-F., & Bishop, G. D. (1999). Emotion control, stress, and health. *Psychology & Health, 14*(5), 813-827.
Lopes, P. N., Salovey, P., Côté, S., & Beers, M. (2005). Emotion regulation abilities and the quality of social interaction. *Emotion, 5*(1), 113-118.
Lynn, A. B. (2008). *The EQ interview: Finding employees with high emotional intelligence*. New York, NY US: AMACOM.
Lyubomirsky, S., King, L., & Diener, E. (2005). The Benefits of Frequent Positive Affect: Does Happiness Lead to Success? *Psychological Bulletin, 131*(6), 803-855.
Martin, L. L., Ward, D. W., Achee, J. W., & Wyer, R. S. (1993). Mood as input: People have to interpret the motivational implications of their moods. *Journal of Personality and Social Psychology, 64*(3), 317-326.

Maslach, C., Schaufeli, W. B., & Leiter, M. P. (2001). Job burnout. *Annual Review of Psychology, 52*, 397-422.

Matsumoto, D., Yoo, S. H., & Nakagawa, S. (2008). Culture, emotion regulation, and adjustment. *Journal of Personality and Social Psychology, 94*(6), 925-937.

Mauss, I. B., Cook, C. L., Cheng, J. Y. J., & Gross, J. J. (2007). Individual differences in cognitive reappraisal: Experiential and physiological responses to an anger provocation. *International Journal of Psychophysiology, 66*(2), 116-124.

Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology, 59*, 507-536.

Meijman, T. E., & Mulder, G. (1998). Psychological Aspects of Workload. In P. J. D. Drenth, H. Thierry & C. J. D. Wolff (Eds.), *A Handbook Of Work And Organizational Psychology: Work Psychology* (pp. 5-33). Hove: Psychology Press Ltd.

Menges, J. (2007). *Emotion regulation strategies at work and their relation to perceived transformational leadership behaviors*. Academy of Management Conference, 2007, Philadelphia, USA.

Michel, A., Stegmaier, R., & Sonntag, K. (2010). I Scratch Your Back - You Scratch Mine. Do Procedural Justice and Organizational Identification Matter for Employees' Cooperation During Change? *Journal of Change Management, 10*(1), 41-59.

Mikolajczak, M., Menil, C., & Luminet, O. (2007). Explaining the protective effect of trait emotional intelligence regarding occupational stress: Exploration of emotional labour processes. *Journal of Research in Personality, 41*(5), 1107-1117.

Mikolajczak, M., Nelis, D., Hansenne, M., & Quoidbach, J. (2008). If you can regulate sadness, you can probably regulate shame: Associations between trait emotional intelligence, emotion regulation and coping efficiency across discrete emotions. *Personality and Individual Differences, 44*(6), 1356-1368.

Mohr, G., Rigotti, T., & Mueller, A. (2005). Irritation-Ein Instrument zur Erfassung psychischer Beanspruchung im Arbeitskontext. Skalen- und Itemparameter aus 15 Studien [Irritation - an instrument to assess psychological strain in the work place. Scale and item parameter from 15 studies]. *Zeitschrift für Arbeits- und Organisationspsychologie, 49*(1), 44-48.

Morgeson, F. P., Delaney-Klinger, K., & Hemingway, M. A. (2005). The Importance of Job Autonomy, Cognitive Ability, and Job-Related Skill for Predicting Role Breadth and Job Performance. *Journal of Applied Psychology, 90*(2), 399-406.

Morrison, E. W., & Phelps, C. C. (1999). Taking charge at work: Extrarole efforts to initiate workplace change. *Academy of Management Journal, 42*(4), 403-419.

Muck, P. M., Hell, B., & Gosling, S. D. (2007). Construct validation of a short five-factor model instrument: A self-peer study on the German adaptation of the Ten-Item Personality Inventory (TIPI-G). *European Journal of Psychological Assessment, 23*(3), 166-175.

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology, 89*(6), 852-863.

Nes, L. S., & Segerstrom, S. C. (2006). Dispositional Optimism and Coping: A Meta-Analytic Review. *Personality and Social Psychology Review, 10*(3), 235-251.

Netzlek, J. B., Schröder-Abé, M., & Schütz, A. (2006). Multilevel analyses in psychological research. Advantages and potential of multilevel random coefficient modeling. *Psychologische Rundschau, 57*(4), 213-223.

Neuman, J. H., & Baron, R. A. (1998). Workplace violence and workplace aggression: Evidence concerning specific forms, potential causes, and preferred targets. *Journal of Management, 24*(3), 391-419.

Niven, K., Totterdell, P., & Holman, D. (2009). A classification of controlled interpersonal affect regulation strategies. *Emotion, 9*(4), 498-509.

Obergfell, J., & Schmidt, L. (2010). *Zwangsjacke Bachelor?! Der Einfluss von Anforderungen und Entscheidungsfreiräumen auf das Stressempfinden und die Gesundheit Studierender - Ein Vergleich von Bachelor- und Diplomstudierenden im Rahmen des Demand-Control-Modells von Karasek [Strait jacket bachelor?! The influence of demands and decision latitude on students' stress experience and health - A comparison of bachelor and diploma students guided by Karasek's demand-control model]*. Unpublished Diploma Thesis, University of Heidelberg, Germany.

Oginska-Bulik, N. (2005). Emotional Intelligence in the Workplace: Exploring its Effects on Occupational Stress and Health Outcomes in Human Service Workers. *International Journal of Occupational Medicine & Environmental Health, 18*, 167-175.

Ohly, S., & Fritz, C. (2007). Challenging the status quo: What motivates proactive behaviour? *Journal of Occupational & Organizational Psychology*, *80*(4), 623-629.

Ohly, S., Sonnentag, S., Niessen, C., & Zapf, D. (2010). Diary studies in organizational research: An introduction and some practical recommendations. *Journal of Personnel Psychology*, *9*(2), 79-93.

Oreg, S., & Sverdlik, N. (2010). Ambivalence toward imposed change: The conflict between dispositional resistance to change and the orientation toward the change agent. *Journal of Applied Psychology*, (Advance online publication).

Organ, D. W. (1997). Organizational citizenship behavior: It's construct clean-up time. *Human Performance, 10*(2), 85-97.

Orth, M. S. (2002). *Factors related to resistance and support of organizational change.* Unpublished dissertation, Colorado State University, Colorado, US.

Ozcelik, H., Langton, N., & Aldrich, H. (2008). Doing well and doing good: The relationship between leadership practices that facilitate a positive emotional climate and organizational performance. *Journal of Managerial Psychology*, *23*(2), 186-203.

Parent, J. D. (2010). Individual Adaptation to the Changing Workplace: A Model of Causes, Consequences, and Outcomes. In J. Houdmont & S. Leka (Eds.), *Contemporary Occupational Health Psychology: Global Perspectives on Research and Practice* (Vol. 1, pp. 188-207). Chichester: Wiley-Blackwell.

Parker, S. K. (2007). *How positive affect can facilitate proactive behavior in the work place.* Paper presented at the Academy of Management Annual Meeting, Philadelphia, USA.

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making Things Happen: A Model of Proactive Motivation. *Journal of Management, 36*, 827-856.

Parker, S. K., Williams, H. M., & Turner, N. (2006). Modeling the antecedents of proactive behavior at work. *Journal of Applied Psychology, 91*(3), 636-652.

Parkinson, B., & Totterdell, P. (1999). Classifying affect-regulation strategies. *Cognition & Emotion, 13*(3), 277-303.

Paterson, J. M., & Cary, J. (2002). Organizational justice, change anxiety, and acceptance of downsizing: Preliminary tests of an AET-based model. *Motivation and Emotion, 26*(1), 83-103.

Pearce, J. L., & Gregersen, H. B. (1991). Task interdependence and extrarole behavior: A test of the mediating effects of felt responsibility. *Journal of Applied Psychology, 76*(6), 838-844.

Pelled, L. H., & Xin, K. R. (1999). Down and out: An investigation of the relationship between mood and employee withdrawal behavior. *Journal of Management, 25*(6), 875-895.

Pescosolido, A. T. (2002). Emergent leaders as managers of group emotion. *The Leadership Quarterly, 13*(5), 583-599.

Ployhart, R. E., & Bliese, P. D. (2006). *Individual adaptability (I-ADAPT) theory: Conceptualizing the antecedents, consequences, and measurement of individual differences in adaptability.* Cambridge: MA: Elsevier Science.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers, 36*(4), 717-731.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research, 42*(1), 185-227.

Pulakos, E. D., Arad, S., Donovan, M. A., & Plamondon, K. E. (2000). Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology, 85*(4), 612-624.

Rafferty, A. E., & Griffin, M. A. (2006). Perceptions of organizational change: A stress and coping perspective. *Journal of Applied Psychology, 91*(5), 1154-1162.

Raftery, J. N., & Bizer, G. Y. (2009). Negative feedback and performance: The moderating effect of emotion regulation. *Personality and Individual Differences, 47*(5), 481-486.

Rank, J., & Frese, M. (2008). The impact of emotions, moods and other affect-related variables on creativity, innovation and initiative. In N. M. Ashkanasy (Ed.), *Research companion to emotion in organizations. New horizons in management*. Cheltenham: Elgar.

Rau, R. (2006). Learning opportunities at work as predictor for recovery and health. *European Journal of Work and Organizational Psychology, 15*(2), 158-180.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.

Raudenbush, S. W., Bryk, A. S., Cheong, Y., Congdon, R., & du Troit, M. (2004). *HLM 6 : Linear and Nonlinear Modeling*. Lincolnwood, IL: Scientific Software International.

Renneberg, B., Erken, J., & Kaluza, G. (2009). Stress. In J. Bengel & M. Jerusalem (Eds.), *Handbuch der Gesundheitspsychologie und medizinischen Psychologie [Handbook of health and medical psychology]* (Vol. 12, pp. 139-146). Göttingen ; Bern ; Wien: Hogrefe.

Richards, J. M. (2004). The Cognitive Consequences of Concealing Feelings. *Current Directions in Psychological Science, 13*(4), 131-134.

Richards, J. M., & Gross, J. J. (1999). Composure at any cost? The cognitive consequences of emotion suppression. *Personality and Social Psychology Bulletin, 25*(8), 1033-1044.

Richards, J. M., & Gross, J. J. (2000a). Emotion Regulation and Memory: The Cognitive Costs of Keeping One's Cool. *Journal of Personality & Social Psychology, 79*, 410-424.

Richards, J. M., & Gross, J. J. (2000b). Emotion regulation and memory: The cognitive costs of keeping one's cool. *Journal of Personality and Social Psychology, 79*(3), 410-424.

Richards, R. (1994). Creativity and bipolar mood swings: Why the association? In M. P. Shaw & M. A. Runco (Eds.), *Creativity and affect.* (pp. 44-72). Westport, CT US: Ablex Publishing.

Rimé, B. (2007). Interpersonal Emotion Regulation. In J. Gross (Ed.), *Handbook of Emotion Regulation* (pp. 466-485). New York, NY: Guilford Press.

Riolli, L., & Savicki, V. (2006). Impact of fairness, leadership, and coping on strain, burnout, and turnover in organizational change. *International Journal of Stress Management, 13*(3), 351-377.

Roberts, N. A., Levenson, R. W., & Gross, J. J. (2008). Cardiovascular costs of emotion suppression cross ethnic lines. *International Journal of Psychophysiology, 70*(1), 82-87.

Robertson, P. J., Roberts, D. R., & Porras, J. I. (1992). A Meta-analytic Review of the Impact of Planned Organizational Change Interventions. *Academy of Management Best Papers Proceedings*, 201-205.

Roger, D., & Hudson, C. (1995). The role of emotion control and emotional rumination in stress management training. *International Journal of Stress Management, 2*(3), 119-132.

Roger, D., & Nesshoever, W. (1987). The construction and preliminary validation of a scale for measuring emotional control. *Personality and Individual Differences, 8*(4), 527-534.

Saavedra, R., & Earley, P. C. (1991). Choice of task and goal under conditions of general and specific affective inducement. *Motivation and Emotion, 15*(1), 45-65.

Saksvik, P. Ã. y., Tvedt, S. D., NytrÃ¸, K., Andersen, G. R., Andersen, T. K., Buvik, M. P., et al. (2007). Developing criteria for healthy organizational change. *Work & Stress, 21*(3), 243-263.

Salas, E., Cooke, N. J., & Rosen, M. A. (2008). On teams, teamwork, and team performance: Discoveries and developments. *Human Factors, 50*(3), 540-547.

Sanz-Vergel, A. I., Demerouti, E., Moreno-Jiménez, B., & Mayo, M. (2010). Work-family balance and energy: A day-level study on recovery conditions. [doi: DOI: 10.1016/j.jvb.2009.07.001]. *Journal of Vocational Behavior, 76*(1), 118-130.

Schaubroeck, J., May, D. R., & Brown, F. W. (1994). Procedural justice explanations and employee reactions to economic hardship: A field experiment. *Journal of Applied Psychology, 79*(3), 455-460.

Schulz-Hardt, S., Jochims, M., & Frey, D. (2002). Productive conflict in group decision making: Genuine and contrived dissent as strategies to counteract biased information seeking. *Organizational Behavior and Human Decision Processes, 88*, 563-586.

Schweiger, D. M., & Denisi, A. S. (1991). Communication with employees following a merger: A longitudinal field experiment. *Academy of Management Journal, 34*(1), 110-135.

Semmer, N., Zapf, D., & Dunckel, H. (1999). Instrument zur Stressbezogenen Taetigkeitsanalyse (ISTA) [Instrument for stress-related task analysis]. In H. Dunckel (Ed.), *Handbuch psychologischer Arbeitsanalyseverfahren [Handbook of psychological work analyses]* (Vol. 14, pp. 179-204). Zuerich: vdf.

Semmer, N. K., Tschan, F., & Messerli, L. (2009). *It may just be the emotional experience: Disentangling the effects of experiencing versus suppressing negative emotions on well being and interaction quality in interactions at work: A diary study*. Paper presented at the 14th European Congress of Work and Organizational Psychology, Santiago, Spain.

Shamir, B., House, R. J., & Arthur, M. B. (1993). The motivational effects of charismatic leadership: A self-concept based theory. *Organization Science, 4*(4), 577-594.

Shiota, M. N. (2006). Silver linings and candles in the dark: Differences among positive coping strategies in predicting subjective well-being. *Emotion, 6*(2), 335-339.

Simons, T. L., & Peterson, R. S. (2000). Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust. *Journal of Applied Psychology, 85*(1), 102-111.

Smollan, R. K., & Sayers, J. G. (2009). Organizational Culture, Change and Emotions: A Qualitative Study. *Journal of Change Management, 9*(4), 435 - 457.

Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhart (Ed.), *Sociological methodology* (pp. 290-312). San Francisco: Jossey-Bass.

Sonnentag, S. (2002). Performance, Well-being and Self-Regulation. In S. Sonnentag (Ed.), *Psychological Management of Individual Performance* (pp. 405-424). Chichester: John Wiley & Sons.

Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between nonwork and work. *Journal of Applied Psychology, 88*(3), 518-528.

Sonnentag, S., & Bayer, U.-V. (2005). Switching Off Mentally: Predictors and Consequences of Psychological Detachment From Work During Off-Job Time. *Journal of Occupational Health Psychology, 10*(4), 393-414.

Sonnentag, S., Binnewies, C., & Mojza, E. J. (2008). 'Did you have a nice evening?' A day-level study on recovery experiences, sleep, and affect. *Journal of Applied Psychology, 93*(3), 674-684.

Sonnentag, S., & Frese, M. (2002). Performance Concepts and Performance Theory. In S. Sonnentag (Ed.), *Psychological Management of Individual Performance* (pp. 3-26). Chichester: John Wiley & Sons.

Sonnentag, S., & Frese, M. (2003). Stress in organizations. In W. C. Borman, D. R. Ilgen & J. R. Klimoski (Eds.), *Handbook of psychology* (Vol. 12: Industrial and organizational psychology, pp. 453-491). Hoboken, NJ: Wiley.

Sonnentag, S., & Fritz, C. (2007). The Recovery Experience Questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology, 12*(3), 204-221.

Sonnentag, S., & Kruel, U. (2006). Psychological detachment from work during off-job time: The role of job stressors, job involvement, and recovery-related self-efficacy. *European Journal of Work and Organizational Psychology, 15*(2), 197-217.

Spain, J. S., Eaton, L. G., & Funder, D. C. (2000). Perspectives on personality: The relative accuracy of self versus others for the prediction of emotion and behavior. *Journal of Personality, 68*(5), 837-867.

Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behavior and organizational citizenship behavior. *Human Resource Management Review, 12*(2), 269-292.

Spector, P. E., & Fox, S. (2003). Reducing subjectivity in the assessment of the job environment: Development of the factual autonomy scale, FAS. *Journal of Organizational Behavior, 24*, 417-432.

Spering, M., Wagener, D., & Funke, J. (2005). The role of emotions in complex problem-solving. *Cognition and Emotion, 19*(8), 1252-1261.

Srivastava, S., Tamir, M., McGonigal, K. M., John, O. P., & Gross, J. J. (2009). The social costs of emotional suppression: A prospective study of the transition to college. *Journal of Personality and Social Psychology, 96*(4), 883-897.

Stanton, A. L., Parsa, A., & Austenfeld, J. L. (2005). The Adaptive Potential of Coping Through Emotional Approach. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of Positive Psychology* (pp. 148-158). Oxford: University Press.

Staw, B. M., Sutton, R. I., & Pelled, L. H. (1994). Employee positive emotion and favorable outcomes at the workplace. *Organization Science, 5*(1), 51-71.

Steptoe, A. (1991). Psychological Coping, Individual Differences and Physiological Stress Responses. In C. Cooper & R. Payne (Eds.), *Personality and Stress: Individual Differences in the Stress Process* (pp. 205-233). Chichester, England: John Wiley & Sons.

Strauss, K., Griffin, M. A., & Rafferty, A. E. (2009). Proactivity directed toward the team and organization: The role of leadership, commitment and role-breadth self-efficacy. *British Journal of Management, 20*(3), 279-291.

Tett, R. P., Fox, K. E., & Wang, A. (2005). Development and Validation of a Self-Report Measure of Emotional Intelligence as a Multidimensional Trait Domain. *Personality and Social Psychology Bulletin, 31*(7), 859-888.

Thayer, R. E., Newman, J. R., & McClain, T. M. (1994). Self-regulation of mood: Strategies for changing a bad mood, raising energy, and reducing tension. *Journal of Personality and Social Psychology, 67*(5), 910-925.

Thomas, J. L., Bliese, P. D., & Jex, S. M. (2005). Interpersonal Conflict and Organizational Commitment: Examining Two Levels of Supervisory Support as Multilevel Moderators. *Journal of Applied Social Psychology, 35*(11), 2375-2398.

Thoresen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & de Chermont, K. (2003). The Affective Underpinnings of Job Perceptions and Attitudes: A Meta-Analytic Review and Integration. *Psychological Bulletin, 129*(6), 914-945.

Tobin, D. L., Holroyd, K. A., Reynolds, R. V., & Wigal, J. K. (1989). The hierarchical factor structure of the Coping Strategies Inventory. *Cognitive Therapy and Research, 13*(4), 343-361.

Tsai, W. C., Liu, H. L., & Chen, C. C. (2007). Test of a Model Linking Employee Positive Mood and Task Performance. *Journal of Applied Psychology, 92*(6), 1570-1583.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient Individuals Use Positive Emotions to Bounce Back From Negative Emotional Experiences. *Journal of Personality and Social Psychology, 86*(2), 320-333.

Tugade, M. M., & Fredrickson, B. L. (2007). Regulation of positive emotions: Emotion regulation strategies that promote resilience. *Journal of Happiness Studies, 8*(3), 311-333.

Tugade, M. M., Fredrickson, B. L., & Barrett, L. F. (2004). Psychological resilience and positive emotional granularity: Examining the benefits of positive emotions on coping and health. *Journal of Personality, 72*(6), 1161-1190.

Van den Heuvel, M., Demerouti, E., Bakker, A. B., & Schaufeli, W. B. (2010). Personal Resources and Work Engagement in the Face of Change. In J. Houdmont & S. Leka (Eds.), *Contemporary Occupational Health Psychology: Global Perspectives on Research and Practice* (Vol. 1, pp. 124-150). Chichester: Wiley-Blackwell.

Van Dyne, L., & LePine, J. A. (1998). Helping and voice extra-role behaviors: Evidence of construct and predictive validity. *Academy of Management Journal, 41*(1), 108-119.

Van Gelderen, B., Heuven, E., van Veldhoven, M., Zeelenberg, M., & Croon, M. (2007). Psychological strain and emotional labor among police-officers: A diary study. *Journal of Vocational Behavior, 71*(3), 446-459.

Van Katwyk, P. T., Fox, S., Spector, P. E., & Kelloway, E. K. (2000). Using the Job-Related Affective Well-Being Scale (JAWS) to investigate affective responses to work stressors. *Journal of Occupational Health Psychology, 5*(2), 219-230.

Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science, 18*(3), 184-188.

Van Knippenberg, D., Van Knippenberg, B., Van Kleef, G. A., & Damen, F. (2008). Leadership, affect, and emotions. In N. M. Ashkanasy & C. Cooper (Eds.), *Research Companion to Emotion in Organizations*. Cheltenham: Elgar.

Van Woerkom, M., & Sanders, K. (2010). The Romance of Learning from Disagreement. The Effect of Cohesiveness and Disagreement on Knowledge Sharing Behavior and

Individual Performance Within Teams. *Journal of Business and Psychology 25*(1), 139-149.

Warr, P., Butcher, V., & Robertson, I. (2004). Activity and psychological well-being in older people. *Aging & Mental Health, 8*(2), 172-183.

Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*(3), 465-490.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

Watson, D., & Tellegen, A. (1985). Toward a consensual structure of mood. *Psychological Bulletin, 98*, 219-235.

Watson, D. C., & Sinha, B. (2008). Emotion regulation, coping, and psychological symptoms. *International Journal of Stress Management, 15*(3), 222-234.

Wegge, J., Dick, R. v., Fisher, G. K., West, M. A., & Dawson, J. F. (2006). A Test of Basic Assumptions of Affective Events Theory (AET) in Call Centre Work. *British Journal of Management, 17*(3), 237-254.

Wegge, J., & Neuhaus, L. (2002). Emotionen bei der Büroarbeit am PC: Ein Test der 'affective events'-Theorie [Emotions during Office Work with a PC: A Test of Affective Events-Theory]. *Zeitschrift für Arbeits- und Organisationspsychologie, 46*(4), 173-184.

Weick, K. E., & Quinn, R. E. (1999). Organizational change and development. *Annual Review of Psychology, 50*, 361-386.

Weisinger, H. (1998). *Emotional intelligence at work*. San Francisco: Jossey-Bass.

Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (pp. 1-74). Greenwich, CT: JAI Press.

Williams, K. J., & Alliger, G. M. (1994). Role stressors, mood spillover, and perceptions of work-family conflict in employed parents. *Academy of Management Journal, 37*, 837-868.

Williams, M. (2007). Building genuine trust through interpersonal emotion management: a threat regulation model of trust and collaboration across boundaries. *Academy of Management Review, 32(2)*, 595-621.

Wright, T. A., & Cropanzano, R. (1998). Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology, 83*(3), 486-493.

Wright, T. A., & Cropanzano, R. (2000). Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology, 5*(1), 84-94.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management, 14*(2), 121-141.

Yang, J., & Mossholder, K. W. (2004). Decoupling task and relationship conflict: The role of intragroup emotional processing. *Journal of Organizational Behavior, 25*(5), 589-605.

Zapf, D., & Semmer, N. K. (2004). Streß und Gesundheit in Organisationen [Stress and Health in Organizations]. In H. Schuler (Ed.), *Enzyklopädie der Psychologie, Themenbereich D, Serie III, Band 3 Organisationspsychologie [Encyclopedia of Psychology, Theme complex D, Series III, Vol. 3 Organisational Psychology]* (2 ed., pp. 1007-1112). Goettingen: Hogrefe.

APPENDIX

Appendix A: Manuscripts

Manuscript Study 1

EMOTION REGULATION AS A DETERMINANT OF RECOVERY EXPERIENCES AND WELL-BEING: A DAY-LEVEL STUDY

Eva Maria Schraub

Vera Clavairoly

Karlheinz Sonntag

University of Heidelberg, Germany

International Journal of Stress Management (under review)

Abstract

The study examined the impact of two emotion regulation strategies, reappraisal and expressive suppression, on recovery experiences and affective well-being after emotional events. In a sample of undergraduate students who completed a time-contingent daily diary over 14 consecutive days, the assumption that work-related emotional strain reduces affective well-being at bedtime was confirmed. It was shown that this negative relationship was partially mediated by recovery experiences. As postulated, reappraisal buffered the adverse effects of emotional strain on recovery experiences. Unexpectedly, expressive suppression had the same buffering effect. We conclude that an additional, fine-grained focus on context and time would usefully enhance our knowledge of the effects of emotion regulation on stress outcomes.

Keywords: diary study, emotion regulation, well-being, recovery

Emotion Regulation as a Determinant of Recovery Experiences and Well-Being: A Day-Level Study

After stressful events, people need time to recover in order to restore their resources (Meijman & Mulder, 1998). Accordingly, recent evidence shows that recovery experiences are positively related to different measures of psychological well-being (e.g., Geurts & Sonnentag, 2006; Sonnentag, 2003; Sonnentag & Fritz, 2007). However, while studies indicate that high work demands increase the risk of not being able to relax after work (Cropley & Purvis, 2003; Rau, 2006; Sonnentag & Bayer, 2005), the follow-up question remains unanswered: Which determinants impede or facilitate recovery experiences after demanding and stressful days? To ground practical advice on empirical evidence, for example in stress management trainings, we therefore need to identify the processes that influence recovery experiences after stressful workdays.

One process that may explain recovery from job stress is emotion regulation. The job demands-resources model predicts that personal resources may moderate the consequences of job demands (Bakker & Demerouti, 2007; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007). In line with this prediction, research shows that individual differences in emotion regulation affect the way work-related emotional events relate to individual performance and well-being (e.g., Ciarrochi, Dean, & Anderson, 2002; Giardini & Frese, 2006; Raftery & Bizer, 2009; Schraub, Stegmaier, & Sonntag, in press). Extending this line of research, we examine the impact of emotion regulation as a determinant of people's recovery from work-related emotional strain.

Altogether, our study contributes to both the recovery and the emotion regulation literature. To our knowledge, the role of emotion regulation has not yet been analyzed with regard to the recovery process. We further extend research on emotion regulation, which has

mostly been either experimental or focused on individual differences, by analyzing situational emotion regulation behavior in a diary design. In contrast to prior studies, this design allows for detection of the effects of intrapersonal variation in the use of specific emotion regulation strategies, while controlling for interpersonal differences in emotion regulation.

Theoretical background and hypotheses development

Effects of emotional strain on recovery experiences and later affective well-being

Emotional strain, which is characterized by negative emotional experiences such as anger or anxiety (Chang, Johnson, & Yang, 2007), is considered a proxy of the individual stress response (Cox & Ferguson, 1991). It can lead to a variety of negative consequences for individuals' well-being, attitudes, and behaviors (cf. Fisher & Ashkanasy, 2000; Fredrickson & Joiner, 2002; Weiss & Cropanzano, 1996). One reason for such consequences may be, as stated by ego depletion theory (Baumeister & Muraven, 2000), that resources are spent on the exertion of self-control. These resources need to be rebuilt after the experience of emotional strain. For the regeneration of depleted resources, recovery experiences are of utter importance. More specifically, regeneration can be achieved by either refraining from any activities or by actively engaging in recovery activities (Geurts & Sonnentag, 2006). In recent years, several diary studies highlighted the importance of adequate recovery for well-being (cf. Demerouti, Bakker, Geurts, & Taris, 2009). Nevertheless, these studies also indicate that especially when resources are spent (e.g., because of high job demands), the risk of insufficient relaxation after work increases (Cropley & Purvis, 2003; Rau, 2006; Sonnentag & Bayer, 2005). Thus, recovery is often impeded at precisely the times when it is most needed.

According to ego depletion theory (Baumeister & Muraven, 2000), we assume that during experiences of emotional strain, resources are needed for self-control and will be depleted for at least some time after the experience. Due to resource depletion and insufficient recovery, we

expect that affective well-being at bedtime, which serves as an indicator of feeling recovered (Sonnentag, 2001), will be reduced as a consequence of a significant emotional strain experience. Prior findings that revealed a spillover of negative affect from the work domain to the family domain support this assumption (e.g., Williams & Alliger, 1994). Prolonged cognitive engagement, which is a likely reaction to significant stressful experiences, has been found to additionally impede recovery (cf. Geurts & Sonnentag, 2006). As recovery experiences during after-work hours restore lost resources and positively affect peoples' well-being (Demerouti, et al., 2009), we expect recovery experiences to mediate the negative effects of emotional strain on affective well-being. The hypotheses we formulate are:

Hypothesis 1: Emotional strain during a significant work-related event negatively affects affective well-being at bedtime.

Hypothesis 2: Recovery experiences mediate the negative relationship between work-related emotional strain and affective well-being at bedtime.

Emotion regulation as a moderator of the effects of emotional strain

Emotion regulation describes strategies through which people may change the intensity, duration, or expression of activated emotions (Gross, 1998b). Gross (2001) developed a process-oriented model of emotion regulation to classify these strategies, and distinguished between antecedent-focused regulation and response-focused regulation. While antecedent-focused regulation (e.g., cognitive reappraisal of the situation) comes early in the emotion-generative process and is therefore considered more effective, response-focused regulation (e.g., expressive suppression) is applied when emotions are already fully experienced and only modifies the emotional display, not the experience. Gross' model was complemented by an assessment tool, the emotion regulation questionnaire (Gross & John, 2003). This tool measures cognitive

reappraisal of the situation and expressive suppression as two uncorrelated styles of intrapersonal emotion regulation. Demonstrating adequate psychometric properties in terms of validity and reliability (Gross & John, 2003), the instrument has been used to predict several meaningful outcomes. Overall, studies indicate that the chronic use of response-focused strategies, such as suppressing one's emotional expression, is associated with higher cognitive load and lower health outcomes in the long term (e.g., Brotheridge & Lee, 2002; Grandey, Fisk, & Steiner, 2005). Cognitive reappraisal, in contrast, has been recognized as the superior strategy as far as health, memory, and social relationships are concerned (Gross & John, 2003; Richards & Gross, 2000; Srivastava, Tamir, McGonigal, John, & Gross, 2009).

Reviewing the emotion regulation literature, we found that most empirical studies are either experimental (e.g., Gross, 1998a), focusing on emotional labor (i.e., emotion regulation performed as part of one's job, Hochschild, 1983), or analyzing individual differences (e.g., Ciarrochi, et al., 2002; Giardini & Frese, 2006; Raftery & Bizer, 2009; Schraub, et al., in press). However, in environments where display rules are weaker and more informal than they are in the service context (cf. Bono & Vey, 2005), people may determine for themselves when and how to regulate their emotions. Moreover, theories on interpersonal effects of emotion regulation (Côté, 2005; Van Kleef, 2009) and the independence of emotion regulation styles suggest that people may apply different and sometimes concurrent emotion regulation strategies depending on the context. To both complement and extend prior studies, we therefore chose to examine specific regulation efforts instead of individual differences in this diary study. We adapted the emotion regulation questionnaire to specific situations to gain insight into short-term consequences of actual emotion regulation behavior rather than into the individual differences in emotion regulation that lie behind such behavior.

Concerning the effects of emotion regulation, the strategy of reappraising the situation can be suggested to buffer negative effects of emotional strain because it changes peoples' interpretations of the respective situation and, thereby, their emotional experience. Experiences of emotional strain should therefore be reduced, leaving resources available for recovery experiences. We assume that:

Hypothesis 3: Reappraisal buffers the negative impact of emotional strain on recovery experiences.

In contrast, expressive suppression is supposed to evoke mainly negative outcomes because it consumes cognitive resources that otherwise would be available for other tasks (Raftery & Bizer, 2009). Because of this heightened cognitive load, we expect this regulation strategy to interfere with recovery experiences and assume that:

Hypothesis 4: Expressive suppression enhances the negative impact of emotional strain on recovery experiences.

To sum up, we expect recovery experiences to be an explanatory mechanism for a negative relationship between emotional strain experienced during work-related events and affective well-being at bedtime. Moreover, we deem the use of reappraisal and expressive suppression during emotional strain to differentially affect the relationship between emotional strain and recovery experiences. The framework that integrates the research questions is depicted in Figure 1.

(Figure 1 about here)

Choice of Sample

We tested our hypotheses with a sample of undergraduate students from a German university. There were two reasons for this choice: First, students have no formally defined

working time, so their schedules resemble work structures with flexible hours. As recovery becomes even more difficult in an unregulated work-life-situation (Ahrentzen, 1990; Cropley, Dijk, & Stanley, 2006; Sonnentag & Kruel, 2006), we consider results from the students' sample to give a first hint as to what results might look like for employees working flexible hours. Second, students today increasingly face pressure and psychological stress. Growing international competition, the Bologna process (i.e., a recent change of academic education to bachelor and master degrees in Europe), and financial pressure by the implementation of tuition in Germany combine to make studying a full-time time job with a high stress level (Cooke, Bewick, Barkham, Bradley, & Audin, 2006; Obergfell & Schmidt, 2010). Finding ways by which students can be encouraged to enhance their recovery and maintain their well-being is therefore a relevant undertaking.

Method

Sample and procedure

In return for research participation credits required by their schedule, 67 full-time undergraduate students of a German university volunteered to participate in the study. All of them completed a paper-and-pencil questionnaire containing questions about demographics and personal traits. They then received a structured paper-based diary within which they were asked to answer a one-page questionnaire each night before going to bed on 14 consecutive days. Participants were reminded of this task each night via SMS. They were assured of anonymous data treatment, and that their cell phone numbers could not be assigned to their data. The research assistant also pointed out that she could be contacted in case of any questions or issues. Questionnaires were matched by an individual code that each participant generated.

Out of the 67 diaries that had been distributed, 65 were returned; this equals a return rate of 97%. As two participants had to be excluded due to being on holiday while participating in the study, the final sample consisted of 63 participants (51 females and 12 males) with an average age of 21 years (SD = 2.9 years). All of them were full-time students, working on study assignments for between 3 and 12 hours per day, with an average working time of 4.8 hours per day (SD = 2.1).

Measures

The focus study variables emotional strain, recovery experiences, emotion regulation and affective well-being at bedtime were assessed in the diary, whereas control variables were assessed in the general questionnaire. Participants were instructed to refer to their studies when asked for work-related experiences.

Emotional strain. Analogous to the procedure used by Gable and colleagues (2004), participants were asked to recapture their most significant work-related emotional experience of the respective day and to briefly describe it. Their emotional strain during this event was then assessed with nine items from a translated and adapted version of Fisher's (2000) job emotion scale (Cole, Bruch, & Vogel, 2006). The participants had to rate their experience of emotions such as "frustration" in relation to the emotional work event on a 5-point Likert scale ranging from 1 = "not at all" to 5 = "very much". Cronbach's Alpha indicated a reliability of $\alpha = .89$.

Recovery experiences. We assessed recovery experiences in the evening with items from Sonnentag, Binnewies and Mojza's (2008) recovery experience questionnaire in its German version. In total, six items asked to what extent the participants detached from their studies and relaxed. Example items are, "Tonight, I was able to forget about university work" (psychological

detachment from work) and, “Tonight, I was doing things during which I was able to relax” (relaxation). Participants were asked to rate the items on a scale ranging from 1 = “not at all” to 5 = “very much”. To examine the factor structure prior to aggregating the items of this scale, we conducted an exploratory factor analysis. Without rotation, all items converged on one factor with an eigenvalue greater than one. This factor accounted for 72.8% of the variance; all item loadings exceeded .82. Cronbach’s Alpha of the composite scale was $\alpha = .93$.

Emotion regulation. For the assessment of the participants’ emotion regulation, we adapted four reappraisal and two expressive suppression items from the German version (Abler & Kessler, 2009) of Gross and John’s (2003) emotion regulation questionnaire to situational emotion regulation. We asked the participants to indicate to what extent they reappraised the situation (e.g. “I controlled my emotions by changing the way I think about the situation I was in”) and suppressed the expression of their feelings (e.g. “I kept my emotions to myself”) during the work-related event they had described beforehand. Answers were given on a 7-point Likert scale ranging from 1 = “not at all” to 7 = “very much”. To assure that reappraisal and expressive suppression formed two separate factors, we submitted all emotion regulation items to a principal components analysis with oblique rotation. Corroborating the measures’ discriminant validity, two factors emerged with eigenvalues greater than one, accounting for 78.0% of the variance. The items’ primary loadings on their appropriate factors were greater than .82; cross-loadings were lower than .26. The internal consistency was $\alpha = .89$ for reappraisal (Cronbach’s Alpha) and $r = .80$ for expressive suppression (Spearman’s correlation coefficient).

Affective well-being. We assessed affective well-being at bedtime with six items (Warr, Butcher, & Robertson, 2004) that we translated into German using the back-translation procedure

(Brislin, 1970). Participants were asked to rate these items (e.g., "At the moment, I feel happy") on a 5-point Likert scale ranging from 1 = "not at all" to 5 = "very much". Cronbach's Alpha for this scale was $\alpha = .83$.

Controls. To ensure that day-level affective well-being could actually be explained by the day-level predictors, we controlled for the socio-demographic data age and gender (assessed with one item each) as well as for dispositional affectivity. Positive and negative affectivity significantly influence a person's recovery, affective well-being, and performance (Connolly & Viswesvaran, 2000; Lyubomirsky, King, & Diener, 2005; Marco & Suls, 1993; Watson & Clark, 1984). We measured dispositional affectivity using Krohne, Egloff, Kohlmann, and Tausch's (1996) validated German version of the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). Participants rated the extent to which they generally experience ten positive feelings (e.g., "I generally feel proud") and ten negative feelings (e.g., "I generally feel upset") on a 5-point Likert scale ranging from 1 = "not at all" to 5 = "very much". Cronbach's Alpha was $\alpha = .83$ for positive affectivity and $\alpha = .89$ for negative affectivity.

Data Analyses

With the diary design of this study, repeated measurement data were collected. The two-level study consisted of day-level data (Level 1) and person-level data (Level 2), with days being nested in persons. For this kind of study, the multilevel random coefficient modeling method (MRCM; also called hierarchical linear modeling, HLM) should be used (e.g., Netzlek, Schröder-Abé, & Schütz, 2006; Raudenbush & Bryk, 2002). This method offers the advantage of working with different levels of analysis simultaneously, such that interrelations on different levels are statistically independent of each other (Netzlek, et al., 2006). In the analyses, each data level is

being treated as a formally independent sub-model. We used HLM 6.0 (Raudenbush, Bryk, Cheong, Congdon, & Du Toit, 2004) for our analyses. We centered the person-level control variables positive and negative affectivity at the grand mean and all day-level predictors at the respective person mean.

Results

Descriptive Results

Participants reported 726 work-related events altogether (M = 11.5; SD = 2.3). The means, standard deviations and correlations of all study variables can be found in Table 1. It can be seen that all correlations point in the right directions. The correlation of r = .50 between reappraisal and expressive suppression on the day level indicates that these two strategies were often applied in conjunction.

(Table 1 about here)

Hypotheses Testing

To test our hypotheses, we first calculated null models (Model 0) that included the intercept as the only predictor. For data evaluation this step is necessary, as it verifies whether sufficient variance exists in the criterion variables on the day level as well as the person level to be explained by the respective predictors. For each hypothesis, we then added the relevant control variables in a second model (Model 1), and then conducted analyses with the predictors (Models 2 and 3). For each model, model-fit indices (deviances) indicate the model fit for the data. Differences of the deviances of two subsequent models follow a chi-square distribution and indicate if a significant additional amount of variance is explained by the additional predictors.

As shown in Model 0 in Table 2, the variance on both levels was indeed sufficient for both recovery experiences and affective well-being. Furthermore, it can be seen that both reappraisal and expressive suppression showed high levels of intrapersonal variance, indicating that it made sense to study their effects on a daily basis.

(Table 2 about here)

Next, we entered the control variables gender, age, and negative as well as positive affectivity (Level 2) as predictors in Model 1. In Model 2, we additionally entered emotional strain (Level 1). Finally, in Model 3, we included recovery experiences (Level 1). For each model, we tested for improved fit over the previous model by calculating differences in the deviances (Δ -2 log likelihood) and submitting them to a Chi-Square test. Results are shown in Table 3.

(Table 3 about here)

The analysis showed that Model 1 improved significantly over Model 0 (Δ -2 log likelihood = 25.16, $df = 7$, $p < .001$). The control variables positive and negative affectivity were significant predictors in this model. As suggested in Hypothesis 1, the intensity of emotional strain during a significant work-related event should negatively affect affective well-being in the late evening. To test this hypothesis, the model fit of Model 1 was compared to the one of Model 2 in which the variable emotional strain was entered. As Model 2 showed an improved model fit (Δ -2 log likelihood = 137.35, $df = 8$, $p < .001$), emotional strain contributed significantly to the prediction of affective well-being, and did so beyond the effects of negative and positive affectivity. Thus, Hypothesis 1 was confirmed. The intensity of emotional strain during a significant work-related event negatively affected affective well-being at bedtime.

In Hypothesis 2, we postulated that recovery experiences would mediate the negative relationship between emotional strain and affective well-being. We therefore included recovery experiences in Model 3. Comparing the model fit between Model 2 and Model 3, the difference between the deviances was again significant (Δ -2 log likelihood = 176.03, df = 9, p < .001), indicating that recovery experiences contributed significantly to the prediction of affective well-being beyond the previous variables. Furthermore, the effect of emotional strain on affective well-being decreased (from β = -0.28 to β = -0.19). To test for a partial mediation effect, we conducted the Sobel Test (Sobel, 1982). In support of Hypothesis 2, the test revealed that the mediator effect for recovery experiences was significant (z = -6.57, p < .001). Recovery experiences partially mediated the negative relationship between emotional strain and affective well-being.

In Hypotheses 3 and 4, different moderating effects of reappraisal and expressive suppression on the negative impact of emotional strain on recovery experiences were postulated. The effect of reappraisal was supposed to be buffering (Hypothesis 3), whereas the effect of emotional suppression was hypothesized to be enhancing (Hypothesis 4). Again, models of multilevel estimates were computed, this time to test the prediction of recovery experiences. Results are shown in Table 4.

(Table 4 about here)

As before, Model 1 contained the control variables gender, age, and negative as well as positive affectivity (Level 2) as predictors. The difference of the likelihood ratio between Model 0 and Model 1 was significant (Δ -2 log likelihood = 25.16, df = 7, p < .001). In a next step, we entered emotional strain, reappraisal and expressive suppression as predictors in Model 2, which was then compared with Model 1. Model 2 showed a significantly improved model fit (Δ -2 log

likelihood = 146.91, *df* = 10, $p < .001$). While emotional strain was negatively related to recovery experiences (β = -0.22, $p < .001$), reappraisal and expressive suppression dit not significant predictor recovery experiences. To test the moderation hypotheses (Hypotheses 3 and 4), the interactions between emotional strain and reappraisal and expressive suppression, respectively, were included in Model 3. Compared with Model 2, Model 3 showed a significantly smaller likelihood ratio (Δ -2 log likelihood = 9.12, *df* = 12, $p < .001$). Both reappraisal (β = 0.05, $p < .01$) and expressive suppression (β = 0.04, $p < .05$) had a significant moderating influence on the negative relationship between the experience of emotional strain during a work-related event and recovery experiences in the evening. An inspection of the simple slopes revealed that as expected in Hypothesis 3, reappraisal buffered the negative impact of emotional strain on recovery experiences (see Figure 2). However, in contrast to Hypothesis 4, expressive suppression did not enhance the negative impact of emotional strain on recovery experiences, but had a buffering impact as well. Thus, the negative relationship between emotional strain and recovery experiences was weaker if either reappraisal or expressive suppression were used.

(Figure 2 about here)

Taken together, Hypotheses 1-3 were supported by the data. Emotional strain had a negative relationship with affective well-being and recovery experiences partially mediated this relationship. The negative impact of emotional strain on recovery experiences was weaker when the person reappraised the situation. In contrast to our expectations in Hypothesis 4, expressive suppression had the same effect as reappraisal; it also buffered the negative impact of emotional strain on recovery experiences.

Discussion

The present study examined the role of emotion regulation for recovery experiences and affective well-being after emotional work-related events by use of a daily diary design. Analysis showed a negative impact of work-related emotional strain on affective well-being at bedtime. This negative relationship was partly mediated by recovery experiences. The use of reappraisal to regulate one's emotions buffered the negative impact of emotional strain on recovery experiences, as did the use of expressive suppression.

The study extends previous research on predictors of recovery (e.g., Cropley & Purvis, 2003; Sonnentag & Bayer, 2005) by revealing that emotional strain inhibits recovery experiences. It further adds to recovery research by showing that emotion regulation seems to have similar beneficial effects as job control (cf. Cropley, et al., 2006); both reappraisal and expressive suppression apparently help in detaching and relaxing from work-related strain.

Concerning the literature on emotion regulation, our results complement previous findings on individual differences and on experientially manipulated emotion regulation, which highlight reappraisal as a healthy form of emotion regulation (e.g., John & Gross, 2004; Mauss, Cook, Cheng, & Gross, 2007). Apparently, reappraisal helps to down-regulate negative emotions in such a way that resources are freed for making recovery experiences. Unexpectedly, we found that expressive suppression, which is considered a rather unhealthy way of emotion regulation when applied chronically (John & Gross, 2004; Srivastava, et al., 2009), also buffered negative effects of emotional strain. This finding is in line with other studies, giving rise to the question of whether expressive suppression should generally be considered detrimental (e.g., Befahr & Cronin, 2010; Cole, Walter, & Bruch, 2008; Schraub, et al., in press). In the present study, the unexpected positive effect of expressive suppression may be explained by the definition and measurement of expressive suppression as intrapersonal variation in emotion regulation in a

specific situation rather than as habitual regulation. Suppressing one's emotional expression during the experience of increased emotional strain, in this case, turned out to be a wise decision. This finding may imply that it is only the chronic use of this regulation strategy that has detrimental effects.

By going beyond the study of stable individual differences in emotion regulation and examining effects of momentary and dynamic emotion regulation in an applied setting, we add another new aspect to emotion regulation literature. As our data show, more than 80% of the variance in emotion regulation was intrapersonal variance. Thus, contextual and state antecedents seem to be stronger predictors of momentary emotion regulation than individual differences are. As discussed above, such a state focus may lead to different outcomes than a habitual focus.

We consider the diary design of the present study to be its particular strength. Reducing probability for retrospective biases (Alliger & Williams, 1993), the diary method more adequately captures emotional experiences and well-being than do assessments at only one or two points of time, because emotions and well-being change in short intervals. Further, effects of such intrapersonal variance in emotion regulation can only be detected by repeated time- or event-contingent measurement, as it was used in this study. Additionally, the high intrapersonal variance in affective well-being (about 75%) implies that by analyzing day-level antecedents of affective well-being, we gained information that gets lost in studies that conceptualize affective states as between-subjects variables (Netzlek, et al., 2006).

Limitations and implications for future research

Clearly, the sample of this study limits the generalizability of its results. Findings from examining undergraduate students cannot be directly applied to employees in a work setting;

demographic characteristics like age, family responsibilities and education might be important moderators of the consequences of significant emotional experiences on well-being. Chang, Johnson, and Yang (2007), who compared employee and student samples with regard to the relationship between emotional strain and organizational citizenship behaviors in a meta-analysis, found a stronger effect for the employee sample. Taking these authors' finding into account, our findings could be even more pronounced in an employee sample. Although we consider our results relevant for the current generation of university students, we recommend their replication in another context and with a more demographically diverse sample.

A methodological issue that may be improved in future research is data collection. A time-contingent assessment with higher frequency (e.g., three times per day) or an event-contingent assessment would allow the capture of events, emotions and behavior even closer to their occurrence and with higher internal validity. However, our repeated-measurement design allowed for control of between-person differences in the focus study variables and thus represents a more adequate assessment for the dynamic constructs we focused on than a cross-sectional assessment would have been.

As interactional theories on emotion regulation suggest (Côté, 2005), context variables such as interaction partners' reactions determine how regulation efforts determine later well-being. Thus, context might explain why expressive suppression need not always be bad. To clarify this picture, future studies should take the context of emotion regulation (e.g., the interaction partner, the setting) into account. This would reveal whether inconsistent findings related to expressive suppression may depend on context. An additional variable that should be addressed in further studies is work significance. If work is highly significant for a person's self-concept, negative work-related emotional experiences might have stronger negative effects.

As shown in this and prior studies, recovery experiences are an important resource for affective well-being. Guided by the conservation of resources theory (Hobfoll, 1989), a next step of research could be to investigate what helps people not only to engage in recovery experiences, but to preserve their positive effects.

Practical Implications

The importance of emotion regulation and of daily recovery experiences in maintaining people's well-being has been supported in this study. As high levels of psychological stress and strain have been reported for the current student generation (Obergfell & Schmidt, 2010), universities are encouraged to expand training and coaching programs, for example by integrating a preventive module on healthy studying techniques in introductory courses. In such stress management trainings (for examples, see Roger & Hudson, 1995; Walach, et al., 2007), the topics of emotion regulation and recovery experiences should be addressed. This way, students would learn to reflect on their work-life-balance, which might also benefit them in their future careers.

Conclusion

As this study demonstrates, recovery experiences depend on the way that experiences of emotional strain are dealt with. In this respect, emotion regulation was shown to have a significant impact. In line with previous research, we conclude that reappraisal can be recommended as a healthy strategy to regulate one's emotions. In addition, the suppression of emotional expressions may at least sometimes be helpful in overcoming experiences of emotional strain. By means of good emotion regulation, recovery experiences that restore resources and maintain affective well-being can be fostered.

References

Abler, B., & Kessler, H. (2009). Emotion Regulation Questionnaire - Eine deutschsprachige Fassung des ERQ von Gross und John [Emotion Regulation Questionnaire - A German version of the ERQ by Gross and John]. *Diagnostica, 55*(3), 144-152.

Ahrentzen, S. B. (1990). Managing conflict by managing boundaries: How professional homeworkers cope with multiple roles at home. *Environment and Behavior, 22*(6), 723-752.

Alliger, G. M., & Williams, K. J. (1993). Using signal-contingent experience sampling methodology to study work in the field: A discussion and illustration examining task perceptions and mood. *Personnel Psychology, 46*(3), 525-549.

Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309-328.

Baumeister, R. F., & Muraven, M. (2000). Ego depletion: A resource model of volition, self-regulation, and controlled processing. *Social Cognition, 18*(2), 130.

Befahr, K., & Cronin, M. A. (2010). *The Efficacy of Venting as a Function of the Response by Third-Party Listeners.* Paper presented at the Academy of Management Annual Meeting, Montréal, Canada.

Bono, J. E., & Vey, M. A. (2005). Toward understanding emotional management at work: A quantitative review of emotional labor research. In C. E. Härtel, W. J. Zerbe & N. M. Ashkanasy (Eds.), *Emotions in organizational behavior.* (pp. 213-233). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185-216.

Brotheridge, C. M., & Lee, R. T. (2002). Testing a conservation of resources model of the dynamics of emotional labor. *Journal of Occupational Health Psychology, 7*(1), 57-67.

Chang, C.-H., Johnson, R. E., & Yang, L.-Q. (2007). Emotional strain and organizational citizenship behaviour: A meta-analysis and review. *Work & Stress, 21*(4), 312-332.

Ciarrochi, J., Dean, F. P., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and Individual Differences, 32*(2), 197-209.

Cole, M. S., Bruch, H., & Vogel, B. (2006). Emotion as Mediators of the Relations Between Perceived Supervisor Support and Psychological Hardiness on Employee Cynicism. *Journal of Organizational Behavior, 27*(4), 463-484.

Cole, M. S., Walter, F., & Bruch, H. (2008). Affective mechanisms linking dysfunctional behavior to performance in work teams: A moderated mediation study. *Journal of Applied Psychology, 93*(5), 945-958.

Connolly, J. J., & Viswesvaran, C. (2000). The role of affectivity in job satisfaction: A meta-analysis. *Personality and Individual Differences, 29*(2), 265-281.

Cooke, R., Bewick, B. M., Barkham, M., Bradley, M., & Audin, K. (2006). Measuring, monitoring and managing the psychological well-being of first year university students. *British Journal of Guidance & Counselling, 34*(4), 505-517.

Côté, S. (2005). A Social Interaction Model of the Effects of Emotion Regulation on Work Strain. *Academy of Management Review, 30*(3), 509-530.

Cox, T., & Ferguson, E. (1991). Individual Differences, Stress and Coping. In C. L. Cooper & R. Payne (Eds.), *Personality and Stress: Individual Differences in the Stress Process* (pp. 7-30). Chichester, England: John Wiley & Sons.

Cropley, M., Dijk, D.-J., & Stanley, N. (2006). Job strain, work rumination, and sleep in school teachers. *European Journal of Work and Organizational Psychology, 15*(2), 181-196.

Cropley, M., & Purvis, L. J. M. (2003). Job strain and rumination about work issues during leisure time: A diary study. *European Journal of Work and Organizational Psychology, 12*(3), 195-207.

Demerouti, E., Bakker, A. B., Geurts, S. A. E., & Taris, T. W. (2009). Daily recovery from work-related effort during non-work time. In S. Sonnentag, P. L. Perrewé & D. C. Ganster (Eds.), *Current perspectives on job-stress recovery.* (pp. 85-123). Bingley United Kingdom: JAI Press/Emerald Group Publishing.

Fisher, C. D. (2000). Mood and emotions while working: Missing pieces of job satisfaction? *Journal of Organizational Behavior, 21*, 185-202.

Fisher, C. D., & Ashkanasy, N. M. (2000). The emerging role of emotions in work life: An introduction. *Journal of Organizational Behavior, 21*, 123-129.

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward emotional well-being. *Psychological Science, 13*(2), 172-175.

Gable, S. L., Reis, H. T., Impett, E. A., & Asher, E. R. (2004). What Do You Do When Things Go Right? The Intrapersonal and Interpersonal Benefits of Sharing Positive Events. *Journal of Personality and Social Psychology, 87*(2), 228-245.

Geurts, S. A. E., & Sonnentag, S. (2006). Recovery as an explanatory mechanism in the relation between acute stress reactions and chronic health impairment. *Scandinavian Journal of Work, Environment and Health, 32*(6), 482-492.

Giardini, A., & Frese, M. (2006). Reducing the negative effects of emotion work in service occupations: Emotional competence as a psychological resource. *Journal of Occupational Health Psychology, 11*(1), 63-75.

Grandey, A. A., Fisk, G. M., & Steiner, D. D. (2005). Must 'Service With a Smile' Be Stressful? The Moderating Role of Personal Control for American and French Employees. *Journal of Applied Psychology, 90*(5), 893-904.

Gross, J. J. (1998a). Antecedent- and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74*(1), 224-237.

Gross, J. J. (1998b). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2*(3), 271-299.

Gross, J. J. (2001). Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science, 10*(6), 214-219.

Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348-362.

Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist, 44*(3), 513-524.

Hochschild, A. R. (1983). *The managed heart: Commercialization of human feeling*. Berkeley: University of California Press.

John, O. P., & Gross, J. J. (2004). Healthy and unhealthy emotion regulation: Personality processes, individual differences, and life span development. *Journal of Personality, 72*(6), 1301-1333.

Krohne, H. W., Egloff, B., Kohlmann, C.-W., & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der 'Positive and Negative Affect Schedule' (PANAS) [Research with a German version of the PANAS]. *Diagnostica, 42*(2), 139-156.

Lyubomirsky, S., King, L., & Diener, E. (2005). The Benefits of Frequent Positive Affect: Does Happiness Lead to Success? *Psychological Bulletin, 131*(6), 803-855.

Marco, C. A., & Suls, J. (1993). Daily stress and the trajectory of mood: Spillover, response assimilation, contrast, and chronic negative affectivity. *Journal of Personality and Social Psychology, 64*(6), 1053-1063.

Mauss, I. B., Cook, C. L., Cheng, J. Y. J., & Gross, J. J. (2007). Individual differences in cognitive reappraisal: Experiential and physiological responses to an anger provocation. *International Journal of Psychophysiology, 66*(2), 116-124.

Meijman, T. E., & Mulder, G. (1998). Psychological Aspects of Workload. In P. J. D. Drenth, H. Thierry & C. J. D. Wolff (Eds.), *A Handbook Of Work And Organizational Psychology: Work Psychology* (pp. 5-33). Hove: Psychology Press Ltd.

Netzlek, J. B., Schröder-Abé, M., & Schütz, A. (2006). Multilevel analyses in psychological research. Advantages and potential of multilevel random coefficient modeling. *Psychologische Rundschau, 57*(4), 213-223.

Obergfell, J., & Schmidt, L. (2010). *Zwangsjacke Bachelor?! Der Einfluss von Anforderungen und Entscheidungsfreiräumen auf das Stressempfinden und die Gesundheit Studierender - Ein Vergleich von Bachelor- und Diplomstudierenden im Rahmen des Demand-Control-Modells von Karasek [Strait jacket bachelor?! The influence of demands and decision latitude on students' stress experience and health - A comparison of bachelor and diploma*

students guided by Karasek's demand-control model]. Unpublished Diploma Thesis, University of Heidelberg, Germany.

Raftery, J. N., & Bizer, G. Y. (2009). Negative feedback and performance: The moderating effect of emotion regulation. *Personality and Individual Differences, 47*(5), 481-486.

Rau, R. (2006). Learning opportunities at work as predictor for recovery and health. *European Journal of Work and Organizational Psychology, 15*(2), 158-180.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (2nd ed.). Thousand Oaks, CA: Sage.

Raudenbush, S. W., Bryk, A. S., Cheong, Y., Congdon, R., & Du Toit, M. (2004). *HLM 6: Hierarchical Linear and Nonlinear Modeling*. Lincolnwood, IL: Scientific Software International.

Richards, J. M., & Gross, J. J. (2000). Emotion Regulation and Memory: The Cognitive Costs of Keeping One's Cool. *Journal of Personality & Social Psychology, 79*, 410-424.

Roger, D., & Hudson, C. (1995). The role of emotion control and emotional rumination in stress management training. *International Journal of Stress Management, 2*(3), 119-132.

Schraub, E. M., Stegmaier, R., & Sonntag, K. (in press). The Effect of Change on Adaptive Performance: Does Expressive Suppression Moderate the Indirect Effect of Strain? *Journal of Change Management*.

Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhart (Ed.), *Sociological methodology* (pp. 290-312). San Francisco: Jossey-Bass.

Sonnentag, S. (2001). Work, recovery activities, and individual well-being: A diary study. *Journal of Occupational Health Psychology, 6*(3), 196-210.

Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between nonwork and work. *Journal of Applied Psychology, 88*(3), 518-528.

Sonnentag, S., & Bayer, U.-V. (2005). Switching Off Mentally: Predictors and Consequences of Psychological Detachment From Work During Off-Job Time. *Journal of Occupational Health Psychology, 10*(4), 393-414.

Sonnentag, S., Binnewies, C., & Mojza, E. J. (2008). 'Did you have a nice evening?' A day-level study on recovery experiences, sleep, and affect. *Journal of Applied Psychology, 93*(3), 674-684.

Sonnentag, S., & Fritz, C. (2007). The Recovery Experience Questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology, 12*(3), 204-221.

Sonnentag, S., & Kruel, U. (2006). Psychological detachment from work during off-job time: The role of job stressors, job involvement, and recovery-related self-efficacy. *European Journal of Work and Organizational Psychology, 15*(2), 197-217.

Srivastava, S., Tamir, M., McGonigal, K. M., John, O. P., & Gross, J. J. (2009). The social costs of emotional suppression: A prospective study of the transition to college. *Journal of Personality and Social Psychology, 96*(4), 883-897.

Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science, 18*(3), 184-188.

Walach, H., Nord, E., Zier, C., Dietz-Waschkowski, B., Kersig, S., & Schüpbach, H. (2007). Mindfulness-based stress reduction as a method for personnel development: A pilot evaluation. *International Journal of Stress Management, 14*(2), 188-198.

Warr, P., Butcher, V., & Robertson, I. (2004). Activity and psychological well-being in older people. *Aging & Mental Health, 8*(2), 172-183.

Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*(3), 465-490.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063-1070.

Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (pp. 1-74). Greenwich, CT: JAI Press.

Williams, K. J., & Alliger, G. M. (1994). Role stressors, mood spillover, and perceptions of work-family conflict in employed parents. *Academy of Management Journal, 37*, 837-868.

Xanthopoulou, D., Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2007). The role of personal resources in the job demands-resources model. *International Journal of Stress Management, 14*(2), 121-141.

TABLE 1

Means, Standard Deviations, and Intercorrelations between Study Variables

Variable	*M*	*SD*	1	2	3	5	6	7	8	9
1. Negative emotions	1.96	0.96		-.25**	-.40**	.54**	.40**			
2. Recovery	2.78	0.82	-.14		.53**	-.10**	-.13**			
3. Well-being	3.32	0.78	-.51**	.60**		-.16**	-.15**			
5. Reappraisal	2.37	1.52	.29**	.14	-.06		.43**			
6. Expressive Suppression	2.70	1.76	.38**	.04	-.09	.50**				
7. Gender[1]	--	--	.05	.14	.16	.06	.17			
8. Age	21.24	2.91	-.01	.08	.05	.29*	.18	.04		
9. Positive affectivity	3.57	0.49	-.34**	.35**	.47**	.12	-.12	-.02	-.13	
10. Negative affectivity	2.96	0.66	.36**	-.47**	-.49**	.03	.18	-.07	.18	-.59**

Note. Below diagonal: person-level data (n=63), above diagonal: day-level data (n=726). [1]1=female, 2=male. ** p<.01, * p<.05.

TABLE 2

Hierarchical Linear Modeling Estimates of Null Models

Dependent variable	γ_{00}	σ^2	τ_{00}	% of total variance that is within-person
Affective well-being	3.32	0.46	.15***	75.41
Recovery Experiences	2.78	0.56	.11***	83.58
Reappraisal	2.37	1.92	.38***	83.48
Suppression	2.70	2.74	.35***	88.67

Note. N = 726 occasions, N = 63 participants. γ_{00} = pooled intercept; σ^2 = within-person variance; τ_{00} = between-person variance. % of total variance that is within-person was computed with the formula $\sigma^2/(\sigma^2 + \tau_{00})$.
*** p<.001

TABLE 3

Multilevel Estimates for Models Predicting Affective Well-being: Recovery Experiences as Mediator

	Model 0			Model 1			Model 2			Model 3		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	3.32	0.05	62.65***	3.32	0.04	76.50***	3.32	0.04	76.62***	3.32	0.04	76.66***
Gender				0.15	0.11	1.36	0.15	0.11	1.36	0.15	0.11	1.37
Age				0.02	0.01	1.52	0.02	0.01	1.54	0.02	0.01	1.54
Positive Affectivity				0.26	0.12	2.27*	0.27	0.11	2.40*	0.27	0.11	2.40*
Negative Affectivity				-0.21	0.07	-2.86**	-0.20	0.07	-2.80**	-0.20	0.07	-2.81**
Emotional Strain							-0.28	0.03	-8.52***	-0.19	0.03	-6.71***
Recovery Experiences										0.39	0.04	11.11***
Deviance			1906.03			1880.87			1743.52			1567.49
Δ Deviance						25.16***			137.35***			176.03***
Δ *df*			*3*			*4*			*1*			*1*
						R^2			R^2			R^2
Level 1 (within-person) Variance	0.46			0.46		0.00	0.40		0.13	0.32		0.20
Level 2 (between-person) Variance	0.15			0.10		0.33	0.09		0.10	0.09		0.00

Note. *N* = 726 occasions, N = 63 participants. Unstandardized regression coefficients are reported. *** p<.001, **p<.01, *p<.05

TABLE 4

Multilevel Estimates for Models Predicting Recovery Experiences: Reappraisal and Expressive Suppression as Moderators

	Model 0			Model 1			Model 2			Model 3		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	2.78	0.05	56.93***	2.78	0.04	66.68***	2.78	0.04	64.93***	2.74	0.05	59.09***
Gender				0.11	0.10	1.12	0.12	0.10	1.21	0.13	0.10	1.26
Age				0.02	0.01	1.66	0.02	0.02	1.34	0.02	0.02	1.26
Positive Affectivity				0.11	0.96	1.15	0.07	0.10	0.70	0.08	0.10	0.73
Negative Affectivity				-0.24	0.06	-3.79**	-0.22	0.07	-3.14**	-0.22	0.07	-3.27**
Emotional Strain							-0.22	0.03	-6.36***	-0.22	0.03	-6.60***
Reappraisal							0.01	0.02	0.64	0.00	0.02	-0.05
Expressive Suppression							-0.03	0.02	-1.61	-0.04	0.02	-1.98*
Emotional Strain x Reappraisal										0.05	0.02	2.62**
Emotional Strain x Expressive Suppression										0.04	0.01	2.05*
Deviance			1906.03			1880.87			1733.96			1724.84
Δ Deviance						25.16***			146.91***			9.12***
Δ *df*			*3*			*4*			*3*			*2*
						R^2			R^2			R^2
Level 1 (within-person) Variance	0.46			0.46		0.00	0.40		0.13	0.39		0.03
Level 2 (between-person) Variance	0.14			0.09		0.36	0.07		0.22	0.07		0.00

Note. *N* = 726 occasions, N = 63 participants. Unstandardized regression coefficients are reported. ***p<.001, **p<.01, *p<.05

FIGURE 1

The proposed conceptual scheme

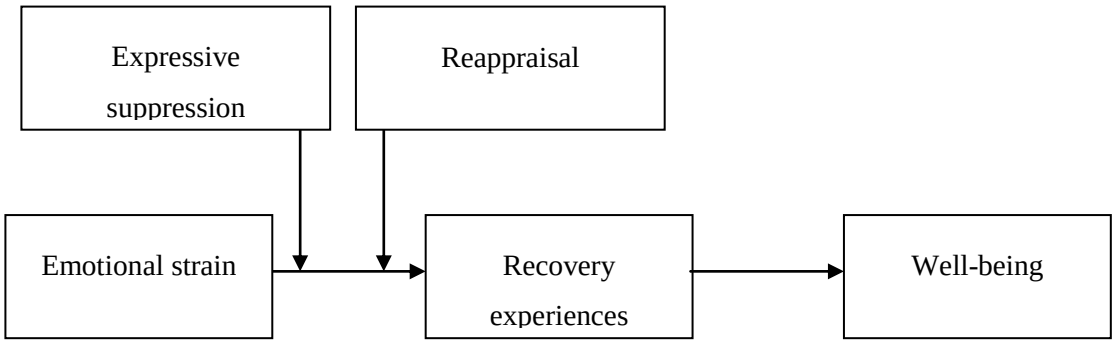
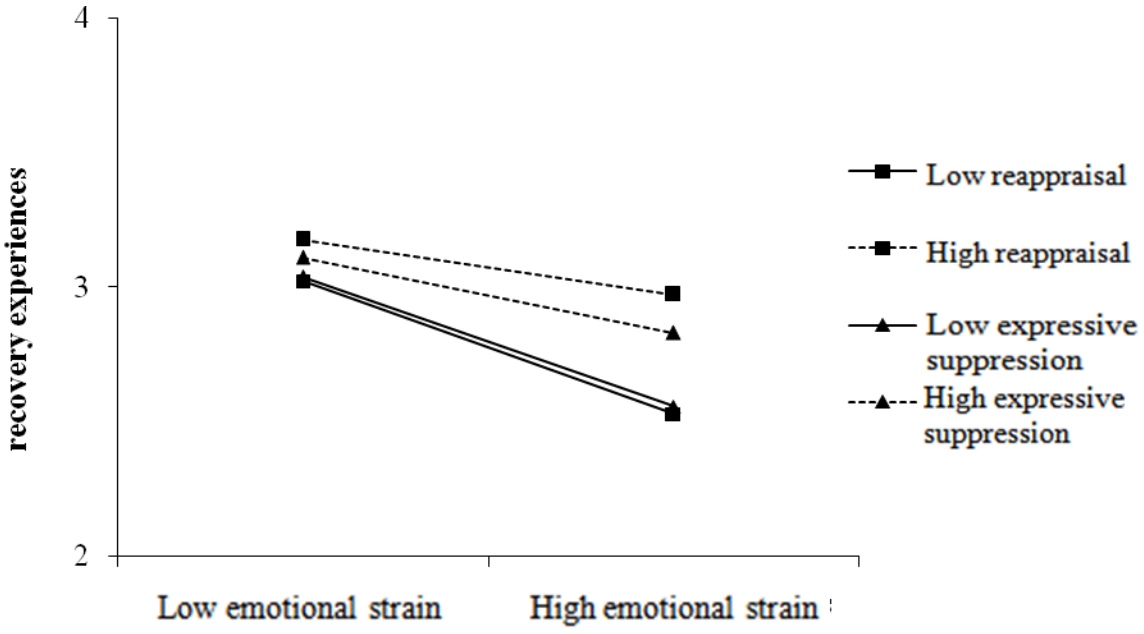


FIGURE 2

The Moderating Effects of Reappraisal and Expressive Suppression on the Relationship between Emotional Strain and Recovery Experiences



Manuscript Study 2

THE EFFECT OF CHANGE ON ADAPTIVE PERFORMANCE: DOES EXPRESSIVE SUPPRESSION MODERATE THE INDIRECT EFFECT OF STRAIN?

Eva Maria Schraub[*]

Ralf Stegmaier[**]

Karlheinz Sonntag[*]

* University of Heidelberg, Germany

** University of Applied Sciences Osnabrueck, Germany

Published.

Schraub, E.M., Stegmaier, R., & Sonntag, Kh. (2011). The Impact of Change on Adaptive Performance: Does Expression Suppression Moderate the Indirect Effect of Strain? Journal of Change Management, *11* (1), 21-44.

Acknowledgements

We thank Julia Kirchberg for her support in data collection.

ABSTRACT

This study examined the relation between employees' perceived extent of change and adaptive performance, focusing on the roles of expressive suppression (i.e. the habit of suppressing overt expressions of emotion) at work and perceived strain. Analysing survey data of 153 employees in Germany with different occupational backgrounds via bootstrapping, the conceptual moderated indirect effect scheme was supported. As hypothesised, greater changes were associated with higher strain. Strain, in turn, was negatively related to adaptive performance. Although extent of change did not directly affect adaptive performance, the data supported the expected indirect relationship via strain. Finally, expressive suppression at work acted as a buffer of this indirect effect: Extent of change was only negatively related to strain for employees low in suppression. In line with newer evidence, our results indicate that the suppression of overt emotional expressions at work can have positive effects under certain circumstances.

Keywords: expressive suppression, change, strain, adaptive performance, moderated indirect effect

The effect of change on adaptive performance: Does expressive suppression moderate the indirect effect of strain?

Introduction

Today, organisations need to be innovative to sustain growth and remain competitive. Changes in the work environment such as technological innovations or the restructuring of work units have thus become "an ever-present element that affects all organisations" (By, 2005, p.378). These changes require employees to be highly adaptable (Pulakos *et al.*, 2000). However, although intended to increase productivity and performance, organizational changes often evoke negative reactions such as cynicism, burnout, mistrust, reduced performance, and intentions to quit (Caldwell *et al.*, 2004; Schaubroeck *et al.*, 1994). A primary goal of the present research is, therefore, to explore a psychological process that influences adaptive reactions to change. Such knowledge is a crucial prerequisite for practitioners who want to be aware of possible pitfalls associated with change implementations.

This study addresses Burnes' (1996) request to enhance the understanding of the individual dynamics that may hinder or facilitate effective change processes and the recent claim to gain deeper insight on the determinants of employees' adaptation (Parent, 2010). The purpose of this study, thus, is to provide some insight on determinants of employees' adaptation to change. It incorporates affective responses to change, which have long been neglected in organizational change research and downplayed by managers (George and Jones, 2001; Mossholder *et al.*, 2000). Nevertheless, both theory and empirical studies indicate that organizational changes are highly emotive events (Basch and Fisher, 2000; Kiefer, 2002). From studies demonstrating that emotion regulation determines strain during challenging events (Lok and Bishop, 1999) it can be concluded that emotion regulation should be of importance in the change context as well.

More specifically, this study examines emotion regulation as a condition that determines how experienced change in the work unit affects employees' strain as a reaction to change that, in turn, may influence the employees' adaptive performance. The study hereby answers the call to enhance the understanding of the links between employees' affective and behavioural reactions to change and responds to the question of how emotion regulation affects adaptation (Kiefer, 2002; Srivastava *et al.*, 2009).

The framework that integrates the research questions (depicted in Figure 1) is built on Lazarus and Folkman's (1984) transactional stress model. It is assumed that the employees' perceived extent of change acts as a stressor that evokes psychological strain, which in turn determines adaptive performance. Furthermore, expressive suppression[5], an emotion regulation strategy that manipulates the overt emotional expression (Gross and Levenson, 1993), is examined as an intervening factor that may influence employees' reactions to change. Because organizational change is considered to be an affective work event that concerns individual employees and may require them to readjust their behaviours (George and Jones, 2001), the study focuses on employees' experiences and behaviours on the individual level.

Figure 1

[5] Other labels like 'emotional inhibition' (Roger and Nesshoever, 1987) and 'emotional suppression' (Gross and Levenson, 1993) have synonymously been used for the same construct. In the present study, the label 'expressive suppression' is used, because it best describes that it is the overt expression of emotion (and not the experience) that is suppressed.

Change Characteristics

Employees are generally required to support organizational changes, for example by implementing new behaviours (Armenakis and Bedeian, 1999). Within the literature on organizational change, it has therefore been argued that employees' perceptions of change should be considered seriously by change managers. Researchers in this domain typically focus on specific aspects of change. Overall, a great deal of attention has been devoted to change implementation processes, to change context, and to the role of individual differences during change (e.g., Caldwell *et al.*, 2004; Cole *et al.*, 2006; Herold *et al.*, 2007; Judge *et al.*, 1999). In recent years, research efforts have also started to concentrate on the impact of change characteristics on employees' reactions to change. Various characteristics such as change frequency, severity, extensiveness, and usefulness have been related to employees' reactions to change (e.g., Burke and Litwin, 1992; Fedor *et al.*, 2006; Fugate *et al.*, 2002).

So far, episodic changes on the organizational level, such as downsizing, mergers and acquisitions have dominated change research (Rafferty and Griffin, 2006). Nevertheless, changes also occur on lower levels of the organisation, for example in the work unit (Burke and Litwin, 1992). These may often be continuous forms of change, which are believed to create substantial change when they cumulate (Weick and Quinn, 1999). As it is the impact on employees' working conditions and experiences that is particularly influential in shaping employees' reactions to change (Fedor *et al.*, 2006), this study does not distinguish sources and forms of change, but focuses on the extent of any kind of change that affects the employees' work units. It examines the employees' perceived extent of change as a potential stressor.

Employee Strain during Change

Organizational changes might be appraised as threatening and potentially damaging and are often perceived as stressful (Lazarus and Folkman, 1987; Parent, 2010). Such stress

reactions due to organizational changes can be explained by the primary appraisal process described in Lazarus and Folkman's (1984) transactional stress model. It states that stress reactions do not result from objective events, but from the way individuals appraise those events. In a number of studies, this primary appraisal of change has been related to cognitive evaluations and affective reactions of ambiguity and uncertainty (e.g., Ashford, 1988; Rafferty and Griffin, 2006).

The secondary appraisal process of the model states that individuals evaluate the availability of resources to cope with a situation (Lazarus and Folkman, 1984). If demands exceed perceived resources, this imbalance can result in long-lasting strain (cf. Zapf and Semmer, 2004). In fact, several studies demonstrated an association between organizational changes and subsequent strain (e.g., Ashford *et al.*, 1989; Fugate *et al.*, 2008; Martin *et al.*, 2005). Uncertainty during change, for example, has been positively related to employees' strain (e.g., Michel *et al.*, 2009; Moyle and Parkes, 1999; Pollard, 2001).

As occupational well-being includes both emotional and cognitive components (Hart and Cooper, 2001), the present study relies on a concept of psychological strain that integrates these two components. Irritation is defined as employees' inability to detach and unwind cognitively and emotionally from problems associated with their jobs (Mohr *et al.*, 2006). Besides its potential of serving as an early indicator of more serious stress reactions like burnout or physical ailments (e.g., Dormann and Zapf, 2002), irritation is a useful strain concept to detect short- and medium-term effects of changes, as it is sensitive enough to be tied back to recent events and circumstances. While measures of more serious psychological and physical strain would not capture reactions due to recent demands, the advantage of assessing short-term strain, such as employees' irritation, is that it may indicate that something has recently gone wrong.

Expecting that changes which are perceived as greater exert a more proximal impact, greater adaptation demands and a greater potential for threat and uncertainty than do lesser changes (Ashford *et al.*, 1989; Caldwell *et al.*, 2004; Riolli and Savicki, 2006), it is assumed that:

Hypothesis 1: The perceived extent of change will be positively associated with employee strain.

Adaptive Performance during Change

The multiple and ongoing changes organisations are engaged in today have fostered the acknowledgement of adaptive behaviours as a key competency for employees (Griffin and Hesketh, 2003). Thus, the importance of adding adaptive performance to existing performance concepts has meanwhile been stressed by various scholars (e.g., Campbell, 1999). Nevertheless, there is still a debate on the question of whether adaptive performance is an aspect of contextual performance or represents a unique performance concept. Johnson (2001), for example, considers adaptive performance (in the sense of handling work stress) to be part of contextual performance, which is defined as behaviours that are functional and supportive for organizational success, but do neither belong to nor necessarily affect employees' core task requirements (Borman and Motowidlo, 1993). Allworth and Hesketh (1999), by contrast, argue that adaptive performance represents a third performance concept: Analysing task, contextual and adaptive performance in one study, they found three statistically different constructs to emerge. In their model of positive work role behaviour, Griffin and colleagues (2007) distinguish between three sub dimensions of work role performance: proficiency, adaptivity, and proactivity. They describe adaptive performance as responding to and supporting change at the individual, team, and organizational level. Their model, thus, clearly corroborates the assumption that adaptive performance represents a unique performance concept.

The difficulty in establishing and agreeing on a concrete definition of adaptive performance has been exacerbated by the fact that adaptive performance requirements vary depending on the nature of the job. Thus, the variety of behaviours that can be considered adaptive performance (e.g., flexibility, versatility) enhances the elusiveness of the concept.

In the change context, adaptive performance has mainly been examined in studies that focused on specific change-supportive behaviours such as innovation implementation (e.g., Michel *et al.*, 2010; Orth, 2002), or concentrated on individuals' adaptation to specific tasks which had been changed (Ployhart and Bliese, 2006). By contrast, the present study addresses adaptive performance as a set of individual behaviours (e.g., dealing with uncertainty), as called for by Robertson and colleagues (1992). While the different behaviours that are subsumed under the concept of adaptive performance are considered important for facilitating successful change (Griffin and Hesketh, 2003), the study of adaptive performance as a set of behaviours has not yet received much attention in change research. However, it should allow conclusions on general adaptive performance, which supports change beyond the fulfilment of specific task requirements. Adhering to such a set of behaviours, adaptive performance is understood as a unique performance component (Griffin *et al.*, 2007). For an operational definition of the concept, scholars frequently use the behavioural taxonomy developed by Pulakos and colleagues (2000). This taxonomy includes behaviours such as dealing with uncertain and unpredictable work situations, demonstrating interpersonal adaptability, and learning new work tasks, technologies, and procedures. These behaviours can be related to the psychological process stages of change, which are identified by individual transition curves (e.g., Bridges, 2003), namely, (1) letting go of the past, (2) adapting to change, and (3) moving forward. Adaptive performance comprises behaviours that support both the second (adaptation) and the third (integration) stage of the individual change process.

Considering the role of strain during change, negative, rather than adaptive, employee reactions can be expected. As stated by resource allocation theory (Kanfer and Ackerman, 1989), attentional resources are limited. If these resources are devoted to the self due to experienced strain, there will be a lack of energy for the tasks ahead (Cohen, 1980). Accordingly, studies on employee well-being and performance have generally demonstrated negative effects of strain (cf. Sonnentag, 2002; Wright and Cropanzano, 1998, 2000). Wanberg and colleagues (2000), for example, found that work-related irritation following a series of changes was positively associated with turnover intention and negatively related to job satisfaction. In a meta-analysis, LePine and colleagues (2005) found that stressors were indirectly and negatively related to performance via strain. Furthermore, lighter forms of strain have also been reported to be a precursor of more severe psychological problems like depressive symptoms (Dormann and Zapf, 2002). As a result, it is assumed that experienced strain should negatively relate to adaptive performance:

Hypothesis 2: Employee strain will be negatively associated with adaptive performance.

Although greater changes impose greater adaptation demands on employees (Ashford, 1988), the conclusion that greater changes evoke higher adaptive performance does not follow from that. Rather, theory and research indicate that a complex relationship, including several concomitant pathways, exists here. Considering that change affects the work environment by both increasing job demands (e.g., time pressure and workload) and by potentially increasing job resources (such as facilitated communication and learning possibilities; Van den Heuvel *et al.*, 2010), the job demands-resources model (Bakker and Demerouti, 2007) can be drawn on to delineate how change may affect adaptive performance. According to this model, the proximal outcome of job demands is a certain level of strain, which in turn negatively affects more distal performance outcomes. However, the model also suggests a positive link between

job resources and motivation, which in turn positively affects performance outcomes. Thus, two pathways by which the experienced extent of change can differently affect adaptive performance can be thought of. First, associated job demands should enhance strain and thereby decrease adaptive performance. Second, if the change is well-managed, that is, supported by the provision of job resources such as role clarity, management availability, colleague support, communication, and participation (By and Dale, 2008; Saksvik *et al.*, 2007; Schweiger and Denisi, 1991), these job resources should enhance motivation and thereby increase adaptive performance. Due to these possible positive and negative pathways, a direct relationship between extent of change and adaptive performance is rather unlikely.

While the positive pathway is not addressed in this study, the expected negative pathway is that perceived extent of change will be positively related to employees' strain (Hypothesis 1), and that strain, in turn, will be negatively related to adaptive performance (Hypothesis 2). It follows that there will be an indirect negative relation between change and adaptive performance if strain is experienced. Consequently, it is expected that:

> *Hypothesis 3: There will be an indirect negative relationship between perceived extent of change and adaptive performance via employee strain.*

Expressive Suppression during Change

The question of which emotion regulation strategies best reduce adverse effects of negative events on well-being has inspired a number of psychological studies (Shiota, 2006). However, organizational change research so far largely neglected the role of emotional skills and strategies for well-being (Jordan, 2004). This is surprising, because theories propose that the emotions associated with affective events lead to specific action tendencies and determine affect-driven work behaviours (Frijda, 1986; Weiss and Cropanzano, 1996). Also, emotion regulation strategies are related to work performance and strain in general (e.g., Brown *et al.*, 2005; Goldberg and Grandey, 2007; Tugade and Fredrickson, 2007) and several studies have

shown that employees' coping strategies (including an emotion-focused component) are related to employees' acceptance of change and their adaptation to change in particular (e.g., Ashford, 1988; Fugate *et al.*, 2008; 2002; Judge *et al.*, 1999; Riolli and Savicki, 2006).

From the person-situation approach, which posits that individuals are interacting with their environment by acting and reacting, it can be suggested that coping is an interactive process (Briner *et al.*, 2004). Thus, the effect of change as an affective event should depend on the regulation strategy the employee applies. The recently developed personal resources adaptation model (Van den Heuvel *et al.*, 2010) explicitly presumes that the interaction between personal resources and job demands determines adaptive performance in a change environment. Consequently, it can be reasoned that individual differences in the affective competency to regulate emotions moderate the effects of change on employees' reactions to the change.

For the definition of emotion regulation strategies, frequent reference is made to the process-oriented model proposed by Gross (2001). This framework suggests that emotions can be regulated by antecedent-focused regulation (such as cognitive reappraisal of the situation), which comes early in the emotion-generative process, and by response-focused regulation (suppressing the expression of a felt emotion or faking an unfelt emotion), which occurs late in the emotion-generative process. As a response-focused strategy, expressive suppression only alters the emotional expression, not the emotional experience. For example, one might try to look contented while feeling anxious or angry. Individual differences have been reported in the use of these two emotion regulation strategies (Gross and John, 2003), indicating that they can be regarded as individual habits.

Findings that the suppression of one's emotional expression tends to be related to more negative outcomes compared to antecedent-focused strategies led to the acknowledgement of antecedent-focused regulation as superior regulation strategies

(Elfenbein, 2008; Goldberg and Grandey, 2007; Gross and Levenson, 1993; Richards and Gross, 1999). People who frequently use expressive suppression experience less positive and more negative emotions and have lower cognitive capacity as well as worse cardiovascular functioning (Richards, 2004; Srivastava *et al.*, 2009). On the other hand, expressing negative emotions also implies a continuing engagement with the adverse situation, which can undermine recovery (Sonnentag and Fritz, 2007). Thus, outcomes of expressive suppression, which occurs when the emotions are already fully experienced, still need to be examined in more detail and in different contexts. In fact, most research on emotion regulation in the organizational context focuses on customer service interactions (i.e. 'emotional labour' according to display rules which are defined by the organisation). However, the expression of emotions in this context is characterized by limited individual control due to formal display rules. Indeed, expressive suppression has been found to be unrelated to well-being in other contexts (e.g., Lok and Bishop, 1999), indicating that control over the emotional expression may determine effects of expressive suppression.

Some recent research that examined the moderating role of expressive suppression indicates that this regulation strategy can actually even have positive outcomes when applied at the workplace. In a team study, Cole and colleagues (2008) demonstrated that team members' nonverbal expressive suppression diminished an adverse effect of negative team affective tone on performance. In line with this finding, Brown and colleagues (2005) showed that the expression of one's negative feelings to others amplified the adverse impact that negative emotions after a critical work event had on work performance. In a day-level study, Sanz-Vergel and colleagues (2010) found that when negative emotions were verbally expressed at work, recovery after work breaks was more positively related to exhaustion at night.

Considering these research results, Lok and Bishop's (1999) statement that expressive suppression may be adaptive in some contexts seems reasonable. One such context could be organizational change. Therefore, the so far neglected effects of expressive suppression during change are examined in this study. Its focus is on non-compulsory expressive suppression, which occurs without formal display rules. According to the predictions of the above-mentioned theories and empirical findings, it is suggested that expressive suppression at work reduces continuing cognitive engagement with the situation and ones feelings. Thus, the impact of perceived extent of change on strain should be dampened. Based on the assumption that more extensive changes lead to higher strain (Hypothesis 1), the following moderation effect is expected:

Hypothesis 4: The positive association between perceived extent of change and employee strain will be weaker for individuals who suppress the expression of emotions at work.

If an indirect relationship exists between extent of change and adaptive performance via strain (Hypothesis 3) and if change is less strongly related to strain for employees who suppress the expression of emotions than for those who express their feelings at work (Hypothesis 4), it follows that expressive suppression should also influence the indirect relationship between extent of change and adaptive performance. Therefore, it is expected that:

Hypothesis 5: Expressive suppression will moderate the indirect relationship between experienced extent of change and adaptive performance in such a way that the relationship will be weaker for individuals high on expressive suppression at work than for individuals low on expressive suppression at work.

The proposed research model (see Figure 1) provides a pattern of a moderated indirect effect (e.g., Muller *et al.*, 2005; Preacher *et al.*, 2007). It predicts that the indirect effect between extent of change and adaptive performance through strain is contingent on employees' expressive suppression.

As further variables may explain the expected relationships, demographic data as well as some person and job characteristics are accounted for in the present research design. Occupational stress models, such as the job demands-resources model (Bakker and Demerouti, 2007; Xanthopoulou *et al.*, 2007), specify that both personal and job resources are differentially related to strain. As such, both the personality trait of emotional stability and the job characteristic of autonomy have been empirically related to employees' strain and performance (Johnson *et al.*, 2009; Judge and Bono, 2001; Morgeson *et al.*, 2005; Terry and Jimmieson, 1999). Further, interpersonal job requirements have been found to relate to emotion regulation and performance through implicit display rules (Diefendorff and Richard, 2003). Thus, the personality trait of emotional stability and the job characteristics of autonomy and task interdependence (a construct reflecting interpersonal requirements) are taken into account.

Method

Data collection and participants

Data were collected in summer 2008 by an online survey. To approach participants, the researchers used their personal networks by asking friends, former fellow students and colleagues working in organisations to participate themselves and to provide contact details of further potential participants. As work unit changes of all kinds and magnitudes were of interest, the only requirements for participation were to be employed in an organisation and not to work in customer service (explicit display rules might influence emotion regulation in this context). Employees holding different kinds of jobs in Germany were approached. To

assure standardised data collection procedures, all participants received an e-mail that explained the purpose and procedures of the study. This e-mail also provided a link that led to the survey. Participants were asked to answer the survey whenever they had about 15 minutes to spend on it. In return for their voluntary participation, they were offered feedback on the results. They were assured that the e-mail addresses for these results would be recorded separately from the data and that the participation was otherwise anonymous.

Of the 301 people initially contacted, 178 persons opened the online survey. Of these, 153 completed the survey and were included in the sample. The others did not enter data for a while and then closed the survey (N = 8), stopped after the first introductory page of the survey (N = 10), or just responded to the first questions (N = 7). Thus, the response rate was 51%. Participants belonged to a variety of industries, including finance and consulting (10.5%), manufacturing (20.3%), public services (19.6%), health and social work (13.7%), education and research (18.3%), and IT (13.1%). The sample represented 45% females and 55% males, most of whom were German (96%). Most respondents were between 20 and 40 years old (85%) and had obtained a university degree (59%). Mean tenure in the organisation was 5.7 years (*SD* = 7.1). Participants had performed the same jobs, not necessarily for the same employers, for 6.7 years on average (*SD* = 7.9).

Measures

As the survey was conducted in German, items from English scales were translated into German by two independent translators (one native English speaker) using the back-translation procedure to assure semantic equivalence (Brislin, 1970). All scales yielded satisfactory reliability (Cronbach's Alpha; see Table 1).

Extent of Change. Perceived extent of change was measured with three questions taken from Caldwell and colleagues (2004), which had been successfully applied in previous research (Fedor *et al.*, 2006; Michel *et al.*, 2009). Participants indicated the extent to which

they experienced changes in their work unit in the last three months. The questions asked for changes in "processes and procedures", in "the way people do their jobs", and in "people's daily routines". They were checked on a five-point scale ranging from "not at all" to "very much".

Strain. Employees' strain was assessed using Mohr and colleagues' (2005) irritation scale, which consists of three items measuring *cognitive irritation* (e.g., "Even at home, I had to think about difficulties at work.") and five items measuring *emotional irritation* (e.g., "I was easily upset."). The scale demonstrated a good overall reliability (Cronbach's $\alpha = .89$) throughout 15 samples (N = 4030; Mohr *et al.*, 2005). In support of its validity, Mohr and colleagues (2005) report significant positive correlations between irritation and for example emotional exhaustion, as well as negative correlations between irritation and job-related self efficacy. The ratings for irritation were given on a seven-point scale ranging from "not at all" to "completely". The subscales were significantly related ($r = .52$, $p < .001$).

Expressive suppression. Expressive suppression was measured with four items from the emotion regulation questionnaire (Gross and John, 2003), adapted to the work context (Menges, 2007). Participants should indicate emotion regulation when dealing with colleagues and supervisors. A sample item is "When I experience negative emotions at work, I don't show them." Ratings were made on a five-point scale ranging from "I don't agree at all" to "I totally agree".

Adaptive Performance. To assess adaptive performance, six behavioural items from Pulakos and colleagues' (2000) scale were used, which had been employed in prior organizational research (DeArmond *et al.*, 2006; Han and Williams, 2008). The items were transformed from third to first person and the time frame that the employees were instructed to refer to was the last three months. Sample items are "I effectively adapted my goals, plans, and priorities to deal with changes.", "I maintained effective work relations with people with

different characters.", and "I took initiative to improve work performance where I had deficits." The items had to be rated on a seven-point scale ranging from "I don't agree at all" to "I totally agree".

Controls. The sociodemographic variables age, gender, education, tenure, and job experience were included to account for differences in participants' responses. They were measured with one item each. Education was operationalised as the highest degree reached. Tenure and job experience were measured as continuous variables: tenure as years in the organisation, and job experience as years holding the same job (not necessarily in the same organisation). Both tenure and job experience were included because they might explain relations among the focal study variables: Individuals more familiar with the organizational culture and procedures and/or more experienced in their jobs might find it easier to adapt to changes or, on the contrary, they might cling to more established schemas and routines, and therefore find it harder to adapt.

To control for a possible impact of emotional stability and the job characteristics of autonomy and task interdependence, these variables were entered as covariates in the analyses. They were measured using a seven-point scale. Emotional stability was assessed with the respective two items from the German version of the ten-item personality inventory (TIPI-G), which had demonstrated adequate results in a construct validation study (Muck *et al.*, 2007). Participants had to indicate, for example, how "calm, emotionally stable" they were. Autonomy was measured with three items such as "I can decide on my own how I do my work" from the instrument for stress-related task analysis (ISTA; Semmer *et al.*, 1999). A sample item for task interdependence, which was measured with two items, is "I work closely with others in doing my work" (Pearce and Gregersen, 1991).

Data Analyses

Before testing the hypotheses, an exploratory factor analysis was conducted to determine the dimensionality of the measures. The items of the study variables extent of change, expressive suppression, irritation, and adaptive performance were submitted to a principal components analysis with oblique rotation. Corroborating the measures' discriminant validity, four factors emerged with eigenvalues greater than 1, accounting for 66.32 percent of the variance. Each item "loaded" on its appropriate factor, with primary loadings greater than .48 and cross-loadings lower than .23.

As the variables were assessed with different response scale ranges, the continuous measures were mean-centred prior to all inferential analyses (Aiken and West, 1991). Then, the bootstrapping procedure described by Preacher and colleagues (2004; 2007) was applied. For testing indirect effects (Hypotheses 1–3), this procedure has the advantage of not requiring normal distribution of the indirect effect *ab*; power problems due to non-normal sampling distributions of the indirect effect are thus avoided. For testing moderated indirect effects (Hypotheses 4 and 5), a macro provided by Preacher and colleagues (2007) was used. The procedure to test moderated indirect effects includes tests for the following four conditions: (a) significant effect of extent of change on strain, (b) significant interaction between extent of change and expressive suppression in predicting strain, (c) significant effect of strain on adaptive performance, and (d) different conditional indirect effect of extent of change on adaptive performance, via strain, across low and high levels of expressive suppression. The last condition, which is the essence of moderated indirect effects, establishes whether a statistically significant indirect effect between the predictor (extent of change) and the outcome (adaptive performance) is contingent on (i.e. differs in strength as a result of) the value of the proposed moderator (expressive suppression) (Preacher *et al.*, 2007).

Results

Descriptive Statistics and Correlations

Table 1 contains means, standard deviations, internal consistencies and intercorrelations for the study variables. An inspection of the correlations revealed that the requirements for further inferential analyses were met: The study variables correlated significantly and in the expected directions.

Table 1

Hypotheses Tests

Table 2 presents the results for Hypotheses 1–3. Supporting Hypothesis 1, perceived extent of change was positively associated with strain, as indicated by a significant unstandardised regression coefficient (B = 0.22, t = 2.41, p < .05). Also, as proposed in Hypothesis 2, the inverse relation between strain and adaptive performance was supported (B = –0.18, t = –3.10, p < .01).

Finally, as proposed in Hypothesis 3, bootstrap results revealed that extent of change had a significant negative indirect effect on adaptive performance (–0.04) with a 95% confidence interval (bias corrected and accelerated) around the indirect effect not containing zero (–.09, –.01). The Sobel test (that assumes normal distribution) corroborated this result (z = –2.81, p < .01) (Sobel, 1982). Thus, Hypotheses 1–3 received empirical support.

Regarding the indirect effect proposed in Hypothesis 3, bootstrapping results do not answer the question whether an indirect or a mediated effect occurred. Thus, the direct relationship between extent of change and adaptive performance was inspected. Because this relationship was not significant (B = 0.04, t = 0.64, ns), the alternative existence of a mediated effect instead of an indirect effect was not suggested by the data.

Table 2

Table 3 provides the results for Hypotheses 4 and 5. With regard to Hypothesis 4, it was predicted that the positive relation between extent of change and strain would be stronger for individuals low on expressive suppression than for individuals high on expressive suppression. As predicted, the cross-product term between extent of change and expressive suppression on strain was significant (B = –0.18, t = –2.16, p < .05). To fully support Hypothesis 4, this interaction should conform to the hypothesized direction. Thus, the simple slopes at one standard deviation above and below the mean of the expressive suppression measure were plotted (see Figure 2) and their significance was tested according to the procedure described by Aiken and West (1991). T-test results indicated that the slope for low expressive suppression significantly differed from zero (b = 0.46, t = 3.40, p < .001), whereas the slope for high expressive suppression did not differ from zero (b = 0.02, t = 0.17, ns). Hence, the results supported Hypothesis 4: The perceived extent of change was only significantly and negatively related to strain for employees who scored low on expressive suppression at work.

To assess the conditional indirect effects model proposed by Hypothesis 5 (see Figure 1) the conditional indirect effect of extent of change on adaptive performance through strain was examined at three values of expressive suppression (see Table 3): the mean (0.00) and one standard deviation above and below the mean (±1.09) . One of the three conditional indirect effects (based on a moderator value one standard deviation below the mean) was negative and significantly different from zero (p < .05). Thus, the expected direction of the indirect conditional effect was supported. The indirect and negative effect of extent of change on adaptive performance through strain was observed when the level of expressive suppression was low, but not when it was moderate or high. At various further arbitrary values of the moderator that fall within the range of the data, the conditional indirect effects corroborate this result (see Table 3). This output complemented the exploration of the

interaction using one standard deviation above and below the mean, and it allowed identifying the values of expressive suppression for which the conditional indirect effect was just statistically significant at Alpha < .05. Results showed that the conditional indirect effect was significant at Alpha < .05 for any value of expressive suppression smaller than or equal to –0.13 on the standardised scale (i.e. $M = 0.00$, $SD = 1.09$).

Table 3

Figure 2

Discussion

This study demonstrates that the perceived extent of changes in the work unit can affect employee strain and adaptive performance when employees express their emotions at work. More specifically, negative effects of the perceived extent of change in the work unit on strain and adaptive performance depend on the level of expressive suppression at work. They are weaker (and not significant) for moderate and high expressive suppression compared to low expressive suppression.

The study extends prior research in several ways. First, it presents new information on a mechanism that predicts adaptive performance by the identification of an indirect, moderated psychological process. Understanding such processes is important for managers and practitioners because smooth adaptation leaves the maximum amount of resources for the tasks ahead; it is therefore essential for securing high task performance during changes. Although a relationship between well-being and adaptive performance has already been proposed by Griffin and Hesketh (2003) in their theory of work adjustment, employees' strain has not yet been empirically investigated in this respect. Instead, it was itself examined as a measure for adaptation (e.g., Jimmieson *et al.*, 2004; Martin *et al.*, 2005). The present study thus extends prior work by identifying employees' strain as a predictor of adaptive performance.

Second, the study responds to the claim that there is a lack of research on specific change characteristics (Rafferty and Griffin, 2006). It focuses on the perceived extent of change in the work unit as a further — and thus far neglected — predictor of adaptive performance. The finding that the extent of change in the work unit is positively related to employees' strain is in line with the authors' expectations and with former results (e.g., Rafferty and Griffin, 2006). Beyond this finding, however, an indirect relationship between

extent of change and adaptive performance through increased employee strain was also identified.

Third, this study contributes to present change research by identifying a strategy of emotion regulation that supports adaptation in a change context. Data show that more extant changes are associated with more strain and less adaptive performance only if employees openly show their emotions to colleagues and supervisors, and not if they keep these emotions to themselves, at least to a certain extent. At first glance, this finding may appear conflictive to research that reported negative psychological and physiological consequences of expressive suppression, such as lower cognitive capacity, impaired interpersonal functioning, and increased physiological activation (Gross and John, 2003; Richards, 2004; Roberts *et al.*, 2008; Srivastava *et al.*, 2009). However, it corroborates the supposition that expressing negative emotions implies a prolonged cognitive engagement with the negative experience, which impairs detachment (Brown *et al.*, 2005; Sonnentag and Fritz, 2007). A further possible explanation of the present and similar findings (e.g., Sanz-Vergel *et al.*, 2010) draws on theories on interpersonal effects of emotion regulation (Côté, 2005; Van Kleef, 2009). These point out that the effects of emotion regulation on one's well-being may not be similar across contexts and situations, but depend on the way others react to one's emotional expression (Côté, 2005; Behfar and Cronin, 2010). Although they were not examined, such reactions may have played a significant role in the present study, particularly because the change affected the respective employee's colleagues as well, leading to heightened emotional contagion (Hatfield *et al.*, 1992). The suppression of, for example, feelings of uncertainty might thus have prevented other colleagues from 'catching' these feelings, resulting in more positive interactions. Besides this effect, negative rumours might have been prevented from spreading. Such rumours have been found to coexist with venting negative emotions and with strain during change (Bordia *et al.*, 2006). Furthermore, revealing negative emotions possibly

increases feelings of vulnerability and may be interpreted as a lack of control by others, especially at the workplace. The suppression of negative emotions at work may thus have left employees feeling more competent. Assuming that greater changes in the work unit are accompanied by negative feelings like uncertainty and insecurity rather than by positive ones, the findings confirm prior research on emotion regulation and performance (e.g., Brown *et al.*, 2005).

By its focus on perceived change in the work unit, this study extends former change research that mainly focused on employees' reactions to downward-cascading organisation-level change. The surveyed employees worked in different jobs and industries in Germany, and faced diverse continuous or episodic changes in their work units. The results and conclusions can therefore be generalised to different work unit changes, jobs, and industries in cultures similar to the German one (see House *et al.*, 2004).

Limitations and Research Directions

As with any study, some limitations should be considered during the interpretation of this study's results. Ideas for further research on the topic are presented below.

First of all, two potential methodological biases need to be mentioned: As all data were provided by a common source, the existence of artifactual covariance between the variables cannot be ruled out (Podsakoff *et al.*, 2003). However, the likelihood of inflated results due to such same-source bias was reduced by demonstrating that the moderator, expressive suppression, was not significantly correlated to perceived extent of change or strain. A second bias, the self-serving bias, might have influenced the performance ratings in particular. Employees might perceive and rate their engagement in terms of adaptive performance as higher than it actually is. Although confidence in the present data is supported by findings that demonstrate high correlations between self-report and objective performance measures (Hurst *et al.*, 1996), the assessment of adaptive performance through more objective

ratings (e.g., through multisource data from supervisors and colleagues) would obviate this and the same-source bias mentioned beforehand.

Furthermore, the cross-sectional design of this study does not allow causal inferences. Although the direction of the present effects was deduced from theory, a longitudinal design should be applied to clarify causality and validate the present study's results.

The advantage of having a sample from diverse occupational backgrounds comes with the limitation that all participants were approached via a "snowball technique" and e-mail. This threatens the generalisability of the results, as for example people without access to the internet were not asked to participate. Thus, validation of this study's results would also benefit from future research that applies the same measures to samples from different populations. Further use of the measures of adaptive performance and work-related emotion regulation used in this study would be desirable to establish their reliability and validity.

It should be taken into account that the strain measure that was used in this study (i.e. irritation) assesses milder forms of psychological strain (Mohr *et al.*, 2005). Despite its sensitivity to detect issues that might predict more severe strain reactions, the assessment of for example physical strain (e.g., physiological arousal) or burnout (Maslach *et al.*, 2001) might have resulted in a different picture.

Finally, the assumption that greater and more complex changes produce more threat and insecurity (Kiefer, 2005) can be challenged by the view that changes can elicit multiple positive and negative emotions due to this complexity (Elfenbein, 2008). For a more precise interpretation, the benefits and threats that employees associate with the change, as well as the regulation of distinct affective states should be evaluated.

Related to the last point, a closer examination of job demands and concomitant job resources is desirable. The present study's result that the experienced extent of change was only indirectly related to adaptive performance suggests that, as delineated above, changes

were apparently accompanied by job resources that balanced negative effects on adaptive performance. If job demands and resources during change were assessed together, the co-existence of positive and negative pathways could be verified, and their strengths be compared.

Interesting approaches concerning interpersonal effects of emotion regulation would be the assessment of implicit display rules (see Diefendorff and Greguras, 2009), of interaction partners' reactions towards expressive suppression during changes, and of inauthentic displays, which may result from expressive suppression and which have been adversely related to social relationships and well-being (e.g., Gross and John, 2003; Richards, 2004; Srivastava *et al.*, 2009). Results on such antecedents and consequences of expressive suppression would offer valuable information for personnel development.

Practical Implications

Until now, organizational change management often focuses on episodic change while ignoring the effects that continuous change in work units has on employee outcomes. By pointing out significant influences of the extent of change that employees experience altogether, the present findings imply that neither episodic nor continuous change should be left out of managers' focus. It is the idea behind continuous change that multiple small changes can cumulate and result in substantial change (Weick and Quinn, 1999).Likewise, this may mean that simultaneous small changes like a new colleague or the introduction of a new computer system can cumulate and result in the experience of a greater extent of change for employees. In work units, direct managers who have an important function as change agents should keep an eye on the extent to which their employees are confronted with change. Good planning and sequencing of change implementations should help to avoid an accumulation of changes.

Managers should pay close attention to the subjective change experiences of their employees, which provide useful insights into dominant concerns, sources of anxiety, or challenges employees associate with organizational changes. As indicated by Smollan and Sayers (2009), the acknowledgement of emotions during change enhances employees' engagement with the change. Job resources should be offered to balance existing demands and to motivate employees, so that they adapt well to changes: Examples of resources that help maintaining good performance during change are availability and support, good communication, and employee participation on decisions that affect them (By and Dale, 2008; Saksvik *et al.*, 2007; Schweiger and Denisi, 1991).

It is advocated that managers role model and teach their employees not to overreact spontaneously in a public work setting, but to express their emotions in a thoughtful way instead, so as to benefit from the buffering effect of expressive suppression at work when facing something new. Employees confronted with change, on the other hand, should consider the extent to which they share feelings with colleagues and supervisors.

Conclusion

Given the need for flexibility and adaptation in today's dynamic work environments, employees' adaptive performance can be seen as a crucial resource for organizational success. The purpose of this study was to shed light on the effects of perceived change in the work unit and of expressive suppression at work on employees' adaptation to changes. The results illustrate that perceived extent of change adversely affects employees by increasing their strain, which in turn decreases their adaptive performance. However, it was demonstrated that expressive suppression at work is an important condition to buffer this negative indirect effect, as it only occurs for those employees who report a low level of expressive suppression. Hence, change was identified as a context in which the suppression of emotional expressions at work keeps the level of strain low and indirectly also promotes employees' adaptation.

Based on these results, it is advocated that the effects of expressive suppression at work should more closely be examined in further studies: Different emotions, contexts, and responses from interaction partners might be important predictors of the usefulness of this response-focused regulation strategy for both psychological well-being and performance.

Addressing practitioners, it can be stated that emotion regulation is not only a relevant topic in customer service. Instead, the present results indicate that expressive suppression at work can be beneficial for employees facing organizational changes. Based on these and other studies' results, it is suggested that emotions and their wise regulation in the organizational context should be explicitly addressed within personnel development and change initiatives.

Literature

Aiken, L. S. and West, S. G. (1991) *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA US: Sage Publications.

Allworth, E. and Hesketh, B. (1999) Construct-oriented biodata: Capturing change-related and contextually relevant future performance. *International Journal of Selection and Assessment, 7*(2), 97-111.

Armenakis, A. A. and Bedeian, A. G. (1999) Organizational change: A review of theory and research in the 1990s. *Journal of Management, 25*(3), 293-315.

Ashford, S. J. (1988) Individual strategies for coping with stress during organizational transitions. *Journal of Applied Behavioral Science, 24*(1), 19-36.

Ashford, S. J., Lee, C. and Bobko, P. (1989) Content, causes, and consequences of job insecurity: A theory-based measure and substantive test. *Academy of Management Journal, 32*(4), 803-829.

Bakker, A. B. and Demerouti, E. (2007) The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology, 22*(3), 309-328.

Basch, J., & Fisher, C. D. (2000). Affective events-emotions matrix: A classification of work events and associated emotions. In N. M. Ashkanasy, C. E. Härtel & W. J. Zerbe (Eds.), *Emotions in the workplace: Research, theory, and practice.* (pp. 36-48). Westport, CT US: Quorum Books/Greenwood Publishing Group.

Behfar, K. and Cronin, M. A. (2010). *The Efficacy of Venting as a Function of the Response by Third-Party Listeners.* Paper presented at the Academy of Management Annual Meeting, Montréal, Canada.

Bordia, P., Jones, E., Gallois, C., Callan, V. J. and Difonzo, N. (2006) Management Are Aliens!: Rumors and Stress during Organizational Change. *Group & Organization Management, 31*(5), 601-621.

Borman, W. C. and Motowidlo, S. J. (1993) Expanding the criterion domain to include elements of contextual performance. In N. Schmitt, W. C. Borman & Associates (Eds.), *Personnel selection in organizations* (pp. 25-38). San Francisco: Jossey-Bass.

Bridges, W. (2003) *Managing transitions: Making the most of change*. London: Nicholas Brealey.

Briner, R. B., Harris, C. and Daniels, K. (2004) How do work stress and coping work? Toward a fundamental theoretical reappraisal. *British Journal of Guidance & Counselling, 32*(2), 223-234.

Brislin, R. W. (1970) Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*(3), 185-216.

Brown, S. P., Westbrook, R. A. and Challagalla, G. (2005) Good Cope, Bad Cope: Adaptive and Maladaptive Coping Strategies Following a Critical Negative Work Event. *Journal of Applied Psychology, 90*(4), 792-798.

Burke, W. W. and Litwin, G. H. (1992) A causal model of organizational performance and change. *Journal of Management, 18*(3), 523-545.

Burnes, B. (1996) No such thing as... a "one best way" to manage organizational change. *Management Decision, 34*(10), 11-18.

By, R. T. (2005) Organizational Change Management: A Critical Review. *Journal of Change Management, 5*(4), 369-380.

By, R. T. and Dale, C. (2008) The successful management of organizational change in tourism SMEs: Initial findings in UK visitor attractions. *International Journal of Tourism Research, 10*(4), 305-313.

Caldwell, S. D., Herold, D. M. and Fedor, D. B. (2004) Toward an Understanding of the Relationships Among Organizational Change, Individual Differences, and Changes in Person-Environment Fit: A Cross-Level Study. *Journal of Applied Psychology, 89*(5), 868-882.

Campbell, J. P. (1999). The definition and measurement of performance in the new age. In D. R. Ilgen & E. D. Pulakos (Eds.), *The changing nature of performance: Implications for staffing, motivation, and development* (pp. 399-427). San Francisco: Jossey-Bass.

Cohen, S. (1980) Aftereffects of stress on human performance and social behavior: A review of research and theory. *Psychological Bulletin, 88*(1), 82-108.

Cole, M. S., Bruch, H. and Vogel, B. (2006) Emotion as Mediators of the Relations Between Perceived Supervisor Support and Psychological Hardiness on Employee Cynicism. *Journal of Organizational Behavior, 27*(4), 463-484.

Cole, M. S., Walter, F. and Bruch, H. (2008) Affective mechanisms linking dysfunctional behavior to performance in work teams: A moderated mediation study. *Journal of Applied Psychology, 93*(5), 945-958.

Côté, S. (2005) A Social Interaction Model of the Effects of Emotion Regulation on Work Strain. *Academy of Management Review, 30*(3), 509-530.

DeArmond, S., Tye, M., Chen, P. Y., Krauss, A., Rogers, D. A. and Sintek, E. (2006) Age and Gender Stereotypes: New Challenges in a Changing Workplace and Workforce. *Journal of Applied Social Psychology, 36*(9), 2184-2214.

Diefendorff, J. M. and Greguras, G. J. (2009) Contextualizing emotional display rules: Examining the roles of targets and discrete emotions in shaping display rule perceptions. *Journal of Management, 35*(4), 880-898.

Diefendorff, J. M. and Richard, E. M. (2003) Antecedents and consequences of emotional display rule perceptions. *Journal of Applied Psychology, 88*(2), 284-294.

Dormann, C. and Zapf, D. (2002) Social stressors at work, irritation, and depressive symptoms: Accounting for unmeasured third variables in a multi-wave study. *Journal of Occupational and Organizational Psychology, 75*(1), 33-58.

Elfenbein, H. A. (2008). Emotion in organizations: A review and theoretical integration. In A. Brief & J. Walsh (Eds.), *The Academy of Management Annals* (Vol. 1, pp. 315-386). Amsterdam: Elsevier.

Fedor, D. B., Caldwell, S. and Herold, D. M. (2006) The effects of organizational changes on employee commitment: A multilevel investigation. *Personnel Psychology, 59*(1), 1-29.

Frijda, N. H. (1986) *The emotions*. New York, NY: Cambridge University Press.

Fugate, M., Kinicki, A. J. and Prussia, G. E. (2008) Employee coping with organizational change: An examination of alternative theoretical perspectives and models. *Personnel Psychology, 61*(1), 1-36.

Fugate, M., Kinicki, A. J. and Scheck, C. L. (2002) Coping with an organizational merger over four stages. *Personnel Psychology, 55*(4), 905-928.

George, J. M. and Jones, G. R. (2001) Towards a process model of individual change in organizations. *Human Relations, 54*(4), 419-444.

Goldberg, L. S. and Grandey, A. A. (2007) Display rules versus display autonomy: Emotion regulation, emotional exhaustion, and task performance in a call center simulation. *Journal of Occupational Health Psychology, 12*(3), 301-318.

Griffin, B. and Hesketh, B. (2003) Adaptable behaviours for successful work and career adjustment. *Australian Journal of Psychology, 55*(2), 65-73.

Griffin, M. A., Neal, A. and Parker, S. K. (2007) A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal, 50*(2), 327-347.

Gross, J. J. (2001) Emotion regulation in adulthood: Timing is everything. *Current Directions in Psychological Science, 10*(6), 214-219.

Gross, J. J. and John, O. P. (2003) Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology, 85*(2), 348-362.

Gross, J. J. and Levenson, R. W. (1993) Emotional suppression: Physiology, self-report, and expressive behavior. *Journal of Personality and Social Psychology, 64*(6), 970-986.

Han, T. Y. and Williams, K. J. (2008) Multilevel investigation of adaptive performance: Individual- and team-level relationships. *Group & Organization Management, 33*(6), 657-684.

Hart, P. M. and Cooper, C. L. (2001) Occupational stress: Toward a more integrated framework. In N. Anderson, D. S. Ones, H. K. Sinangil & C. Viswesvaran (Eds.), *Handbook of industrial, work and organizational psychology, Volume 2: Organizational psychology.* (pp. 93-114). Thousand Oaks, CA Sage Publications.

Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1992). Primitive emotional contagion. In M. S. Clark (Ed.), *Emotion and social behavior.* (pp. 151-177). Thousand Oaks, CA US: Sage Publications, Inc.

Herold, D. M., Fedor, D. B. and Caldwell, S. D. (2007) Beyond change management: A multilevel investigation of contextual and personal influences on employees' commitment to change. *Journal of Applied Psychology, 92*(4), 942-951.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W. and Gupta, V. (2004) *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Thousand Oaks, London, New Delhi: Sage Publications.

Hurst, N. W., Young, S., Donald, I., Gibson, H. and Muyselaar, A. (1996) Measures of safety management performance and attitudes to safety at major hazard sites. *Journal of Loss Prevention in the Process Industries, 9*(2), 161-172.

Jimmieson, N. L., Terry, D. J. and Callan, V. J. (2004) A Longitudinal Study of Employee Adaptation to Organizational Change: The Role of Change-Related Information and Change-Related Self-Efficacy. Journal of Occupational Health Psychology, 9(1), 11-27.

Johnson, J. W. (2001) The relative importance of task and contextual performance dimensions to supervisor judgments of overall performance. *Journal of Applied Psychology, 86*(5), 984-996.

Johnson, S. J., Batey, M. and Holdsworth, L. (2009) Personality and health: The mediating role of Trait Emotional Intelligence and Work Locus of Control. *Personality and Individual Differences, 47*(5), 470-475.

Jordan, P. J. (2004) Dealing with organizational change: Can emotional intelligence enhance organizational learning? *International Journal of Organizational Behaviour, 8*, 456-471.

Judge, T. A. and Bono, J. E. (2001) Relationship of core self-evaluations traits - self-esteem, generalized self-efficacy, locus of control, and emotional stability - with job

satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*(1), 80-92.

Judge, T. A., Thoresen, C. J., Pucik, V. and Welbourne, T. M. (1999) Managerial coping with organizational change: A dispositional perspective. *Journal of Applied Psychology, 84*(1), 107-122.

Kanfer, R. and Ackerman, P. L. (1989) Motivation and cognitive abilities: An integrative/aptitude-treatment interaction approach to skill acquisition. *Journal of Applied Psychology, 74*(4), 657-690.

Kiefer, T. (2002) Understanding the emotional experience of organizational change: Evidence from a merger. *Advances in Developing Human Resources, 4*(1), 39-61.

Kiefer, T. (2005) Feeling bad: Antecedents and consequences of negative emotions in ongoing change. *Journal of Organizational Behavior, 26*(8), 875-897.

Lazarus, R. S. and Folkman, S. (1984) *Stress, appraisal, and coping*. New York: Springer.

Lazarus, R. S. and Folkman, S. (1987) Transactional theory and research on emotions and coping. *European Journal of Personality, 1*(3, Spec Issue), 141-169.

LePine, J. A., Podsakoff, N. P. and LePine, M. A. (2005) A meta-analytic test of the challenge stressor-hindrance stressor framework: An explanation for inconsistent relationships among stressors and performance. *Academy of Management Journal, 48*(5), 764-775.

Lok, C.-F. and Bishop, G. D. (1999) Emotion control, stress, and health. *Psychology & Health, 14*(5), 813-827.

Martin, A. J., Jones, E. S. and Callan, V. J. (2005) The role of psychological climate in facilitating employee adjustment during organizational change. *European Journal of Work and Organizational Psychology, 14*(3), 263-289.

Maslach, C., Schaufeli, W. B. and Leiter, M. P. (2001) Job burnout. *Annual Review of Psychology*, *52*, 397-422.

Menges, J. (2007). *Emotion regulation strategies at work and their relation to perceived transformational leadership behaviors.* Paper presented at the Academy of Management Annual Meeting, Philadelphia, USA.

Michel, A., Stegmaier, R., Meiser, D. and Sonntag, Kh. (2009) Ausgebrannt und unzufrieden? Wie Change-Charakteristika und veränderungsspezifische Arbeitsplatzunsicherheit mit emotionaler Erschöpfung, Arbeitszufriedenheit und Kündigungsabsicht zusammenhängen [Burnt out and unsatisfied? How change characteristics and change specific job insecurity are related to emotional burnout, job satisfaction and turnover intention] *Zeitschrift für Arbeits- und Organisationspsychologie, 53,* 11-21.

Michel, A., Stegmaier, R. and Sonntag, Kh. (2010) I Scratch Your Back - You Scratch Mine. Do Procedural Justice and Organizational Identification Matter for Employees' Cooperation During Change? *Journal of Change Management, 10*(1), 41-59.

Mohr, G., Mueller, A., Rigotti, T., Aycan, Z. and Tschan, F. (2006) The assessment of psychological strain in work contexts: Concerning the structural equivalency of nine language adaptations of the irritation scale. *European Journal of Psychological Assessment, 22*(3), 198-206.

Mohr, G., Rigotti, T. and Mueller, A. (2005) Irritation-Ein Instrument zur Erfassung psychischer Beanspruchung im Arbeitskontext. Skalen- und Itemparameter aus 15 Studien [Irritation - an instrument to assess psychological strain in the work place. Scale and item parameter from 15 studies]. *Zeitschrift für Arbeits- und Organisationspsychologie, 49*(1), 44-48.

Morgeson, F. P., Delaney-Klinger, K. and Hemingway, M. A. (2005) The Importance of Job Autonomy, Cognitive Ability, and Job-Related Skill for Predicting Role Breadth and Job Performance. *Journal of Applied Psychology, 90*(2), 399-406.

Mossholder, K. W., Settoon, R. P., Armenakis, A. A. and Harris, S. G. (2000) Emotion during organizational transformations: An interactive model of survivor reactions. *Group & Organization Management, 25*(3), 220-243.

Moyle, P. and Parkes, K. (1999) The effects of transition stress: A relocation study. *Journal of Organizational Behavior, 20*(5), 625-646.

Muck, P. M., Hell, B. and Gosling, S. D. (2007) Construct validation of a short five-factor model instrument: A self-peer study on the German adaptation of the Ten-Item Personality Inventory (TIPI-G). *European Journal of Psychological Assessment, 23*(3), 166-175.

Muller, D., Judd, C. M. and Yzerbyt, V. Y. (2005) When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology, 89*(6), 852-863.

Orth, M. S. (2002). *Factors related to resistance and support of organizational change.* Unpublished dissertation, Colorado State University, Colorado, US.

Parent, J. D. (2010) Individual Adaptation to the Changing Workplace: A Model of Causes, Consequences, and Outcomes. In J. Houdmont & S. Leka (Eds.), *Contemporary Occupational Health Psychology: Global Perspectives on Research and Practice* (Vol. 1, pp. 188-207). Chichester: Wiley-Blackwell.

Pearce, J. L. and Gregersen, H. B. (1991) Task interdependence and extrarole behavior: A test of the mediating effects of felt responsibility. *Journal of Applied Psychology, 76*(6), 838-844.

Ployhart, R. E. and Bliese, P. D. (2006) *Individual adaptability (I-ADAPT) theory: Conceptualizing the antecedents, consequences, and measurement of individual differences in adaptability.* Cambridge: MA: Elsevier Science.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y. and Podsakoff, N. P. (2003) Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Pollard, T. M. (2001) Changes in mental well-being, blood pressure and total cholesterol levels during workplace reorganization: The impact of uncertainty. *Work & Stress, 15*(1), 14-28.

Preacher, K. J. and Hayes, A. F. (2004) SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments & Computers, 36*(4), 717-731.

Preacher, K. J., Rucker, D. D. and Hayes, A. F. (2007) Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate Behavioral Research, 42*(1), 185-227.

Pulakos, E. D., Arad, S., Donovan, M. A. and Plamondon, K. E. (2000) Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology, 85*(4), 612-624.

Rafferty, A. E. and Griffin, M. A. (2006) Perceptions of organizational change: A stress and coping perspective. *Journal of Applied Psychology, 91*(5), 1154-1162.

Richards, J. M. (2004) The Cognitive Consequences of Concealing Feelings. *Current Directions in Psychological Science, 13*(4), 131-134.

Richards, J. M. and Gross, J. J. (1999) Composure at any cost? The cognitive consequences of emotion suppression. *Personality and Social Psychology Bulletin, 25*(8), 1033-1044.

Riolli, L. and Savicki, V. (2006) Impact of fairness, leadership, and coping on strain, burnout, and turnover in organizational change. *International Journal of Stress Management, 13*(3), 351-377.

Roberts, N. A., Levenson, R. W. and Gross, J. J. (2008) Cardiovascular costs of emotion suppression cross ethnic lines. *International Journal of Psychophysiology, 70*(1), 82-87.

Robertson, P. J., Roberts, D. R. and Porras, J. I. (1992) A Meta-analytic Review of the Impact of Planned Organizational Change Interventions. *Academy of Management Best Papers Proceedings*, 201-205.

Roger, D. and Nesshoever, W. (1987) The construction and preliminary validation of a scale for measuring emotional control. *Personality and Individual Differences, 8*(4), 527-534.

Saksvik, P. Ø., Tvedt, S. D., Nytrø, K., Andersen, G. R., Andersen, T. K., Buvik, M. P. *et al.* (2007) Developing criteria for healthy organizational change. *Work & Stress, 21*(3), 243-263.

Sanz-Vergel, A. I., Demerouti, E., Moreno-Jiménez, B. and Mayo, M. (2010) Work-family balance and energy: A day-level study on recovery conditions. [doi: DOI: 10.1016/j.jvb.2009.07.001]. *Journal of Vocational Behavior, 76*(1), 118-130.

Schaubroeck, J., May, D. R. and Brown, F. W. (1994) Procedural justice explanations and employee reactions to economic hardship: A field experiment. *Journal of Applied Psychology, 79*(3), 455-460.

Schweiger, D. M. and Denisi, A. S. (1991) Communication with employees following a merger: A longitudinal field experiment. *Academy of Management Journal, 34*(1), 110-135.

Semmer, N., Zapf, D. and Dunckel, H. (1999) Instrument zur Stressbezogenen Taetigkeitsanalyse (ISTA) [Instrument for stress-related task analysis]. In H. Dunckel (Ed.), *Handbuch psychologischer Arbeitsanalyseverfahren [Handbook of psychological work analyses]* (Vol. 14, pp. 179-204). Zuerich: vdf.

Shiota, M. N. (2006) Silver linings and candles in the dark: Differences among positive coping strategies in predicting subjective well-being. *Emotion, 6*(2), 335-339.

Smollan, R. K. and Sayers, J. G. (2009) Organizational Culture, Change and Emotions: A Qualitative Study. *Journal of Change Management, 9*(4), 435 - 457.

Sobel, M. E. (1982) Asymptotic intervals for indirect effects in structural equations models. In S. Leinhart (Ed.), *Sociological methodology* (pp. 290-312). San Francisco: Jossey-Bass.

Sonnentag, S. (2002) Performance, Well-being and Self-Regulation. In S. Sonnentag (Ed.), *Psychological Management of Individual Performance* (pp. 405-424). Chichester: John Wiley & Sons.

Sonnentag, S. and Fritz, C. (2007) The Recovery Experience Questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology, 12*(3), 204-221.

Srivastava, S., Tamir, M., McGonigal, K. M., John, O. P. and Gross, J. J. (2009) The social costs of emotional suppression: A prospective study of the transition to college. *Journal of Personality and Social Psychology, 96*(4), 883-897.

Terry, D. J., & Jimmieson, N. L. (1999). Work control and employee well-being: A decade review. In C. L. Cooper & I. T. Robertson (Eds.), *International review of industrial and organizational psychology* (pp. 95-148). New York, NY US: John Wiley & Sons Ltd.

Tugade, M. M. and Fredrickson, B. L. (2007) Regulation of positive emotions: Emotion regulation strategies that promote resilience. *Journal of Happiness Studies, 8*(3), 311-333.

Van den Heuvel, M., Demerouti, E., Bakker, A. B. and Schaufeli, W. B. (2010) Personal Resources and Work Engagement in the Face of Change. In J. Houdmont & S. Leka

(Eds.), *Contemporary Occupational Health Psychology: Global Perspectives on Research and Practice* (Vol. 1, pp. 124-150). Chichester: Wiley-Blackwell.

Van Kleef, G. A. (2009) How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science, 18*(3), 184-188.

Wanberg, C. R., Kanfer, R. and Banas, J. T. (2000) Predictors and outcomes of networking intensity among unemployed job seekers. *Journal of Applied Psychology, 85*(4), 491-503.

Weick, K. E. and Quinn, R. E. (1999) Organizational change and development. *Annual Review of Psychology, 50*, 361-386.

Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (pp. 1-74). Greenwich, CT: JAI Press.

Wright, T. A. and Cropanzano, R. (1998) Emotional exhaustion as a predictor of job performance and voluntary turnover. *Journal of Applied Psychology, 83*(3), 486-493.

Wright, T. A. and Cropanzano, R. (2000) Psychological well-being and job satisfaction as predictors of job performance. *Journal of Occupational Health Psychology, 5*(1), 84-94.

Xanthopoulou, D., Bakker, A. B., Demerouti, E. and Schaufeli, W. B. (2007) The role of Personal Resources in the Job Demands-Resources Model. *International Journal of Stress Management, 14*(2), 121-141.

Zapf, D. and Semmer, N. K. (2004) Streß und Gesundheit in Organisationen [Stress and Health in Organizations]. In H. Schuler (Ed.), *Enzyklopädie der Psychologie,*

Themenbereich D [Encyclopedia of Psychology, Theme complex D] (2 ed., pp. 1007-1112). Goettingen: Hogrefe.

TABLE 1

Means, Standard Deviations, and Intercorrelations among all Variables[a]

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
1. Extent of change	2.73	1.12	(.88)											
2. Strain	3.47	1.36	.26**	(.88)										
3. Expressive suppression	3.14	1.09	.12	.05	(.75)									
4. Adaptive performance	5.26	0.96	-.02	-.36**	-.01	(.76)								
5. Sex	1.55	0.50	-.02	-.03	-.09	.00								
6. Age[b]			.01	.09	-.04	.02	.06							
7. Education[b]			.04	.09	.04	.00	-.16	-.21**						
8. Tenure	5.71	7.15	-.07	-.03	-.05	.05	.00	.42**	-.19**					
9. Job experience	6.68	7.95	-.08	-.07	-.01	.08	.02	.47**	-.30**	.82**				
10. Autonomy	5.51	1.31	-.07	-.04	-.12	.28**	-.11	.16	.18	.14	.10	(.74)		
11. Emotional Stability	3.84	0.76	-.10	-.37**	-.05	.40**	-.13	.13*	.13*	.10	.14	.11	(.62)	
12. Task Interdependence	5.80	1.41	.04	-.05	-.05	.22**	.10	-.06	-.05	-.04	-.02	-.13	.15	(.72)

Note. $N = 153$. [a] Internal consistency reliabilities (Cronbach's Alpha) for variables 1-4 and 10 and correlations (Pearson's correlation coefficient) for variables 11-12 are on the diagonal, in parentheses. Sex: 1 = male, 2 = female. [b] Kendall's tau correlation coefficients are reported. Age: 1 = 1–30 years, 2 = 31–40 years, 3 = 41–50 years, 4 = 51–60 years, 5 = > 60 years. Education: 1 = no college, until 8 = PhD/Doctorate. Tenure, Job experience: measured in years. ** $p < .01$

TABLE 2

Regression Results for Simple Mediation

Variable			*B*	*SE*	*T*	*p*
Direct and total effects [a]						
Adaptive performance regressed on extent of change:			0.04	0.06	0.64	0.527
Strain regressed on extent of change:			0.22	0.09	2.41	0.017
Adaptive performance regressed on strain:			-0.18	0.06	-3.10	0.002
Adaptive performance regressed on extent of change controlling for strain:			0.08	0.06	1.26	0.210
	Value	*SE*	*z*	*p*		
Indirect effect and significance using normal distribution						
Sobel	-0.09	0.03	-2.81	0.005		
	Value	*SE*	LL 95% CI	UL 95% CI		
Bootstrap results for indirect effect [a]						
Effect	-0.04	0.02	-0.09	-0.01		

Note. N = 153. Unstandardized regression coefficients are reported. Bootstrap sample size = 7,000.
[a] Covariates sex, age, tenure, job experience, education, emotional stability, autonomy, and task interdependence were included. LL = lower limit; CI = biased corrected and accelerated confidence interval; UL = upper limit.

TABLE 3

Regression Results for Conditional Indirect Effect

Predictor	*B*	*SE*	*T*	*p*
	Strain			
Constant	-0.58	0.43	-1.34	.183
Extent of change	0.24	0.09	2.70	.008
Expressive suppression	0.01	0.09	0.07	.947
Age	0.65	0.18	3.56	.001
Education	0.09	0.06	1.47	.145
Emotional stability	-0.67	0.14	-4.96	.000
Autonomy	-0.09	0.10	-0.86	.394
Task interdependence	0.01	0.07	0.07	.942
Extent of change X expressive suppression	-0.18	0.08	-2.16	.033
	Adaptive performance			
Constant	-0.02	0.30	-0.08	.938
Age	-0.01	0.13	-0.11	.910
Education	-0.03	0.04	-0.61	.541
Emotional stability	0.32	0.10	3.17	.002
Autonomy	0.27	0.07	3.73	.000
Task interdependence	0.12	0.05	2.28	.024
Strain	-0.20	0.06	-3.33	.001
Expressive suppression	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*
Conditional indirect effect at expressive suppression = *M* ± 1 *SD*				
-1 *SD* (-1.09)	-0.08	0.04	-2.14	.032
M (0.00)	-0.05	0.02	-1.97	.049
+ 1 *SD* (1.09)	-0.01	0.03	-0.34	.732
Expressive suppression	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*
Conditional indirect effect at range of values of expressive suppression				
-1.63	-0.10	0.05	-2.06	0.039
-0.88	-0.08	0.04	-2.16	0.031
-0.13	-0.05	0.03	-2.07	0.039
0.12	-0.04	0.02	-1.87	0.061
0.37	-0.03	0.02	-1.55	0.121
0.87	-0.02	0.02	-0.70	0.486
1.62	0.01	0.04	0.24	0.807

Note. $N = 153$. Unstandardized regression coefficients are reported. Bootstrap sample size = 7,000.

Sex, tenure and job experience were also controlled for but are not depicted as they did not significantly relate to any of the respective outcomes.

FIGURE 1

The proposed conceptual scheme

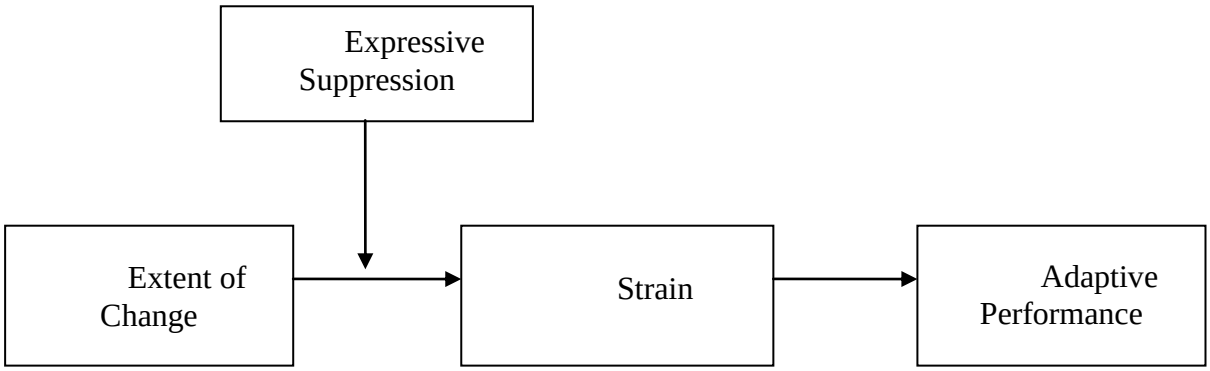
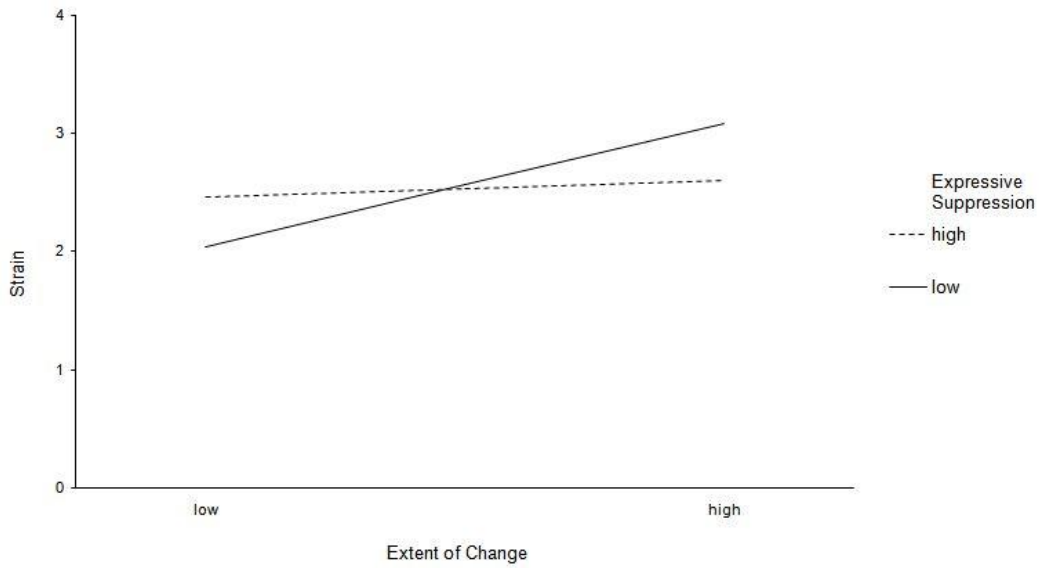


FIGURE 2

Strain predicted by Extent of Change moderated by Expressive suppression



Manuscript Study 3

THE ROLES OF LEADER EMOTION MANAGEMENT AND TEAM CONFLICT FOR TEAM MEMBERS' PROACTIVE BEHAVIOR: A MULTILEVEL PERSPECTIVE

Eva Maria Schraub[1]

Alexandra Michel[1]

Meir Shemla[2]

Karlheinz Sonntag[1]

[1]University of Heidelberg, Germany

[2]Technical University of Dresden, Germany

European Journal of Work and Organizational Psychology (under review)

Abstract

Employees' active and future-oriented engagement at work is of high relevance to organizations that strive for innovation and competitiveness. In the present study, the impact of several affect-related predictors of proactive behavior in teams was analyzed with data from 300 members of 59 work teams in Germany. Data were gathered from multiple sources at three points in time over the course of two weeks. Multilevel analyses indicated that perceived leader emotion management had a negative impact on the level of relationship conflict in teams and a positive impact on team members' proactive behavior. The latter effect was mediated by team members' well-being in terms of positive mood. Furthermore, data revealed an indirect negative effect of task conflict on proactive behavior via positive mood. The study's results suggest that the improvement of leaders' emotion management as well as the establishment of work conditions and experiences that foster positive mood should be considered seriously by organizations wishing to facilitate proactive behavior in team settings.

Keywords: leader emotion management; team conflict; affective well-being; positive mood; proactive behavior

The roles of leader emotion management and team conflict for team members' proactive behavior: a multilevel perspective

As the workplace has grown in complexity, organizations have increasingly structured work around teams (Salas, Cooke, & Rosen, 2008). At the same time, proactive employee behavior, which is characterized by an active, self-starting, and goal-oriented approach, has become an important resource for organizations wishing to meet the challenges of global competition (Bindl & Parker, 2010; Campbell, 2000).

With the aim to understand teamwork's advantages and challenges, research over the past decade has increasingly examined emergent states in a team, such as trust, affect, and conflict (e.g., Bartel & Saavedra, 2000; Gamero, González-Romá, & Peiró, 2008; Simons & Peterson, 2000). However, these research efforts seem to have neglected the role played by affective processes and states in teams for such important future-oriented performance components like proactive behavior. Aside from this, there is little research linking leaders' behavior with employees' affective experiences and proactive behavior (Bono, Foldes, Vinson, & Muros, 2007; Griffin, Parker, & Mason, 2010). Moreover, contrasting findings exist on the effects of leader behavior on employees' proactive behavior (cf. Bindl & Parker, 2010), indicating that this topic warrants further research.

Contributing to filling these gaps in present research, we examine whether leader emotion management and team conflict, two interpersonally relevant variables that are related to affective states in teams (Gamero, et al., 2008), influence team members' well-being and proactive behavior. More precisely, we aim to extend prior team research in several ways. First, we examine to what extent leader emotion management influences the quality of relationships and positive mood in the team. While leadership researchers contend that the way leaders manage their own and employees' emotions contributes to their effectiveness as leaders (Pescosolido, 2002; van Knippenberg, van Knippenberg, Van Kleef, & Damen, 2008), the absence of research on the mechanisms by which leadership, team processes, and affect in

teams are related has been lamented (Pirola-Merlo, Haertel, Mann, & Hirst, 2002). In response to the call to study mediating psychological processes that explain how leaders affect their followers' behavior (van Knippenberg, et al., 2008) and agreeing with the notion that emotional skills exert their influence in a team setting through interactions (Côte & Miners, 2006; Kim, Cable, Kim, & Wang, 2009), we investigate the impact that leader emotion management has on both team members' relationship conflict and on their positive mood. Second, we address the need to better understand which specific situations and experiences foster or hinder proactive behavior (Fritz & Sonnentag, 2009). We examine effects of task and relationship conflict on proactive behavior in the team. Being related to rather aversive states, task and relationship conflict in teams should reduce team members' well-being in terms of their positive mood. Positive mood, however, has been related to a range of positive performance outcomes, including proactive behaviors such as personal initiative or taking charge (Fritz & Sonnentag, 2009; Lyubomirsky, King, & Diener, 2005; Rank & Frese, 2008). Third, we extend previous research about conflict at work, which has been mostly implicitly multilevel (De Dreu & Gelfand, 2008), by specifically addressing the influences of the abovementioned predictors across levels. Based on recent developments in multilevel theory (Chen, Bliese, & Mathieu, 2005), we examine cross-level effects of team-level constructs (i.e., leader emotion management and team conflict) on individual-level constructs (i.e., positive mood at work and proactive behavior) in a longitudinal design with three points in time.

In sum, the aim of this study is to determine the extent to which team members' proactive behavior depends on the team leader's emotion management and on the levels of relationship and task conflict in the team. We expect positive mood to play an important role in mediating these effects. The research framework is depicted in Figure 1. We explain each relationship in more detail below.

(Figure 1 about here)

Proactive behavior

Proactive behavior, which is an umbrella term for behaviors such as personal initiative and taking charge (Griffin, et al., 2010), is associated with a future-oriented aim to change oneself or the environment (Bateman & Crant, 1993). Models of work performance that integrate its multidimensional nature include proactive behavior as part of different and partly overlapping constructs (cf. Fay & Sonnentag, 2010). Griffin, Neal, and Parker (2007), for example, distinguish proactive behavior from proficient and adaptive behaviors. Proactive behavior is behavior that 'makes things happen', it involves thinking ahead and to bring about change (Bindl & Parker, 2010). Like adaptive behavior, proactive behavior especially contributes to the effectiveness of work performance when work requirements are unpredictable (Griffin, et al., 2010). It differs from proficient and adaptive behavior in that it is self-initiated and independent of external changes (Griffin, et al., 2010). Since many organizations have reduced supervision and many teams have even become self-managing, the importance of proactive behavior continues to rise (Bindl & Parker, 2010; Sonnentag, 2003; Sonnentag & Frese, 2002). The identification of as yet unknown antecedents of such behavior, therefore, seems a promising venture for anyone promoting proactive behavior in organizations.

Positive Mood and Proactive Behavior

As a state of positive affect, positive mood is characterized as a long-lasting experience of diffuse positive feelings with relatively low intensity and no clear antecedent causes (cf. Barsade & Gibson, 2007). According to Fredrickson's (1998) broaden-and-build theory, positive affect not only widens peoples' action repertoires, but also facilitates approach behavior by broadening cognitive and motivational processes. Drawing on this same theory, Parker (2007) argues that positive affect should also encourage proactive behavior by

building resources such as self-efficacy and cognitive complexity. In their recently developed model of proactive motivation, Parker, Bindl, and Strauss (2010) more precisely distinguish between positive affect and *activated* positive affect. While they propose the former to be a distal predictor of proactive behavior, they define activated positive affect as a proactive motivational state that functions as a proximal energizer of proactive behavior. Positive mood has also been linked to higher task persistence (Tsai, Liu, & Chen, 2007), which is needed for proactive behavior when barriers and setbacks are encountered. George (1991) identified positive mood as a significant predictor of prosocial behavior towards coworkers and customers, which Frese and Fay (2001) consider proactive because it implies acts of helping not requested by others. In the following sections, we will discuss leader behavior and team processes that can be expected to relate to team members' positive mood and, thereby, to their proactive behavior.

Leader Emotion Management, Team Conflict, and Positive Mood

Due to the pervasive effects that affective states exert on attitudes, decisions, and behavior, leaders who effectively manage their followers' emotions exert a great influence (van Knippenberg, et al., 2008). Influential theories on transformational and charismatic leadership posit the existence of emotional links between leaders and followers (cf. Bass & Riggio, 2006; Conger, Kanungo, & Menon, 2000; Shamir, House, & Arthur, 1993). It is, thus, not surprising that the question of how leaders' emotional expressions and behavior influence their followers' affective states, and thereby their attitudes and behavior, is receiving increasing interest (e.g., Humphrey, 2002; Lewis, 2000). However, this question so far remains largely unanswered (Bono, et al., 2007; van Knippenberg, et al., 2008).

As a result of the revived interest in emotional and interpersonal characteristics and behavior, different concepts of emotional intelligence have been developed during the last few years (cf. Cherniss, 2010). However, such broader concepts of affective abilities and skills are

being criticized because of their discriminate and predictive validity and psychometric properties (e.g., Conte, 2005; Harms & Credé, 2010). Scholars thus argue that specific components of such concepts (e.g., emotion management) should be examined separately, also because their importance may differ depending on the context (Barsade & Gibson, 2007; Jordan & Troth, 2004). Emotion management, in particular, has been identified as a major competence for improving relationships and effective team functioning at work (Jordan & Lawrence, 2009; Weisinger, 1998). As one branch of most emotional intelligence concepts, emotion management can be defined as the ability to reflect on and regulate one's own and others' emotions. Jordan and Lawrence (2009) define emotion management in the team context as characteristics and behaviors such as respecting different opinions, overcoming frustration with fellow team members, being contagious in one's enthusiasm, and cheering up fellow team members.

The specific consequences of leaders' emotion management within their teams have yet to be explored. We reason that there should be at least two mechanisms through which leader emotion management evokes positive effects on the relationships among team members. First, leaders may manage their own emotions by holding back on their immediate reactions to first judge whether the expression of their emotions will be productive or damaging to working relationships. By reflecting on their own behavior, leaders can thus protect positive relationships within the team. Second, leaders' management of team members' emotions might prevent the occurrence of relationship conflict in emotionally charged situations which naturally occur in teams (Yang & Mossholder, 2004). Drawing on the above-mentioned arguments, we hypothesize:

Hypothesis 1: Leader emotion management is negatively related to relationship conflict in the team.

Besides reducing relationship conflict, we also expect team leaders' emotion management to affect team members' well-being at work in terms of their positive mood. First of all, leaders' successful management of their own emotions (e.g., overcoming frustration) should go along with a larger number of positive emotional expressions. Because of emotional contagion, or the way people "catch" others' emotional expressions (Barsade, 2002; Hatfield, Cacioppo, & Rapson, 1994), leaders' emotional expressions have been related to similar affective experiences in their followers (Bass & Riggio, 2006; Conger, et al., 2000; George, 1996; Sy, Côté, & Saavedra, 2005). Leaders' expression of positive emotions, in particular, is considered to exert inspirational and motivational influence either because it conveys positivity or because it is contagious and instills positive affective states in followers (Conger, et al., 2000; Sonnentag & Frese, 2003; van Knippenberg, et al., 2008). Accordingly, positive emotion management and positive emotional expression have been found to be particularly contagious (Totterdell, 2000). Due to leaders' function as role models, their emotion management can be suggested to be especially influential for team members' affective experiences. Supporting this notion is evidence from an experimental negotiation study, in which low-power negotiators turned out to be more sensitive and responsive to the emotions of high-power compared to low-power counterparts (Sluiter, de Croon, Meijman, & Frings-Dresen, 2003).

Leaders are also likely to reinforce team members' positive mood by managing team emotions, specifically through the encouragement of positive emotions such as enthusiasm and motivation (van Knippenberg, et al., 2008). Positive mood, in turn, can be expected to enhance proactive behavior as it has been positively related to self-efficacy, aspirations, and performance goals (Ilies & Judge, 2005; Saavedra & Earley, 1991). Thus, we summarize that leader emotion management should be conducive to proactive behavior and propose the following mediation effect:

Hypothesis 2: Leader emotion management is positively related to team members' proactive behavior via team members' positive mood.

Team Conflict and Positive Mood

Conflict is a fundamental and inevitable aspect of teamwork (Levi, 2001), since team decisions often evoke feelings of unease and stress. The close tie between teamwork and team conflict is already deducible from the definition of conflict as "the interaction of interdependent people who perceive opposition of goals, aims, and values, and who see the other party as potentially interfering with the realization of these goals" (Putnam & Poole, 1987, p. 549). It reveals that two central characteristics of conflict - interaction and interdependence - also characterize teamwork.

Team conflict can more precisely be defined by distinguishing between task and relationship conflict. Jehn describes task conflict as, "disagreements among group members about the content of the tasks being performed, including differences in viewpoints, ideas, and opinions" (1995, p. 258). Relationship conflict, on the other hand, is defined as, "interpersonal incompatibilities among group members, which typically include tension, animosity, and annoyance" (Jehn, 1995, p. 258). Compared to the cognitive core of task conflict (Simons & Peterson, 2000), relationship conflict has a strong affective element as exemplified by disagreement about personal taste, values, attitudes, or interpersonal style.

An information-processing perspective of conflict suggests that too little and too much team conflict impedes performance (De Dreu & Weingart, 2003). Nevertheless, there is an ongoing debate regarding whether or not - and in which way - task and relationship conflict each affect performance (e.g., De Dreu & Weingart, 2003; Jehn, 1995; Simons & Peterson, 2000). While task conflict has been suggested to encourage greater cognitive understanding of task issues and to foster learning (De Dreu & Weingart, 2003), other studies suggest the opposite effect to occur. Van Woerkom and Sanders (2010), for example, showed that task

conflict prevented team members from sharing opinions. In general, recent studies indicate that both types of team conflict have rather negative effects, depending on the context (for a review, see De Dreu & Weingart, 2003).

Attempting to clarify elements of this debate, we draw on Weiss and Cropanzano's (1996) affective events theory. This framework suggests that behavior and attitudes are, in part, driven by affective reactions to a particular work event. Both task and relationship conflict can be considered such affective events, as they are inextricably bound with tension, arousal, and stress (Giebels & Janssen, 2005).

Emotions during the experience of team conflict are immediate, short-lived affective states that tend to fade into longer-lasting moods (Barsade & Gibson, 2007) and shape a wide variety of organizational behavior such as prosocial behavior, task performance, and workplace deviance (George, 1991, 2000; Lyubomirsky, et al., 2005). As neither relationship nor task conflict provides much basis for positive emotions, we expect a reduction of positive mood to be the consequence of both types of team conflict. For the positive relationship we hypothesized to exist between positive mood and proactive behavior, we further expect that team conflict reduces team members' proactive behavior. We thus hypothesize:

Hypothesis 3: Relationship conflict in the team is negatively related to team members' proactive behavior via team members' positive mood.

Hypothesis 4: Task conflict in the team is negatively related to team members' proactive behavior via team members' positive mood.

Methods

Procedure and Participants

The present study was conducted with teams of three or more members that belonged to either public or private organizations in Germany. Team leaders received a survey package consisting of multiple questionnaires, instruction sheets, and self-addressed return envelopes, which they distributed to all team members. In exchange for their participation, teams were

offered feedback about major results of the study, as well as practical implications. However, feedback was only given in aggregated form to ensure individual anonymity. All team members (including the team leader) were asked to participate, however team leaders received a different questionnaire and provided data that were not relevant for the present study and therefore were not included. Participants returned their forms directly to us in closed envelopes.

All questionnaires were in the German language. Answering the questions took about 15 minutes for the first questionnaire (t1), about 10 minutes for the second questionnaire (t2), and about 5 minutes for the colleague evaluation (t3). The second questionnaire was administered one week after the first, and an e-mail was sent to the team members as a reminder. The colleague evaluation was completed between two and three days after the second survey.

Overall, the research team approached 72 teams, using existing contacts to organizational practitioners. From these, 64 teams agreed to participate in the study (participation rate of 89%), and 59 teams passed our team check that ensured that team members had interdependent tasks, common goals and interaction with each other (Ilgen, 1999). These 59 teams, with 300 members in total, were included in the final sample. Team size was between 3 and 16 members, with an average size of 5 team members (SD = 2.71). In each team, at least 75% of the team members participated in the current study. The sample consisted of 45% male and 55% female employees ranging in age from 17 to 65 years (M = 36.4, SD = 9.8). All but nine participants were German citizens. Fifty per cent of the participating employees had a university degree and 30% had completed an apprenticeship. Tenure within the team was greater than two years for 52% of the participants, between one and two years for 19%, and shorter than one year for 26% of them. Thirty-two per cent of the participating teams stemmed from the IT industry and 32% from health care and social

services. Other industries the teams belonged to were "automobiles and engineering" (14%) and "food service" (9%). The rest worked in areas such as administration, trade, consulting, media, and the arts.

Measures

English scales that did not exist in a validated German version were translated independently by two members of our research group and checked by a native speaker afterwards, following Brislin's (1980) translation-back-translation procedure.

*Leader Emotion Management***.** Team leaders' emotion management was measured in the second questionnaire (t2) with eight "emotion management" items from the short version of the Workgroup Emotional Intelligence Profile (WEIP-S, Jordan & Lawrence, 2009). The items had to be answered on a 7-point Likert scale ranging from 1 = "strongly disagree" to 7 = "strongly agree". We averaged the answers to form one index. Because self-reports of individual competencies may be biased by social desirability or may reflect self-identity (Spain, Eaton, & Funder, 2000), we changed the wording of the items to peer-report and relied on employees' ratings of their leaders' emotion management. A sample items is, "He/She gives a fair hearing to team members' ideas". Cronbach's alpha for the scale was α = .90.

*Team Conflict***.** We assessed the amount of relationship and task conflict in a team in the first questionnaire (t1) with four items from Jehn's (1995) scale. Participants were asked to indicate on a 5-point Likert scale, anchored by 1 = "strongly disagree" and 5 = "strongly agree", to what extent they experienced, for instance, "interpersonal tension as an issue in the group" or, "disagreements about single tasks in the group". Cronbach's alphas for the scales of relationship and task conflict were α = .87 and α = .81, respectively.

Finding high correlations between task and relationship conflict on both the individual and team level, r = .68, p < .01 and r = .75, p < .01, respectively, we conducted a

confirmatory factor analysis with AMOS 17.0 to ascertain whether the team conflict items measured two distinctive factors. With the item covariance matrix as the input matrix, the model parameters were estimated by means of maximum likelihood methods. In order to assess model fit, we computed the following fit indices: Comparative Fit Index (CFI), Standardized Root Mean Square Residual (SRMR), Goodness of Fit Index (GFI), and the Root Mean Square Residual (RMSEA). The hypothesized two-factor model with relationship and task conflict as separate factors showed an acceptable fit to the data, χ^2 (19) = 44.6, p < .001; CFI = .98; SRMR = .03; GFI = .97; RMSEA = .06. We compared the fit of the two-factor model with the fit of an alternative one-factor model. This one-factor model did not fit our data adequately, χ^2 (20) = 104.9, p < .001; CFI = .92; SRMR = .06; GFI = .91; RMSEA = .12. The difference between the chi-squared statistics of the two models was statistically significant, $\Delta\chi^2(1) = 60.27$, p < .001, providing support for the two-factor model. These results confirmed the distinctiveness of the correlated team conflict factors.

*Positive Mood***.** We measured employees' positive mood at work in the second questionnaire (t2) by using ten items from the Job-Related Affective Well-Being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000). Team members were instructed to indicate the extent to which any part of their job had made them feel a particular emotion *in the last couple of days at work* (e.g. "happy", "proud", and "inspired") on a 5-point Likert scale ranging from 1 = "not at all" to 5 = "very much". Cronbach's alpha for this scale was α = .84.

*Proactive behavior***.** Scholars have stressed the importance of using multiple sources for measuring the relationship between affect and proactivity (Bindl & Parker, 2010). Thus, team members' proactive behavior was evaluated in the third questionnaire (t3) according to Ohly and Fritz' (2007) procedure, using a peer version of Frese et al.'s (1997) 7-item personal initiative scale. A randomly selected team colleague was instructed to rate another employee's

personal initiative as it was *at the moment* on a 7-point Likert scale ranging from 1 = "strongly disagree" to 7 = "strongly agree". The team colleagues were informed that the evaluation would not have consequences for the respective employee. Peer-ratings were anonymous and were linked to the self-report data of the employee by means of a code. It was ensured that neither the team leader nor the employee her/himself could see into the evaluations. A sample item is, "He/She actively attacks problems". Cronbach's alpha for the scale was $\alpha = .89$.

Controls. The demographic variables gender and education (level 1), as well as team size (level 2), were measured with one item each in the first questionnaire (t1). We controlled for their influences because of their empirically established relationships with focal study outcomes (Amason & Sapienza, 1997; Korsgaard, Jeong, Mahony, & Pitariu, 2008; Staw, Sutton, & Pelled, 1994).

We further controlled for individual differences in positive affectivity, which has been related to a range of positive individual outcomes (cf. Lyubomirsky, et al., 2005). Positive affectivity was measured by five adjectives (e.g. "active") using the German version of the Positive and Negative Affect Schedule (PANAS) from Krohne, Egloff, Kohlmann, and Tausch (1996). Participants rated the intensity of a particular feeling they had experienced during the past 12 months on a 5-point Likert scale ranging from 1 = "not at all" to 5 = "very much". Cronbach's alpha was $\alpha = .72$.

Finally, we included the job characteristic of autonomy, which influences the motivation, satisfaction, and performance of employees (Morgeson, Delaney-Klinger, & Hemingway, 2005). It was measured with three items from Spector and Fox (2003). A sample item is "How often does someone tell you what you are to do?" Ratings were given on a five-point Likert scale ranging from 1 = "every day" to 5 = "never" (coding was reversed for data analyses). Cronbach's alpha for this scale was $\alpha = .78$.

Data Analyses

We analyzed the relationships between team- and individual-level data, specifically the effects of the team characteristics "leader emotion management" and "team conflict" on the individual-level outcomes "positive mood at work" and "proactive behavior". Because data from individual team members were nested within teams, we applied multilevel analyses, also known as hierarchical linear modeling (HLM), using the program HLM 6.0 (Raudenbush, Bryk, Cheong, Congdon, & du Troit, 2004). Only Hypothesis 1, which predicted a relationship between two team-level constructs, was tested by a hierarchical multiple regression analysis with SPSS 17.0. All variables were standardized to facilitate the interpretation of results. For testing indirect effects (Hypotheses 2-4), we calculated Sobel's (1982) *z*-test. Partial estimates and standard errors of the multilevel analyses (with controls entered beforehand) were used for this test.

Data Aggregation

Like other leader characteristics, leader emotion management can be conceptualized as either an individual-level or group-level variable. By asking for the leader's general behavior towards the group (i.e., an ambient stimulus shared by all team members) instead of the behavior towards the individual team member (i.e., a discretionary stimulus), we conceptualized leader emotion management as a team-level variable.

Prior to investigating relationships among variables, we had to obtain team-level data by aggregating individual-level responses for leader emotion management and team conflict. To justify this aggregation, we examined the construct validity of the level 2 composition variables. In addition to scale reliabilities (see Table 2), we computed R_{wg} values (James, Demaree, & Wolf, 1984), or within-group interrater reliability statistics, to assess agreement among team members' judgments on a particular variable. The R_{wg} index is calculated separately for each team, and compares the observed group variance to an expected variance

from random responding. It varies from zero to one. Moreover, intraclass correlation coefficients (ICC_1s) were estimated to assess the amount of within- and between-team variance in each variable (Bliese, 2000). ICC_1 estimates represent the amount of variance in individuals' responses that can be explained by group membership. Table 1 displays the median R_{wg} and ICC_1 values for the team-level variables leader emotion management and team conflict.

(Table 1 about here)

The median R_{wg} values for leader emotion management, relationship conflict and task conflict indicated substantial agreement among team members about the respective variable. ICC_1s for all three measures were significant, indicating sufficient between-team variance (Bliese, 2000). Thus, the average value of team members' ratings for the three variables was calculated for each team.

Results

Descriptive Results

Means, standard deviations and intercorrelations between variables at both levels of analysis are displayed in Table 2. Below the diagonal, correlation coefficients relating to individual level variables (level 1) are reported. Correlation coefficients relating to variables on the team level (level 2) can be found above the diagonal.

(Table 2 about here)

An inspection of the correlations reveals that relationship conflict and task conflict were positively related on both the individual and team level. Correlations between most focus variables were significant and in the hypothesized directions. Some controls showed quite strong correlations with the study variables, for instance positive affectivity and positive mood at work. Team size was negatively associated with both types of team conflict.

Hypotheses Testing

As it referred to constructs on the same level, Hypothesis 1 was tested using hierarchical multiple regression analyses. The hypothesis stated that the leader's emotion management would negatively relate to the level of relationship conflict in the team. Controlling for team size, the regression coefficient for leader emotion management was negative and significant, $\beta = -.31$, $t = -2.54$, $p < .05$, which supported the hypothesis.

The other hypotheses were tested with multilevel modeling. Here, our first step was to fit an unconditional model, the intercept-only model (also called the "null model"), which contains no explanatory variables and breaks the variance of the outcome variable into two components: the within-group variance and the between-group variance. This null model informs the researcher whether or not there is enough variance in the dependent variable on both levels of analysis to be explained by a number of predictors. It also provides a value of deviance that serves as a benchmark with which other models are compared (Hox, 2002). Analyzing the null models of positive mood and proactive behavior, we found that the amount

of variance that could be explained by team-level variables was sufficient for both positive mood, $ICC_1 = .10$, $p < .05$, and proactive behavior, $ICC_1 = .14$, $p < .01$. These results supported the use of HLM by indicating the presence of a nesting effect in our data.

When conducting multilevel analyses for each dependent variable, we compared at least three different nested models: the null model, model 1, and model 2. In the null model, the intercept was the only predictor; in model 1, all control variables were entered, and in model 2, the predictors were included. All parameters were estimated using the Full Maximum Likelihood estimation method, which has the advantage of allowing the differences of the deviances of various models to be computed based on the likelihood function. Thus, we could test whether the final model including all predictors fitted significantly better than the previous models by examining the difference of the respective likelihood ratios that follows a chi-square distribution.

As a precondition of Hypotheses 2-4, leader emotion management, relationship conflict and task conflict should be significantly related to positive mood. Multilevel analyses indicated that while leader emotion management was positively related and task conflict negatively related to positive mood, relationship conflict was not related at all (see Table 3). Thus, the conditions for Hypotheses 2 and 4 were met, whereas the one for Hypotheses 3 was not.

(Table 3 about here)

For all three indirect effects hypotheses, a further precondition was a positive relationship between positive mood and proactive behavior. This was corroborated; after including the controls in model 1, positive mood was significantly related to proactive behavior (see Table 4).

(Table 4 about here)

Hypothesis 2 proposed an indirect relationship between leader emotion management and team members' proactive behavior via team members' positive mood. To test for this effect we compared model 3, which contained leader emotion management and positive mood, to model 2, which contained only the predictor leader emotion management. Table 5 compares estimates, standard errors, and *t*-values for all predictor variables, the likelihood values (-2xlog) for all models, and differences between the likelihood values (Δ-2xlog) of models. It can be seen that leader emotion management was positively related to proactive behavior in model 2, β =.25, $p < .01$. When the mediator was introduced in model 3, the effect of leader emotion management on proactive behavior decreased. Together with the significant difference between this model and model 2, this indicates that the direct effect of leader emotion management on proactive behavior is partly mediated by positive mood. Thus, Hypothesis 2 was empirically supported.

(Table 5 about here)

Hypotheses 4 stated that task conflict would be negatively related to team members' proactive behavior via team members' positive mood. Although no direct relationship existed between task conflict and proactive behavior (see Table 2), we still found that task conflict was negatively related to positive mood (see Table 3), and that positive mood was positively related to proactive behavior (see Table 4). We therefore tested for an indirect effect of task conflict on proactive behavior. Table 6 provides the *z*-test results of this indirect effect and of the one for leader emotion management. Indeed, the data indicate that an indirect effect exists between task conflict and proactive behavior.

(Table 6 about here)

Discussion

The main goal of this study was to investigate the relationships between leader emotion management, team conflict, and positive mood on the one hand, and team members'

proactive behavior at work on the other. Finding that leader emotion management was related to the level of relationship conflict in the team as well as to team members' positive mood and proactive behavior, our empirical evidence suggests that we can positively answer De Dreu and Weingart's question, "Can the negative effects of conflict be mitigated?" (2003, p. 747). As expected, leaders who are perceived as good "emotion managers" have less relationship conflict in their teams and a positive influence on their team members' positive mood and proactive behavior. Thereby, these leaders mitigate negative effects of team conflict on team members' mood and associated performance outcomes (see also Strauss, Griffin, & Rafferty, 2009). As assumed, leader emotion management positively affected team members' proactive behavior by fostering team members' positive mood.

The finding that relationship conflict did not significantly relate to team members' mood when both types of conflict were simultaneously analyzed did, at first, surprise us. However, it may be explained by the fact that even though the two types of team conflict could be discriminated in a confirmatory factor analysis, they correlated strongly. Consistent with an average intercorrelation coefficient of $r = .52$ between the two conflict types, which De Dreu and Weingart (2003) calculated from a review of 30 studies on team conflict, we deem our finding to corroborate the assumption that the two conflict types co-occur most of the time (Simons & Peterson, 2000). Longitudinal studies revealed that task conflict may lead to relationship conflict over time (Gamero, et al., 2008). Thus, it can be suggested that shared variance of both conflict types explains the insignificant effect of relationship conflict in the multilevel analysis. In fact, negative associations between relationship conflict and affect-related measures such as affective commitment and teams' affective climate have been demonstrated before (Gamero, et al., 2008; Thomas, Bliese, & Jex, 2005).

The finding that task conflict reduces team members' positive mood at work extends the conflict literature that often neglected effects on employee well-being (De Dreu &

Beersma, 2005). While most research until now operationalized conflict as relationship conflict and neglected the role of task conflict (Spector & Bruk-Lee, 2008), our study adds to this literature by depicting negative effects of task conflict on affective well-being.

While the relationship between relationship conflict, positive mood and proactive behavior was insignificant, we found a negative indirect effect of task conflict on proactive behavior via positive mood. These findings differ from studies that reported negative effects of relationship conflict on performance, but insignificant or even positive effects of task conflict on performance (e.g., Jehn, 1997; Schulz-Hardt, Jochims, & Frey, 2002). Nevertheless, they are in line with De Dreu and Weingart's meta-analysis (2003), in which task conflict was strongly and negatively related to team performance and satisfaction. Providing a possible explanation for our findings, this meta-analysis further demonstrates that the strength of the negative relationship between task conflict and team performance seems to depend on the correlation between task conflict and relationship conflict: The higher the two conflict types correlated, the stronger were the negative effects of task conflict. We conclude that task conflict cannot generally be considered as a functional or stimulating part of the workplace.

The positive relationship between positive mood and proactive behavior supports scholars' assumptions that positive affect leads employees to set more proactive goals and to persist in achieving them (Parker, 2007). This finding extends research that reveals positive effects of positive mood on motivation, persistence, and innovative behavior at work (George, 1990; Ilies & Judge, 2005; Tsai, et al., 2007) and complements first evidence showing that positive mood fosters proactive behavior (cf. Fritz & Sonnentag, 2009).

Strengths, Limitations and Future Research

Using aggregated measures of team conflict and leader emotion management as well as peer ratings of employees' proactive behavior, we avoided issues of common method

variance and inflated associations in the assessment of predictor and outcome variables (cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The random assignment of team colleagues to provide the proactive behavior ratings further strengthened the design, as it allowed us to avoid self-selection of "colleague friends" and the danger of biased ratings. We consider distorted results due to factors like social desirability or inaccurate judgments and reports of feelings (DeNisi & Shaw, 1977) a minor problem, because we assured anonymity and because in regard to affective constructs, people should know themselves best.

By asking team members to rate their team leaders' emotion management, we obviated self-evaluations of emotional competencies, which are questionable because they may reflect perceptions of emotional self-efficacy rather than actual competence and behavior (Tett, Fox, & Wang, 2005).

Finally, the study's multilevel design provided the advantage of being able to analyze variables from different levels simultaneously. Hence, we were able to simultaneously take into account both team conflict as a group-level phenomenon and team members' behavior as an individual-level phenomenon. Besides being an important outcome in its own right, individual behavior in a team context has also been considered relevant to the understanding of team processes and team performance (Sonnentag & Frese, 2002).

As all research, this study has some limitations that need to be considered when interpreting the results. First, teams' voluntary participation (i.e. self-selection) limits the validity of the results to the respective target population (Bortz & Doering, 2006). However, the fact that the sample consisted of teams stemming from a wide variety of occupational domains can be considered a conceptual strength that enhances external validity.

Second, although we assessed our measures at three points in time, definite conclusions about causality cannot be drawn, especially because we did not control for proactive behavior at time 1. Indeed, De Dreu and Weingart (2003) remark that performance

might influence the level and type of conflict in teams. By challenging the status quo, proactive behavior might especially contribute to conflicts in the team. Future experimental or cross-lagged longitudinal studies should therefore test for reversed causation and mutual reinforcement of the revealed relationships.

Finally, one might argue that team members who are in a positive mood might not necessarily be more proactive, but rather be better liked by their colleagues, thus inflating their peer ratings. Staw, Sutton, and Pelled (1994), for instance, report that expressions of positive emotions at the workplace can lead to greater interpersonal attraction due to "halo" effects (i.e., overgeneralizations to other desirable traits). On the other hand, the insignificant correlations between employees' positive affectivity and peer-rated proactive behavior argue against the above explanation.

An interesting avenue for further research on this topic would be the investigation of conditions under which affective and behavior consequences of conflict occur. Among these, team characteristics and team emotion management might be relevant. For example, Yang and Mossholder (2004) and Ayoko and colleagues (2008) found that team emotional intelligence and interactional norms moderated the outcomes of task conflict. Furthermore, measuring the two types of team conflict in all points in time and over a longer period might allow them to be disentangled. As for leader emotion management, other individual-level variables such as affective commitment or self-efficacy should be investigated. Evidence suggests that these variables are influenced by leaders' behavior and that they foster proactive behavior (Strauss, et al., 2009). Also worth investigating are the nonlinear effects of task conflict, positive mood, and proactive behavior. In a curvilinear model, Jehn (1995) found that there was an optimal level of task conflict for the performance of groups working on non-routine tasks. Kluger and DeNisi (1996) report that positive mood can shift attention away from the task and thus lead to a performance loss. Further, the mood-as-input model (Martin,

Ward, Achee, & Wyer, 1993) predicts that positive mood signals that all is well and there is no need to put effort into changing the status quo. Thus, certain levels of both task conflict and positive mood might be optimal to drive proactive behavior. Researchers are encouraged investigate these relationships more thoroughly, considering nonlinear trends such as curvilinear U-shaped relationships.

Practical Implications

Based on the positive consequences of leader emotion management that we found, we suggest that practitioners work on enhancing leaders' emotion management skills. Leader emotion management could be integrated in leader development programs. In a training program on emotional skills, scores on self-management and social skills increased significantly (cf. Gowing, O'Leary, Brienza, Cavallo, & Crain, 2006). This and other studies indicate that emotional skills can indeed be learned and improved in trainings.

The present study corroborates the notion that task conflict in teams cannot generally be seen as productive. In fact, different scholars point out that the effects of task conflict depend on team members' emotion management skills (Jordan & Troth, 2004; Yang & Mossholder, 2004). Thus, employees working in teams should be trained on emotion management and interpersonal skills, just like their leaders (cf. Cartwright & Cooper, 1996).

In sum, we suggest that both positive experiences at work (e.g., through positive feedback) and emotion management skills should be fostered to enhance cooperation, affective well-being in stressful situations, and proactive behavior (cf. Jordan, Lawrence, & Troth, 2006; Schraub, Stegmaier, & Sonntag, 2011).

Conclusion

In line with evidence on detrimental effects of task conflict for performance and knowledge-sharing behavior in teams (De Dreu & Weingart, 2003; van Woerkom & Sanders, 2010), the results of the present study point out that task conflict needs to be monitored and

managed if team members are expected to engage in proactive behavior. Furthermore, the presented evidence on leader emotion management and team members' affective well-being warrants the claim that the impacts of emotion and affective competencies should not be underestimated by organizational practitioners. Rather, leaders are encouraged to improve their emotion management.

References

Amason, A. C., & Sapienza, H. J. (1997). The effects of top management team size and interaction norms on cognitive and affective conflict. *Journal of Management, 23*(4), 495-516.

Ayoko, O. B., Callan, V. J., & Härtel, C. E. J. (2008). The influence of team emotional intelligence climate on conflict and team members' reactions to conflict. *Small Group Research, 39*(2), 121-149.

Barsade, S. G. (2002). The ripple effects: Emotional contagion and its influence on group behavior. *Administrative Science Quarterly, 47*(4), 644-675.

Barsade, S. G., & Gibson, D. E. (2007). Why does affect matter in organizations? *Academy of Management Perspectives, 21*(1), 36-59.

Bartel, C. A., & Saavedra, R. (2000). The collective construction of work group moods. *Administrative Science Quarterly, 45*(2), 197-231.

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2. ed. ed.). Mahwah, NJ: Erlbaum.

Bateman, T. S., & Crant, J. M. (1993). The proactive component of organizational behavior: A measure and correlates. *Journal of Organizational Behavior, 14*(2), 103-118.

Bindl, U. K., & Parker, S. K. (2010). Proactive work behavior: Forward-thinking and change-oriented action in organizations. In S. Zedeck (Ed.), *APA handbook of industrial and*

organizational psychology (Vol. 2, pp. 567-598). Washington, DC: American Psychological Association.

Bliese, P. D. (2000). Within-group agreement, non-independence, and reliability: Implications for data aggregation and analysis. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions.* (pp. 349-381). San Francisco, CA US: Jossey-Bass.

Bono, J. E., Foldes, H. J., Vinson, G., & Muros, J. P. (2007). Workplace emotions: The role of supervision and leadership. *Journal of Applied Psychology, 92*(5), 1357-1367.

Bortz, J., & Doering, N. (2006). *Forschungsmethoden und Evaluation für Human- und Sozialwissenschaftler [Research methods and evaluation for the human and social sciences]*. Heidelberg: Springer.

Brislin, R. W. (1980). Translation and content analysis of oral and written material. In H. C. Triandis & J. W. Berry (Eds.), *Handbook of Cross-Cultural Psychology* (Vol. 2, pp. 389-444). Boston: Allyn and Bacon.

Campbell, D. J. (2000). The proactive employee: Managing workplace initiative. *Academy of Management Executive, 14*, 52-66.

Cartwright, S., & Cooper, C. L. (1996). Coping in occupational settings. In M. Zeidner & N. S. Endler (Eds.), *Handbook of coping: Theory, research, applications.* (pp. 202-220). Oxford England: John Wiley & Sons.

Chen, G., Bliese, P. D., & Mathieu, J. E. (2005). Conceptual Framework and Statistical Procedures for Delineating and Testing Multilevel Theories of Homology. *Organizational Research Methods, 8*(4), 375-409.

Cherniss, C. (2010). Emotional Intelligence: Toward Clarification of a Concept. *Industrial and Organizational Psychology, 3*(2), 110-126.

Conger, J. A., Kanungo, R. N., & Menon, S. T. (2000). Charismatic leadership and follower effects. *Journal of Organizational Behavior, 21*(7), 747-767.

Conte, J. M. (2005). A review and critique of emotional intelligence measures. *Journal of Organizational Behavior, 26*(4), 433-440.

Côté, S., & Miners, C. T. H. (2006). Emotional Intelligence, Cognitive Intelligence, and Job Performance. *Administrative Science Quarterly*, *51*(1), 1-28.

De Dreu, C. K. W., & Beersma, B. (2005). Conflict in organizations: Beyond effectiveness and performance. *European Journal of Work & Organizational Psychology, 14*(2), 105-117.

De Dreu, C. K. W., & Gelfand, M. J. (2008). Conflict in the Workplace: Sources, Functions, and Dynamics Across Multiple Levels of Analysis. In C. K. W. De Dreu & M. J. Gelfand (Eds.), *The Psychology of Conflict and Conflict Management in Organizations* (pp. 3-54). New York: Lawrence Erlbaum Associates.

De Dreu, C. K. W., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: A meta-analysis. *Journal of Applied Psychology*, *88*(4), 741-749.

DeNisi, A. S., & Shaw, J. B. (1977). Investigation of the uses of self-reports of abilities. *Journal of Applied Psychology*, *62*(5), 641-644.

Fay, D., & Sonnentag, S. (2010). A look back to move ahead: New directions for research on proactive performance and other discretionary work behaviours. *Applied Psychology: An International Review*, *59*(1), 1-20.

Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology, 2*(3), 300-319.

Frese, M., & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. *Research in Organizational Behavior, 23*, 133-188.

Frese, M., Fay, D., Hilburger, T., & Leng, K. (1997). The concept of personal initiative: Operationalization, reliability and validity of two German samples. *Journal of Occupational and Organizational Psychology, 70*(2), 139-161.

Fritz, C., & Sonnentag, S. (2009). Antecedents of day-level proactive behavior: A look at job stressors and positive affect during the workday. *Journal of Management, 35*(1), 94-111.

Gamero, N., González-Romá, V., & Peiró, J. M. (2008). The influence of intra-team conflict on work teams' affective climate: A longitudinal study. *Journal of Occupational and Organizational Psychology, 81*(1), 47-69.

George, J. M. (1990). Personality, affect, and behavior in groups. *Journal of Applied Psychology, 75*(2), 107-116.

George, J. M. (1991). State or trait: Effects of positive mood on prosocial behaviors at work. *Journal of Applied Psychology, 76*(2), 299-307.

George, J. M. (1996). Group affective tone. In M. West (Ed.), *Handbook of work group psychology* (pp. 77-93). New York: Wiley.

George, J. M. (2000). Emotions and leadership: The role of emotional intelligence. *Human Relations, 53*(8), 1027-1055.

Giebels, E., & Janssen, O. (2005). Conflict, stress and reduced well-being at work: The buffering effect of third-party help. *European Journal of Work and Organizational Psychology, 14*(2), 137-155.

Gowing, M. K., O'Leary, B. S., Brienza, D., Cavallo, K., & Crain, R. (2006). A Practitioner's Research Agenda: Exploring Real-World Applications and Issues. In V. U. Druskat, F. Sala & G. Mount (Eds.), *Linking emotional intelligence and performance at work: Current research evidence with individuals and groups.* (pp. 245-265). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.

Griffin, M. A., Neal, A., & Parker, S. K. (2007). A new model of work role performance: Positive behavior in uncertain and interdependent contexts. *Academy of Management Journal, 50*(2), 327-347.

Griffin, M. A., Parker, S. K., & Mason, C. M. (2010). Leader vision and the development of adaptive and proactive performance: A longitudinal study. *Journal of Applied Psychology, 95*(1), 174-182.

Harms, P. D., & Credé, M. (2010). Remaining Issues in Emotional Intelligence Research: Construct Overlap, Method Artifacts, and Lack of Incremental Validity. *Industrial and Organizational Psychology, 3*(2), 154-158.

Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. New York, Paris Cambridge University Press

Hox, J. (2002). *Multilevel Analysis. Techniques and Applications*. Mahwah, NJ: Lawrence Erlbaum Ass.

Humphrey, R. H. (2002). The many faces of emotional leadership. *The Leadership Quarterly, 13*(5), 493-504.

Ilgen, D. R. (1999). Teams embedded in organizations: Some implications. *American Psychologist, 54*(2), 129-139.

Ilies, R., & Judge, T. A. (2005). Goal Regulation Across Time: The Effects of Feedback and Affect. *Journal of Applied Psychology, 90*(3), 453-467.

James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of Applied Psychology, 69*(1), 85-98.

Jehn, K. A. (1995). A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly, 40*(2), 256-282.

Jehn, K. A. (1997). Affective and cognitive conflict in work groups: Increasing performance through value-based intragroup conflict. In C. K. W. De Dreu & E. Van de Vliert (Eds.), *Using conflict in organizations.* (pp. 87-100). Thousand Oaks, CA US: Sage Publications, Inc.

Jordan, P. J., & Lawrence, S. A. (2009). Emotional intelligence in teams: development and initial validation of the short version of the Workgroup Emotional Intelligence Profile (WEIP-S). *Journal of Management and Organization, 15*, 452-469.

Jordan, P. J., Lawrence, S. A., & Troth, A. C. (2006). The impact of negative mood on team performance. *Journal of Management & Organization, 12*(2), 131-145.

Jordan, P. J., & Troth, A. C. (2004). Managing Emotions During Team Problem Solving: Emotional Intelligence and Conflict Resolution. *Human Performance, 17*(2), 195-218.

Kim, T.-Y., Cable, D. M., Kim, S.-P., & Wang, J. (2009). Emotional competence and work performance: The mediating effect of proactivity and the moderating effect of job autonomy. *Journal of Organizational Behavior, 30*(7), 983-1000.

Kluger, A. N., & DeNisi, A. (1996). Effects of feedback intervention on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin, 119*(2), 254-284.

Korsgaard, M. A., Jeong, S. S., Mahony, D. M., & Pitariu, A. H. (2008). A multilevel view of intragroup conflict. *Journal of Management, 34*(6), 1222-1252.

Krohne, H. W., Egloff, B., Kohlmann, C.-W., & Tausch, A. (1996). Untersuchungen mit einer deutschen Version der 'Positive and Negative Affect Schedule' (PANAS) [Research with a German version of the PANAS]. *Diagnostica, 42*(2), 139-156.

Levi, D. (2001). *Group Dynamics for Teams*. Thousands Oaks, CA: Sage.

Lewis, K. M. (2000). When leaders display emotion: How followers respond to negative emotional expression of male and female leaders. *Journal of Organizational Behavior, 21*(Spec Issue), 221-234.

Lyubomirsky, S., King, L., & Diener, E. (2005). The Benefits of Frequent Positive Affect: Does Happiness Lead to Success? *Psychological Bulletin, 131*(6), 803-855.

Martin, L. L., Ward, D. W., Achee, J. W., & Wyer, R. S. (1993). Mood as input: People have to interpret the motivational implications of their moods. *Journal of Personality and Social Psychology, 64*(3), 317-326.

Morgeson, F. P., Delaney-Klinger, K., & Hemingway, M. A. (2005). The Importance of Job Autonomy, Cognitive Ability, and Job-Related Skill for Predicting Role Breadth and Job Performance. *Journal of Applied Psychology, 90*(2), 399-406.

Ohly, S., & Fritz, C. (2007). Challenging the status quo: What motivates proactive behaviour? *Journal of Occupational & Organizational Psychology, 80*(4), 623-629.

Parker, S. K. (2007). *How positive affect can facilitate proactive behavior in the work place.* Paper presented at the Academy of Management Annual Meeting, Philadelphia, USA.

Parker, S. K., Bindl, U. K., & Strauss, K. (2010). Making Things Happen: A Model of Proactive Motivation. *Journal of Management, 36*, 827-856.

Pescosolido, A. T. (2002). Emergent leaders as managers of group emotion. *The Leadership Quarterly, 13*(5), 583-599.

Pirola-Merlo, A., Haertel, C., Mann, L., & Hirst, G. (2002). How leaders influence the impact of affective events on team climate and performance in R&D teams. *Leadership Quarterly, 13*(5), 561-581.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Putnam, L., & Poole, M. (1987). Conflict and Negotiation. In L. Porter (Ed.), *Handbook of Organizational Communication: An Interdisciplinary Perspective* (pp. 549-599). Newbury Park, CA: Sage.

Rank, J., & Frese, M. (2008). The impact of emotions, moods and other affect-related variables on creativity, innovation and initiative. In N. M. Ashkanasy (Ed.), *Research companion to emotion in organizations. New horizons in management*. Cheltenham: Elgar.

Raudenbush, S. W., Bryk, A. S., Cheong, Y., Congdon, R., & du Troit, M. (2004). *HLM 6 : Linear and Nonlinear Modeling*. Lincolnwood, IL: Scientific Software International.

Saavedra, R., & Earley, P. C. (1991). Choice of task and goal under conditions of general and specific affective inducement. *Motivation and Emotion, 15*(1), 45-65.

Salas, E., Cooke, N. J., & Rosen, M. A. (2008). On teams, teamwork, and team performance: Discoveries and developments. *Human Factors, 50*(3), 540-547.

Schraub, E., Stegmaier, R., & Sonntag, Kh. (2011). The Effect of Change on Adaptive Performance: Does Expressive Suppression Moderate the Indirect Effect of Strain? *Journal of Change Management*.

Schulz-Hardt, S., Jochims, M., & Frey, D. (2002). Productive conflict in group decision making: Genuine and contrived dissent as strategies to counteract biased information seeking. *Organizational Behavior and Human Decision Processes, 88*, 563-586.

Shamir, B., House, R. J., & Arthur, M. B. (1993). The motivational effects of charismatic leadership: A self-concept based theory. *Organization Science, 4*(4), 577-594.

Simons, T. L., & Peterson, R. S. (2000). Task conflict and relationship conflict in top management teams: The pivotal role of intragroup trust. *Journal of Applied Psychology, 85*(1), 102-111.

Sluiter, J. K., de Croon, E. M., Meijman, T. F., & Frings-Dresen, M. H. W. (2003). Need for recovery from work related fatigue and its role in the development and prediction of subjective health complaints. *Occupational and Environmental Medicine, 60*, 62-70.

Sobel, M. E. (1982). Asymptotic intervals for indirect effects in structural equations models. In S. Leinhart (Ed.), *Sociological methodology* (pp. 290-312). San Francisco: Jossey-Bass.

Sonnentag, S. (2003). Recovery, work engagement, and proactive behavior: A new look at the interface between nonwork and work. *Journal of Applied Psychology, 88*(3), 518-528.

Sonnentag, S., & Frese, M. (2002). Performance Concepts and Performance Theory. In S. Sonnentag (Ed.), *Psychological Management of Individual Performance* (pp. 3-26). Chichester: John Wiley & Sons.

Sonnentag, S., & Frese, M. (2003). Stress in organizations. In W. C. Borman, D. R. Ilgen & J. R. Klimoski (Eds.), *Handbook of psychology* (Vol. 12: Industrial and organizational psychology, pp. 453-491). Hoboken, NJ: Wiley.

Spain, J. S., Eaton, L. G., & Funder, D. C. (2000). Perspectives on personality: The relative accuracy of self versus others for the prediction of emotion and behavior. *Journal of Personality, 68*(5), 837-867.

Spector, P. E., & Bruk-Lee, V. (2008). Conflict, health, and well-being. In C. K. W. De Dreu & M. J. Gelfand (Eds.), *The psychology of conflict and conflict management in organizations.* (pp. 267-288). New York, NY: Taylor & Francis Group/Lawrence Erlbaum Associates.

Spector, P. E., & Fox, S. (2003). Reducing subjectivity in the assessment of the job environment: Development of the factual autonomy scale, FAS. *Journal of Organizational Behavior, 24*, 417-432.

Staw, B. M., Sutton, R. I., & Pelled, L. H. (1994). Employee Positive Emotion and Favorable Outcomes at the Workplace. *Organization Science, 5*(1), 51-71.

Strauss, K., Griffin, M. A., & Rafferty, A. E. (2009). Proactivity directed toward the team and organization: The role of leadership, commitment and role-breadth self-efficacy. *British Journal of Management, 20*(3), 279-291.

Sy, T., Côté, S., & Saavedra, R. (2005). The Contagious Leader: Impact of the Leader's Mood on the Mood of Group Members, Group Affective Tone, and Group Processes. *Journal of Applied Psychology, 90*(2), 295-305.

Tett, R. P., Fox, K. E., & Wang, A. (2005). Development and Validation of a Self-Report Measure of Emotional Intelligence as a Multidimensional Trait Domain. *Personality and Social Psychology Bulletin, 31*(7), 859-888.

Thomas, J. L., Bliese, P. D., & Jex, S. M. (2005). Interpersonal Conflict and Organizational Commitment: Examining Two Levels of Supervisory Support as Multilevel Moderators. *Journal of Applied Social Psychology, 35*(11), 2375-2398.

Totterdell, P. (2000). Catching moods and hitting runs: Mood linkage and subjective performance in professional sport teams. *Journal of Applied Psychology, 85*(6), 848-859.

Tsai, W. C., Liu, H. L., & Chen, C. C. (2007). Test of a Model Linking Employee Positive Mood and Task Performance. *Journal of Applied Psychology, 92*(6), 1570-1583.

Van Katwyk, P. T., Fox, S., Spector, P. E., & Kelloway, E. K. (2000). Using the Job-Related Affective Well-Being Scale (JAWS) to investigate affective responses to work stressors. *Journal of Occupational Health Psychology, 5*(2), 219-230.

van Knippenberg, D., van Knippenberg, B., Van Kleef, G. A., & Damen, F. (2008). Leadership, affect, and emotions. In N. M. Ashkanasy & C. Cooper (Eds.), *Research Companion to Emotion in Organizations*. Cheltenham: Elgar.

van Woerkom, M., & Sanders, K. (2010). The Romance of Learning from Disagreement. The Effect of Cohesiveness and Disagreement on Knowledge Sharing Behavior and Individual Performance Within Teams. *Journal of Business and Psychology 25*(1), 139-149.

Weisinger, H. (1998). *Emotional intelligence at work*. San Francisco: Jossey-Bass.

Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (pp. 1-74). US: Elsevier Science/JAI Press.

Yang, J., & Mossholder, K. W. (2004). Decoupling task and relationship conflict: The role of intragroup emotional processing. *Journal of Organizational Behavior, 25*(5), 589-605.

TABLE 1

R_{wg} and ICC_1 values for all team level variables

Group Level Variable	R_{wg} Median	ICC_1
Leader emotion management	.70	.29**
Team conflict		
- relationship conflict	.76	.29**
- task conflict	.73	.11**

Note. R_{wg} = within-group reliability, ICC_1 = intraclass correlation, ** $p < .01$

TABLE 2

Means, Standard Deviations, and Intercorrelations between Study Variables

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
M			2.58	2.65	4.96							
SD			.71	.48	.82							
1. Relationship Conflict	2.52 [a]	1.00		.75**	-.31*							-.35**
2. Task Conflict	2.62 [a]	.84	.68**		-.19							-.37**
3. LEM	5.00 [b]	1.14	-.27**	-.22**								.10
4. Positive Mood	3.14 [a]	.64	-.21**	-.26**	.28**							
5. Proactive behavior	5.26 [b]	.96	-.06	-.07	.21**	.19**						
6. Autonomy	2.51 [a]	.87	-.11	-.11	.11	.13*	.13*					
7. Positive Affectivity	3.57 [a]	.56	-.17**	-.22**	.20**	.64**	.10	.03				
8. Education[1]	1.63	.48	.05	.10	.13	.02	.21**	-.06	.11			
9. Gender[2]	1.56	.50	.12*	-.02	-.03	.19**	.10	-.05	.24**	.05		
10. Team Size	6.68	3.77	--	--	--	--	--	--	--	--	--	

Note. Below the diagonal: person-level data (N = 300), above the diagonal: team-level data (N = 59).
[1] 1 = highschool/apprenticeship 2 = university [2] 1 = female, 2 = male [a] 5-point Likert scale, [b] 7-point Likert scale. ** $p < .01$, * $p < .05$.

LEM: Leader Emotion Management

TABLE 3

Multilevel Estimates for Leader Emotion Management, Relationship Conflict and Team Conflict Predicting Positive Mood

	Nullmodel			Model 1			Model 2		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	.01	.07	-0.16	-.01	.05	-0.19	-.02	.04	-0.44
level 1									
Autonomy				-.09	.03	-2.67**	.05	.04	-1.39
PA				.41	.03	13.26**	.41	.03	13.07**
Education				-.02	.03	-.75	-.03	.03	-.56
Gender				.01	.03	.47	-.03	.04	-.78
level 2									
Team Size				.00	.03	-.09	.01	.05	-.21
LEM							.12	.04	2.67*
Relationship Conflict							.04	.06	.65
Task Conflict							-.14	.05	-2.70*
-2 x log			812.01			464.05			458.02
Δ - 2 x log						347.95**			6.03*
Level 1 Var.	.79			.24			.24		
Level 2 Var.	.09			.07			.05		

Note. N = 300 team members, N = 59 teams. Standardized regression coefficients are reported.
** $p < .01$, * $p < .05$. PA: Positive Affectivity, LEM: Leader Emotion Management

TABLE 4

Multilevel Estimates for Positive Mood Predicting Proactive Behavior

	Nullmodel			Model 1			Model 2		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	-.02	.07	-.23	-.03	.07	-.35	-.03	.08	-.50
level 1									
Autonomy				-.14	.07	-1.98*	-.10	.06	-1.63
PA				.02	.07	.32	-.11	.10	-1.08
Education				.22	.07	3.08**	.23	.07	3.25**
Gender				.13	.08	1.69	.13	.08	1.70
Positive Mood							.21	.10	2.14*
level 2									
Team Size				.20	.06	3.10**	.20	.07	3.13**
-2 x log			787.54			595.19			590.31
Δ - 2 x log						192.34**			4.88*
Level 1 Var.	.80			.78			.76		
Level 2 Var.	.13			.10			.10		

Note. N = 300 team members, N = 59 teams. Standardized regression coefficients are reported.
** $p < .01$, * $p < .05$, PA: Positive Affectivity

TABLE 5

Multilevel Estimates for Leader Emotion Management Predicting Proactive behavior: Positive Mood as Mediator

	Nullmodel			Model 1			Model 2			Model 3		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Intercept	-.02	.07	-.23	-.03	.07	-0.35	-.04	.08	-.54	-.04	.07	-.59
level 1												
Autonomy				-.14	.07	-1.98*	.11	.07	1.55	.09	.07	1.30
PA				.02	.07	.32	.01	.08	.10	.01	.10	.50
Education				.22	.07	3.08**	.16	.07	2.42*	.17	.07	2.60*
Gender				.13	.08	1.69	.14	.08	1.81	.13	.07	1.64
Positive Mood										.19	.07	2.14*
level 2												
Team Size				.20	.06	3.10**	.18	.06	3.22**	.18	.06	3.23**
LEM							.25	.07	3.34**	.18	.05	2.58*
-2 x log			787.54			595.19			590.54			585.76
Δ - 2 x log						192.35**			4.65*			4.78*
Level 1 Var.	.80			.78			.77			.77		
Level 2 Var.	.13			.10			.06			.04		

Note. N = 300 team members, N = 59 teams. Standardized regression coefficients are reported. ** p<.01, * p<.05, PA: Positive Affectivity, LEM: Leader Emotion Management

TABLE 6

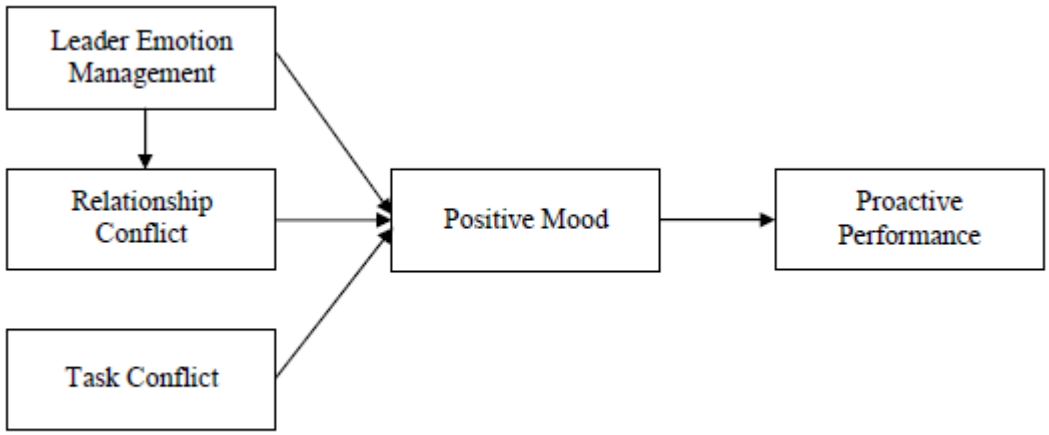
Tests of Indirect Effects

Path	Indirect Effect	*z*
Leader Emotion Management → Positive Mood → Proactive behavior (H2)	.03	2.17*
Task Conflict → Positive Mood → Proactive behavior (H4)	-.03	-2.16*

Note. H = hypothesis. * $p < .05$

FIGURE 1

The proposed conceptual scheme



Appendix B: Publications and Presentations

In Preparation

Schraub, E.M., Michel, A., Shemla, M., & Sonntag, Kh. (under review). The Roles of Leader Emotion Management and Team Conflict for Team Members' Proactive Behavior: A Multilevel Perspective. European Journal of Work and Organizational Psychology.

Schraub, E.M., Clavairoly, V., & Sonntag, Kh. (under review). Emotion Regulation as a Determinant of Recovery Experiences and Well-Being: A Day-Level Study. International Journal of Stress Management.

Milovac, M. & Schraub, E.M. (under review). Love it or Leave it: The Detrimental Effects of Emotion Management on Affective Commitment. Academy of Management Conference 2011.

Shemla, M., Wegge, J., Kearney, E., & Schraub, E.M. (in preparation). Does Perceiving Differences in Teams Make us Feel Less Alike? The Moderating Role of Diversity and Identification on Affective Linkages in Work Teams.

Printed Publications

Schraub, E.M., Stegmaier, R. & Sonntag, Kh. (2011). The Impact of Change on Adaptive Performance: Does Expression Suppression Moderate the Indirect Effect of Strain? Journal of Change Management, *11* (1), 21-44.

Schraub, E.M., Stegmaier, R. & Sonntag, Kh. (2010). Evaluation und Nutzenbestimmung von betrieblichem Gesundheitsmanagement [Evaluation of Occupational Health Management]. In Kh. Sonntag, R. Stegmaier & U. Spellenberg (Eds.), Arbeit-Gesundheit-Erfolg. Gesundheitsmanagement auf dem Prüfstand: Das Projekt BiG (pp. 15-32). Kroening, Germany: Asanger.

Schraub, E.M., Sonntag, Kh., Buech, V. & Stegmaier, R. (2010). Der Gesundheitsindex [The Health Index]. In Kh. Sonntag, R. Stegmaier & U. Spellenberg (Eds.), Arbeit-Gesundheit-Erfolg. Gesundheitsmanagement auf dem Prüfstand: Das Projekt BiG (pp. 73-92). Kroening, Germany: Asanger.

Schraub, E.M. & Buech, V. (2010). Studien zu Führung, Gesundheit und Innovation [Studies on Leadership, Health, and Innovation]. In Kh. Sonntag, R. Stegmaier & U. Spellenberg (Eds.), Arbeit-Gesundheit-Erfolg. Gesundheitsmanagement auf dem Prüfstand: Das Projekt BiG (pp. 127-144). Kroening, Germany: Asanger.

Schraub, E.M., Michaelis, B., Stegmaier, R. & Sonntag, Kh. (2010). Benchmarking als Methode zum Erfahrungsaustausch und Transfer von Best-Practice Lösungen [Benchmarking as a Method for Experience Exchange and Best-practice Transfer]. In Kh. Sonntag, R. Stegmaier & U. Spellenberg (Eds.), Arbeit-Gesundheit-Erfolg. Gesundheitsmanagement auf dem Prüfstand: Das Projekt BiG (pp. 147-155). Kroening, Germany: Asanger.

Buech, V. Schraub, E.M., Stegmaier, R. & Sonntag, Kh. (2010). Das BiG-Gestaltungsmodell zur Arbeitsumgebung [The BiG Implementation Model for the Workplace]. In Kh. Sonntag, R. Stegmaier & U. Spellenberg (Eds.), Arbeit-Gesundheit-Erfolg. Gesundheitsmanagement auf dem Prüfstand: Das Projekt BiG (pp. 157-203). Kroening, Germany: Asanger.

Schraub, E.M. (2009). Hungarian-German Relations – The Past and the Present. In C. Zahorán (Ed.), The Hidden Faces of a Capital. Traditional Multiculturalism in Contemporary Budapest (pp. 134-137). Budapest, Hungary: Terra Recognita Foundation.

Schraub, E. M., Stegmaier, R., & Sonntag, Kh. (2008). Gestaltung gesundheits- und sicherheitsrelevanter Arbeits- und Organisationsbedingungen in einem nachhaltigen Gesundheitsmanagement [Designing Health and Safety Relevant Work and Organisational Characteristics in a Sustainable Health Management]. In C. Schwennen, G. Elke, B. Ludborzs, H. Nold, S. Rohn, S. Schreiber-Costa & B. Zimolong (Eds.), Psychologie der Arbeitssicherheit und Gesundheit: Perspektiven - Visionen (pp. 171-173). Kroening, Germany: Asanger.

Schraub, E.M., Stegmaier, R., & Sonntag, Kh. (2008). Bestimmung des ökonomischen Nutzens eines nachhaltigen Gesundheitsmanagements anhand eines Gesundheitsindex [Calculation of the Economic Value of a Sustainable Health Management by Means of a Health Index]. In K. Henning, A. Richert & F. Hees (Eds.), Präventiver Arbeits- und Gesundheitsschutz 2020 (pp. 95-99). Aachen, Germany: Wissenschaftsverlag Mainz in Aachen.

Schraub, E.M., Stegmaier, R., Sonntag, Kh., Buech, V., Michaelis, B., & Spellenberg, U. (2008). Bestimmung des ökonomischen Nutzens eines ganzheitlichen Gesundheitsmanagements [Calculation of the Economic Value of an Integrated Health Management]. In Badura, Schröder & Vetter (Eds.), Fehlzeiten-Report 2008. Betriebliches Gesundheitsmanagement: Kosten und Nutzen (pp. 101-110). Heidelberg, Germany: Springer.

Schraub, E.M. (2006). A Cross-cultural Study on Entrepreneurship in China and Germany. The Moderating Role of Culture on the Relationship between Goals, Visions, and Business Success. Unpublished Diploma Thesis, Justus-Liebig University Giessen, Germany.

Conference Contributions and Talks

Ritzenhoefer, L., Schanz, K. & Schraub, E.M. (2010). Arbeitsinitiative in Teams: Die Bedeutung emotionaler Fähigkeiten des Teamleiters [Personal initiative in teams: The role of the team leader's emotional competences]. 47th Congress of the German Psychological Society (DGPS), Bremen, Germany.

Schraub, E.M., Schanz, K. & Sonntag, Kh. (2010). Impacts of leader emotion management and team conflict on team members' proactive performance: A multilevel perspective. Academy of Management Conference, Montréal, Canada.

Schraub, E.M. (2010) Betriebliches Gesundheitsmanagement auf dem Prüfstand: Ansatz und Ergebnisse einer Evaluation [Occupational Health Management being on Trial: Approach and Results of an Evaluation]. Invited talk at the University of Freiburg, Germany.

Turgut, S., Michel, A., Schraub, E.M., & Sonntag, Kh. (2010). The impact of work complexity on the relationships between positive and negative affective appraisal and recovery experiences. 27th International Congress of Applied Psychology, Melbourne, Australia.

Schraub, E.M., Buech, V. and Sonntag, Kh. (2010) Ökonomische Kennzahlen zur Evaluation eines ganzheitlichen Gesundheitsmanagement-Konzepts: Geht die Rechnung auf? [An Economic Evaluation of an Integrated Health Management Approach: Does it pay off?]. "16. Workshop Psychologie der Arbeitssicherheit und Gesundheit", Dresden, Germany.

Schraub, E.M., Buech, V. & Sonntag, Kh. (2010). Evaluating occupational health management: Development of the 'Health Index' and its relation to economic outcomes. 9th Conference of the European Academy of Occupational Health Psychology, Rome, Italy.

Schraub, E.M. and Schanz, K. (2010) Team emotional intelligence as a predictor of employee strain and initiative: A conflict perspective. 9th Conference of the European Academy of Occupational Health Psychology, Rome, Italy.

Schraub, E.M. (2009) Gesund im Job? Führung als Impulsgeber [Healthy at work? Leadership as impulse trigger]. Invited talk at Rotary Club Heidelberg-Neckar, Germany.

Schraub, E.M., Stegmaier, R., & Sonntag, Kh. (2009). Feeling stressed? – A Day-Level Study on Night-Time Effects of Emotion Regulation and Recovery. 8th International Conference on Occupational Health and Stress, San Juan, Puerto Rico.

Buech, V., Schraub, E.M., & Sonntag, Kh. (2009). Gesundheitsmanagement, Führungsverhalten und Arbeitscharakteristika als Stellgrößen für Wohlbefinden und Engagement von Mitarbeitern [Health Management, Leader Behavior, and Work Characteristics as Predictors of Employees‘ Well-Being and Engagement]. A+A 2009 congress on occupational safety and health promotion, Duesseldorf, Germany.

Schraub, E.M., Stegmaier, R., & Sonntag, Kh. (2009). Effektive Emotionsregulation bei der Arbeit – Konsequenzen für Beanspruchung und Leistung [Effective Emotion Regulation at Work: Consequences for Strain and Performance]. “6. Tagung der Fachgruppe Arbeits- und Organisationspsychologie der Deutschen Gesellschaft für Psychologie“, Vienna, Austria.

Schraub, E.M., Stegmaier, R., & Sonntag, Kh. (2009). Adaptive Performance during Change at Work: The Influence of Emotion Regulation. 8th Industrial and Organisational Psychology Conference, Sydney, Australia.

Schraub, E.M., Buech, V., Stegmaier, R., & Sonntag, Kh. (2009). Leader Behaviour as a Resource for Employee Well-being: The Influence of Leaders’ Health Promotion on Employees’ Conflict Management Skills and Health Behaviours in a Service Sample. 14th European Congress of Work and Organisational Psychology, Santiago de Compostela, Spain.

Schraub, E.M. (2009). Determinants and mechanisms of effective affect regulation. 6th doctoral colloquium of the department for work and organisational psychology of the “Deutsche Gesellschaft für Psychologie”, Mainz, Germany.

Schraub, E.M., Michaelis, B., Stegmaier, R., & Sonntag, Kh. (2008). The Influence of Workplace Health Promotion, Leader Behavior and Team Climate on Health and Performance at Work. XXIXth International Congress of Psychology, Berlin, Germany.

Koenig,C., Schraub, E.M., Frese, M. (2006). The Moderating Role of Culture in the Relationships of Visions, Goals, and Strategies to Entrepreneurial Success. 26th International Congress of Applied Psychology, Athens, Greece.

Hueweler, A., Kampschulte, A., Schraub, E.M., Argstatter, H., Gehrke, J., Sporer, S.L. (2002). Wiedererkennen Verbaler und Visueller Stimuli: Gesichter als Eigene Klasse? [Recognition of Verbal and Visual Stimuli: Faces as a Distinct Category?] “44. Tagung experimentell arbeitender Psychologen“, Chemnitz, Germany.

Appendix C: Curriculum Vitae

Eva Maria Schraub (Dipl.-Psych.)

born October 16, 1980, Frankfurt am Main, Germany

PROFESSIONAL EXPERIENCE

since 2007	**Ruprecht-Karls University Heidelberg**, Germany Research associate (Work and Organizational Psychology)
2004 – 2007	**ISM Global Dynamics**, Kronberg, Germany Market research assistant
2004 – 2007	**Fair Service**, Solms, Germany Translator at trade fairs
2005	**Justus-Liebig University Giessen**, Germany Research assistant
2004	**HOCHTIEF AG**, Frankfurt am Main, Germany Intern (HR Management Center Europe)
2004	**Team fuer Psychologisches Management**, Schwalmtal, Germany Assistant (HR Recruiting)
2003 – 2004	**Institut fuer Personalwirtschaft und Management Training**, Giessen, Germany Intern and assistant (HR Development)

EDUCATION

since 2007	**Ruprecht-Karls University Heidelberg**, Germany Doctoral candidate (Work and Organizational Psychology)
2008 – 2009	**PH Akademie**, Heidelberg, Germany Train- the-Trainer qualification
2000 – 2006	**Justus-Liebig University Giessen**, Germany Diploma in Psychology (Dipl.-Psych.) • Majors: Work and Organizational Psychology, Business Administration • Diploma thesis on entrepreneurship in China und Germany
2005	**Sieger Consulting**, Darmstadt, Germany Systemic coaching qualification
2002 – 2003	**Complutense University Madrid**, Spain Studies of psychology
2000	**Liebigschule Giessen**, Germany Abitur (high school graduation)

Appendix D: Declaration

Erklärung gemäß § 8 Abs. 1 Buchst. b) der Promotionsordnung der Universität Heidelberg für die Fakultät für Verhaltens- und Empirische Kulturwissenschaften

Ich erkläre, dass ich die vorgelegte Dissertation selbstständig angefertigt, nur die angegebenen Hilfsmittel benutzt und die Zitate gekennzeichnet habe.

Erklärung gemäß § 8 Abs. 1 Buchst. c) der Promotionsordnung der Universität Heidelberg für die Fakultät für Verhaltens- und Empirische Kulturwissenschaften

Ich erkläre, dass ich die vorgelegte Dissertation in dieser oder einer anderen Form nicht anderweitig als Prüfungsarbeit verwendet oder einer anderen Fakultät als Dissertation vorgelegt habe.

Name, Vorname: Schraub, Eva Maria

Datum, Unterschrift: