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## **PROACTIVE WORK BEHAVIOUR**

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## Zusammenfassung

Heutzutage ist Arbeit meist durch häufige Veränderungen und dezentrale Strukturen gekennzeichnet. Damit wird es zunehmend wichtiger, dass Mitarbeitende ihre Arbeit nicht einfach nur ausführen und passiv auf neue Situationen reagieren, sondern dass sie flexibler und aktiver werden und auftretende Probleme proaktiv lösen. Als Ergebnis dieser organisationalen Veränderungen gewinnt *Eigeninitiative* bzw. *proaktives Verhalten bei der Arbeit* als Forschungsthema zunehmend an Bedeutung. Die vorliegende Dissertation erweitert mit drei empirischen Studien die bestehende Forschung zu Prädiktoren und Auswirkungen von Eigeninitiative.

In Studie 1 wurden Zusammenhänge zwischen Stressoren am Arbeitsplatz (Zeitdruck, organisatorische Probleme) und Eigeninitiative untersucht. Frühere Forschungsergebnisse zeigten überraschend, dass Stressoren positiv mit selbsteingeschätzter Eigeninitiative zusammenhängen. Studie 1 untersuchte, ob sich die gefundenen Ergebnisse auch auf durch Vorgesetzte eingeschätzte Eigeninitiative übertragen lassen. Zusätzlich untersuchte diese Studie, ob *role breadth self-efficacy*, eine Form der Selbstwirksamkeitserwartung, als zugrundeliegender Mechanismus die Zusammenhänge von Stressoren am Arbeitsplatz und Handlungsspielraum mit Eigeninitiative erklären kann. Pfadanalysen in einer Stichprobe von 200 Mitarbeitern kleiner und mittlerer Unternehmen der Elektronikbranche bestätigten das angenommene partielle Mediationsmodell für selbst eingeschätzte sowie vom Vorgesetzten eingeschätzte Eigeninitiative. Die vorhergesagten positiven, indirekten Beziehungen von Handlungsspielraum und Zeitdruck zu Eigeninitiative bestätigten sich. Unerwartet zeigte sich jedoch ein negativer, indirekter Zusammenhang zwischen organisatorischen Problemen und selbsteingeschätzter Eigeninitiative. Es traten außerdem direkte positive Zusammenhänge zwischen Handlungsspielraum und Eigeninitiative (eingeschätzt durch Vorgesetzte) sowie zwischen Stressoren am Arbeitsplatz und selbsteingeschätzter Eigeninitiative auf. Die Ergebnisse der Studie zeigen, dass Mitarbeiter an Arbeitsplätzen mit hohem Handlungsspielraum, großem Zeitdruck und wenig organisatorischen Problemen größere Selbstwirksamkeitserwartungen haben und daraufhin mehr Eigeninitiative zeigen.

Studie 2 untersuchte, aufbauend auf bestehenden Modellen zu Prädiktoren individueller Eigeninitiative, ob Zusammenhänge zwischen verschiedenen Prädiktoren (transaktionale und transformationale Führung, Klima des Vertrauens, organisationales Commitment, Arbeitszufriedenheit) und Eigeninitiative auch auf organisationaler Ebene gelten. Darüber hinaus wurde untersucht, ob produktive organisationale Energie als zentraler Kontextfaktor diese Zusammenhänge moderiert. In einer großangelegten Untersuchung

wurden insgesamt 13340 Mitarbeiter aus 92 Unternehmen mit einem Split-Sample-Design untersucht. Wie vorhergesagt, hingen die genannten Prädiktoren positiv mit Eigeninitiative auf Unternehmensebene zusammen. Produktive organisationale Energie moderierte diese Zusammenhänge, d.h. die Zusammenhänge zwischen Prädiktoren und unternehmensweiter Eigeninitiative waren in Unternehmen mit hoher produktiver Energie stärker.

Studie 3 führte zwei abgrenzbare Arten von Eigeninitiative ein (*promotion-oriented initiative* und *prevention-oriented initiative*) und untersuchte deren Zusammenhänge mit der Zunahme und Abnahme von aufgabenbezogenen Konflikten am Arbeitsplatz. Studie 3a belegte die Konstruktvalidität von *promotion-oriented initiative* und *prevention-oriented initiative* an einer Stichprobe von 363 studentischen Hilfskräften: Konfirmatorische Faktorenanalysen belegten die Abgrenzbarkeit der Konstrukte untereinander ebenso wie die Abgrenzbarkeit von aktivem Coping. Korrelationsmuster waren vergleichbar mit einem früheren Eigeninitiative-Konzept. Studie 3b war eine Online-Längsschnittuntersuchung mit 197 Mitarbeitern über einen Zeitraum von drei Wochen. Übereinstimmend mit den Hypothesen sagte *promotion-oriented initiative* eine Zunahme von aufgabenbezogenen Konflikten vorher, während *prevention-oriented initiative* mit einer Abnahme von aufgabenbezogenen Konflikten einherging.

Durch unterschiedliche methodische Ansätze und Stichproben in den drei empirischen Studien ließen sich verschiedene Alternativerklärungen (z.B. Common-Method-Bias, Effekte aufgrund einer spezifischen Operationalisierung der Konstrukte) ausschließen und die Ergebnisse auf diverse Stichproben generalisieren. Da in dieser Dissertation jedoch keine längerfristigen Effekte untersucht wurden, ist zukünftig weitere Forschung zu langfristigen Beziehungen zwischen Prädiktoren und Eigeninitiative sowie möglichen Auswirkungen von Eigeninitiative notwendig.

Insgesamt erweitert diese Dissertation die bestehende Forschung zu Prädiktoren und Auswirkungen von Eigeninitiative. Ergebnisse aus drei empirischen Studien zeigen, dass (1) Selbstwirksamkeitserwartungen als verbindender Mechanismus die positiven Zusammenhänge zwischen Stressoren am Arbeitsplatz und Eigeninitiative erklären können, (2) zuvor auf individueller Ebene untersuchte Prädiktoren auf Organisationsebene generalisiert werden können, (3) der organisationale Kontext (d.h. produktive organisationale Energie) die Beziehungen zwischen Prädiktoren und Eigeninitiative moderiert und (4) Eigeninitiative (*promotion-oriented initiative*) mit einer Zunahme von aufgabenbezogenen Konflikten am Arbeitsplatz in Zusammenhang steht.

## Summary

Today's jobs are typically characterized by rapid changes and decentralized work structures. Therefore, it is increasingly important that employees do not just fulfil their jobs and react passively to new situations but that they become more flexible and active, and that they attack occurring problems in a proactive way. Reflecting these organizational developments, *proactive work behaviour* as a research topic becomes more and more important in recent times. With its three empirical studies, this dissertation contributes to the research on antecedents and outcomes of proactive work behaviour.

In Study 1, relationships between job stressors (time pressure, situational constraints) and proactive work behaviour have been examined. Against common intuition, previous research repeatedly showed that job stressors are positively related to self-rated proactive work behaviour. This study analysed if these relationships can be generalized to supervisor-rated proactive work behaviour. Moreover, this study examined if relationships between job stressors and job control on the one hand and proactive work behaviour on the other hand can be explained by role breadth self-efficacy (i.e., perceived capability) as underlying mechanism. Using self and supervisor ratings of proactive work behaviour from 200 employees of small and medium-sized companies from the electronic industry, path analyses confirmed a partial mediation model. Hypothesized positive indirect relationships of job control and time pressure with proactive work behaviour were confirmed. Unexpectedly, a negative indirect relationship between situational constraints and self-rated proactive work behaviour emerged. Moreover, direct positive relationships became obvious between job control and supervisor-rated proactive work behaviour as well as between job stressors and self-rated proactive work behaviour. The results suggest that employees working in jobs with high job control, high time pressure, but low situational constraints experience higher role breadth self-efficacy and thereby show more proactive work behaviour.

Building on current models about antecedents of individual proactive work behaviour, Study 2 investigated if relationships between various antecedents (leadership, climate of trust, organizational commitment, job satisfaction) and proactive work behaviour hold true on an organizational level of analysis. Moreover, this study answered calls to take boundary conditions into account when analysing predictors of proactive work behaviour and introduced productive organizational energy as a crucial context factor that moderates relationships between proactive work behaviour and its predictors. In a large-scale study that included 92 companies, using a split-sample design, a total of 13,340 employees provided data on their organization's transformational and transactional leadership, climate of trust,



productive organizational energy, and on employees' shared organizational commitment, job satisfaction, and proactive work behaviour. As proposed, the examined predictors were positively related to employees' proactive behaviour climate. Productive organizational energy moderated these relationships, i.e., relationships between antecedents and employees' proactive behaviour climate were stronger for organizations with higher levels of productive organizational energy.

Study 3 introduced two distinct types of proactive work behaviour (promotion-oriented initiative and prevention-oriented initiative) and examined their positive but also negative relationships with changes in task conflicts over time. Study 3a supported construct validity of promotion-oriented initiative and prevention-oriented initiative for 363 student assistants: Confirmatory factor analyses indicated that both types of proactive work behaviour are distinct constructs and also distinct from active coping; patterns of correlations were similar with a prior concept of proactive work behaviour. Study 3b was a longitudinal online survey with 197 employees over three weeks. Consistent with the hypotheses, promotion-oriented initiative predicted an increase in task conflicts while prevention-oriented initiative predicted a decrease in task conflicts.

By using various methodological approaches and samples in the three studies, several alternative explanations could be ruled out (e.g., common method bias, biases due to specific operationalizations of constructs) and results can be generalized to different samples. However, as none of these studies took into account longer time periods, further research is needed that examines long-term relationships of proactive work behaviour with its antecedents and outcomes.

Altogether, this dissertation extends research on antecedents and outcomes of proactive work behaviour. Results from three empirical studies showed that (1) self-efficacy serves as linking mechanism in the positive relationship between job stressors and proactive work behaviour, (2) previously examined antecedents on the individual level of analysis can be generalized to the organizational level, (3) the organizational context (i.e., productive organizational energy) moderates relationships between antecedents and proactive work behaviour, and that (4) proactive work behaviour (promotion-oriented initiative) is related to increased task conflicts at work.

## GENERAL INTRODUCTION

Proactive work behaviour is typically described as anticipatory behaviour with the aim to influence either oneself or the work environment (Grant & Ashford, 2008). As proactive work behaviour is related to increased individual and organizational performance, such as overall performance, career-related outcomes, sales, and organizational success (Fay & Frese, 2001; Parker, Williams, & Turner, 2006; Raabe, Frese, & Beehr, 2007), it is beneficial for organizations. Especially in today's jobs that are characterized by decentralized management, increased team work, rapid organizational changes including the introduction of innovations and new technologies, and increased job stress (cf. Armenakis & Bedeian, 1999; Balogun & Johnson, 2004; Campbell, 2000; De Dreu & Weingart, 2003; Härenstam et al., 2004; Howell & Higgins, 1990; Jimmieson, Terry, & Callan, 2004; Schilling & Steensma, 2001; Thatcher & Zhu, 2006), organizations might achieve a competitive advantage if they were able to motivate their employees to behave in a proactive manner. More specifically, employees need to become more flexible and active and they need to attack occurring problems in a proactive way instead of just fulfilling their jobs and reacting passively to new situations (Parker, 2000; Swan & Fox, 2009). The goal of this dissertation is to extend research on proactive work behaviour by examining antecedents as well as outcomes of proactive work behaviour using different methodological approaches.

The dissertation contains three parts. In this first part (*General Introduction*), I introduce the concept of proactive work behaviour and present its role as a research topic for industrial and organizational psychology. Moreover, I point out the overall research goals of this dissertation and give an outline over the following chapters. In Part 2 (*Study 1 to 3*), I present three empirical studies examining relationships of proactive work behaviour with various antecedent and outcome variables. These chapters include separate theoretical introductions and discussions and can be read independently. In Part 3 (*General Discussion*), I summarize and discuss the findings from the presented studies and conclude with the dissertation's contribution for research and practice.

### **Proactive Behaviour as a Research Topic in Industrial and Organizational Psychology**

Traditionally, researchers as well as practitioners supposed that employees might rather be passive and solely following instructions of their supervisors would be sufficient to grant good performance and organizational success (Frese, 2008). Due to changes in the work environments, these traditional views have changed towards a more (pro-)active point of view: In the 90s of the 20th century, scientists started to explore proactive work behaviour

and related concepts (e.g., Bateman & Crant, 1993; Frese, Kring, Soose, & Zempel, 1996; Morrison & Phelps, 1999; Parker, Wall, & Jackson, 1997). Until today, literature in this field has grown immensely and suggested a variety of proactive approaches, ranging from rather stable conceptualizations (e.g., proactive personality, Crant, 1995) to approaches that focus on specific behavioural patterns (e.g., personal initiative, Frese et al., 1996; taking charge, Morrison & Phelps, 1999) and general proactive behaviour at work (e.g., Grant & Ashford, 2008; Parker, Williams, & Turner, 2006). After the initial approach of studying proactivity in a general way, a flurry of narrowly specified concepts emerged (e.g., individual innovation, issue selling, proactive feedback seeking, career initiative, Parker & Collins, in press). Recently, scholars have started to integrate various proactive behaviour concepts (e.g., Grant & Ashford, 2008; Griffin, Neal, & Parker, 2007; Parker & Collins, in press). Throughout this dissertation I will use the general term proactive (work) behaviour but integrate research on various operationalizations: Specifically, I will focus on personal initiative (i.e., a “behaviour syndrome resulting in an individual’s taking an active and self-starting approach to work and going beyond what is formally required in a given job”, Frese, Kring, Soose, & Zempel, 1996, p. 38) and taking charge (i.e., a change-oriented proactive behaviour that emphasizes the improvement of work execution by voluntary efforts accomplished by employees, Morrison & Phelps, 1999). Moreover, I will introduce two newly developed concepts, namely promotion-oriented initiative (i.e., discretionary behaviour with the aim of taking control in order to improve the internal organizational environment) and prevention-oriented initiative (i.e., discretionary behaviour with the aim of preventing the reoccurrence of obstacles and stressors at work).

Beyond conceptualization issues, research focused on antecedents and outcomes of proactive behaviour. In an early review in this field, Crant (2000) identified individual differences (e.g., proactive personality, role breadth self-efficacy, job involvement, goal orientation, need for achievement) as well as contextual factors (e.g., organizational culture and norms) as antecedents of proactive behaviour. Similarly, Fay and Frese (2001) confirmed cognitive ability, knowledge and skills, personality variables (e.g., achievement motive, action orientation), individual orientations (e.g., control aspirations, self-efficacy, change orientation), and environmental support (e.g., job control, complexity of work) as variables that are related to personal initiative. Recently, Bindl and Parker (in press) reviewed the literature on proactive behaviour and presented a model that also takes into account mediation processes in the relationship between antecedents and proactive behaviour. With regard to antecedents of proactive behaviour, they distinguished between individual factors (e.g., age,

gender, knowledge, abilities, readiness to change, learning goal orientation) and situational factors (e.g., job autonomy, complexity, job stressors, leadership, climate). Furthermore, they integrated motivational processes (e.g., perceived capability, goals and aspirations, affect-related processes) as linking mechanism between antecedents and proactive behaviour. Outcomes that were associated with proactive behaviour in prior research include, for instance, individual job performance, career success, well-being, identification, role clarity, team effectiveness, and organizational success (Bindl & Parker, in press; Crant, 2000; Fay & Frese, 2001). In general, while research on outcomes of proactive behaviour also refers to team and organizational level variables, research on antecedents has mainly focused on individual-level variables.

Although prior research has already revealed many insights about antecedents and outcomes of proactive work behaviour, still a long way is to go to comprehensively understand these relationships and the construct of proactive work behaviour itself. With regard to antecedents of proactive work behaviour, research on situational antecedents is underrepresented in comparison to research on employees' individual characteristics. For instance, the influence of negative workplace environments (e.g., job stressors) on proactive work behaviour has emerged as a new research topic and little is known about processes that link negative workplace characteristics with proactive work behaviour. Moreover, the majority of prior research was conducted on an individual level of analysis and knowledge about how proactive work behaviour differs between organizations and knowledge about potential antecedents that influence organizational-level proactive behaviour is missing. Finally, little is known about potential boundary conditions that moderate the relationships between proactive work behaviour and its antecedents. Regarding research on outcomes of proactive work behaviour, prior research was guided by the very optimistic view that proactive behaviour is generally beneficial. Potential negative consequences for the employee or the organization have not been studied so far.

Overall, research on proactive behaviour is closely related to various adjacent research areas of industrial and organizational psychology. Results of this dissertation are especially relevant for job design literature as well as stress literature with regard to studied situational antecedents of proactive work behaviour. Moreover, focusing on outcomes proactive work behaviour, results are related to team literature as well as to job performance research and literature on organizational success factors.

## Research Goals

The central goal of this dissertation is to extend research on antecedents and outcomes of proactive work behaviour. First, I test parts of prior models on proactive behaviour (Bindl & Parker, in press; Crant, 2000; Fay & Frese, 2001) that have not been tested before. In particular, I examine self-efficacy as a linking mechanism in the positive relationship between job stressors and proactive work behaviour (Study 1). Second, I apply parts of these prior models to an organizational level of analysis (Study 2). Third, I extend these prior models. More specifically, I take boundary conditions into account that promote or inhibit the impact of antecedents on proactive work behaviour (Study 2) and regard negative outcomes of proactive work behaviour (Study 3). Finally, I use more sophisticated methodological approaches, such as supervisor ratings of proactive work behaviour (Study 1) and longitudinal data (Study 3).

In particular the following research questions will be addressed in this dissertation:

- Can previously found mediators in the relationship between positive workplace characteristics and proactive work behaviour also be applied as linking mechanism for negative workplace characteristics (i.e., job stressors, Study 1)?
- Is the organizational context (e.g., productive organizational energy) a boundary condition that promotes or inhibits the impact of individual and situational antecedents on proactive work behaviour (Study 2)?
- Are there also undesired outcomes of proactive work behaviour (Study 3)?

Moreover, I address these questions using various methodological approaches. First, to enhance generalizability, various samples are used throughout this dissertation, including blue- and white-collar workers from the electronic industry (Study 1), a heterogeneous sample of employees from various small- and medium-sized companies (Study 2), student assistants (Study 3) as well as employees from public health and pension insurance companies (Study 3). Second, I use data from cross-sectional designs (Study 1) as well as from split-sample designs (Study 2) and from longitudinal designs (Study 3). Third, data is analysed on the individual level (Study 1 and 3) as well as on the organizational level (Study 2). Fourth, I use self ratings (Study 1 to 3) as well as supervisor ratings (Study 1) to collect data on employees' proactive work behaviour. Fifth, I use a broad range of proactive work behaviour concepts throughout this dissertation, including personal initiative (Study 1 and 2), taking charge (Study 1), as well as two newly developed concepts, namely promotion-oriented initiative and prevention-oriented initiative (Study 3).

## Dissertation Outline

The dissertation includes three empirical studies examining relationships of proactive work behaviour with various antecedent and outcome variables and using different methodological approaches. While Studies 1 and 2 focus on antecedents of proactive work behaviour, Study 3 deals with positive as well as negative consequences of proactive work behaviour.

In Study 1, I examine relationships between job stressors and proactive work behaviour. Prior research on workplace characteristics as antecedents of proactive work behaviour has long been limited to *positive* workplace characteristics, such as job control, work complexity, leadership, and organizational support for proactive behaviour (Fay & Frese, 2001; Frese, Garst, & Fay, 2007; Morrison & Phelps, 1999; Parker, et al., 2006; Strauss, Griffin, & Rafferty, 2009). However, research has shown that proactive behaviour is also positively predicted by job stressors, formerly seen as *negative* workplace characteristics (e.g., time pressure, situational constraints; Fay & Sonnentag, 2002; Fay, Yan, & West, 2007; Ohly, Sonnentag & Pluntke, 2006; Sonnentag 2003). The majority of these studies relied on self-rated proactive behaviour measures. In Study 1, I investigate if these relationships hold true for supervisor ratings of proactive work behaviour. Moreover, using two frequently used proactive work behaviour measures, namely personal initiative (Frese, Kring, Soose, & Zempel, 1996) and taking charge (Morrison & Phelps, 1999), I am also able to rule out that relationships between job stressors (i.e., time pressure, situational constraints) and proactive work behaviour merely occur due to a specific operationalization of proactive work behaviour. Beyond these methodological questions, I expand prior mediation models of positive workplace characteristics to explain relationships between job stressors and proactive work behaviour. In particular, I analyse if role breadth self-efficacy works as a linking mechanism in the relationship between job stressors and proactive work behaviour.

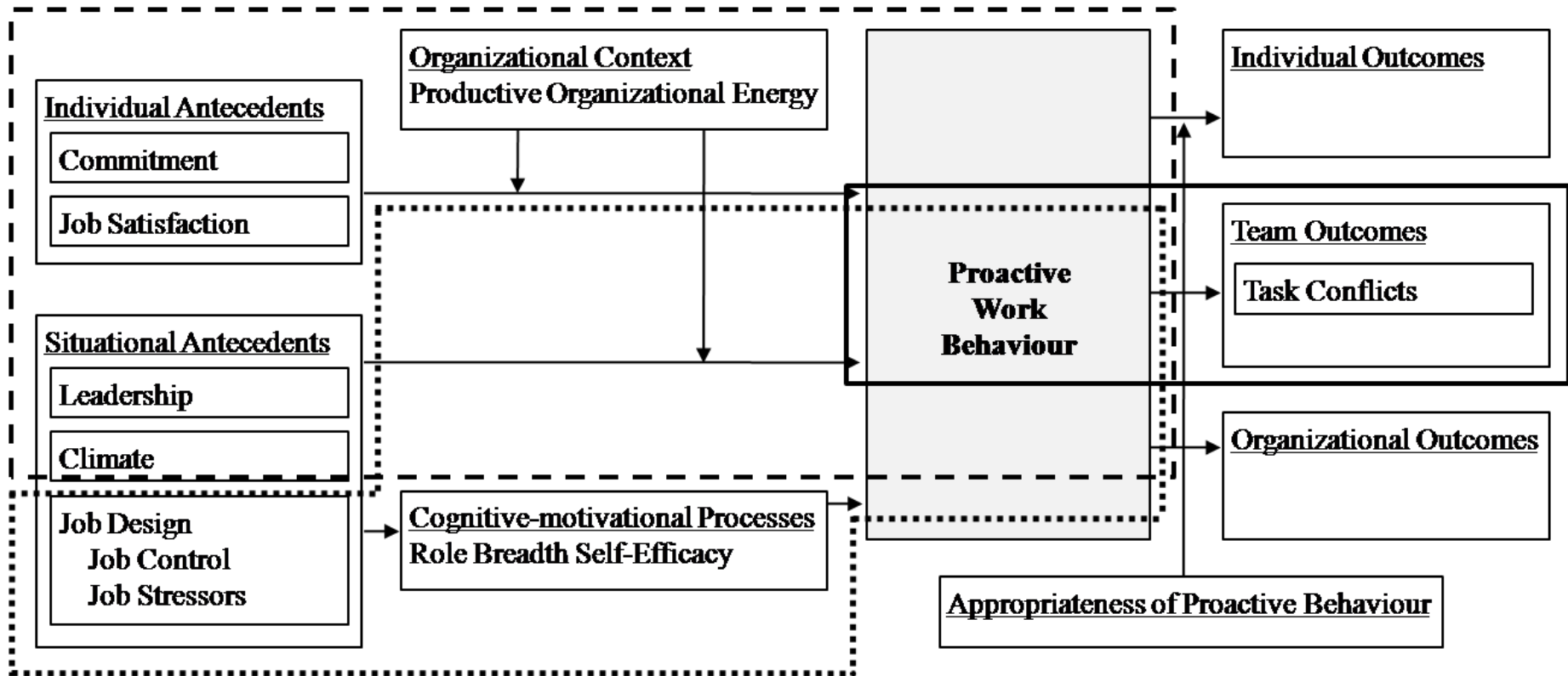
Study 2 has two aims: First, notwithstanding the valuable insights from research on predictors at the individual level of analysis, research on higher levels of analysis (e.g., organizational level) is scarce (Bindl & Parker, in press). Therefore, I analyse if relationships between various antecedents and proactive work behaviour hold true on an organizational level of analysis. More specifically, building on the review of Bindl and Parker (in press), I examine transactional and transformational leadership and climate of trust as organizational-level situational antecedents as well as shared organizational commitment and shared job satisfaction as aggregated (organizational-level) individual antecedents. Hence, I ask if differences between companies with regard to situational and aggregated individual

antecedents predict different levels of proactive work behaviour. Second, little is known about boundary conditions that indicate under which circumstances predictors promote or inhibit proactive work behaviour (Bindl & Parker, in press; Crant, 2000). Thus, I extend the model of Bindl & Parker (in press) by systematically regarding boundary conditions in the relationships between antecedents and proactive work behaviour. Particularly, I suggest productive organizational energy as a crucial organizational context factor that moderates these relationships. Productive organizational energy “reflects the extent to which a company has mobilized its emotional, cognitive, and behavioural potential in pursuit of its goals” (Cole, Bruch, & Vogel, 2005, p. 2). With its broad conceptualization productive organizational energy comprehensively captures an organization’s context that may promote or hinder proactive work behaviour of its employees.

Study 3 focuses on outcomes of proactive work behaviour. Prior research repeatedly revealed that proactive behaviour is beneficial for individual as well as organizational success (Fay & Frese, 2001; Parker, Williams, & Turner, 2006; Raabe, Frese, & Beehr, 2007). However, negative consequences of proactive work behaviour have rarely been addressed by researchers (Bateman & Crant, 1999; Campbell, 2000). In Study 3, I argue that proactive work behaviour may have negative consequences particularly for conflicts among colleagues and supervisors about how to accomplish work tasks because proactive employees might be “difficult” for colleagues and supervisors (cf., Grant, Parker, & Collins, 2009). More specifically, I argue that consequences of proactive work behaviour are not uniformly positive or negative but that relationships are different for distinct types of proactive work behaviour. Particularly, I introduce promotion-oriented initiative (i.e., discretionary behaviour that aims at taking control in order to improve the internal organizational environment) and prevention-oriented initiative (i.e., discretionary behaviour that aims at preventing the reoccurrence of obstacles and stressors at work) as two specific types of proactive work behaviour. While promotion-oriented initiative should be related to increased task conflicts, prevention-oriented initiative should be related to decreased task conflicts. Using a longitudinal design, I am able to predict changes in tasks conflicts by these two types of proactive work behaviour.

Figure 1 depicts an integrated model of proactive behaviour that is based on former reviews of the proactive behaviour research (Bindl & Parker, in press; Crant, 2000; Fay & Frese, 2001) and that summarizes the foci of the three empirical studies of this dissertation.

In the final chapter (*General Discussion*), I discuss the results from the empirical studies and conclude with the dissertation’s contribution for research and practice.



*Note.*

- ..... = Study 1
- - - - = Study 2
- = Study 3

Figure 1

Model of Proactive Behaviour – Based on the Model of Bindl and Parker (in press) and Studies Conducted in this Dissertation



## **STUDY 1: JOB CONTROL AND JOB STRESSORS AS PREDICTORS OF PROACTIVE WORK BEHAVIOUR: IS ROLE BREADTH SELF-EFFICACY THE LINK?<sup>1</sup>**

### **Summary**

Contrary to what one might expect, previous research repeatedly showed that job stressors are positively related to proactive work behaviour. While former research predominantly relied on self ratings, this study examines if these relationships can be generalized to supervisor-rated proactive behaviour. Moreover, we examine if relationships between job stressors (time pressure, situational constraints) and job control on the one hand and proactive behaviour on the other hand can be explained by role breadth self-efficacy as underlying mechanism. We used self and supervisor ratings of proactive behaviour from 200 employees of small and medium-sized companies from the electronic industry. Path analyses confirmed a partial mediation model. Hypothesized positive indirect relationships of job control and time pressure with proactive behaviour were confirmed. Unexpectedly, a negative indirect relationship between situational constraints and self-rated proactive behaviour emerged. We found direct positive relationships between job control and supervisor-rated proactive behaviour as well as between job stressors and self-rated proactive behaviour. Our results suggest that employees working in jobs with high job control, high time pressure, but low situational constraints experience higher role breadth self-efficacy and thereby show more proactive behaviour.

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<sup>1</sup> This chapter is based on:

Spychala, A., & Sonnentag, S. (under review). Job control and job stressors as predictors of proactive work behaviour: Is role breadth self-efficacy the link?

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## Introduction

Today's employees are often confronted with rapid changes in their jobs, including the need to deal with innovations and new technologies, and to work in companies with decentralized management (Balogun & Johnson, 2004; Campbell, 2000; Howell & Higgins, 1990; Schilling & Steensma, 2001; Thatcher & Zhu, 2006). Typically, job stress is increased, for instance by job stressors such as job demands, obstacles, role conflicts, and uncertainty (Armenakis & Bedeian, 1999; Härenstam et al., 2004; Jimmieson, Terry, & Callan, 2004). Moreover, proactive working is demanded, i.e., employees have to become more flexible and active, and have to approach occurring problems in a proactive way (Parker, 2000; Swan & Fox, 2009). Proactive behaviour, which is typically seen as anticipatory behaviour with the aim to influence either oneself or the work environment (Grant & Ashford, 2008), is beneficial for the organization as it is related to increased individual and organizational performance, such as overall performance, career-related outcomes, sales, and organizational success (Fay & Frese, 2001; Parker, Williams, & Turner, 2006; Raabe, Frese, & Beehr, 2007).

Consequently, the search for predictors of this performance-related behaviour is a much needed effort. While predictors referring to individual characteristics are well elaborated, research on workplace characteristics is usually limited to *positive* workplace characteristics, such as job control, work complexity, leadership, and organizational support for proactive behaviour (Fay & Frese, 2001; Frese, Garst, & Fay, 2007; Morrison & Phelps, 1999; Parker, et al., 2006; Strauss, Griffin, & Rafferty, 2009). However, research has shown that proactive behaviour is also positively predicted by job stressors, formerly seen as *negative* workplace characteristics (e.g., time pressure, situational constraints; Fay & Sonnentag, 2002; Fay, Yan, & West, 2007; Ohly, Sonnentag & Pluntke, 2006; Sonnentag 2003).

At first glance, these positive relationships between job stressors and proactive behaviour are surprising: Why should employees engage in extra proactive efforts when being confronted with stressors at work? Intuitively, one might rather think that if employees are confronted with job stressors, fulfilling the required tasks should be more demanding and should require more task-related effort (Frese & Zapf, 1994; Hockey, 1997). Therefore, time and resources for additional proactive actions should be scarce. One possible explanation for these surprising results might lay in the methodology of the previous research: Studies that showed positive relationships between job stressors and proactive behaviour measured proactive behaviour with self ratings. Therefore, relationships might have occurred because of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) or might reflect an

individual perception of activation. In general, self ratings used for performance evaluations have been shown to have lower validity than, for instance, supervisor ratings (Hoffman, Nathan, & Holden, 1991). Moreover, proactive behaviour is not always appreciated by supervisors (Grant, Parker, & Collins, 2009). Until now, it stays unclear if employees' increased perception of proactive behaviour also translates into higher supervisor ratings of proactive behaviour. Thus, the first aim of our study is to test if positive relationships between job stressors and proactive behaviour still remain when using supervisor ratings of proactive behaviour. For that purpose, we measure proactive behaviour by self as well as supervisor ratings within one sample.

As a second aim, we want to examine possible explanations for these relationships. While previous studies have mainly focused on either positive workplace characteristics or negative workplace characteristics we present an integrative approach and argue that relationships between positive (e.g., job control) as well as negative (e.g., job stressors) workplace characteristics and proactive behaviour can be explained by the same underlying mechanism. Previous research suggested role breadth self-efficacy, which is a core psychological state reflecting employees' confidence to fulfil a broad role (Parker, 1998), as a central linking mechanism between job control and proactive behaviour (Grant & Ashford, 2008; Parker et al. 2006). In this study, we aim at extending this view for the relationship between job stressors and proactive behaviour and present an integrative model including positive as well as negative workplace characteristics.

Altogether, this study contributes to the understanding of proactive work behaviour and its dependence on workplace characteristics, especially job stressors as negative workplace characteristics. First, methodological reasons for relationships between job stressors and proactive work behaviour will be examined. Second, we use prior mediation models from positive workplace characteristics and expand them to explain relationships between job stressors and proactive behaviour. Third, this study incorporates positive as well as negative workplace characteristics in an integrative model to predict proactive behaviour.

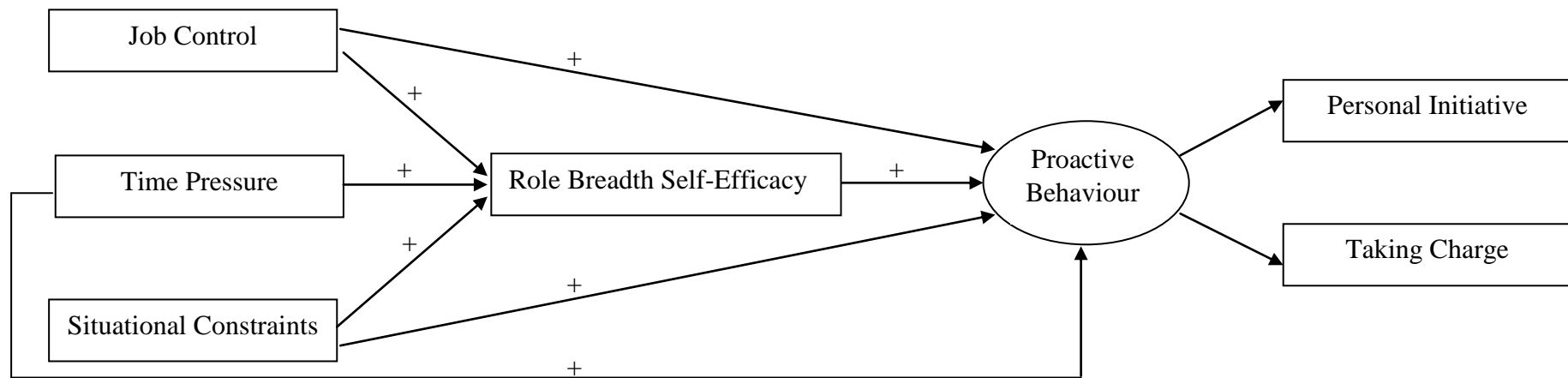


Figure 2

Conceptual Model (Study 1)

### **Conceptual Model: Workplace Characteristics and Proactive Work Behaviour**

Proactive work behaviour can be defined as discretionary behaviour that aims at changing the internal organizational environment (Grant & Ashford, 2008; Parker & Collins, in press). According to Parker and Collins (in press), proactive work behaviour is a latent variable that contains different types of proactive behaviour concepts. Parker and Collins (in press) reported taking charge, individual innovation, problem prevention, and voice as the four constructs that constitute proactive work behaviour. In congruence with Parker and Collins (in press), we focused on taking charge as one proactive behaviour concept that constitutes proactive work behaviour. *Taking charge* is a change-oriented proactive behaviour that emphasizes the improvement of work execution by voluntary efforts accomplished by employees (Morrison & Phelps, 1999). Differing from Parker and Collins (in press), we used the concept of personal initiative instead of voice, individual innovation, and problem prevention. *Personal initiative* is defined as a “behaviour syndrome resulting in an individual’s taking an active and self-starting approach to work and going beyond what is formally required in a given job” (Frese, Kring, Soose, & Zempel, 1996, p. 38). Employees show personal initiative if the behaviour fits the organization’s mission, is self-starting, persistent, proactive, as well as long-term, future, and goal oriented (Frese et al., 1996). Being persistent, for instance not giving up if a supervisor does not like a new idea (Frese et al., 1996), overlaps with the concept of voice (“communicate your views about work issues to others in the workplace, even if your views differ and others disagree with you”, Parker and Collins, in press, p. 45). Moreover, personal initiative captures also aspects from individual innovation (e.g., “I am particularly good at realizing ideas”, Frese et al., 1997, p. 161 vs. “generate creative ideas”, Parker and Collins, in press, p. 45) and problem prevention (e.g., “I actively attack problems”, Frese et al., 1997, p. 161 vs. “spend time planning how to prevent re-occurring problems”, Parker and Collins, in press, p. 45).

Figure 2 shows our conceptual model. In general, we propose that job control and job stressors (i.e., time pressure, situational constraints), as parts of the work environment, are directly and indirectly related to proactive behaviour. Indirect relationships between work environment characteristics and proactive behaviour are explained by role breadth self-efficacy. The upper part of the model (i.e., relationships concerning job control) is in line with former models on proactive behaviour (Frese & Fay, 2001; Grant & Ashford, 2008; Parker et al. 2006; Speier & Frese, 1997). Moreover, role breadth self-efficacy as the linking mechanism is consistent with job design theory (Hackman & Oldham, 1976) and social-cognitive theory (Bandura, 1982). According to Bandura (1977), self-efficacy expectations

vary with regard to their generality, i.e., people can have high self-efficacy expectations regarding narrow circumscribed behaviours or situations but they can also have high general self-efficacy expectations that go beyond certain situations. We chose role breadth self-efficacy as efficacy construct for our model because it reflects a similar level of generality as proactive behaviour, i.e., proactive behaviour as well as role breadth self-efficacy refer to a broad range of work related behaviours or roles. In contrast to generalized self-efficacy which goes beyond the work context, role breadth self-efficacy focuses on self-efficacy within the individuals' work role (Parker et al., 2006). However, it includes a variety of tasks (e.g., solving long-term problems, improving procedures, meeting customers) instead of a single task as captured by task specific self-efficacy (Parker et al., 2006).

The lower part of the model (i.e., relationships concerning time pressure and situational constraints) extends former models on relationships between positive workplace characteristics and proactive behaviour by introducing job stressors as relevant parts of the work environment. To include two different but typical types of stressors (c.f., LePine, Podsakoff, & LePine, 2005; Podsakoff, LePine, & LePine, 2007), we integrated time pressure and situational constraints as core stressors in our model.

### **Job Control and Proactive Work Behaviour**

A core supportive aspect of the environment and pivotal predictor of proactive work behaviour is job control (Grant & Ashford, 2008). Job control is defined as “the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out” (Hackman & Oldham, 1976, p. 258). First, job control directly predicts to what extent proactive behaviour is allowed to be shown: While lack of job control may hinder goal accomplishment, employees who experience larger levels of job control can set and pursue a broader range of work-related goals and feel more responsible for work-related problems and goals than employees with lower levels of job control (Parker, 2000; Parker, Wall, & Jackson, 1997). Thus, it should be easier for employees with high job control to start behaviour that goes beyond formal job requirements, including proactive behaviour.

Second, as argued in the job characteristics model (Hackman & Oldham, 1976), job control enhances internal work motivation which promotes task performance and in addition proactive behaviour. Indeed, meta-analytical results showed positive relationships between job control on the one hand and intrinsic work motivation and performance on the other hand (Humphrey, Nahrgang, & Morgeson, 2007). Furthermore, several studies found positive

relationships between job control and proactive behaviours (e.g., Fay & Frese, 2001, Frese et al., 2007; Ohly et al., 2006; Parker et al., 2006). To sum up, we propose

*Hypothesis 1. Job control will be positively related to proactive behaviour.*

### **Job Stressors and Proactive Work Behaviour**

Beehr, Jex, Stacy, and Murray (2000) defined job stressors as “environmental factors at work that lead to individual strains - aversive and potentially harmful reactions of the individual“ (p. 391). While job stressors were typically seen as workplace factors that increase strain and impair performance (Jex & Bliese, 1999; Motowidlo, Packard, & Manning, 1986), recent research within the framework of challenge and hindrance stressors suggested more complex relationships between job stressors and performance (LePine et al., 2005; Podsakoff et al., 2007). Earlier, Lazarus and Folkman (1984) had proposed that reactions to stressors depend on individual appraisals of stressors as threatening or challenging: While stressors appraised as threats trigger passive coping reactions, stressors appraised as challenge trigger active coping responses.

Hindrance stressors include stressful demands that are evaluated as “unnecessarily thwarting personal growth and goal attainment” (LePine et al., 2005, p. 765). Hassles at work and situational or organizational constraints, defined as “situations or things that prevent employees from translating ability and effort into high levels of job performance” (Spector & Jex, 1998, p. 357), are typically viewed as hindrance stressors. In contrast, challenge stressors refer to stressful demands that are evaluated as “obstacles to be overcome in order to learn and achieve” (LePine et al., 2005, p. 765). Time pressure (similar to the concepts of workload, overload, or job demands), which is characterized by too many tasks that have to be accomplished in too short time, is viewed as a typical challenge stressor. According to Spector and Jex (1998), employees usually perceive relatively low levels of situational constraints but medium levels of time pressure (or work load). Meta-analytical results showed that independently of individual appraisals challenge as well as hindrance stressors go along with strain but only hindrance stressors were actually negatively related to work-related outcomes (e.g., task performance, job satisfaction, organizational commitment), whereas challenge stressors were positively related to these outcomes (LePine et al., 2005; Podsakoff et al., 2007). However, when it comes to proactive behaviour, the association between these two types of stressors and proactive behaviour might differ from the pattern of findings that

emerged for task performance because hindrance stressors might not impair but rather stimulate proactive actions (cf., Fay & Sonnentag, 2002).

Taking a control theory perspective (Carver & Scheier, 1982, 1998; Edwards, 1992), we propose that time pressure as well as situational constraints will be positively related to proactive behaviour: Proactive behaviour aims at changing and improving the internal organizational environment (Grant & Ashford, 2008; Parker & Collins, in press). Therefore, every kind of stressor may stimulate proactive behaviour as it points to aspects that might be improved. Both types of stressors indicate a discrepancy between actual and preferred situation. For the employee, the occurrence of time pressure or situational constraints shows that work is not organized and allocated in an optimal way and that therefore actual workload exceeds preferred workload (time pressure) or task accomplishment is threatened (situational constraints). Accordingly, the situation makes it obvious for an individual that it is necessary to take action and to change something in order to decrease this discrepancy.

First studies support the assumption that time pressure is positively related to personal initiative but results are mixed: Ohly et al. (2006) found a linear positive relationship between time pressure and personal initiative. Sonnentag (2003) included time pressure as a control variable and the correlation matrix indicates a positive relationship between time pressure and personal initiative. Furthermore, Fay et al. (2007) reported a positive relationship between work demands (i.e., time pressure and work load) and innovation implementation (i.e., another form of proactive behaviour) on a congress. Moreover, time pressure enhanced proactive behaviour while the reverse effect could not be shown (Fay, Sonnentag, & Frese, 1998). The only study that also tested a possible mechanism in the relationship between time pressure and proactive behaviour showed that effects of daily time pressure on personal initiative were partially mediated by challenge appraisals (Ohly & Fritz, in press). This study is in line with the conceptualization of time pressure as a typical challenge stressor (LePine et al., 2005). However, Fay and Sonnentag (2002) found a positive relationship between time pressure and change in personal initiative two years later in one of their three analyses but did not find any relationship in the other two analyses. Similar, Fritz and Sonnentag (2009) did not find a positive relationship between time pressure at noon and taking charge during the afternoon when controlling for positive mood. Thus, the majority of studies but not all of them revealed positive relationships between time pressure and proactive behaviour.

Empirical support for relationships between situational constraints and proactive behaviour is mixed: Fay and Sonnentag (2002) assumed a curvilinear relationship but found a linear positive relationship between situational constraints and proactive behaviour after two



years in one of their three sets of analyses. However, they did not find any relationship between these constructs in the other two analyses. Fritz and Sonnentag (2009) reported positive relationships between situational constraints at noon and taking charge during the afternoon. Notwithstanding these mixed results, based on our theoretical argumentation derived from a control theory perspective, we propose

*Hypothesis 2. Time pressure will be positively related to proactive behaviour.*

*Hypothesis 3. Situational constraints will be positively related to proactive behaviour.*

### **Role Breadth Self-Efficacy as the Linking Mechanism**

In line with prior research on proactive behaviour, we propose positive relationships between role breadth self-efficacy, as an individual psychological state, and proactive work behaviour (Parker 1998, Parker et al., 2006). While abilities and skills are important factors for employees to engage in proactive behaviour (Fay & Frese, 2001), it is particularly important that the employees themselves are also convinced to be able to successfully achieve their goals (Bandura, 1977). Parker (1998) introduced the concept of role breadth self-efficacy which “concerns the extent to which people feel confident that they are able to carry out a broader and more proactive role” (p. 835). According to expectancy theory (Vroom, 1964), individuals will decide to show a certain behaviour if they assume that they will be successful and if the expected consequences will fulfil their expectations. Employees with high role breadth self-efficacy are more convinced to successfully fulfil broad roles and therefore, the likelihood to actually carry out broad roles and proactive behaviour should be higher (Parker et al., 2006). Empirical studies underpin the proposed relationship between role breadth self-efficacy and proactive behaviour. Positive relationships were found between a broad range of self-efficacy concepts on the one hand and individual, team member, and organization member proactivity (Griffin, Neal, & Parker, 2007), proactive behaviour at work (Parker et al., 2006), personal initiative (Fay & Frese, 2001; Ohly & Fritz, 2007; Speier & Frese, 1997), and taking charge (McAllister, Kamdar, Morrison, & Turban, 2007; Morrison & Phelps, 1999; Parker & Collins, in press) on the other hand. Several of these studies integrated interview-based evaluations of participants’ proactive behaviour or supervisor ratings instead of mere self ratings (e.g., Griffin et al., 2007; McAllister et al., 2007; Parker et al., 2006; Speier & Frese, 1997). Therefore, role breadth self-efficacy should not only be related to higher employees’ self-rated proactive behaviour but also to higher supervisor-rated proactive

behaviour of employees. We propose

*Hypothesis 4. Role breadth self-efficacy will be positively related to proactive behaviour.*

Models on proactive behaviour propose psychological states as linking mechanism between job control and proactive behaviour (Frese et al., 2007; Grant & Ashford, 2008; Parker et al. 2006; Speier & Frese, 1997). Role breadth self-efficacy is a core psychological state which is relevant for proactive behaviour (Parker, 1998). First, individuals working in jobs with high job control are granted responsibilities and decision latitude by their supervisors. Therefore, employees with high job control should suppose that their supervisor is convinced that they have got enough knowledge, skills, and abilities to fulfil the tasks in their job and to carry out a broad range of tasks and roles. Therefore, their own confidence to carry out broad roles should be increased, i.e., they should experience a higher level of role breadth self-efficacy than employees with low job control. Second, high job control should enable employees to use a broader set of skills and abilities, and indeed, Leach, Wall, and Jackson (2003) showed that empowerment (i.e., provision of higher job control, among other aspects) increases job knowledge. Parker (1998) argued that the acquisition of skills by job control promotes enactive mastery which is a core resource for self-efficacy (Bandura, 1982). Consequently, job control should enhance role breadth self-efficacy. Indeed, Parker (1998) showed that job control predicted an increase in role breadth self-efficacy over 18 months and cross-sectional relationships were found repeatedly (Parker, 2003; Parker & Sprigg, 1999; Parker et al., 2006). As discussed above, role breadth self-efficacy is a core predictor for proactive behaviour. Consequently, we propose role breadth self-efficacy as a core linking mechanism in the positive relationship between job control and proactive behaviour. Indeed, Parker et al. (2006) showed positive effects of job control on proactive behaviour mediated by role breadth self-efficacy.

With regard to relationships between job stressors (time pressure, situational constraints) and proactive behaviour, we propose that job stressors function as situational cues that activate perceptions of individuals' own capabilities. We argue that psychological states, such as role breadth self-efficacy can be triggered by situational cues. Situations with high job stressors show the necessity for concrete actions, including proactive behaviour, and thereby activate perceptions of one's own capabilities: Confronted with certain action necessities individuals may evaluate their own capabilities and notice that they are able to carry out these

necessary tasks also including broader and proactive tasks. Comparably, in coping research this evaluation process is called secondary appraisal (Lazarus and Folkman, 1984). In contrast, in situations with low job stressors employees will not think in particular about their capabilities to carry out broader tasks and therefore in low-stressor situations role breadth self-efficacy should be low. Similarly, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2007) argued that personal resources, including self-efficacy, are cultivated by the environment and found a positive relationship between generalized workload and self-efficacy. Correspondingly, Parker (2003) reported a positive longitudinal correlation between role overload and role breadth self-efficacy after three years. As discussed above, role breadth self-efficacy fosters proactive behaviour. Consequently, we propose role breadth self-efficacy as one possible linking mechanism in the positive relationship between job stressors (time pressure, situational constraints) and proactive behaviour.

Beyond role breadth self-efficacy, other constructs may also function as potential linking mechanisms in the relationships between positive as well as negative workplace characteristics and proactive behaviour. For instance, setting broader goals or increased internal work motivation may link job control with proactive behaviour and appraising stressors as challenges may link time pressure and situational constraints with proactive behaviour. Taken together, we propose,

*Hypothesis 5a. The relationship between job control and proactive behaviour will be partially mediated by role breadth self-efficacy.*

*Hypothesis 5b. The relationship between time pressure and proactive behaviour will be partially mediated by role breadth self-efficacy.*

*Hypothesis 5c. The relationship between situational constraints and proactive behaviour will be partially mediated by role breadth self-efficacy.*

## **Method**

### **Sample and Procedure**

We collected data by paper-and-pencil questionnaires in small and medium-sized companies from the electronic industry located in Germany. We chose the electronic industry because in this industry innovation and rapid changes usually meet rather traditional workplaces of blue-collar workers, providing options for proactive behaviour. First, we contacted CEOs of German small and medium-sized companies from the electronic industry

and introduced our study as research on stress at work. After having received their consent, we informed employees by written information about the study and sent them a registration form. Participants who registered for the study received the questionnaire. Additionally, registered employees received a second questionnaire which they were asked to give to their direct supervisor. Employee and supervisor questionnaires were matched by a code word given by the employee.

In total, 388 employees registered for participation and 232 (59.8 percent) sent back the questionnaire. We received 179 supervisor ratings corresponding to a response rate of 46.1 percent. We had to delete 32 employee cases because of missing data, and 39 supervisor cases because of various reasons (19 cases had to be deleted because the corresponding employee case was deleted, for 12 cases no employee case could be matched, 8 cases were deleted because of missing data). The final sample contained 200 employee self ratings from 38 companies and 140 supervisor ratings resulting in two samples as basis for further analyses. Within the companies, the number of employees ranged from 1 to 18, with a median of 4 and an average of 5 ( $SD = 4$ ). Because of the relatively high number of deleted cases, we ran several tests to confirm that our final sample was not systematically different from the raw sample: Deleted cases and finally used cases in the employee sample did not differ significantly with regard to our study variables. The same holds true for the supervisory data: Deleted cases and finally used cases in the supervisor sample did not differ significantly. Moreover, employees' with and without corresponding supervisor rating did not differ significantly from each other with regard to our study variables.

The final employee sample included 46.0 percent women. About a third (38.3 percent) of the employees were blue-collar workers, i.e., working in production or stock workplaces; the others were white-collar workers, i.e., working in administrative or sales departments. Concerning education, 8.9 percent of the employees did not have any degree, 45.0 percent held a degree of an apprenticeship or professional training, and 46.1 percent held a university degree or another degree of higher education. The mean age was 39.4 years ( $SD = 10.3$ ); mean reported company tenure was 7.3 years ( $SD = 7.3$ ).

## Measures

**Work characteristics.** We assessed job control and job stressors (i.e., time pressure and situational constraints) by using self-report scales developed by Semmer, Zapf and Dunkel (1999) which are widely used in and comprehensively validated for German speaking countries (Semmer et al., 1999; Semmer, Zapf, & Greif, 1996). Specifically, we

measured *job control* with five items using a 5-point Likert-scale from 1 (very little) to 5 (to a very large extent). A sample item is “Can you influence the way of how you accomplish your tasks?”. We measured *time pressure* with five items with possible answers from 1 (never) to 5 (very often). A sample item is “How often do you have time pressure?” We assessed *situational constraints* by five items which concern situations characterized by malfunctioning, missing, incomplete, or outdated equipment, tools, or information. A sample item is “How often do you have to work with incomplete and outdated documents and information?” Cronbach’s alphas were .81 for job control, .83 for time pressure, and .72 for situational constraints.

***Role breadth self-efficacy (RBSE).*** We assessed RBSE as employees’ self ratings by nine items from the measure developed by Parker (1998) using a 5-point Likert-scale ranging from 1 (not confident at all) to 5 (very confident). A sample item is “How confident would you feel designing new procedures for your work area?” Cronbach’s alpha was .91.

***Proactive behaviour.*** We assessed self-rated and supervisor-rated proactive behaviour (i.e., personal initiative and taking charge) using 5-point Likert-scales from 1 (fully disagree) to 5 (fully agree). Specifically, we measured *personal initiative* with the seven-item scale of Frese, Fay, Hilburger, Leng, and Tag (1997). A sample item for self ratings is “I actively attack problems” and accordingly for supervisor ratings “He/she actively attacks problems”. Cronbach’s alphas were .77 for self ratings and .89 for supervisor ratings. We assessed *taking charge* by six items from the measure developed by Morrison and Phelps (1999). A sample item for self ratings is “I often try to bring about improved procedures for the work unit or department” and correspondingly for supervisor ratings “He/she often tries to bring about improved procedures for the work unit or department.” Cronbach’s alphas were .90 for self ratings and .93 for supervisor ratings.

We ran a set of confirmatory factor analyses (CFAs) to test discriminant validity of the variables. We tested a five-factor model (factors: job control, time pressure, situational constraints, role breadth self-efficacy, proactive behaviour) with personal initiative and taking charge loading on a higher order factor (proactive behaviour) against plausible alternative models. This model depicts our proposed conceptual model with personal initiative and taking charge loading on a second-order factor, namely proactive behaviour. Alternative CFA models were a five-factor model with personal initiative and taking charge loading on a single factor; a five-factor model with time pressure and situational constraints loading on a single factor; a four-factor model with time pressure, situational constraints, and job control loading on a single factor; a four-factor model with personal initiative, taking charge, and role breadth

self-efficacy loading on a single factor; a three-factor model with time pressure, situational constraints, job control, and role breadth self-efficacy loading on a single factor; and a one-factor model. The corresponding five-factor model with personal initiative and taking charge loading on a second-order factor (proactive behaviour) exhibited an acceptable fit (self ratings:  $\chi^2 = 1129.31$ ,  $df = 617$ ,  $p < .001$ ,  $RMSEA = .07$ ,  $CFI = .86$ ; supervisor ratings:  $\chi^2 = 996.99$ ,  $df = 617$ ,  $p < .001$ ,  $RMSEA = .07$ ,  $CFI = .87$ ) and fit the data significantly better than the best fitting alternative model which was a five-factor model with personal initiative and taking charge loading on a single factor ( $\Delta\chi^2(2) = 70.89$ ,  $p < .001$  for self ratings;  $\Delta\chi^2(2) = 61.74$ ,  $p < .001$  for supervisor ratings).

### Statistical Analyses

We tested the conceptual model displayed in Figure 2 by using path analysis with direct observed variables with the exception of proactive behaviour which was modelled as latent variable with personal initiative and taking charge as manifest variables. Moreover, we allowed the two job stressor factors to be correlated (Jöreskog & Sörbom, 1993). We used the maximum-likelihood method implemented in AMOS (Arbuckle, 2006) and assessed model fit using the standard  $\chi^2$  test, as well as the goodness-of-fit index (*GFI*), the normed fit index (*NFI*), the comparative fit index (*CFI*), the root mean square error of approximation (*RMSEA*), and the standardized root mean square residual (*SRMR*). Values of .08 and lower (for *RMSEA* and *SRMR*) or .90 and higher (for *NFI*, *CFI*, and *GFI*) signify acceptable model fit (Byrne, 2001). According to Jöreskog and Sörbom (1993), we tested the proposed partial mediation model against alternative models which were a nonmediation model (which included only direct relationships of job control, time pressure, situational constraints, and role breadth self-efficacy with proactive behaviour) and a full mediation model (which included only indirect relationships of job control, time pressure, and situational constraints with proactive behaviour via role breadth self-efficacy). By this procedure, we got further information about the relative fit of the proposed model due to the linking function of role breadth self-efficacy. Furthermore, we tested the significance of the indirect relationships of job control and job stressors with proactive behaviour using the Sobel test (Sobel, 1982).

Table 1

Means, Standard Deviations, Zero-Order Correlations, and Reliabilities (Self Ratings, N = 200, Study 1)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1 Job control	3.57	0.76	(.81)					
2 Time pressure	3.22	0.85	.12+	(.83)				
3 Situational constraints	2.54	0.69	-.13+	.23***	(.72)			
4 RBSE	3.34	0.90	.48***	.27***	-.19**	(.91)		
5 Personal initiative (self)	3.69	0.60	.22**	.28***	-.01	.47***	(.77)	
6 Taking charge (self)	3.39	0.81	.33***	.41***	.05	.67***	.66***	(.90)

*Note.* Cronbach's alphas are displayed on the diagonal.

+  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

Table 2

Means, Standard Deviations, Zero-Order Correlations, and Reliabilities (Self Ratings and Supervisor Ratings, N = 140, Study 1)

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1 Job control	3.54	0.78	(.81)							
2 Time pressure	3.22	0.89	.11	(.84)						
3 Situational constraints	2.54	0.70	-.17*	.21*	(.72)					
4 RBSE	3.35	0.91	.55***	.27***	-.16	(.91)				
5 Personal initiative (self)	3.67	0.58	.27***	.25**	-.01	.44***	(.77)			
6 Taking charge (self)	3.41	0.82	.39***	.40***	.06	.73***	.68***	(.90)		
7 Personal initiative (supervisor)	3.38	0.78	.40***	.16 <sup>+</sup>	.00	.37***	.37***	.38***	(.89)	
8 Taking charge (supervisor)	3.08	0.85	.41***	.16 <sup>+</sup>	-.02	.42***	.38***	.48***	.80***	(.93)

Note. Cronbach's alphas are displayed on the diagonal.

<sup>+</sup>  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .



## Results

Descriptive statistics, zero-order correlations, and reliabilities are shown in Table 1 for employees' self ratings ( $N = 200$ ) and Table 2 for the reduced sample that was used for analyses based on supervisor ratings ( $N = 140$ ). Inter-rater agreement between employees' self ratings and supervisor ratings was  $r = .37$  for personal initiative and  $r = .48$  for taking charge. Consistent with Hypotheses 1, 2, and 4, job control, time pressure, and role breadth self-efficacy were positively correlated with the two self-rated proactive behaviour measures, i.e., personal initiative ( $r = .22$  to  $r = .47$ , Table 1) and taking charge ( $r = .33$  to  $r = .67$ , Table 1) as well as the two supervisor-rated proactive behaviour measures, i.e., personal initiative ( $r = .16$  to  $r = .40$ , Table 2) and taking charge ( $r = .16$  to  $r = .42$ , Table 2). However, correlations between time pressure and supervisor-rated proactive behaviour just missed the significance level of  $p < .05$  ( $p = .054$  for personal initiative and  $p = .053$  for taking charge). Inconsistent with Hypothesis 3, situational constraints were uncorrelated with proactive behaviour (self ratings, Table 1:  $r = -.01$  to  $r = .05$ ; supervisor ratings, Table 2:  $r = -.02$  to  $r = .00$ ).

Table 3 presents fit indices for the partial mediation, nonmediation, and full mediation model. The hypothesized partial mediation model exhibited good fit indices and fit the data significantly better than the nonmediation model ( $\Delta\chi^2(4) = 85.08$ ,  $p < .001$  for self ratings;  $\Delta\chi^2(4) = 67.45$ ,  $p < .001$  for supervisor ratings) and the full mediation model ( $\Delta\chi^2(4) = 37.45$ ,  $p < .001$  for self ratings;  $\Delta\chi^2(4) = 16.87$ ,  $p < .001$  for supervisor ratings).

Table 3  
Path Models Predicting Proactive Behaviour (Study 1)

	$\chi^2$	<i>df</i>	<i>p</i>	<i>GFI</i>	<i>NFI</i>	<i>CFI</i>	<i>RMSEA</i>	<i>SRMR</i>
Supervisor ratings								
Nonmediation	75.20	9	.001	.86	.71	.73	.23	.17
Full mediation	24.62	9	.003	.95	.90	.94	.11	.09
Hypothesized partial mediation	7.75	5	.171	.98	.97	.99	.06	.05
Self ratings								
Nonmediation	94.11	9	.001	.88	.74	.75	.22	.18
Full mediation	46.48	9	.001	.93	.87	.89	.15	.10
Hypothesized partial mediation	9.03	5	.108	.99	.98	.99	.06	.05

Note.  $N = 140$  for supervisor ratings and  $N = 200$  for self ratings. *GFI* = goodness-of-fit index; *NFI* = normed fit index; *CFI* = comparative fit index; *RMSEA* = root mean square error of approximation; *SRMR* = standardized root mean square residual.

Figure 3 shows the significant paths of the proposed partial mediation model. The path from role breadth self-efficacy to proactive behaviour was significant for both supervisor ratings and self ratings, providing further support for Hypothesis 4.

Job control was positively related to role breadth self-efficacy and the positive, indirect relationship between job control and proactive behaviour via role breadth self-efficacy was significant as well (supervisor ratings:  $z = 2.57, p < 0.01$ ; self ratings:  $z = 5.02, p < 0.001$ ), supporting Hypothesis 5a. Additionally, we found a significant direct positive relationship between job control and supervisor ratings of proactive behaviour, but no relationship for self ratings of proactive behaviour. This indicates that role breadth self-efficacy fully mediated the relationship between job control and self-rated proactive behaviour while the relationship between job control and supervisor-rated proactive behaviour was partially mediated by role breadth self-efficacy.

Time pressure was positively related to role breadth self-efficacy and the positive, indirect relationship between time pressure and proactive behaviour via role breadth self-efficacy was significant as well (supervisor ratings:  $z = 2.14, p < 0.05$ ; self ratings:  $z = 3.73, p < 0.001$ ), supporting Hypothesis 5b. Additionally, we found a significant direct positive relationship between time pressure and self-rated proactive behaviour, but no relationship for supervisor ratings of proactive behaviour. This indicates that role breadth self-efficacy fully mediated the relationship between time pressure and supervisor-rated proactive behaviour while the relationship between time pressure and self-rated proactive behaviour was partially mediated by role breadth self-efficacy.

As situational constraints were uncorrelated to proactive behaviour (Table 1 and Table 2), we tested indirect relationships via role breadth self-efficacy (Mathieu & Taylor, 2006). Inconsistent with Hypothesis 5c, situational constraints were negatively related to role breadth self-efficacy. However, in the reduced sample with supervisor ratings for proactive behaviour this path was only marginal significant. Moreover, the indirect relationship between situational constraints and proactive behaviour via role breadth self-efficacy was negative as well but only significant for self-rated proactive behaviour (supervisor ratings:  $z = -1.49, p > .10$ ; self ratings:  $z = -2.98, p < 0.01$ ). Additionally, we found a significant direct positive relationship between situational constraints and self-rated proactive behaviour, but none for supervisor ratings of proactive behaviour.

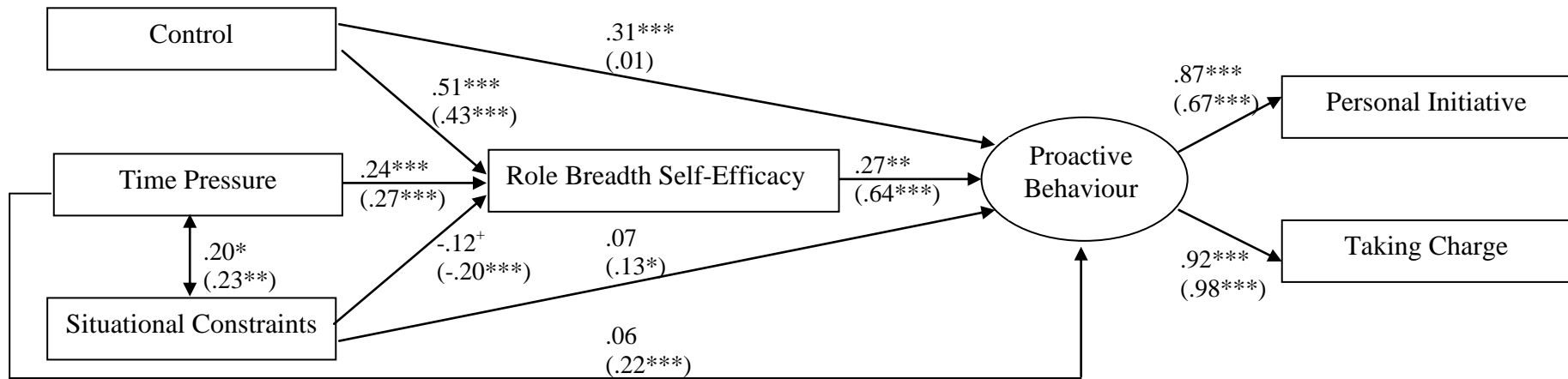


Figure 3

Path Analysis Predicting Proactive Behaviour based on Supervisor Ratings and Self Ratings (Self Ratings in Brackets, Study 1)

## Discussion

The aim of this study was to improve the understanding of proactive work behaviour and its association with workplace characteristics. More specifically, the first aim was to test if positive relationships between job stressors and proactive behaviour still remain when using supervisor ratings of proactive behaviour instead of self ratings as previous research did (e.g., Fay et al., 2007; Ohly et al., 2006). The second aim was to get first insights on possible explanations for these relationships. We presented an integrative model and argued that relationships between positive (e.g., job control) as well as negative (e.g., job stressors) workplace characteristics and proactive behaviour can be explained by the same underlying mechanism, namely role breadth self-efficacy. Furthermore, by the use of two distinct proactive behaviour measures, i.e., personal initiative (Frese et al., 1996) and taking charge (Morrison & Phelps, 1999), we also showed that these relationships do occur irrespective of a particular operationalization of proactive behaviour. The expected positive indirect relationships between job control and time pressure with proactive behaviour via role breadth self-efficacy were confirmed for self ratings as well as for supervisor ratings of proactive behaviour. Although we also expected a positive indirect relationship between situational constraints and proactive behaviour, situational constraints were negatively related to role breadth self-efficacy, leading to a negative indirect relationship for self ratings of proactive behaviour. Direct relationships were inconsistent for self-rated and supervisor-rated proactive behaviour: While we found a direct positive relationship between job control and supervisor-rated proactive behaviour, we found direct positive relationships between both job stressors, i.e., time pressure and situational constraints, with self-rated proactive behaviour.

Thus, previous findings that revealed relationships between job stressors and proactive behaviour cannot fully be generalized to supervisor evaluations of employees' proactive behaviour. This incongruence of employee and supervisor ratings is in line with prior research on OCB (Turnipseed & Rassuli, 2005). Moreover, Den Hartog and Belschak (2007) reported moderate correlations between employees' self-rated versus manager-rated proactive behaviour and Belschak and Den Hartog (in press) found comparably moderate correlations between employees' self ratings versus peer ratings of proactive behaviour. One might think of several explanations for this incongruence between self and supervisor ratings. First, concerning the direct relationship between job control and proactive work behaviour, supervisors might expect more proactive behaviour of employees with higher job control, which usually goes along with higher responsibilities and more complex tasks, and thus, in congruence with their expectations, also attribute higher proactive behaviour to these

employees. Second, concerning the direct relationships of both job stressors, i.e., time pressure and situational constraints, with self-rated but not with supervisor-rated proactive behaviour, a possible explanation may be that employees feel more activated when experiencing high time pressure or high situational constraints, because they fulfil more or additional tasks in the same time. Thus, high time pressure and high situational constraints might lead to employees' self-perception that they are very active, do a lot for the company, and also that they show more proactive behaviour. Based on our data, one might speculate that employees' supervisors expect reactions to a stressful work environment as formal tasks that employees have to accomplish, while employees themselves feel active and understand their direct reactions on a stressful work environment as proactive behaviour (i.e., not belonging to their formal duty).

Moreover, we identified another interesting pattern of results for situational constraints: As expected, we found a positive direct relationship between situational constraints and self-rated proactive behaviour but unexpectedly the indirect relationship was negative. Employees who are often confronted with situational constraints (e.g., who have to work with outdated information or with equipment that does not work well) report lower role breadth self-efficacy and thus show lower proactive behaviour. This result is in line with research on the framework of challenge and hindrance stressors (LePine et al., 2005) as situational constraints belong to hindrance stressors which are associated with threats and go along with negative work-related outcomes (LePine et al., 2005; Podsakoff et al., 2007). As expected, beyond this negative indirect relationship, employees seem to directly react on situational constraints with higher proactive behaviour which is in line with a control theory perspective (Carver & Scheier, 1982), i.e., employees perceive a discrepancy between actual and preferred situation and therefore engage in proactive behaviour to decrease this discrepancy. Hence, our results for indirect relationships between time pressure and situational constraints on the one hand and proactive behaviour on the other hand are not fully in line with a control theory perspective (Carver & Scheier, 1982), but with previous research on challenge versus hindrance stressors (LePine et al., 2005). Thus, our study underlines the importance of distinguishing more in detail which job stressors are positively and which are negatively related to performance, including both task and also contextual performance, such as proactive behaviour. However, future research should investigate moderators and other possible mediators in the relationship between situational constraints and proactive behaviour. Although LePine et al. (2005) described situational constraints as typical hindrance stressors one might even argue that work environments with high job control, high error tolerance,

change-oriented culture, or relations-oriented leadership behaviour might transform these typical hindrances into challenges. Nevertheless, the fact that we only found relationships of situational constraints with self-rated but not with supervisor-rated proactive behaviour weakens this interpretation and suggests that only employees themselves regard these behavioural reactions as proactive behaviour while supervisors might expect these reactions as usual task performance.

### **Limitations and Future Research**

Central limitations of our study are the use of self-report measures for work environment variables and role breadth self-efficacy as well as the cross-sectional nature of our data. First, while we used multiple-source data to measure proactive behaviour, the sole use of self-reports to assess work environment variables and role breadth self-efficacy might have led to an overestimation of the relationships between these variables because of common method bias (Podsakoff et al., 2003). While self ratings seem to be the best way to measure role breadth self-efficacy, future studies may also include other sources to assess work environment variables, such as objective data or co-worker ratings. However, as recommended by Podsakoff et al. (2003), respondents' answers were anonymous and we used items that described the work environment in a very concrete manner. Therefore, common method bias should be reduced.

Second, due to the fact that we used cross-sectional data, the causal processes await an explicit test in future studies. In our conceptual model, we implicitly argued that job control and job stressors serve as predictors of proactive behaviour mediated by role breadth self-efficacy. This assumption was built on prior models of proactive behaviour that were based on longitudinal data (Parker et al., 2006; Grant & Ashford, 2008). Moreover, literature on the job characteristics model also underpins the assumption of work environment variables as predictors for work-related behaviour (Humphrey et al., 2007). Nevertheless, one can also imagine reverse causal paths: Proactive employees might experience more self-efficacy, take on more tasks and create more stress for themselves. However, Fay et al. (1998) tested reciprocal relationships between time pressure and proactive behaviour and found a positive effect of time pressure on proactive behaviour but no effect of proactive behaviour on time pressure. Future studies should also consider longitudinal designs (e.g., over days, weeks, or years) that focus on intraindividual processes between certain job stressors and proactive behaviour.

As we tested role breadth self-efficacy as the only linking mechanism, future studies

should also consider other possible explanations for the relationships between job stressors and proactive behaviour. On the one hand, active coping, motives to reduce uncertainty, or problem-focused planning might be mediators of positive relationships between job stressors and proactive behaviour. On the other hand, negative affect or fatigue might be mediators of negative relationships between job stressors and proactive behaviour. Furthermore, moderators should be tested that explain under which conditions total effects of job stressors on proactive behaviour are positive or negative (e.g., error tolerance, change oriented culture, or relations-oriented leadership behaviour).

According to a control theory perspective (Carver & Scheier, 1982), we proposed and found linear positive relationships between job stressors and proactive behaviour. However, these results may be limited to usual work days that are characterized by low to medium levels of job stressors. Extremely high levels of job stressors might no longer go along with experiences of mastery, increased self-efficacy, and increased proactive behaviour but might be related to failure, lowered self-efficacy, and decreased proactive behaviour.

Altogether, future studies on proactive work behaviour should keep in mind different perspectives of supervisors and employees themselves. As proactive behaviour evaluations are different, more research on possibly different consequences is needed, i.e., consequences of employees' perception of own proactive behaviour as well as consequences of supervisors' evaluation of employees' proactive behaviour. These consequences may include effects on the employees, the work group, the relationship between employee and supervisor, but also effects on the organization.

### **Implications for Management**

As proactive behaviour is beneficial for the organization, managers ought to try to encourage their employees to be proactive. To foster role breadth self-efficacy and proactive behaviour, managers should try to enhance job control of their employees. To increase job control, managers may involve their employees in decisions about rules for working procedures, managers should award complex tasks and it should be upon the employees themselves to decide which steps are necessary to fulfil the tasks. However, formal enhancement of job control seems not to be enough for employees to actually use their broader possibilities (Leach et al., 2003). Especially to prevent that employees are overloaded by enhanced job control, managers may not only formally enhance job control but also support their employees in the use of the enhanced job control by the implementation of information systems (Leach et al., 2003) or a positive feedback environment (Sparr &

Sonnentag, 2008). Concerning stressful work environments, certain job stressors (e.g., time pressure) seem to foster proactive behaviour while they are also known to threaten employee health (Ganster & Schaubroeck, 1991). Thus, temporary time pressure is acceptable, but managers should offer possibilities to avoid long-lasting time pressure (e.g., regular breaks, guaranteed time for daily recovery by avoiding contacting employees at home and by avoiding overtime). As hindrance stressors (e.g., situational constraints) are negatively related to role breadth self-efficacy, employees should get the possibility to learn coping strategies to overcome this negative effect (e.g., external attribution). Furthermore, expectations and perspectives of employees and their supervisors seem to vary. This might have implications for motivation, performance evaluations and payment as supervisors may reward this behaviour less than anticipated by the employees. To align their expectations, supervisors may set greater importance to exchange ideas with their employees as well as to regular appraisal and feedback discussions, and they may also more often informally talk to their employees.

To conclude, although job stressors decrease well-being and health on the one side, they partially go along with improved work-related outcomes, such as proactive work behaviour. However, evaluations of employees and supervisors differ with regard to proactive behaviour: While supervisors report higher proactive behaviour of their employees if these have high job control, employees perceive higher proactive behaviour when confronted with job stressors.



## **STUDY 2: PRODUCTIVE ORGANIZATIONAL ENERGY AS A MODERATOR IN THE RELATIONSHIP BETWEEN PROACTIVE BEHAVIOUR AND ITS ANTECEDENTS: AN ORGANIZATIONAL-LEVEL STUDY<sup>2</sup>**

### **Summary**

Building on current models of individual proactive behaviour, this study investigates relationships between various antecedents (leadership, climate of trust, organizational commitment, job satisfaction) and proactive behaviour on an organizational level of analysis. This study is an answer to calls to take boundary conditions into account when analysing predictors of proactive behaviour and introduces productive organizational energy as a crucial context factor that moderates these relationships. In a large-scale study that included 92 companies, using a split-sample design, a total of 13,340 employees provided data on study variables. As proposed, transformational leadership, transactional leadership, climate of trust as well as employees' aggregated organizational commitment and job satisfaction were positively related to employees' aggregated proactive behaviour. Productive organizational energy moderated these relationships, i.e., relationships between these various antecedents and employees' aggregated proactive behaviour were stronger when productive organizational energy was high.

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<sup>2</sup> This chapter is based on:

Spychala, A., Bruch, H., & Sonnentag, S. (under review). Productive organizational energy as a moderator in the relationship between proactive behaviour and its antecedents: An organizational-level study.

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## Introduction

Today's jobs are typically characterized by rapid changes including the introduction of innovations and new technologies (Campbell, 2000; Howell & Higgins, 1990; Thatcher & Zhu, 2006). Therefore, it is increasingly important that employees do not just fulfil their jobs and react passively to new situations but become more flexible and approach occurring problems in a proactive way (Parker, 2000; Swan & Fox, 2009). Such anticipatory behaviour with the aim to influence the work environment is referred to as proactive behaviour (Grant & Ashford, 2008). Proactive behaviour is beneficial for an organization as relationships to increased individual and organizational performance, such as overall performance, career-related outcomes, sales, and organizational success, have been shown (Fay & Frese, 2001; Parker, Williams, & Turner, 2006; Raabe, Frese, & Beehr, 2007). Consequently, the search for predictors of this performance-related behaviour is a much needed effort. Our study contributes to literature on proactive behaviour in two facets: First, we complement individual views on proactive behaviour by examining organizational level predictors. Second, we answer calls to take boundary conditions into account when analysing predictors of proactive behaviour (e.g., Bindl & Parker, in press; Crant, 2000).

First, predictors referring to individual characteristics have been well elaborated over years of research (e.g., Bateman & Crant, 1993; Fay & Frese, 2001; Parker & Collins, in press): On an individual level of analysis, a variety of individual antecedents was studied, for instance, cognitive ability, knowledge and skills, proactive personality, role breadth self-efficacy, job involvement, goal orientation, need for achievement, and readiness to change (cf. Bindl & Parker, in press; Crant, 2000; Fay & Frese, 2001). However, research on situational characteristics on an individual level of analysis is more limited and mainly referred to job autonomy, complexity of work, job stressors, and leadership (cf. Bindl & Parker, in press; Fay & Sonnentag, 2002; Frese, Garst, & Fay, 2007; Parker et al., 2006). Notwithstanding the valuable insights from research on predictors at the individual level of analysis, research on higher levels of analysis (e.g., organizational level) is scarce (Bindl & Parker, in press). Although proactive behaviour has been linked to organizational level outcomes (e.g., return on assets, firm goal achievement, Baer & Frese, 2003; Frese & Fay, 2001), knowledge about how organizational level predictors are related to proactive behaviour is missing. More specifically, proactive behaviour has been usually considered as an employee's individual behaviour and former studies tried to predict this individual behaviour by an employee's individual characteristics as well as his or her individual work environment (e.g., individual amount of job autonomy or job stressors). However, beyond employees' individual proactive

behaviour (which was shown to be related to performance outcomes, e.g., Fay & Frese, 2001; Parker et al., 2006; Raabe et al., 2007), organizations may benefit much more and be more competitive if they were able to achieve and maintain a high level of proactive behaviour throughout all employees, i.e., if the majority of employees is alert, anticipates potential problems and solves them although they did not formally get a respective work order. Therefore, knowledge is necessary which organizational level characteristics predict a high organizational level of proactive behaviour. Thus, our first aim is to shed light on organizational-level antecedents of proactive work behaviour. Bindl and Parker (in press) recently reviewed results of individual and situational predictors of proactive behaviour on an individual level of analysis and presented an integrative model. In this study, we will analyse if relationships between various antecedents and proactive behaviour hold true on an organizational level of analysis. More specifically, we examine leadership behaviour and climate of trust as organizational level situational antecedents as well as aggregated organizational commitment and aggregated job satisfaction as individual antecedents. Hence, we ask if differences between companies with regard to situational and aggregated individual antecedents predict proactive behaviour at the organizational level.

Second, little is known about boundary conditions that indicate under which circumstances predictors promote or inhibit proactive behaviour (cf. Bindl & Parker, in press; Crant, 2000). Therefore, our second aim is to extend the model of Bindl & Parker (in press) by systematically regarding boundary conditions in the relationships between antecedents and proactive behaviour. In particular, we introduce productive organizational energy (POE) as a crucial context factor that moderates these relationships. Productive organizational energy “reflects the extent to which a company has mobilized its emotional, cognitive, and behavioural potential in pursuit of its goals” (Cole, Bruch, & Vogel, 2005, p. 2) and is a collective construct that emerges from employees’ shared feelings, thoughts, and behaviours through mechanisms of social interaction (Morgeson & Hofmann, 1999), conformity processes (Asch, 1956; Hewlin, 2009), and contagion (Bakker, Westman, & van Emmerik, 2009; Hatfield, Cacioppo, & Rapson, 1994). With its broad conceptualization, productive organizational energy comprehensively captures an organization’s context that may promote or hinder the impact of various antecedents on employees’ proactive behaviour.

## **Proactive Behaviour**

Proactive behaviour at work is an important aspect of contextual performance which includes behaviour that is not formally part of the job description (McAllister, Kamdar, Morrison, & Turban, 2007). Parker and Collins (in press) even suggest that employees can be more or less proactive on every kind of performance behaviour, i.e., regardless whether this is in-role (i.e., formal task performance) or extra-role behaviour. In general, proactive behaviour can be defined as discretionary behaviour that aims at changing the internal organizational environment (Parker & Collins, in press) and is related to increased individual and organizational performance, such as overall performance, career-related outcomes, sales, and organizational success (Fay & Frese, 2001; Parker et al., 2006; Raabe et al., 2007). Proactive behaviour has been studied in various ways, for example as personal initiative (Frese, Kring, Soose, Zempel, 1996), general proactive behaviour (Crant, 2000), or taking charge (Morrison & Phelps, 1999).

Prior research mainly examined proactive behaviour on an individual level of analysis with the exception of Baer and Frese (2003) who introduced climate for initiative as an organizational-level operationalization of proactive behaviour. In general, organizational-level constructs can either reflect global, shared, or configural attributes (Klein & Kozlowski, 2000): While global attributes (e.g., organization size) indicate objective characteristics of an organization as a whole, shared and configural attributes emerge from individual perceptions of the employees. Due to various processes that go along with dealing with the same work environment, employees' individual attitudes and behaviour are similar within an organization but vary between different organizations (cf. Klein & Kozlowski, 2000). Therefore, the mean level of employees' individual attributes represents the respective shared (or aggregated) attribute (e.g., leadership perceptions). Configural attributes also emerge from employees' individual perceptions but represent the range or variability of employees' perceptions within an organization (e.g., age diversity within an organization). In line with Baer and Frese (2003), this study focuses on shared attributes. Moreover, we examine relationships between mean levels of antecedents and mean levels of proactive behaviour. Thus, in contrast to individual-level research, we are interested in differences between whole organizations with regard to proactive behaviour and its antecedents. Building on prior individual-level models of proactive behaviour, especially a very recent model of Bindl and Parker (in press), this study examines antecedents of proactive behaviour on an organizational level of analysis as well as boundary conditions that influence the relationships between these antecedents and proactive behaviour.

First, with regard to antecedents of proactive behaviour, Bindl and Parker (in press) distinguished between individual (e.g., age, gender, knowledge, abilities, readiness to change, learning goal orientation) and situational differences (e.g., job autonomy, complexity, job stressors, leadership, climate). Furthermore, Bindl and Parker (in press) integrated motivational processes (e.g., perceived capability, goals and aspirations, affect-related processes) as linking mechanism between antecedents and proactive behaviour. However, these motivational processes again represent individual characteristics and to a certain extent, motivational processes and individual antecedents overlap in their model. Therefore, we will integrate different individual antecedents into one category in our study. To avoid confusion regarding the use of the term *individual*, we rename the category of individual antecedents into aggregated individual antecedents. As denoted before, we examine if formerly revealed antecedents accordingly apply on an organizational level of analysis. Therefore, we analyse relationships between situational (i.e., transformational and transactional leadership, climate of trust) and aggregated individual antecedents (i.e., organizational commitment, job satisfaction) on the one hand and proactive behaviour climate (i.e., aggregated personal initiative) on the other hand. Figure 4 presents an overview of our hypotheses.

Second, we argue that relationships between antecedents and proactive behaviour depend on boundary conditions. Although Bindl and Parker (in press) suggested boundary conditions between proactive behaviour and outcome variables in their model, former studies on antecedents of proactive behaviour did not refer to any boundary conditions between antecedents and proactive behaviour. We argue that a rather active and vigorous organizational environment may enhance the impact of antecedents on employees' proactive behaviour. Therefore, we present productive organizational energy as a crucial boundary condition (Figure 4). Productive organizational energy captures employees' joint emotional, cognitive, and behavioural mobilization of potentials in goal achievement, i.e., employees in organizations with high productive organizational energy are emotionally involved and enthusiastic, mentally alert, and ready to invest extraordinary efforts to achieve organizational goals (Bruch & Ghoshal, 2003). By means of social interaction (Morgeson & Hofmann, 1999), conformity processes (Asch, 1956; Hewlin, 2009), and contagion (Bakker et al., 2009; Hatfield et al., 1994) productive organizational energy energizes employees and promotes the impact of various antecedents on proactive behaviour.

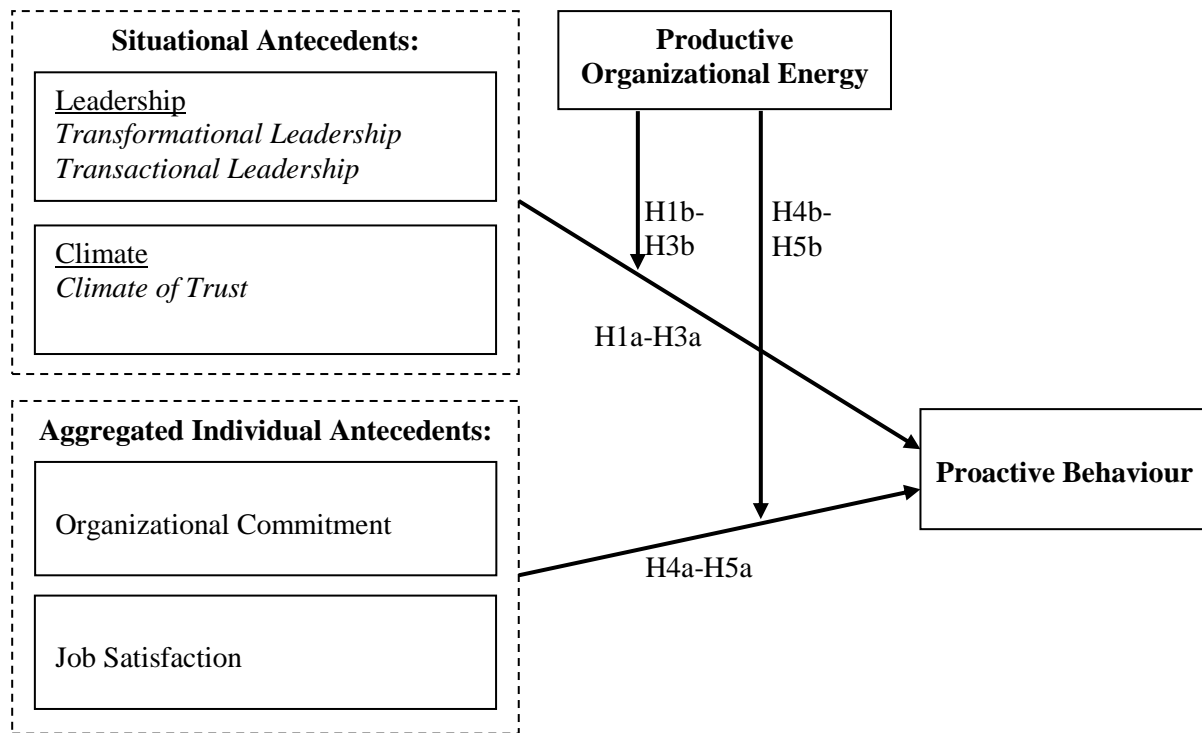


Figure 4  
Conceptual Model (Study 2)

### Situational Antecedents

#### *Leadership*

We argue that transformational and transactional leadership are positively related to proactive behaviour on an organizational level of analysis. Transformational and transactional leadership are effective and broadly studied leadership behaviours (Bass, 1990). In line with prior research, we conceptualize transformational and transactional leadership as leadership climate constructs, i.e., the extent to which leaders in an organization taken as a whole engage in these behaviours (e.g., Bliese, Halverson, & Schriesheim, 2002; Walter & Bruch, in press). Leadership climate results from leaders' individual behaviour. Due to mechanisms such as organization-specific selection of leaders, socialization processes, and dealing with common experiences, these individual behaviours manifest at the organizational level (Klein & Kozlowski, 2000; Kozlowski & Hatrup, 1992; Schneider, Goldstein, & Smith, 1995).

Transformational leadership (TFL) consists of four different behavioural patterns that may promote employees' proactive behaviour (Bass, 1990): First, TFL is based on charismatic leaders, i.e., leaders function as role models with whom employees identify. Second, these leaders "inspire and excite their employees with the idea that they may be able

to accomplish great things with extra effort” (Bass, 1990, p. 21). Thus, being motivated to spend extra effort in order to achieve great things may also evoke employees’ proactive behaviour. Third, leaders intellectually stimulate their employees, for example, they challenge them to think about new ways to solve old problems which is one prerequisite if one aims at proactively improving the organizational environment. Fourth, TFL includes individual consideration of employees, i.e., leaders take into account differences between their employees and adjust their behaviour accordingly. Therefore, leaders may focus on motivational aspects and excite their employees to go the extra mile if this fits the respective employee or focus on intellectual support for other employees. By this pattern of leadership behaviour, leaders are able to increase motivation of employees and employees frequently spend extra effort which is close to behaving in a proactive manner (Bass, 1990). Indeed, on the individual level, positive relationships between TFL and proactive behaviour were reported (Bateman & Crant, 1993; Belschak & Den Hartog, in press; Rank, Carsten, Unger, & Spector, 2007; Strauss, Griffin, & Rafferty, in press). We expect the same processes to be relevant on an organizational level of analysis. Thus, we expect that aggregated TFL will be positively related to employees’ aggregated proactive behaviour. The more leaders in an organization consistently engage in TFL behaviour, i.e., the higher an organization’s TFL climate, the more employees throughout the organization are affected by this behaviour and can be motivated to be proactive. Thus, TFL climate will evoke similar motivation in all employees to spend extra effort and being proactive. Consequently, we propose

*Hypothesis 1a: Transformational leadership is positively related to proactive behaviour climate.*

Transactional leadership (TAL) refers to transactions between leaders and employees, i.e., leaders explain to their employees what is required and what they will receive if they fulfil these goals (Bass, 1990). Thus, TAL includes “promise and reward for good performance, or threat and discipline for poor performance” (Bass, 1990, p. 20). A main mechanism by which transactional leaders influence their employees refers to setting and specifying explicit goals. Referring to goal setting theory, setting explicit and challenging goals goes along with better performance and higher motivation (Latham & Locke, 2007). Another mechanism refers to getting feedback about whether the individual behaviour is in line with the behaviour that is expected in the organization. By knowing what they have to reach and if they do so, employees may better evaluate which behaviour and targets are

valued in the organization. Knowing individual objectives may therefore be a crucial prerequisite if one wants to spend extra effort and wants to promote organizational goals proactively. Indeed, Podsakoff, MacKenzie, and Bommer (1996) revealed positive relationships between individual contingent reward behaviour (i.e., a main facet of TAL) and employees' extra effort in their meta-analysis, and Dutton, Ashford, O'Neill, and Lawrence (2001) exposed the relevance of strategic knowledge (e.g., knowing an organization's goals) for proactive issue selling (i.e., a specific proactive behaviour concept). We expect similar processes and relationships on an organizational level of analysis: The more leaders engage in TAL, the more employees throughout an organization will be informed about their goals and will get feedback if they are on the way to achieve these goals. Therefore, relevant knowledge and expectations are spread out within the whole organization which represents a crucial prerequisite for engaging in proactive behaviour. As a result, we propose

*Hypothesis 2a: Transactional leadership is positively related to proactive behaviour climate.*

### ***Climate of Trust***

We argue that a climate of trust is positively related to proactive behaviour. Climate of trust in organizations is defined as "positive expectations that individuals have about the intent and behaviours of multiple organizational members based on organizational roles, relationships, experiences, and interdependencies" (Huff & Kelley, 2003, p. 82). According to impression management theory, people try to appear in a positive and desired way in the eyes of others (Schlenker, 1980; Tedeschi, 1981). Contrary, proactive behaviour goes along with barriers and dealing with setbacks, for instance one has to convince others of the effectiveness of changes that one wants to make with regard to the internal organizational environment (Frese et al., 1996; Parker & Collins, in press). Thus, being proactive includes a high psychological risk for employees (Frese & Fay, 2001). A climate of trust, i.e., reliable relationships between each other, gives a sense of safety to employees that the others are benevolent and therefore reduces social uncertainty (Ammeter, Douglas, Ferris, & Goka, 2004; Möllering, Bachmann, & Lee, 2004). Therefore, perceived risks of proactive behaviour will be decreased when trust is high. As a consequence, the likelihood for engaging in proactive behaviour increases. Indeed, prior empirical results support this assumption: Parker et al. (2006) showed that co-worker trust was positively linked to proactive behaviour. Ashford, Rothbard, Piderit, and Dutton (1998) showed that a high degree of organizational



support and trusting relationships increased issue-selling (i.e., a specific proactive behaviour construct) in organizations. Moreover, they revealed perceived image risk as mediator. Dutton, Ashford, O'Neill, Hayes, and Wierba (1997) identified a supportive culture and lack of fear of negative consequences as two characteristics of a favourable context for managers' issue-selling. In the related field of research on innovation behaviour which might be seen as a potential consequence of proactive behaviour (Rank, Pace, & Frese, 2004), Baer and Frese (2003) revealed a positive relationship between a climate of safety and innovation behaviour on an organizational level of analysis. Consequently, we expect a positive relationship between climate of trust and employees' shared proactive behaviour. As a result, we propose

*Hypothesis 3a: Climate of trust is positively related to proactive behaviour climate.*

## **Aggregated Individual Antecedents**

### ***Organizational Commitment***

We argue that affective organizational commitment is positively related to proactive behaviour. In line with prior research, we conceptualize organizational commitment as a shared (or collective) construct, i.e., the mean extent to which employees in an organization are committed to this organization (Kirkman & Rosen, 1999; Van der Vegt & Bunderson, 2005). Shared organizational commitment results from employees' individual organizational commitment. Due to dealing with common experiences and social interaction, individual commitment manifests at the organizational level (Heffner & Rentsch, 2001; Klein & Kozlowski, 2000).

Meyer and Allen (1991) define affective organizational commitment as "employee's emotional attachment to, identification with, and involvement in the organization" (p. 67). Highly committed employees are interested in their organization's success as they want to stay with this organization. Consequently, Meyer and Allen (1991) argued that highly committed employees are motivated to spend extra effort for their organization, i.e. a crucial prerequisite of being proactive. Indeed, individual organizational commitment was positively related to individual-level proactive behaviour (Den Hartog & Belschak, 2007; Griffin, Neal, & Parker, 2007; Rank et al., 2007). We expect that the same processes are relevant on an organizational level of analysis. Thus, organizations with highly committed employees should achieve higher levels of aggregated proactive behaviour among their employees. As the majority of employees is attached to the respective organization and is interested in its success, they even may cooperate with each other and therefore collectively engage in

proactive behaviour. Moreover, some employees may have ideas how to improve the internal organizational environment. Experiencing the high commitment of their co-workers, they can easily trigger other committed employees to support them. Therefore, proactive behaviour will not only be done by these initial employees but will be spread among numerous employees. As a result, we propose

*Hypothesis 4a: Organizational commitment is positively related to proactive behaviour climate.*

### ***Job Satisfaction***

We argue that job satisfaction is positively related to proactive behaviour. Job satisfaction is one of the most frequently examined variables in work and organizational psychology (e.g., Kaplan, Warren, Barsky, & Thoresen, 2009; Kinicki, McKee-Ryan, Schriesheim, & Carson, 2002). Job satisfaction refers to employees' feelings (affect) and beliefs (cognitions) concerning various facets of their job (Smith, Kendall, & Hulin, 1969) or their job in general (Locke, 1976). In line with prior research, we conceptualize job satisfaction as a shared (or collective) construct, i.e., the mean extent to which employees in an organization are satisfied with their job in this organization (Ostroff, 1992; Schulte, Shmulyian, Ostroff, & Kinicki, 2009). Shared job satisfaction emerges from employees' individual job satisfaction; due to dealing with common experiences, interdependencies, and social interaction, individual job satisfaction manifests at the organizational level (Klein & Kozlowski, 2000; Ostroff, 1992; Schulte et al., 2009).

Although, usually considered as potential outcome variable, relationships between proactive behaviour and job satisfaction may be bi-directional and job satisfaction may also function as antecedent of proactive behaviour (Judge, Bono, Thoresen & Patton, 2001). First, job satisfaction is associated with higher intrinsic motivation (e.g., Kinicki et al., 2002) which in turn may translate in a higher likelihood not only to perform well, but also to engage in proactive behaviour (Bindl & Parker, in press). Second, according to social exchange theory (Blau, 1964) employees who are satisfied with their job feel the need to give something back to their organization. Indeed, meta-analytical results revealed positive relationships between job satisfaction and motivation, organizational citizenship behaviour, and performance on an individual level (e.g., Dalal, 2005; Kinicki et al., 2002; LePine, Erez, & Johnson; Organ & Ryan, 1995). Expecting the same processes to be relevant on an organizational level, organizations with highly satisfied employees should have higher levels of proactive

behaviour among their employees. As Ostroff (1992) argued, high job satisfaction among employees throughout an organization goes along with collaborative effort. As a result, employees more likely collectively engage in proactive behaviour. Therefore, we propose

*Hypothesis 5a: Job satisfaction is positively related to proactive behaviour climate.*

### **Productive Organizational Energy as a Boundary Condition**

We argue that positive relationships between antecedents (i.e., transformational and transactional leadership, climate of trust, organizational commitment, job satisfaction) and proactive behaviour are moderated by productive organizational energy (POE) as POE represents a work environment that fits to proactive behaviour. Therefore, relationships between antecedents and proactive behaviour should be especially strong when POE is high.

In general, work environments can either support or impede the impact that antecedent variables may have on proactive behaviour of employees as organizational norms, values, and cultures are more or less in congruence with proactive behaviour. For instance, conservative values and norms that emphasize traditions and routines may inhibit the impact of antecedents on proactive behaviour (Fay & Frese, 2000) while values and norms such as openness to change may support the impact of antecedents on proactive behaviour (Fay & Frese, 2001; Morrison & Phelps, 1999). POE is a collective construct that captures employees' joint emotional, cognitive, and behavioural mobilization of potentials in goal achievement (Bruch & Ghoshal, 2003; Cole et al., 2005): Organizations with high POE have managed to align their employees' emotions, cognitions, and behaviour in order to achieve the organization's goals. Employees typically are emotionally involved and enthusiastic, mentally alert, and ready to invest extraordinary efforts to achieve organizational goals. Therefore, POE represents an active and vigorous organizational environment which fits to values and norms that support proactive behaviour. Contrary, organizations with low POE are characterized by lack of enthusiasm and readiness to strive for ambitious organizational goals (Bruch & Ghoshal, 2003).

Antecedents of proactive behaviour provide employees with increased resources that *can* be used to engage in proactive behaviour: For instance, transformational leadership as well as employees' shared commitment and job satisfaction may have an influence on the general motivation to engage in proactive behaviour. Climate of trust may influence this general motivation as well by decreasing perceived risks that go along with proactive behaviour. Transactional leadership may influence the ability to carry out proactive behaviour

as organizational and individual goals as well as feedback on goal achievement are made transparent to the employees. However, a general motivation to engage in proactive behaviour as well as the availability of necessary knowledge might not be sufficient that employees actually carry out the respective behaviour. One potential cue that increases the likelihood that employees actually carry out proactive behaviour may lie in a work environment that is in congruence with proactive behaviour. Employees who work in organizations with high POE (i.e., an environment that fits to proactive behaviour) get this final cue: The whole work environment functions as role model and due to mechanisms such as social interaction (Morgeson & Hofmann, 1999), conformity processes (Asch, 1956; Hewlin, 2009), and contagion (Bakker et al., 2009; Hatfield et al., 1994) POE energizes employees. If these employees at the same time receive resources that are necessary to engage in proactive behaviour, the likelihood that they will actually carry out this behaviour and strive for extraordinary goals increases. Contrary, employees who work in organizations with low POE do not get this final cue. Therefore, some of them will engage in proactive behaviour, because individual motivation is high enough, while others will rather adapt to the overall passive atmosphere of the organization because their desire to fit to the group is higher than their individual motivation to be proactive which might go along with becoming an outsider (Asch, 1956; Hewlin, 2009). As a result, high POE promotes the impact of the various antecedents on proactive behaviour, i.e., the relationships between antecedents and proactive behaviour are stronger when POE is high than when POE is low. Therefore, we propose

*Hypothesis 1b – Hypothesis 5b:*

*The relationships between transformational leadership (H1b), transactional leadership (H2b), climate of trust (H3b), organizational commitment (H4b), job satisfaction (H5b) on the one hand and proactive behaviour climate on the other hand are moderated by productive organizational energy. The relationships are stronger if productive organizational energy is high.*

## **Method**

### **Sample and Procedure**

We collected data as part of a larger research project. For data collection, we cooperated with an agency that specializes in benchmarking small and medium-sized companies. Data collection took place from spring to summer 2009. In total, 95 companies located in Germany were interested in participating in the current research. However, two

companies cancelled their participation and one company failed to provide sufficient data and was dropped from the study, resulting in an organizational-level response rate of 97% ( $n = 92$ ). Participating companies represented a variety of industries, including services (65%), manufacturing (19%), trade (10%), and finance and insurance (6%). Within the companies, the number of employees ranged from 21 to 3,296, with a median of 131 and an average of 276 ( $SD = 462$ ). The age of the companies ranged from 2 to 155 years, with an average age of 34 years ( $SD = 33$  years) and a median of 23 years. In return for its participation, each company received a detailed technical report including benchmark analyses.

First, general information on the participating companies (e.g., company size, industry affiliation, company age) was assessed through a key informant survey completed by the organizations' HR executives or a member of the executive board. Second, employee survey data were collected to obtain information on the study variables. All employees received a standardized email invitation including a description of the study's purpose and a link to a web-based survey hosted by an independent third party. This email invitation was sent through the company's HR department (if applicable) or through a top management team member's email address. Full anonymity was guaranteed to respondents. To alleviate concerns about common-source bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), we implemented a split-sample design (Ostroff, Kinicki, & Clark, 2002; Rousseau, 1985): Based on an algorithm programmed in the survey website, respondents were randomly redirected to one of four versions of the survey. Productive organizational energy was measured in Version A of the employee survey, proactive behaviour in Version B, transformational and transactional leadership in Version C, and remaining variables (i.e., climate of trust, organizational commitment, job satisfaction) in Version D, respectively.

In total, 13,340 employees participated in the survey, ranging from 17 to 1,080 per company ( $M = 145$ ,  $SD = 187$ ,  $median = 81$ ). The average within-organization response rate was 70% ( $SD = 20\%$ ). The algorithm effectively distributed participating employees among the four versions of the survey, yielding between 3,292 and 3,420 respondents per version. In each company, a minimum of 4 employee surveys for each version was completed ( $M = 36$ ,  $SD = 47$ ,  $median = 20$ ). Individual respondents were represented by 44% males and 47% females (9% did not indicate their gender). Mean age of employees was 39 years ( $SD = 11$ ). On average, they worked for the company for 8 years ( $SD = 8$ ). However, 31% of the respondents did not provide information on age and 20% did not indicate their tenure. The majority of employees did not have leadership responsibility (73%), 11% were first-line supervisors, 8% came from middle-management, and 8% did not answer.

## Measures

*Transformational leadership* (TFL) was measured by the scale developed by Podsakoff and colleagues (Podsakoff et al., 1996; Podsakoff, MacKenzie, Moorman, & Fetter, 1990) using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). A sample item is „My direct supervisor inspires others with his/ her plans for the future“. This scale contains 22 items that capture six dimensions of TFL (articulating a vision, providing an appropriate model, fostering the acceptance of group goals, high performance expectations, individualized support, and intellectual stimulation). Based on prior research, we averaged all items to get an overall TFL score (Agle, Nagarajan, Sonnenfeld, & Srinivasan, 2006; Rubin, Munz, & Bommer, 2005). We aggregated individual employees' responses to the company level (Rousseau, 1985). To empirically justify this aggregation, we used intraclass correlation coefficients (*ICCI* and *ICC2*; Bliese, 2000) and interrater agreement statistics ( $r_{wg}$ ; James, Demaree, & Wolf, 1984). Usually, *ICCI* values that are based on a significant one-way analysis of variance, *ICC2* values of more than .60, and mean  $r_{wg}$  values of more than .70 are considered sufficient (Bliese, 2000; Chen, Mathieu, & Bliese, 2004; George, 1990; Kenny & La Voie, 1985). With regard to these benchmarks, aggregation of individual responses to the organizational level of analysis was justified for this TFL measure (*ICCI* = .10,  $p < .001$ , *ICC2* = .79, mean  $r_{wg}$  = .79). Cronbach's alpha at the organizational level was .97.

*Transactional leadership* was measured by a four-item scale of Podsakoff and colleagues that captures contingent reward behaviour (Podsakoff, Todor, Grover, & Huber, 1984). We used a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). A sample item is „My direct supervisor gives me special recognition when my work is very good“. We aggregated individual responses to the organizational level (*ICCI* = .10,  $p < .001$ , *ICC2* = .80, mean  $r_{wg}$  = .58). Although the mean  $r_{wg}$  value was lower than desirable, aggregation seemed justified with regard to appropriate ICC values (cf. Bliese, 2000; Koene, Vogelaar, & Soeters, 2002). Cronbach's alpha at the organizational level was .96.

*Climate of trust* was measured by one item (“There is a very high level of trust throughout this organization.”) from the internal trust scale developed by Huff and Kelley (2003) using a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). We aggregated individual responses to the organizational level (*ICCI* = .16,  $p < .001$ , *ICC2* = .87, mean  $r_{wg}$  = .50). Although the mean  $r_{wg}$  value was lower than desirable, aggregation seemed justified with regard to appropriate ICC values (cf. Bliese, 2000; Koene et al., 2002).

*Organizational commitment* was measured by three items from the affective organizational commitment scale of Allen and Meyer (1990) following the proceeding of

Eisenberger, Armeli, Rexwinkel, Lynch, and Rhoades (2001). These items were “Working at this company has a great deal of personal meaning to me”, “I feel a strong sense of belonging to this company”, and “I am proud to tell others I work at this company”. We added one reverse coded item from the original scale of Allen and Meyer (1990, “I think that I could easily become as attached to another organization as I am to this one”). We used a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). Based on aggregation statistics ( $ICC1 = .12, p < .001, ICC2 = .84, \text{mean } r_{wg} = .72$ ), we aggregated individual responses to the organizational level. Cronbach’s alpha at the organizational level was .92.

*Job satisfaction* was measured by five items that capture the job facets used in the Job Descriptive Index (JDI, Smith et al., 1969). We assessed satisfaction with pay, promotion, co-workers, supervision, and the work itself by using a 7-point Likert scale from 1 (very dissatisfied) to 7 (very satisfied). A sample item is „How satisfied are you with your pay?“. Based on aggregation statistics ( $ICC1 = .08, p < .001, ICC2 = .76, \text{mean } r_{wg} = .70$ ), we aggregated individual responses to the organizational level. Cronbach’s alpha at the organizational level was .85.

We ran a set of confirmatory factor analyses (CFAs) to test discriminant validity of the independent organizational-level variables. We tested a five-factor model (factors: transformational leadership, transactional leadership, climate of trust, organizational commitment, job satisfaction) against plausible alternative models. Due to the small sample size on the organizational level, we used six item parcels that represented the six transformational leadership dimensions instead of the 22 single items to reduce the number of variables. Alternative CFA models were (a) a two-factor model with situational antecedents (transformational leadership ( six item parcels), transactional leadership, climate of trust) loading on the first factor and aggregated individual antecedents (organizational commitment, job satisfaction) loading on the second factor, (b) a five-factor higher-order model with three factors (transformational leadership ( six parcels), transactional leadership, climate of trust) loading on the higher-order factor situational antecedents and two factors (organizational commitment, job satisfaction) loading on the higher-order factor aggregated individual antecedents, and (c) a one-factor model. The corresponding five-factor model fit the data significantly better than the five-factor higher-order model ( $\Delta\chi^2(4) = 61.26, p < .001$ ), the two-factor model ( $\Delta\chi^2(8) = 295.87, p < .001$ ), and the one-factor model ( $\Delta\chi^2(61) = 343.00, p < .001$ ).

*Productive organizational energy* was measured by the scale of Cole et al. (2005). The scale refers to the cognitive, behavioural, and emotional dimension of organizational energy

(Bruch & Ghoshal, 2003; Cole et al., 2005). For cognitive and behavioural items, we used a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Sample items are „People in my work group are mentally alert“ (cognitive) and „People in my work group will go out of their way to ensure the company succeeds“ (behavioural). We used a 5-point Likert scale from 1 (never) to 5 (extremely often/always) for affective items (sample item: „People in my work group feel energetic in their job“). Based on aggregation statistics ( $ICC1 = .11$ ,  $p < .001$ ,  $ICC2 = .81$ , mean  $r_{wg} = .82$ ), we aggregated individual responses to the organizational level. Cronbach’s alpha at the organizational level was .96.

*Proactive behaviour* was assessed by the seven-item personal initiative scale of Frese, Fay, Hilburger, Leng, and Tag (1997) using a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). A sample item is “I actively attack problems”. Based on aggregation statistics ( $ICC1 = .04$ ,  $p < .001$ ,  $ICC2 = .60$ , mean  $r_{wg} = .88$ ), we aggregated individual responses to the organizational level. Cronbach’s alpha at the organizational level was .90.

*Control variables.* As our sample varied in company size and prior research revealed that company size is related to employee attitudes and behaviours (Ragins, Cotton, & Miller, 2000; Schminke, Cropanzano, & Rupp, 2002), we included company size as a control variable in all analyses. The organizations’ HR executives provided information on company sizes, thereby referring to the number of full time positions.

## Statistical Analyses

All analyses were conducted on the organizational level. We conducted moderated regression analyses (Aiken & West, 1991). In the first step, we included company size as well as z-standardized values of productive organizational energy and the respective predictor variable to test Hypotheses H1a to H5a. With regard to our sample size ( $n = 92$ ) and for reasons of comparability to prior research on the individual level of analysis, we conducted separate analyses for each predictor variable. In the second step, we included the interaction term between z-standardized values of productive organizational energy and the respective predictor variable to test Hypotheses H1b to H5b. For interpretation of the interaction effects, we plotted the regression lines of personal initiative on the respective predictor under two conditions – low and high productive organizational energy (i.e.,  $-1 SD$  and  $+1 SD$ , Aiken & West, 1991). Furthermore, we conducted simple slope tests to examine if the plotted slopes reached statistical significance (Preacher, Curran, & Bauer, 2006).



Table 4

Means, Standard Deviations, Zero-Order Correlations, and Reliabilities (Study 2)

Variables	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>
1 Company size	147.25	187.76	-							
2 Proactive behaviour <sup>a</sup>	5.72	0.24	-.00	(.90)						
3 Productive organizational energy <sup>b</sup>	3.65	0.30	-.19 <sup>+</sup>	.37***	(.96)					
4 Transformational leadership <sup>b</sup>	3.60	0.31	-.17 <sup>+</sup>	.41***	.61***	(.97)				
5 Transactional leadership <sup>b</sup>	3.45	0.43	-.12	.38***	.54***	.87***	(.96)			
6 Climate of trust <sup>a</sup>	4.82	0.83	-.28**	.44***	.69***	.68***	.64***	-		
7 Organizational commitment <sup>a</sup>	5.01	0.52	-.33***	.46***	.50***	.48***	.35***	.74***	(.92)	
8 Job satisfaction <sup>a</sup>	5.27	0.48	-.28**	.40***	.55***	.64***	.53***	.76***	.72***	(.85)

Note. *N* = 92 companies. Cronbach's alphas are displayed on the diagonal.

\*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

<sup>a</sup> Range 1 to 7. <sup>b</sup> Range 1 to 5.

## Results

Descriptive statistics, zero-order correlations, and reliabilities are shown in Table 4. Consistent with Hypotheses 1a to 5a, transformational leadership, transactional leadership, climate of trust, organizational commitment, and job satisfaction were positively related to proactive behaviour ( $r = .38$  to  $r = .46$ ).

### Situational Antecedents

We had hypothesized that *transformational leadership* (H1a), *transactional leadership* (H2a), and *climate of trust* (H3a) are positively related to proactive behaviour and that these relationships are stronger if POE is high (H1b to H3b). Table 5, Table 6, and Table 7 display results for main and interaction effects of transformational leadership, transactional leadership and climate of trust, respectively and support Hypotheses 1a to 3a as well as 1b to 3b. Furthermore, Figure 5, Figure 6, and Figure 7 illustrate that relationships between these variables and proactive behaviour were stronger for companies with high levels of POE. Simple slope tests indicated that the positive relationship of transformational leadership, transactional leadership as well as climate of trust with proactive behaviour was only significant for companies with high POE (transformational leadership: low POE:  $\gamma = .02$ ,  $t = 0.49$ , n.s.; high POE:  $\gamma = .11$ ,  $t = 3.59$ ,  $p \leq .001$ ; transactional leadership: low POE:  $\gamma = .02$ ,  $t = 0.61$ , n.s.; high POE:  $\gamma = .11$ ,  $t = 3.38$ ,  $p \leq .001$ ; climate of trust: low POE:  $\gamma = .06$ ,  $t = 1.70$ , n.s.; high POE:  $\gamma = .14$ ,  $t = 3.59$ ,  $p \leq .001$ ).

### Aggregated Individual Antecedents

We had hypothesized that *organizational commitment* (H4a) and *job satisfaction* (H5a) are positively related to proactive behaviour and that these relationships are stronger if POE is high (H4b, H5b). Table 8 and Table 9 display results for main and interaction effects of organizational commitment and job satisfaction, respectively and support Hypotheses 4a and 5a as well as 4b and 5b. Furthermore, Figure 8 and Figure 9 illustrate that relationships between these variables and proactive behaviour were stronger for companies with high levels of POE. Organizational commitment was positively related to proactive behaviour in companies with low and high POE (low POE:  $\gamma = .07$ ,  $t = 2.09$ ,  $p \leq .05$ ; high POE:  $\gamma = .15$ ,  $t = 4.29$ ,  $p \leq .001$ ), but the relationships were stronger in companies with high POE. Job satisfaction was only positively related to proactive behaviour for companies with high POE (low POE:  $\gamma = .01$ ,  $t = 0.40$ , n.s.; high POE:  $\gamma = .13$ ,  $t = 4.53$ ,  $p \leq .001$ ).

Table 5  
Moderated Regression Analysis Predicting Proactive Behaviour by Transformational Leadership (Study 2)

	Step 1	Step 2
Step 1		
Company size	.09	.08
Transformational leadership	.30*	.25*
Productive organizational energy (POE)	.20	.14
Step 2		
Transformational leadership x POE		.31**
$\Delta R^2$	.20***	.09**
Total $R^2$	.20***	.28***

Note.  $N = 92$  companies. Standardized coefficients (beta) are reported.

+  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

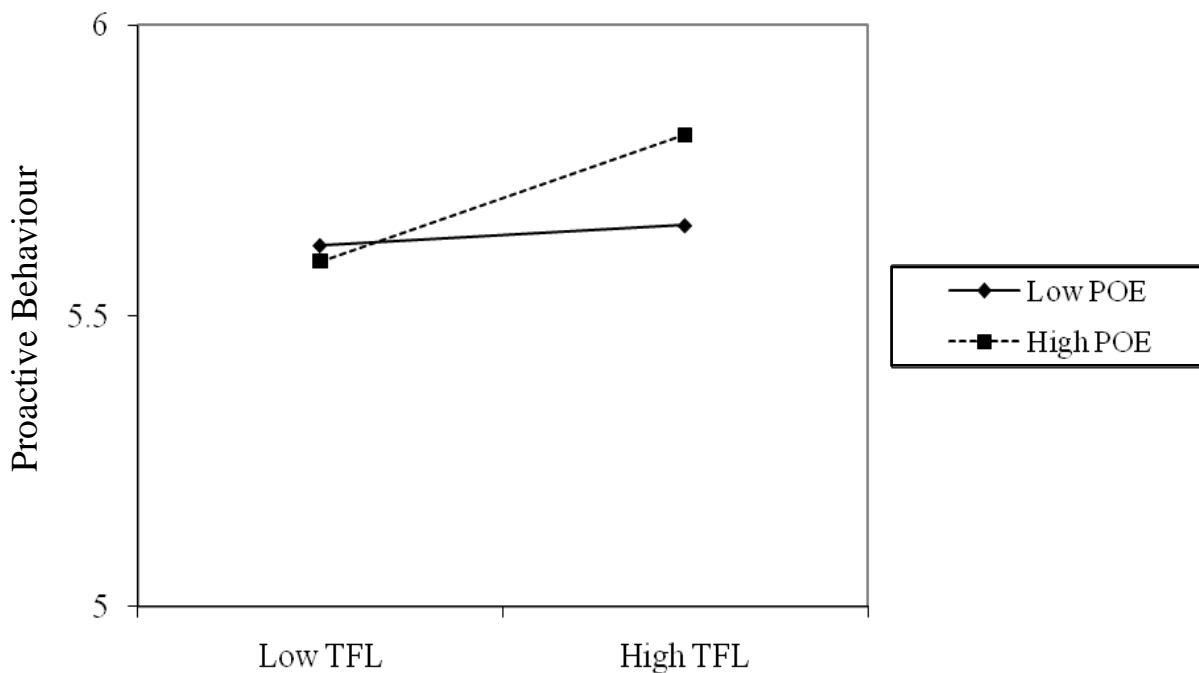


Figure 5  
Interaction of Transformational Leadership (TFL) and Productive Organizational Energy (POE, Study 2)

Table 6  
Moderated Regression Analysis Predicting Proactive Behaviour by Transactional Leadership (Study 2)

	Step 1	Step 2
Step 1		
Company size	.07	.07
Transactional leadership	.26*	.25*
Productive organizational energy (POE)	.24*	.18
Step 2		
Transactional leadership x POE		.26**
$\Delta R^2$	.19***	.06**
Total $R^2$	.19***	.25***

Note.  $N = 92$  companies. Standardized coefficients (beta) are reported.

+  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

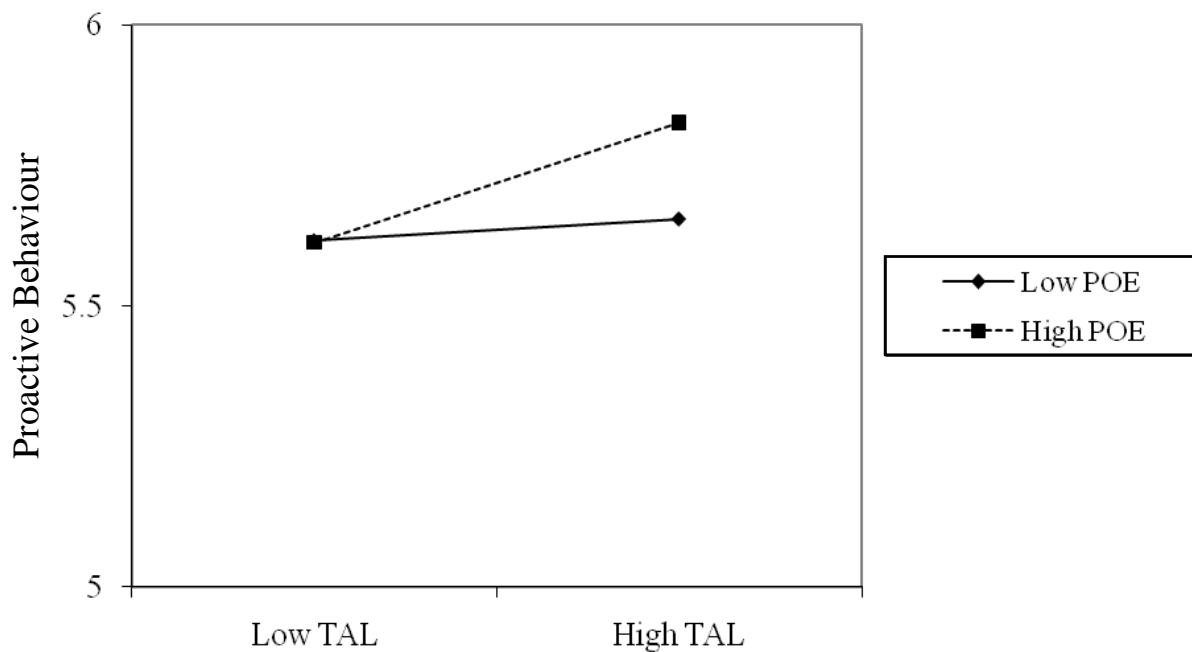


Figure 6  
Interaction of Transactional Leadership (TAL) and Productive Organizational Energy (POE, Study 2)

Table 7

Moderated Regression Analysis Predicting Proactive Behaviour by Climate of Trust (Study 2)

	Step 1	Step 2
Step 1		
Company size	.13	.12
Climate of trust	.40**	.41**
Productive organizational energy (POE)	.12	.04
Step 2		
Climate of trust x POE		.19*
$\Delta R^2$	.22***	.03*
Total $R^2$	.22***	.25***

Note.  $N = 92$  companies. Standardized coefficients (beta) are reported.

+  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

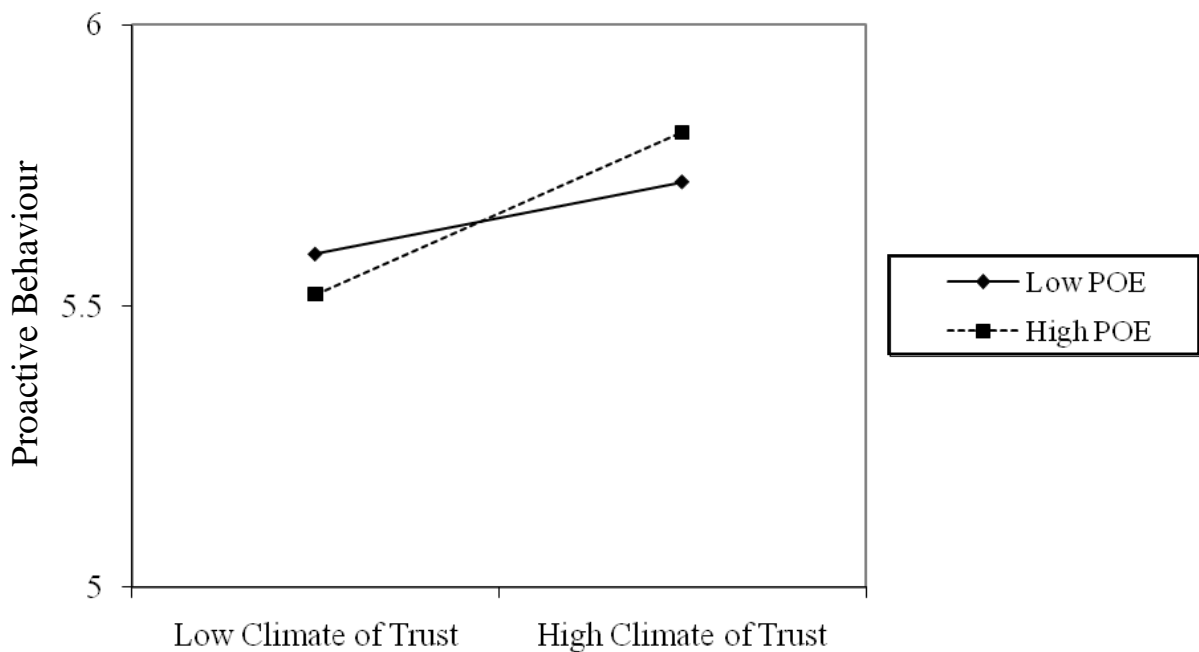


Figure 7

Interaction of Climate of Trust and Productive Organizational Energy (POE, Study 2)

Table 8  
Moderated Regression Analysis Predicting Proactive Behaviour by Organizational Commitment (Study 2)

	Step 1	Step 2
Step 1		
Company size	.17 <sup>+</sup>	.15
Organizational commitment	.42***	.44***
Productive organizational energy (POE)	.19 <sup>+</sup>	.08
Step 2		
Organizational commitment x POE		.21*
$\Delta R^2$	.26***	.04*
Total $R^2$	.26***	.30***

Note.  $N = 92$  companies. Standardized coefficients (beta) are reported.

<sup>+</sup>  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

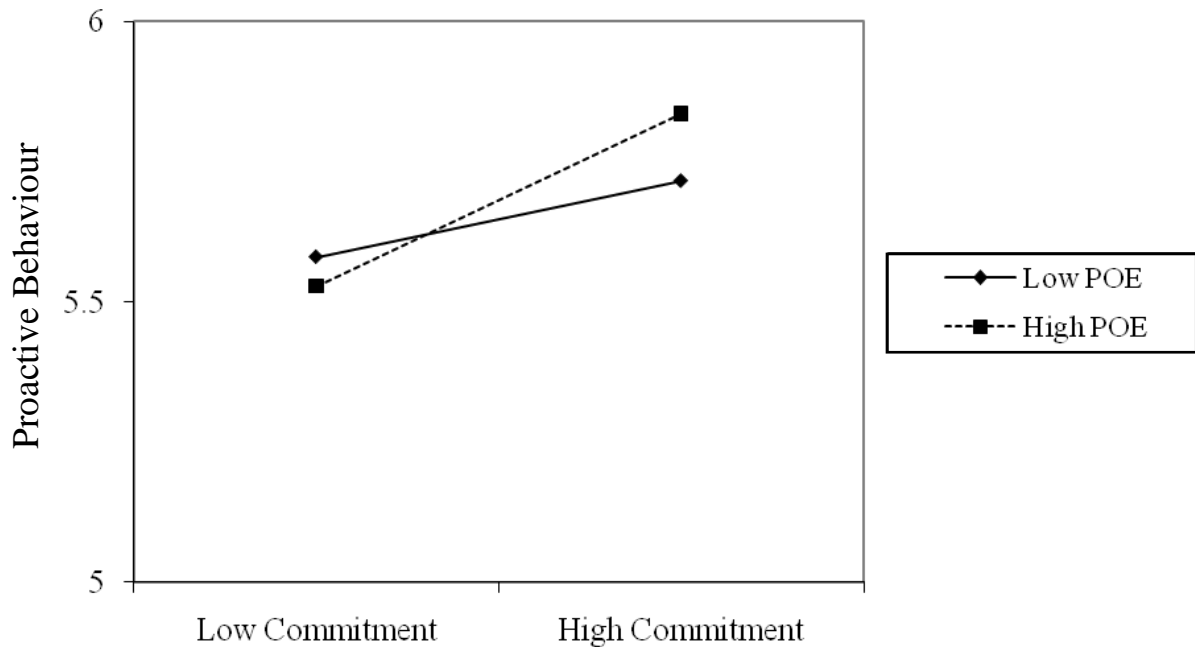


Figure 8  
Interaction of Organizational Commitment and Productive Organizational Energy (POE, Study 2)

Table 9

Moderated Regression Analysis Predicting Proactive Behaviour by Job Satisfaction (Study 2)

	Step 1	Step 2
Step 1		
Company size	.12	.09
Job satisfaction	.32**	.30**
Productive organizational energy (POE)	.22 <sup>+</sup>	.08
Step 2		
Job satisfaction x POE		.39***
$\Delta R^2$	.21***	.13***
Total $R^2$	.21***	.34***

Note.  $N = 92$  companies. Standardized coefficients (beta) are reported.

<sup>+</sup>  $p \leq .10$ . \*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

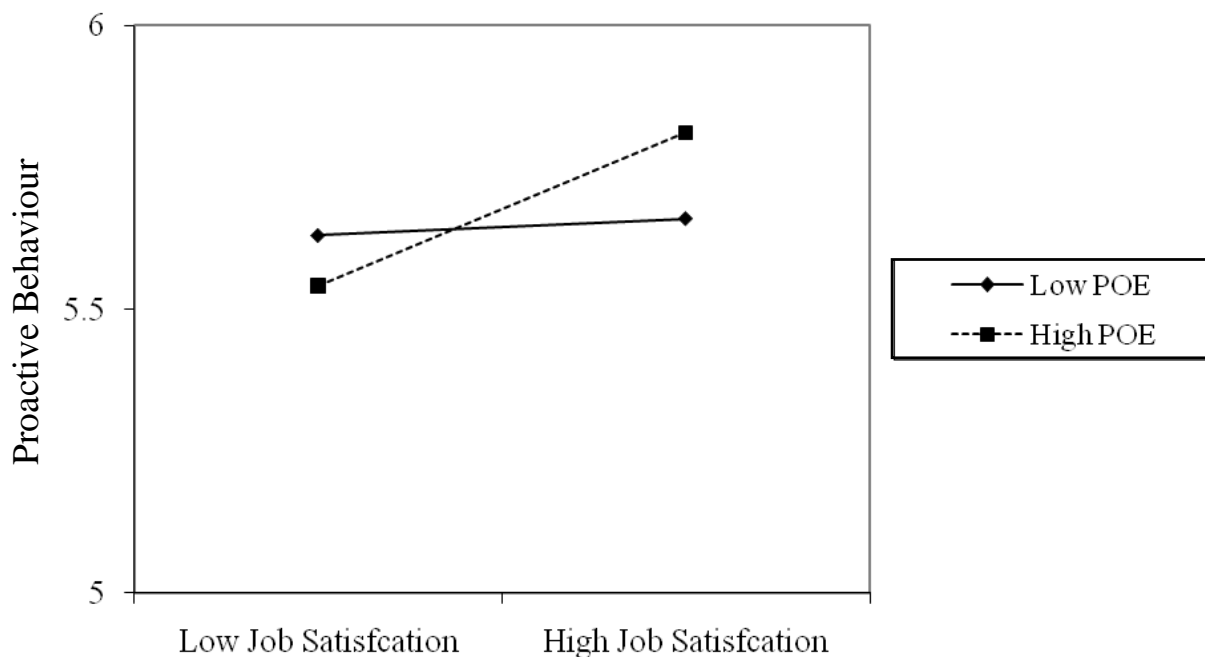


Figure 9

Interaction of Job Satisfaction and Productive Organizational Energy (POE, Study 2)

## Discussion

We pursued two aims with this study: Our first aim was to examine antecedents of proactive work behaviour on an organizational level of analysis. More specifically, we examined leadership behaviour and climate of trust as situational antecedents and shared organizational commitment as well as shared job satisfaction as aggregated individual antecedents. As proposed, our findings suggest that transformational leadership, transactional leadership, climate of trust as well as employees' shared organizational commitment and job satisfaction are positively related to employees' proactive behaviour on an organizational level. Second, as argued, productive organizational energy moderated these relationships, i.e., relationships between situational and aggregated individual antecedents and employees' aggregated proactive behaviour were stronger for companies with high productive organizational energy. Therefore, we extended the model of Bindl and Parker (in press) by taking productive organizational energy as a crucial boundary condition in the relationships between antecedents and proactive behaviour into account.

Previous work has shown that individual proactive behaviour is beneficial for the employees' but also the organizations' success (Fay & Frese, 2001; Parker et al., 2006; Raabe et al., 2007). However, organizations are increasingly confronted with particular challenges, such as introduction of innovations, change management, and fast growth (e.g., Hult, Hurley, & Knight, 2004). Proactive behaviour of particular employees might not be sufficient to solve these challenges. It might rather be necessary that organizations manage to generate a certain amount of proactive behaviour throughout all employees. As our results suggest, organizations that are characterized by a climate of trust, leaders who engage in transformational and transactional leadership behaviours as well as employees who are committed to the respective organization and who are satisfied with their jobs obtain higher levels of proactive behaviour among their employees than organizations that do not fulfil these characteristics. Thus, situational and aggregated individual variables that were previously confirmed as individual-level antecedents for individual proactive behaviour also predict different levels of proactive behaviour between organizations (Bindl & Parker, in press; Crant, 2000, Fay & Frese, 2001). These results provide first evidence that current models on proactive behaviour may be generalized to an organizational level of analysis. Moreover, these results are in line with literature that proposes that organizational-level attributes emerge from individual-level attributes (Klein & Kozlowski, 2000).

The findings of this study confirm that proactive behaviour is related to various kinds of antecedents which can be influenced within organizations instead of merely depending on



the respective employee him- or herself. Extending prior research that already revealed positive effects of transformational leadership on in-role and extra-role performance (e.g., Humphrey, Nahrgang, & Morgeson, 2007; Judge & Piccolo, 2004; Lowe, Kroeck, & Sivasubramaniam, 1996; Podsakoff, MacKenzie, Paine, & Bachrach, 2000), this study confirmed the impact of an organizations' transformational leadership climate on employees proactive behaviour.

Furthermore, our study is the first that showed the importance of the overall organizational context for employees' proactive behaviour. High levels of productive organizational energy amplify the impact of antecedent variables on employees' aggregated proactive behaviour. Organizations that have high levels of productive organizational energy most probably achieve an alignment of their employees' emotions, cognitions, and activities in pursuit of the organization's goals. Typically, organizations with high levels of productive organizational energy are characterized by high involvement, enthusiasm, mental alertness, and readiness to invest extraordinary efforts to achieve organizational goals (Bruch & Ghoshal, 2003). Employees who work in organizations with high levels of productive organizational are more likely to actually engage in proactive behaviour if they are in general motivated and enabled to do so. To gain full potential of proactive behaviour in an organization, it is therefore necessary not only to care for leadership, trust, commitment, and job satisfaction but also to develop an energetic organizational context.

### **Limitations and Future Research**

Central limitations of our study are the cross-sectional nature of our data as well as the use of self-report measures. First, due to the fact that we used cross-sectional data, causal processes remain unclear. In our conceptual model we argued that situational variables (i.e., transformational and transactional leadership, climate of trust) and aggregated individual variables (i.e., organizational commitment, job satisfaction) serve as predictors of proactive behaviour moderated by productive organizational energy. This assumption was built on prior models of proactive behaviour that were partly based on longitudinal data (Bindl & Parker, in press; Crant, 2000; Parker et al., 2006; Grant & Ashford, 2008). Nevertheless, one can also imagine reverse causal paths: For example, proactive employees might shape their environment in a way that leaders engage more often in transformational and transactional leadership, that interaction with others gets more trustworthy, and that these employees are then more strongly committed to the organization and more satisfied with their job. Actually, we expect reciprocal relationships. To gain a deeper understanding, future studies should also

consider longitudinal designs (e.g., over days, weeks, or years) that focus on processes between certain antecedents and proactive behaviour on an organizational level as well as compare these processes with processes for the reciprocal relationships, respectively.

Second, we used self ratings to measure our focal study variables. A central concern with self ratings is the potential overestimation of relationships due to a common method bias (Podsakoff et al., 2003). However, as recommended by Ostroff et al. (2002), we used a split sample design, i.e., antecedents, moderator variable, and proactive behaviour were assessed by different randomly assigned employees within each organization. Then, measurements were aggregated and analysed on an organizational level. Furthermore, as recommended by Podsakoff et al. (2003), respondents' answers were anonymous. As a result, common method bias should be reduced.

As we tested productive organizational energy as the only moderator, future studies should also consider other possible boundary conditions that influence relationships between antecedents and proactive behaviour. On an organizational level of analysis, boundary conditions from an organization's environment might play a role (e.g., job security, competitiveness of markets). Potential boundary conditions on an individual level of analysis might also lay in the employees' personality and characteristics. For example, Binnewies, Sonnentag, and Mojza (2009) revealed an interaction between recovery status and job control to predict individual day-level proactive behaviour.

Finally, future studies should take into account different levels of analysis. While the majority of research on proactive behaviour refers to individual-level data, more research on different levels (e.g., sub-units, organizations, industries) may broaden the understanding of proactive behaviour and its influences.

### **Implications for Management**

As proactive behaviour is beneficial for organizations, managers should try to encourage their employees to be proactive. Although proactive behaviour also depends on aggregated individual variables, situational aspects that can be established by top and middle management play an important role. Once more, this study confirmed the necessity of appropriate leadership. Especially, transformational and transactional leadership should be exhibited by leaders of all hierarchy levels. Leadership trainings, especially those that focus on conscious goal setting and feedback giving on the one hand and transformational behaviour (e.g., individual consideration, communication of organization's vision, relevance of being a role model) on the other hand, as well as coaching and mentoring programs that

enhance transformational leadership might help to implement desired leadership behaviour in the organization (Barling, Weber, & Kelloway, 1996).

Furthermore, this study revealed the importance of productive organizational energy. To unleash productive energy in an organization, Bruch and Ghoshal (2003) suggest two strategies, one building on current threats and the other one building on a capturing vision: Leaders may clearly articulate an imminent external threat and involve employees in problem-solving. Alternatively, leaders may mobilize with the help of a capturing vision.

Altogether, this study complemented individual views on proactive behaviour by examining organizational level antecedents and revealed the importance of an organization's context (i.e., productive organizational energy) as a crucial boundary condition that promotes or hinders proactive behaviour of its employees.

## **STUDY 3: THE DARK AND THE BRIGHT SIDES OF PROACTIVE WORK BEHAVIOUR AND SITUATIONAL CONSTRAINTS: LONGITUDINAL RELATIONSHIPS WITH TASK CONFLICTS<sup>3</sup>**

### **Summary**

We investigate relationships of a job stressor (situational constraints) and specific proactive behaviours with change in task conflicts over time. Therefore, we introduce two distinct types of proactive work behaviour (promotion-oriented initiative and prevention-oriented initiative) and examine their positive but also negative relationships with change in task conflicts. Study 1 supported construct validity of promotion-oriented initiative and prevention-oriented initiative for 363 student assistants: Confirmatory factor analyses indicated that both types of proactive behaviour are distinct constructs and also distinct from active coping; patterns of correlations are similar with a prior concept of proactive behaviour. Study 2 was a longitudinal online survey with 197 employees over three weeks. Consistent with our hypotheses, situational constraints and promotion-oriented initiative predicted an increase in task conflicts while prevention-oriented initiative predicted a decrease in task conflicts.

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<sup>3</sup> This chapter is based on:

Spychala, A., & Sonnentag, S. (under review). The dark and the bright sides of proactive work behaviour and situational constraints: Longitudinal relationships with task conflicts.

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## Introduction

Today's jobs are typically characterized by rapid changes including the introduction of innovations and new technologies (Campbell, 2000; Thatcher & Zhu, 2006). In addition, many employees work in companies with decentralized management, and teamwork is increasing (Balogun & Johnson, 2004; De Dreu & Weingart, 2003; Schilling & Steensma, 2001). Therefore, it is increasingly important that employees do not just fulfil their jobs and react passively to new situations but that they become more flexible and active, and that they attack occurring problems in a proactive way (Parker, 2000; Swan & Fox, 2009). Moreover, these changes imply an increase in job stressors (e.g., obstacles, job demands, role conflicts, uncertainty; Armenakis & Bedeian, 1999; Härenstam et al., 2004; Jimmieson, Terry, & Callan, 2004) as well as in interpersonal conflicts at work (e.g., task conflicts; De Dreu & Weingart, 2003).

Recent research demonstrated the negative impact of task conflicts (i.e., conflicts with colleagues and supervisors about how to accomplish work tasks) on various outcomes including performance, team performance, well-being, and satisfaction (e.g., De Dreu & Weingart, 2003; Friedman, Tidd, Currall, & Tsai, 2000; Gamero, González-Romá, & Peiró, 2008; Medina, Munduate, Dorado, Martínez, & Guerra, 2005). However, rather little is known about antecedents of task conflicts so far, and longitudinal studies are scarce (De Wit & Greer, 2008; Moye & Langfred, 2004; Peterson & Behfar, 2003). The aim of this study is to fill this gap. Following research that emphasizes the importance to consider conflicts as a dynamic process (e.g., De Dreu, 2008; Greer, Jehn, & Mannix, 2008; Jehn & Mannix, 2001; Peterson & Behfar, 2003; Simons & Peterson, 2000), we underline the importance to examine antecedents that go along with a decrease or increase of task conflicts. Potential antecedents may derive from working conditions but also from employees' behaviour at work. Therefore, we examine stressors at work, especially situational constraints (i.e., obstacles in the work situation that hinder task accomplishment), and employees' proactive work behaviour as antecedents of increased task conflicts. We propose that situational constraints are directly related to increased task conflicts but that relationships for proactive work behaviour are less uniform.

Typically, researchers have studied proactive behaviour as positive and desired work behaviour. And indeed, there is evidence that proactive work behaviour is beneficial for individual as well as company success (Fay & Frese, 2001; Parker, Williams, & Turner, 2006; Raabe, Frese, & Beehr, 2007). However, negative consequences of proactive work behaviour have rarely been addressed by researchers – neither negative consequences on the employee

him- or herself nor on colleagues, supervisors, or the company as a whole (Bateman & Crant, 1999; Campbell, 2000). We argue that proactive behaviour may have negative consequences especially for conflicts among colleagues and supervisors about how to accomplish work tasks as proactive employees might be “difficult” for colleagues and supervisors (cf., Grant, Parker, & Collins, 2009). More specifically, we argue that consequences of proactive work behaviour are not uniformly positive or negative but that relationships are different for distinct types of proactive work behaviour. Particularly, we introduce promotion-oriented initiative (i.e., discretionary behaviour that aims at taking control in order to improve the internal organizational environment) and prevention-oriented initiative (i.e., discretionary behaviour that aims at preventing the reoccurrence of obstacles and stressors at work) as two specific types of proactive work behaviour. While promotion-oriented initiative should be related to increased task conflicts, prevention-oriented initiative should be related to decreased task conflicts.

Altogether, our study contributes to the literature on interpersonal conflicts by examining antecedents of task conflicts with a longitudinal design. Moreover, this study focuses on antecedents that may be modified instead of concentrating on mere team composition variables as prior research frequently has done (De Wit & Greer, 2008). Furthermore, this study contributes to a deeper understanding of proactive work behaviour by analysing promotion-oriented and prevention-oriented initiative as specific proactive behaviours. More and more, research in this field demonstrates the importance of differentiating particular proactive behaviours (Griffin, Neal, & Parker, 2007; Parker & Collins, in press).

### **Task Conflicts**

Interpersonal conflicts at work refer to a “process resulting from the tension between team members because of real or perceived differences” (De Dreu & Weingart, 2003, p. 741). Research on conflicts at work usually distinguishes task conflicts (e.g., conflicts about procedures, policies, and distribution of resources) and relationship conflicts (e.g., conflicts about personal taste, political preferences, and values; De Dreu & Weingart, 2003). Traditionally, task conflicts were seen as contributing to effective group decision making and group performance (Amason, 1996; Jehn, 1994) whereas relationship conflicts were seen as dysfunctional because they distract employees (De Dreu & Weingart, 2003). However, recent research, including meta-analytical results, revealed that both types of conflicts go along with decreased job performance, well-being, and job satisfaction, as well as increased strain and

tension (e.g., De Dreu, 2008; De Dreu & Weingart, 2003; Friedman et al., 2000; Gamero et al., 2008; Medina et al., 2005). Even more important, researchers argued and empirically confirmed that relationship conflicts evolve from task conflicts due to misinterpretations of task conflict behaviour (i.e., if task conflict behaviour is perceived as personal criticism, relationship conflicts are likely to occur) and demonstrated that the negative impact of task conflicts on various outcomes is mediated by relationship conflicts (e.g., Friedman et al., 2000; Gamero et al., 2008; Medina et al., 2005). Therefore, especially task conflicts play a crucial role for work processes and performance as they often seem to be the starting point to unfavourable processes and outcomes at work. Because of this high importance of task conflicts, we will focus on perceived task conflicts in this study.

While outcomes of conflicts are well elaborated, research on antecedents of conflicts is scarce. Beyond performance feedback and information sharing which have been studied as potential antecedents (Moye & Langfred, 2004; Peterson & Behfar, 2003), previous research primarily focused on characteristics of team composition as antecedents for conflicts. Correspondingly, De Wit and Greer (2008) confirmed positive relationships between team diversity, especially informational diversity, and task conflicts in their meta-analysis. Antecedents referring to team composition are well elaborated. However, other domains of potential antecedents are rarely investigated, yet. Moreover, from a practical perspective, knowledge about team composition variables as antecedents is often only of limited value as managers can influence team member characteristics primarily in the stage of team building. However, it might be more helpful to be able to influence detrimental characteristics also later on. Therefore, other domains have to come to the fore. In this study, we consider two main domains which may have an influence on a team's work and potential task conflicts: Work environment and employees' behaviour. First, the environment in which team work takes place may have an influence. Research on job performance revealed especially job stressors as detrimental characteristics of the work environment. In this study, we examine if this holds true for task conflicts, too. Typical job stressors refer to red tape and organizational politics as well as daily hassles, such as technical problems and missing or outdated information (e.g., LePine, Podsakoff, & LePine, 2005). The concept of situational constraints represents these aspects (Peters & O'Connor, 1980). Thus, we examine situational constraints as a major antecedent of task conflicts at work. Second, team members themselves may have an influence on their work and potential conflicts. While merely accomplishing one's job may be neutral for other team members, behaviour that goes beyond pure task accomplishment may evolve conflicts as it influences other team members' work. The concept of proactive

behaviour depicts a form of work behaviour that goes beyond pure task accomplishment (e.g., Parker & Collins, in press). Therefore, we incorporate proactive behaviour as another major antecedent of task conflicts into the study.

Finally, recent research emphasizes the dynamic nature of conflicts at work (e.g., De Dreu, 2008; Greer et al., 2008; Jehn & Mannix, 2001; Peterson and Behfar, 2003; Simons & Peterson, 2000). For instance, with regard to task conflicts, Jehn and Mannix (2001) reported that medium to high levels during the midpoint of a group's work are beneficial for team performance but that lower levels towards the end are necessary for high performance. Moreover, Peterson and Behfar (2003) showed that prior performance predicts changes in conflicts over time. In line with this research, we examine antecedents that go along with a decrease or increase of conflicts using a longitudinal design.

### **Job Stressors and Task Conflicts**

Job stressors are stimuli in the stress process (Jex, 1998; Lazarus & Folkman, 1984). Especially stressors that are associated with hindrance at work, i.e., stressors that impede goal attainment, are negatively related to job performance, job satisfaction, motivation, and commitment as well as positively related to strain, turnover, and withdrawal behaviour (e.g., lateness and absenteeism; LePine, Podsakoff, & LePine, 2005; Podsakoff, LePine, & LePine, 2007). Meta-analytic results indicate that situational constraints belong to the most dysfunctional job stressors with regard to job performance (Gilboa, Shirom, Fried, & Cooper, 2008). Situational constraints refer to hassles and obstacles in the work situation that hinder task accomplishment (e.g., incomplete and outdated material and information; Peters & O'Connor, 1980; Spector & Jex, 1998).

We propose that situational constraints are related to an increase of task conflicts because they represent potential issues to argue about. Situational constraints indicate that work procedures are not optimal. Typically, employees have little control over these constraints (Jex, 1998; Peters & O'Connor, 1980). However, employees might attribute this suboptimal functioning to failure of themselves, colleagues, and supervisors or to external reasons. According to causal attribution theory (e.g. Zuckerman, 1979), persons tend to follow a self-serving bias and therefore attribute failure of oneself to external reasons but failure of others to their internal reasons. Translated to situational constraints at work, we argue that employees may hold colleagues and supervisors responsible for these constraints and therefore will focus on different opinions about how to get the work done in the light of these conflicts. Consequently, employees may start to argue about task accomplishment and



task conflicts may increase. Additionally, competing for scarce resources, which is one indicator for situational constraints, may increase task conflicts. Research on relationships between job stressors and interpersonal conflicts is scarce as conflicts are often seen as stressors themselves (Giebels & Janssen, 2005). Taken together, we propose

*Hypothesis 1: Situational constraints are related to increased task conflicts with colleagues and supervisors.*

### **Proactive Work Behaviour and Task Conflicts**

In general, proactive work behaviour can be defined as discretionary behaviour that aims at changing the internal organizational environment (Parker & Collins, in press). For a long time, research studied proactive work behaviour as a general construct, for example as personal initiative (Frese, Kring, Soose, Zempel, 1996), general proactive behaviour (Crant, 2000), or taking charge (Morrison & Phelps, 1999). More and more, research in this field demonstrates the importance of differentiating particular dimensions and types of proactive behaviour (Grant & Ashford, 2008; Griffin et al., 2007; Parker & Collins, in press). In our study, we focus on two types of proactive work behaviour, namely promotion-oriented initiative and prevention-oriented initiative.

*Promotion-oriented initiative* includes a broad range of proactive work behaviours that is comparable to behaviours examined in earlier research on proactivity. Based on prior definitions of personal initiative, taking charge, and proactive work behaviour (Frese et al., 1996; Morrison & Phelps, 1999; Parker et al., 2006), we define promotion-oriented initiative as discretionary behaviour that aims at taking control in order to improve the internal organizational environment. From a motivational perspective, promotion-oriented initiative includes a promotion focus, i.e., the pursuit of desired goals (Higgins, 1997). For example, an employee who works in a pension insurance company engages in promotion-oriented initiative by trying to introduce work procedures that are more customer-oriented (e.g., sending a notice of receipt directly after a customer put a question to the company instead of answering the question days or weeks later). Compared to the types of proactive work behaviour introduced by Parker and Collins (in press), promotion-oriented initiative is related to the concept of taking charge.

We define *prevention-oriented initiative* as discretionary behaviour that aims at preventing the reoccurrence of obstacles and stressors at work. From a motivational perspective, prevention-oriented initiative includes a prevention focus, i.e., the avoidance of

undesired outcomes (Higgins, 1997). For example, if several employees have trouble with new software that is already used in the department and one employee initiates a workshop to share experiences with the software, this employee engages in prevention-oriented initiative. Hence, this type of proactive behaviour is not fully self-initiated but is rather a reaction to job stressors. Consequently, prevention-oriented initiative might be seen as a form of proactive coping (Aspinwall & Taylor, 1997) or innovative coping (Bunce & West, 1994) and is closely related to the concept of problem prevention as described by Parker and Collins (in press). However, although prevention-oriented initiative overlaps with coping, it additionally includes proactive elements of problem solving going beyond solving an acute problem. Overall, the motivational and situational background of the two types of proactive behaviour is quite different and these types will also relate differently to potential outcome variables.

We propose that promotion-oriented initiative will be related to increased task conflicts while prevention-oriented initiative will be related to decreased task conflicts. Typically, researchers have studied proactive behaviour as work behaviour that is beneficial and potential negative consequences of proactive work behaviour have only rarely been addressed by researchers. Early papers discussed potential unanticipated consequences (Bateman & Crant, 1999; Campbell, 2000) but did not empirically validate the propositions. However, in this study we focus on potential negative outcomes of proactive work behaviour. Especially with regard to promotion-oriented initiative in contrast to prevention-oriented initiative we propose detrimental effects. Promotion-oriented initiative implies to fulfil additional tasks, to deal with barriers and setbacks, and sometimes also to offend company's implicit rules. This behaviour may lead to negative judgements by colleagues and supervisors, for example being a "difficult person" who always wants to address more issues than others do. Indeed, Grant et al. (2009) showed that employee proactive behaviour is not always appreciated by supervisors. Furthermore, employees engaging in promotion-oriented initiative may create more workload and more stress objectively, because they challenge role boundaries and introduce new tasks that would not arise when only fulfilling formal job descriptions. These additional tasks may also have an impact on tasks and work processes of colleagues and supervisors. For example, an employee tries to introduce more customer-oriented work procedures (e.g., sending a notice of receipt directly after a customer put a question to the company instead of only answering the question days or weeks later). First, most probably only this employee will behave in this manner but later on colleagues within the same department might have to take over this behaviour as customers and supervisor request it. Thus, working procedures and also workload of the employee's colleagues are

affected. Therefore, colleagues and supervisors who do not want to engage in promotion-oriented initiative may perceive employees who do engage in promotion-oriented initiative to be responsible for the increase of workload and stress. As a result, conflicts about how to successfully accomplish work will increase due to different opinions about role boundaries and relevant tasks.

Concerning prevention-oriented initiative and task conflicts at work, we argue that prevention-oriented initiative should be related to decreased task conflicts. Although also prevention-oriented initiative goes beyond the formal job description, this kind of behaviour is much more focused on solving present problems and preventing the reoccurrence of specific job stressors. For example, due to the fact that many colleagues repeatedly had problems using a particular pension software package an employee stands up and initiates a workshop to share experiences with this software or convinces his or her supervisor to change the particular software that is used in his or her department. Thus, this behaviour also has an impact on colleagues and supervisors but the probability that colleagues and supervisors take direct advantage of this behaviour is high because their problems may also be solved. Consequently, an employee engaging in prevention-oriented initiative is most probably perceived as the one who solves the problems and reduces stress. Therefore, colleagues and supervisors should be grateful for employees engaging in prevention-oriented initiative and will agree that this is the right way to fulfil the work task. Thus, task conflicts at work should decrease. Taken together, we propose

*Hypothesis 2: Promotion-oriented initiative is related to increased task conflicts with colleagues and supervisors.*

*Hypothesis 3: Prevention-oriented initiative is related to decreased task conflicts with colleagues and supervisors.*

### **Overview over the Studies**

In Study 3a, we developed measures for promotion-oriented and prevention-oriented initiative and examined construct validity of these two measures by confirmatory factor analyses. Furthermore, we analysed discriminant and convergent validity of the measures. To test discriminant validity, we distinguished promotion-oriented initiative and prevention-oriented initiative from active coping by confirmatory factor analyses. To test convergent validity, we compared relationships of the newly developed measures with the personal initiative scale by Frese, Fay, Hilburger, Leng, and Tag (1997) which is an established

measure of proactive behaviour. Moreover, we examined relationships of promotion-oriented initiative, prevention-oriented initiative, and personal initiative on the one hand with variables that are typically related to proactive behaviour (job control, time pressure, situational constraints, job involvement, and active coping) on the other hand (e.g., Bindl & Parker, in press; Fay & Frese, 2001).

Study 3b is the main study of this paper. In this study, we tested our hypotheses by examining the relationships of situational constraints and the two types of proactive behaviour with task conflicts at work. For Study 2, we gathered data at different points of time and could therefore predict change in task conflicts over time. More specifically, we used diary measures to obtain more reliable estimates of the predictor variables (Bolger, Davis, & Rafaeli, 2003) and predicted change in task conflicts over two weeks.

### **Study 3a: Construct Validation**

#### **Method**

##### ***Sample and Procedure***

We collected data by paper-and-pencil questionnaires in a sample of student assistants who worked at German universities. We contacted administrative offices of university departments (excluding psychology departments) and asked for an email to be forwarded with information about the study to student assistants working in the departments. In sum, 685 master student assistants expressed their willingness to participate in the study. We received complete surveys from 363 student assistants corresponding to a response rate of 53.0 percent. These student assistants worked on administrative tasks (e.g., IT administration, literature search, data entry), scientific tasks (e.g., carrying out experiments, recruitment of study participants, proof-reading), and teaching (e.g., holding tutorials, consulting students). Mean age was 24.5 years ( $SD = 2.7$  years); about 49% were male and 51% were female, and on average they worked since 16.3 months as student assistant ( $SD = 12.8$  months).

##### ***Measures***

All items were rated on a 5-point Likert-scale from 1 (fully disagree) to 5 (fully agree) (with the exception of job involvement which was rated on a 7-point Likert-scale).

***Proactive behaviour.*** We used five items to measure *promotion-oriented initiative*. Scale development was based on the measure of Frese et al. (1997): We adopted three items that are in accordance with the concept of promotion-oriented initiative; we reworded two other items from this measure to create items which focus more strongly on the promotion-

oriented aspect of proactive behaviour; and we removed two items that are associated with prevention-oriented behaviour (see Table 10). Cronbach's alpha was .79. *Prevention-oriented initiative* was assessed by five newly generated items that capture proactive dealing with stressors and prevention of their reoccurrence (see Table 10). Cronbach's alpha was .79. We assessed *personal initiative* by the seven-item scale of Frese et al. (1997). A sample item is "I actively attack problems". Cronbach's alpha was .75.

**Job control.** We measured job control by a five-item scale developed by Semmer (1984) and Zapf (1993) which is widely used in and comprehensively validated for German speaking countries (Semmer, Zapf, & Dunckel, 1999; Semmer, Zapf & Greif, 1996). A sample item is "How much can you influence the way in which you accomplish your tasks?". Cronbach's alpha was .77.

**Job stressors.** We measured job stressors by scales developed by Semmer (1984) and Zapf (1993) also frequently used in German speaking countries and comprehensively validated (Semmer et al., 1999; Semmer et al., 1996). *Time pressure* was measured by five items (sample item: "I am required to work fast at my work"). Cronbach's alpha was .85. *Situational constraints* were assessed by five items (sample item: "I have to work with materials and information that are incomplete and outdated"). Cronbach's alpha was .71.

**Job involvement.** We measured job involvement by the 10-item scale of Kanungo (1982). A sample item is "Most of my interests are centred around my job". Cronbach's alpha was .87.

**Active coping.** We assessed active coping in a sub-sample with the corresponding four item subscale of the COPE inventory (Carver, Scheier, & Weintraub, 1989). A sample item is "I take direct action to get around the problem". Cronbach's alpha was .73.

## Results

We ran a set of confirmatory factor analyses (CFAs) to test if promotion-oriented initiative and prevention-oriented initiative were distinct constructs. A two-factor model with promotion-oriented initiative loading on a first factor and prevention-oriented initiative loading on a second factor showed good fit indices ( $\chi^2 = 94.89$ ,  $df = 34$ ,  $p < .001$ , GFI = .95, NFI = .92, CFI = .95, RMSEA = .07) and fitted the data significantly better than a one-factor model with promotion-oriented initiative and prevention-oriented initiative loading on one factor ( $\Delta\chi^2(1) = 79.34$ ,  $p < .001$ ). The correlation between the observed variables promotion-oriented initiative and prevention-oriented initiative was  $r = .61$ .

Table 10

Standardized Factor Loadings from Confirmatory Factor Analysis for Proactive Behaviour and Active Coping (Study 3a)

Items	<i>Factors</i>		
	<i>1</i>	<i>2</i>	<i>3</i>
<i>Prevention-oriented initiative</i>			
I actively work on disposing obstacles at work once and for all.	.76		
I try to eliminate obstacles and troubles at work early.	.71		
If problems occur at work, I try to solve them in a way that they cannot happen again.	.66		
I do not wait until others solve the problems, but I become active myself.	.61		
I often try to prevent the reoccurrence of work stressors.	.55		
<i>Promotion-oriented initiative</i>			
I am known for taking matters into my own hands at work.	.74		
I am particularly good at realizing ideas. (Frese et al., 1996)	.68		
I am a "doer".	.68		
I use opportunities quickly in order to attain my goals. (Frese et al., 1996)	.66		
Whenever there is a chance to get actively involved, I take it. (Frese et al., 1996)	.56		
<i>Active coping</i>			
I take direct action to get around the problem.			.88
I do what has to be done, one step at a time.			.58
I concentrate my efforts on doing something about it.			.56
I take additional action to try to get rid of the problem.			.55

Note. Sub-sample with  $N = 311$ .

To test discriminant validity, we ran a set of confirmatory factor analyses to test if promotion-oriented initiative and especially prevention-oriented initiative can be distinguished from active coping. Data on active coping were available for a sub-sample of  $N = 311$ . Table 10 shows factor loadings and Table 11 indicates that a three-factor model, with prevention-oriented initiative loading on the first factor, promotion-oriented initiative loading on the second factor and active coping loading on the third factor, fitted the data well and showed a significantly better fit than the second best model with prevention-oriented initiative and active coping loading on a first factor and promotion-oriented initiative loading on a

second factor ( $\Delta\chi^2(2) = 185.90, p < .001$ ). Thus, CFA showed that promotion-oriented initiative and prevention-oriented initiative are distinguishable constructs. Importantly, prevention-oriented initiative is distinct from the construct of active coping.

Table 11

Confirmatory Factor Analyses for Proactive Behaviour and Active Coping (Study 3a)

	$\chi^2$	<i>df</i>	<i>p</i>	<i>GFI</i>	<i>NFI</i>	<i>CFI</i>	<i>RMSEA</i>
One-factor model	395.14	77	.001	.83	.72	.76	.12
Two-factor model 1 <sup>a</sup>	330.75	76	.001	.85	.76	.80	.10
Two-factor model 2 <sup>b</sup>	311.50	76	.001	.86	.78	.82	.10
Three-factor model <sup>c</sup>	125.60	74	.001	.95	.91	.96	.05

*Note.* Sub-sample with  $N = 311$ .

<sup>a</sup> Promotion-oriented initiative items and active coping items loading on first factor and prevention-oriented initiative items loading on second factor. <sup>b</sup> Prevention-oriented initiative items and active coping items loading on first factor and promotion-oriented initiative items loading on second factor. <sup>c</sup> Prevention-oriented initiative items loading on first factor, promotion-oriented initiative items loading on second factor and active coping items loading on third factor.

To test convergent validity of promotion-oriented initiative and prevention-oriented initiative, i.e., to test if both new constructs are still types of proactive behaviour, we compared relationships of the newly developed scales with the personal initiative scale by Frese et al. (1997) which is an established measure of proactive behaviour. More specifically, we compared zero-order correlations of promotion-oriented initiative, prevention-oriented initiative, and personal initiative with variables that had been identified as antecedents of proactive behaviour in earlier research (i.e., job control, time pressure, situational constraints, and job involvement, Bindl & Parker, in press; Fay & Frese, 2001). Table 12 shows means, standard deviations, and zero-order correlations. Correlation coefficients of promotion-oriented initiative and prevention-oriented initiative with typical antecedents do not significantly differ from correlation coefficients of personal initiative with these antecedents. While this might be obvious for promotion-oriented initiative because this measure includes items that are also used in the personal initiative scale, we found similar results for prevention-oriented initiative. Thus, promotion-oriented initiative and prevention-oriented initiative constitute distinguishable types of proactive behaviour while they relate to other variables in a similar way as personal initiative does.

Table 12

Means, Standard Deviations, Zero-Order Correlations, and Reliabilities (Study 3a)

	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1 Gender <sup>a</sup>	1.51	0.50	-									
2 Age	24.50	2.71	-.06	-								
3 Personal initiative <sup>b</sup>	3.66	0.55	-.05	.07	(.75)							
4 Prevention-oriented initiative <sup>b</sup>	3.83	0.59	.02	.15**	.65***	(.79)						
5 Promotion-oriented initiative <sup>b</sup>	3.49	0.66	.01	.07	.88***	.61***	(.79)					
6 Job control <sup>b</sup>	3.48	0.73	.07	.15**	.30***	.21***	.32***	(.77)				
7 Time pressure <sup>b</sup>	2.05	0.81	-.03	.06	.13*	.11*	.11*	.05	(.85)			
8 Situational constraints <sup>b</sup>	2.20	0.66	.01	-.01	.00	-.01	.00	.03	.29***	(.71)		
9 Job involvement <sup>c</sup>	3.49	1.07	-.02	.00	.30***	.22***	.25***	.21***	.22***	-.02	(.87)	
10 Active coping <sup>d</sup>	3.76	0.61	-.01	.11	.32***	.36***	.31***	.02	-.01	-.15**	.11	(.73)

Note.  $N = 363$ . Cronbach's alphas are displayed on the diagonal.

\*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

<sup>a</sup> 1=female, 2=male. <sup>b</sup> Range 1 to 5. <sup>c</sup> Range 1 to 7. <sup>d</sup> Sub-sample with  $N=311$ .



## Study 3b: Test of Hypotheses

### Method

#### *Sample and Procedure*

We collected data via online surveys in German public health and pension insurance companies. To recruit participants, we contacted CEOs or HR managers of the companies. After having received management consent, employees were provided with written information about the study and a registration form. The study was introduced as examining “stress at work”.

After their registration, participants received a link for a general survey via electronic mail. This general survey assessed demographic variables and the general level of the examined variables. General survey data constituted “Time 1” data.

Subsequently, participants received daily electronic mails with links to daily surveys on four consecutive working days (Monday to Thursday, constituting “Time 2” data). Each day, the first survey (“morning survey”) referred to the morning assessments of the examined variables. The link to this survey was sent around lunch break (the exact time was dependent on participants’ information about their individual working hours). The second survey (“afternoon survey”) referred to the afternoon assessments of the examined variables and the respective link was sent at the end of the working day, immediately before participants went home. Time of completing the surveys was logged automatically. To reduce possible biases that can occur for retrospective evaluations, we averaged daily scores for each participant assessed over the course of the four days for further analyses (Bolger et al., 2003). Thus, “Time 2” data was averaged out of eight measurements during four consecutive work days and therefore reflected employees’ average perception of study variables during Week 1.

Finally, participants received a link to the survey “after two weeks”. The link was sent two weeks after the participants completed the last daily survey, i.e., at the end of Week 3. This survey refers to assessments of the examined variables within the last two weeks, i.e., Weeks 2 and 3. Data from this final survey constituted “Time 3”. Following Dormann (2007) we chose a relatively short time lag. Dormann argued for conducting more short-term longitudinal studies because effect sizes of longitudinal effects depend on stabilities of independent and dependent variables: The more unstable the variables are the shorter the time-lags have to be.

All in all, 310 employees registered for the study, 299 completed at least one survey corresponding to a response rate of 96.5 percent. We received valid data for the general survey, at least for two of the daily surveys and for the after-two-weeks survey from 197

employees from 9 public health and pension insurance companies. Daily-survey data were considered to be valid if we received complete data for the morning and afternoon survey of the respective day with at least 2 hours between both surveys. From the 197 employees, 54% were female and 46% were male; 49% held a university degree, the remaining completed another professional education. Mean age was 39.3 years ( $SD = 9.9$  years) and mean tenure in the respective company was 14.9 years ( $SD = 9.0$  years).

### **Measures**

We assessed demographic control variables (gender, tenure, trait negative affect) with the general survey (Time 1). The other variables were measured with the daily surveys (Time 2) and the survey after two weeks (Time 3). All items were rated on a 5-point Likert-scale from 1 (*fully disagree*) to 5 (*fully agree*). Items were the same for all questionnaires except for the time frames specified in the instructions to each set of items: Items referred to “in general” in the general survey, “this morning” in the morning survey, “this afternoon” in the afternoon survey, and “during the last two weeks” in the final questionnaire at the end of Week 3.

**Situational Constraints.** As in Study 3a, we measured situational constraints by a scale developed by Semmer (1984) and Zapf (1993) which is comprised of five items. Cronbach’s alphas ranged from .75 to .84 in the various surveys (general survey, daily surveys, and after-two-weeks survey).

**Proactive behaviour.** To measure *promotion-oriented initiative* we used five items developed in Study 3a. A sample item for the morning survey is “This morning, I used opportunities quickly in order to attain my goals”. Cronbach’s alphas ranged from .80 to .88 in the various surveys. *Prevention-oriented initiative* was assessed by five items developed in Study 3a. A sample item for the morning survey is “This morning, I tried to prevent the reoccurrence of work stressors”. Cronbach’s alphas ranged from .79 to .92 in the various surveys.

**Task conflicts.** We measured task conflicts by the task conflicts scale of Giebels and Janssen (2005) which was based on the scale of Jehn (1995). The scale included four items, a sample item is “This morning, me and my colleagues and supervisors had divergent ideas on the execution of tasks“. Cronbach’s alpha ranged from .86 to .92 in the various surveys.

**Control variables.** We controlled for gender, tenure, trait negative affect and Time 2 level of task conflicts to predict change in task conflicts at Time 3. Prior research on team composition and team diversity variables revealed gender and tenure as variables that were highly related to task conflicts: According to De Wit and Greer (2008), gender is a typical

social category diversity characteristic and tenure is a typical informational diversity characteristic. Giebels and Janssen (2005) showed that especially gender is highly correlated to task conflicts and according to Jehn (1995), gender and tenure were among the team composition variables that had the highest correlations with task conflicts. Therefore, in order to investigate antecedents' impact on task conflicts beyond mere team composition variables, such as gender and tenure, we included these two variables as control variables. Moreover, we controlled for trait negative affect to reduce common method variance. Podsakoff, MacKenzie, Lee, and Podsakoff (2003) discuss this variable as a major source for common method variance and suggest to partial effects due to general negative affectivity out of the predictor and criterion variable. *Gender* and *tenure* were assessed by open questions. *Trait negative affect* was assessed by the respective 10-item scale of the PANAS (sample item: "distressed", Watson, Clark & Tellegen, 1988). Cronbach's alpha was .86.

### **Data Analysis**

We ran a set of confirmatory factor analyses (CFAs) to test discriminant validity of the two measures of proactive work behaviour. The CFAs were run separately for morning and afternoon questionnaires with person-mean centred variables (Bolger et al., 2003). As can be seen in Table 13, the two-factor model showed good fit indices and fitted the data significantly better than the one factor model ( $\Delta\chi^2(1) = 269.47, p < .001$  for morning survey,  $\Delta\chi^2(1) = 315.97, p < .001$  for afternoon survey). The correlation between the observed variables promotion-oriented initiative and prevention-oriented initiative was  $r = .68$ .

Table 13  
Confirmatory Factor Analyses for Prevention-Oriented Initiative and Promotion-Oriented Initiative (Study 3b)

	$\chi^2$	<i>df</i>	<i>p</i>	<i>GFI</i>	<i>NFI</i>	<i>CFI</i>	<i>RMSEA</i>
Morning							
One-factor model	441.38	35	.001	.85	.80	.81	.14
Two-factor model <sup>a</sup>	171.91	34	.001	.94	.92	.94	.08
Afternoon							
One-factor model	467.96	35	.001	.83	.78	.79	.14
Two-factor model <sup>a</sup>	151.99	34	.001	.95	.93	.94	.08

Note.  $n = 610$  measurement occasions. <sup>a</sup>Prevention-oriented initiative items loading on first factor and promotion-oriented initiative items loading on second factor.

To predict change in our outcome variable task conflict (Time 3) we performed hierarchical regression analyses. We entered control variables (gender, tenure, trait negative affect, Time 2 score of task conflicts) in the first step and the predictor variables (situational constraints, promotion-oriented initiative, prevention-oriented initiative, all assessed at Time 2) in the second step. As correlations among the predictor variables were substantial (i.e., greater than  $r = .50$ ), we assessed multicollinearity in our data. We examined the tolerance index and the variance inflation factor (VIF) of each predictor in the regression models. Generally, values lower than 0.10 for tolerance index and values greater than 10 for VIF indicate problems with multicollinearity (e.g., Belsley, Kuh, & Welsch, 1980; Chatterjee & Hadi, 2006; Marquardt, 1970). VIF values were less than 2.1, tolerance values were equal to or greater than .48. Thus, multicollinearity was not a serious problem.

Moreover, following the suggestion of Zapf, Dormann, and Frese (1996), we also examined reverse relationships, i.e., predicting change in situational constraints, promotion-oriented initiative, and prevention-oriented initiative by task conflicts at work. According to Zapf et al. (1996), this procedure allows to overcome problems of reverse causation.

## **Results**

Table 14 displays means, standard deviations, and zero-order correlations. We had hypothesized that situational constraints (Hypothesis 1) and promotion-oriented initiative (Hypothesis 2) predict an increase in task conflicts at work, while prevention-oriented initiative predict a decrease in task conflicts (Hypothesis 3). Table 15 shows results for predicting change in task conflicts within two weeks. Consistent with Hypotheses 1 and 2, situational constraints and promotion-oriented initiative predicted an increase in task conflicts at work. Confirming Hypothesis 3, prevention-oriented initiative predicted a decrease in task conflicts at work.

Furthermore, using the same procedure and following Zapf et al. (1996), we tested reverse relationships of the hypothesized relationships, i.e., predicting change in situational constraints, promotion-oriented initiative, and prevention-oriented initiative by task conflicts at work. We found no significant reverse effects.

Table 14

Means, Standard Deviations, and Zero-Order Correlations (Study 3b)

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1 Gender <sup>a</sup>	1.46	0.50	1									
2 Tenure	14.92	8.99	.14	1								
3 Trait negative affect <sup>b</sup>	1.70	0.58	.08	.03	1							
4 Situational constraints Time 2 <sup>b</sup>	1.62	0.74	.07	-.06	.27***	1						
5 Situational constraints Time 3 <sup>b</sup>	1.89	0.94	.05	-.02	.31***	.85***	1					
6 Promotion-oriented initiative Time 2 <sup>b</sup>	3.28	0.60	.06	.06	-.13	-.06	-.03	1				
7 Promotion-oriented initiative Time 3 <sup>b</sup>	3.39	0.72	.13	.11	-.08	-.13	-.07	.63***	1			
8 Prevention-oriented initiative Time 2 <sup>b</sup>	3.24	0.78	-.06	.01	-.01	.03	.06	.69***	.40***	1		
9 Prevention-oriented initiative Time 3 <sup>b</sup>	3.64	0.76	-.08	.06	-.05	-.04	.01	.50***	.65***	.57***	1	
10 Task conflicts Time 2 <sup>b</sup>	1.74	0.69	-.04	.02	.23***	.48***	.46***	-.10	-.07	.05	-.03	1
11 Task conflicts Time 3 <sup>b</sup>	2.37	1.03	-.05	-.01	.23***	.45***	.47***	-.05	.05	-.02	.09	.71***

Note. *N* = 197.

\*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

<sup>a</sup> 1=female, 2=male. <sup>b</sup> Range 1 to 5.

Table 15

Hierarchical Regression Analysis Predicting Task Conflicts over the Course of Two Weeks (Study 3b)

	Task conflicts at work Time 3	
	Step 1	Step 2
<b>Step 1</b>		
Gender <sup>a</sup>	-.03	-.06
Tenure	-.02	-.01
Trait negative affect Time 1	.08	.07
Task conflicts Time 2	.69***	.64***
<b>Step 2</b>		
Situational constraints Time 2		.14*
Promotion-oriented initiative Time 2		.14*
Prevention-oriented initiative Time 2		-.15*
$\Delta R^2$	.50***	.03*
Total $R^2$		.53***

Note.  $N = 197$ . Standardized coefficients (beta) are reported.

\*  $p \leq .05$ . \*\*  $p \leq .01$ . \*\*\*  $p \leq .001$ .

<sup>a</sup>1=female, 2=male.

## Discussion

The main goal of this paper was to examine antecedents of task conflicts at work with a longitudinal design. Therefore, we examined relationships of situational constraints and two types of employees' proactive work behaviour with change in task conflicts over time. Moreover, we also wanted to contribute to a deeper understanding of proactive work behaviour itself. Thus, we introduced promotion-oriented initiative and prevention-oriented initiative as two types of proactive behaviour that are related in an opposite manner to change in task conflicts. As argued, situational constraints and promotion-oriented initiative were related to increased task conflicts and prevention-oriented initiative was related to decreased task conflicts.

Our study confirmed that situational constraints, i.e., obstacles in the work situation that hinder task accomplishment, predict an increase in task conflicts at work over two weeks. Thus, the more situational constraints employees were confronted with the more task conflicts they experienced. Moreover, our results indicate that employees perceived relatively low

levels of situational constraints. However, even these low levels of situational constraints predicted an increase in task conflicts. This emphasizes the importance and severity of situational constraints at work as even few situational constraints seem to be detrimental. One might argue that task conflicts need not to be negative per se as they may stimulate open discussions about how to achieve goals (Amason, 1996; Jehn, 1994). However, more recent research clearly suggests that task conflicts have negative consequences (e.g., De Dreu, 2008; De Dreu & Weingart, 2003; Friedman et al., 2000; Gamero et al., 2008; Medina et al., 2005). Thus, our result is in accordance with research on hindrance stressors that revealed dysfunctional relationships of hindrance stressors (e.g. situational constraints) with job performance and various job attitudes (Le Pine et al., 2005; Podsakoff et al., 2007). Concerning the conflict literature, our findings imply that not only team composition is relevant for workplace conflict, but attention should also be given to job stressors as antecedents of conflicts.

Concerning proactive behaviour, we found support for treating proactive work behaviour in a more specific way: Promotion-oriented initiative and prevention-oriented initiative were confirmed to be two correlated, albeit clearly distinct types of proactive behaviour. Furthermore, both types have a similar nomological net as personal initiative, a proactive behaviour concept suggested by Frese et al. (1997). Moreover, we showed that promotion-oriented initiative and prevention-oriented initiative are distinct from active coping. Thus, although particularly the prevention-oriented initiative concept potentially overlaps with active coping, prevention-oriented initiative goes beyond coping and addresses problems in a proactive manner. Therefore, our study contributes to a broader understanding of proactive work behaviour which is in line with recent studies that suggested distinguishing between several types of proactive work behaviour (Griffin et al., 2007; Parker & Collins, in press).

We found that promotion-oriented initiative predicted an increase in task conflicts while prevention-oriented initiative predicted a decrease in task conflicts over time. These results challenge the traditional view of proactive work behaviour as behaviour which is globally functional and desirable (Fay & Frese, 2001). By revealing opposite relationships of different types of proactive work behaviour with a work-related outcome variable we expand our knowledge about the concept of proactive behaviour. Although positive consequences of general proactive behaviour concepts (e.g., personal initiative) on performance outcomes are well established in the literature (Fay & Frese, 2001; Parker et al., 2006; Raabe et al., 2007), we found dysfunctional relationships of promotion-oriented initiative on task conflicts at

work. However, prevention-oriented initiative was related to a decrease of task conflicts at work. Thus, consequences of proactive work behaviour seem to be much more complex than earlier research in this field has acknowledged. Moreover, consequences of proactive behaviour might also be dependent on whether an employee's supervisor or colleagues are involved. With regard to research on conflicts at work, this finding implies that employee behaviour is related to changes in task conflicts.

Interestingly, both proactive behaviours predicted a change in task conflicts over time but zero-order correlations were not significant. This indicates that the absolute level of task conflicts does not depend on employees' proactive behaviour but that employees' proactive behaviour might be able to reduce or increase already existing conflicts. In contrast, situational constraints are related to the absolute amount of task conflicts as well as to an increase. Moreover, one might expect a positive correlation between prevention-oriented initiative and situational constraints which was not supported by our data. One might speculate that on the one hand, situational constraints trigger prevention-oriented initiative. But on the other hand, this kind of proactive behaviour might reduce situational constraints. If both processes are comparably high, no significant zero-order correlation will occur.

Especially concerning proactive work behaviour, one might argue that task conflicts impede motivation and therefore reduce proactive behaviour of employees. However, reverse regression effects were not significant, i.e., task conflicts did not predict changes in proactive work behaviour nor in situational constraints.

### **Strength and Limitations**

Our study is characterized by several strengths but also limitations. A strength of this study is that we used a longitudinal design to test our hypotheses. We gathered data at different points of time and could therefore predict change in task conflicts. Moreover, Time 2 data was averaged out of eight measurements on four consecutive work days. Therefore, we obtained reliable estimates of the predictors throughout participants' working days (Bolger et al., 2003). In sum, the longitudinal design rules out several alternative explanations of our findings, for instance, measurement context effects (Podsakoff et al., 2003).

A central limitation of our study is the use of self-report measures. However, at least concerning individual appraisals of variables such as proactive work behaviour, self-ratings seem to be the best way because proactive behaviour is a discretionary behaviour and colleagues and supervisors might not always be able to fully observe and evaluate this behaviour. Moreover, by partialling out general negative affectivity and by using the initial



level of our outcome variable as additional control variable, we followed recommendations of Podsakoff et al. (2003) to reduce probability of common method variance. Furthermore, internal validity might be reduced because of the retrospective measurement of our outcome variable. Although we used averaged daily scores for our predictor variables (Bolger et al., 2003), we measured task conflicts as outcome variable with a single measurement occasion two weeks later. However, usually questionnaire studies rely on single measurement occasions. Therefore, our results are comparable to prior findings concerning task conflicts (e.g., Giebels & Janssen, 2005; Moye & Langfred, 2004; Peterson & Behfar, 2003).

### **Future Research and Practical Implications**

Previous conflict research primarily focused on outcomes of conflicts as well as on conflict management (Spector & Bruk-Lee, 2008). Research that took antecedents of conflicts into account mainly focused on characteristics of team composition, especially team diversity, which play an important role for conflicts. However, our study and two other studies (Moye & Langfred, 2004; Peterson & Behfar, 2003) revealed antecedents from other domains, such as the work environment (our study: situational constraints), employees' individual behaviour (our study: two types of proactive work behaviour; Moye & Langfred, 2004: information sharing), and employees' prior performance (Peterson & Behfar, 2003). Therefore, future research should systematically examine antecedents of conflicts from different domains.

In this study, we focused on task conflicts at work. However, prior research differentiated relationship conflicts, and recently also process conflicts, from task conflicts (e.g., Jehn & Mannix, 2001) and Bruk-Lee and Spector (2006) emphasized that team conflicts which occur on the same hierarchical level might be different from conflicts between supervisors and subordinates. Thus, future research is necessary to examine if results may be generalized to other types of conflicts and types of opponents in a conflict.

Moreover, investigating potential moderators in the relationship between task conflicts and its antecedents might be fruitful. For instance, personality of employees, employees' and an organization's values, or management styles of conflict management play an important role to buffer negative relationships between situational constraints and promotion-oriented initiative on the one hand and task conflicts on the other hand.

As this study showed differences within proactive work behaviour, future research should continue to investigate different types of proactive work behaviour. In our study, we focused on a promotion-oriented type of proactive work behaviour and on a prevention-oriented type which takes increase of job stress of today's jobs into account. Also other

classifications may be plausible, for example, Parker and Collins (in press) identified even four different types of proactive behaviour building a higher-order factor proactive work behaviour, Den Hartog and Belschak (2007) suggested different foci of proactive behaviour (pro-self vs. pro-organization), and Griffin et al. (2007) distinguished proactivity that is focused on the individual task from proactivity that is focused on team members or organization members. Closely related, by examining what are relevant types of proactive work behaviour, a broader range of potential outcome variables ought to be considered (e.g., work-related attitudes, turnover intention, or employees' mental and physical health). Moreover, longitudinal studies with other time frames are encouraged (e.g., Binnewies, Sonnentag, & Mojza, 2009).

From a practical perspective, an unconditional call for engaging in proactive work behaviour has to be challenged. Although, proactive work behaviour might contribute to individual and firm success (Fay & Frese, 2001; Parker et al., 2006; Raabe et al., 2007), negative consequences also have to be taken into account. First findings point to an increase of task conflicts at work after engaging in a more promotion-oriented type of proactive work behaviour. To utilize positive outcomes of proactive work behaviour, incorporation of a compatible organizational culture might be helpful (Baer & Frese, 2003). Furthermore, results of this study have implications for conflict management. Trying to avoid conflicts at work may be more beneficial than trying to deal with them when they have already occurred. As stressors, such as situational constraints, are related to increased task conflicts, managers may improve conflict management by addressing potential job stressors. By reducing job stressors fewer task conflicts at work may appear.

## **Conclusion**

Altogether, this study revealed aspects from various domains, such as the work environment (situational constraints) and employees' individual behaviour (two types of proactive work behaviour), as longitudinal antecedents of task conflicts at work. Situational constraints as well as promotion-oriented initiative predicted an increase of task conflicts at work while prevention-oriented initiative predicted a decrease of task conflicts. Moreover, this study contributes to a deeper understanding of proactive work behaviour by confirming opposite relationships of promotion-oriented and prevention-oriented initiative with task conflicts and therefore probably also for the smooth functioning of work groups. Thus, this study empirically shows that proactive work behaviour is not only beneficial.

## GENERAL DISCUSSION

The central goal of this dissertation was to extend research on antecedents and outcomes of proactive work behaviour. Two independent empirical studies investigated antecedents of proactive work behaviour, one focusing on a linking mechanism in the relationship between antecedents and proactive work behaviour and the other one referring to organizational-level antecedents as well as potential boundary conditions. A third study focused on positive but also negative outcomes of proactive work behaviour. In this chapter, I will summarize and combine the results from these studies. Thereafter, I will discuss strengths and limitations of the studies. Finally, I will present implications for future research and practice.

### Overall Summary and Discussion of Results

The goal of Study 1 was to improve the understanding of proactive work behaviour and its association with workplace characteristics. More specifically, this study examined if positive relationships between job stressors and proactive work behaviour can be generalized to supervisor-rated proactive work behaviour as well as to different operationalizations of proactive work behaviour. Moreover, this study investigated if positive relationships between job stressors (time pressure, situational constraints) and job control on the one hand and proactive work behaviour on the other hand can be explained by the same underlying mechanism, namely role breadth self-efficacy. Using self and supervisor ratings of proactive work behaviour, path analyses confirmed a partial mediation model. The results suggest that employees working in jobs with high job control, high time pressure, but low situational constraints experience higher role breadth self-efficacy and thereby show more proactive work behaviour regardless of the specific operationalization of proactive behaviour (i.e., personal initiative or taking charge). However, direct relationships were inconsistent for self-rated and supervisor-rated proactive work behaviour: While supervisors report higher proactive work behaviour of their employees if these employees have high job control, employees perceive higher proactive work behaviour when confronted with job stressors (i.e., time pressure, situational constraints). Overall, Study 1 confirmed that positive relationships between job stressors and proactive work behaviour do not occur due to a specific operationalization of proactive work behaviour. However, generalization to supervisor ratings is limited. Moreover, role breadth self-efficacy serves as a linking mechanism between job stressors and proactive work behaviour although situational constraints were unexpectedly negatively related to role breadth self-efficacy.

The aims of Study 2 were to examine antecedents of proactive work behaviour on an organizational level of analysis and to extend the model of Bindl and Parker (in press) by taking productive organizational energy as a crucial boundary condition into account that promotes the impact of antecedents on proactive work behaviour. More specifically, this study examined leadership and climate of trust as organizational-level situational antecedents as well as shared organizational commitment and shared job satisfaction as aggregated (organizational-level) individual antecedents. Using aggregated data that were derived from individual employees' data by a split sample design, regression analyses supported the hypotheses. Organizations that are characterized by a climate of trust, leaders who engage in transformational and transactional leadership behaviours as well as employees who are committed to the respective organization and who are satisfied with their jobs achieve higher levels of proactive work behaviour among their employees than organizations that do not incorporate these characteristics. Moreover, productive organizational energy moderates these relationships, i.e., relationships between antecedents and employees' aggregated proactive behaviour were stronger in organizations characterized by high productive organizational energy. Overall, Study 2 provided first evidence that current models on proactive behaviour may be generalized to an organizational level of analysis but that the general impact of antecedents on proactive behaviour depends on boundary conditions (e.g., productive organizational energy).

The goal of Study 3 was to investigate potential undesired outcomes of proactive work behaviour. More specifically, this study introduced two distinct types of proactive work behaviour (promotion-oriented initiative and prevention-oriented initiative) and analysed their positive but also negative relationships with change in task conflicts over time. Study 3a confirmed that promotion-oriented initiative and prevention-oriented initiative are distinct constructs that are also distinct from active coping. Moreover, Study 3a also confirmed that both constructs are proactive work behaviour constructs as nomological nets were similar to personal initiative, i.e. a prior concept of proactive work behaviour. Using longitudinal data over the course of two weeks, Study 3b revealed that employees who engage in promotion-oriented initiative reported increasing task conflicts over the course of two weeks, while employees who engage in prevention-oriented initiative reported decreasing task conflicts during the same time. Overall, Study 3 found support for treating proactive work behaviour in a more specific way and challenged the traditional view of proactive work behaviour as behaviour which is generally functional and desirable.

The result of Study 1 that job stressors are positively related to proactive work behaviour is in line with a control theory perspective (Carver & Scheier, 1982). Employees perceive a discrepancy between actual and preferred situation and therefore engage in proactive work behaviour to decrease this discrepancy. Moreover, the need to appraise a situation that is characterized by high time pressure triggers efficacy beliefs, especially role breadth self-efficacy. If employees are confronted with time pressure they evaluate their own capabilities and notice that they are able to carry out necessary tasks that may reduce time pressure. Thus, role breadth self-efficacy increases. The result that situational constraints were unexpectedly negatively related to role breadth self-efficacy is in line with the framework of challenge and hindrance stressors (LePine et al., 2005). Situational constraints belong to hindrance stressors which are associated with threats and go along with negative work-related outcomes (LePine, Podsakoff and LePine, 2005; Podsakoff, LePine and LePine, 2007). Nonetheless, beyond this detrimental relationship via role breadth self-efficacy, employees seem to directly react on situational constraints with higher proactive work behaviour which is again in line with a control theory perspective (Carver & Scheier, 1982). Thus, Study 1 supports the assumption that time pressure is appraised as a challenge but situational constraints are appraised as threats. However, if employees overcome the feeling of threat, situational constraints trigger proactive work behaviour.

Findings from Study 2 support the generalizability of current individual-level models on proactive behaviour to an organizational level of analysis and are in line with literature that proposes that organizational-level attributes emerge from individual-level attributes (Klein & Kozlowski, 2000). Various processes that go along with dealing with the same work environment lead to similar attitudes and behaviour of employees within an organization while employees vary between different organizations (cf. Klein & Kozlowski, 2000). Study 2 supports the assumption that individual-level processes are similar to relationships and processes on an organizational level of analysis: Situational variables (transformational and transactional leadership, climate of trust) and aggregated individual variables (organizational commitment, job satisfaction) that were previously confirmed as individual-level antecedents for individual proactive behaviour (Bindl & Parker, in press; Crant, 2000; Fay & Frese, 2001) also predict different levels of proactive behaviour between organizations.

In line with recent models on proactive behaviour that suggested distinguishing between several types of proactive work behaviour (Griffin et al., 2007; Parker & Collins, in press), Study 3 revealed opposing relationships of proactive work behaviour with task conflicts as outcome. For instance, Parker and Collins (in press) identified four different types

of proactive behaviour that build a higher-order factor named proactive work behaviour, Den Hartog and Belschak (2007) suggested different foci of proactive behaviour (pro-self vs. pro-organization), and Griffin et al. (2007) distinguished proactivity that is focused on the individual task from proactivity that is focused on team members or organization members. In line with these studies, Study 3 shows that also the classification of promotion- versus prevention-oriented initiative is crucial. Moreover, detecting undesired outcomes of proactive behaviour is in contrast to traditional views of proactive behaviour as behaviour which is globally functional and desirable (e.g., Bindl & Parker, in press; Crant, 2000; Fay & Frese, 2001). Especially, promotion-oriented initiative is related to increased tasks conflicts at work. However, early papers already discussed potential unanticipated consequences but did not empirically validate these discussions (Bateman & Crant, 1999; Campbell, 2000).

On the whole, these studies (a) tested formerly theoretically proposed linking mechanisms in the positive relationship between job stressors and proactive work behaviour (Study 1), (b) generalized models on antecedents of proactive behaviour from an individual level to on an organizational level of analysis (Study 2), and (c) extended prior models on antecedents of proactive behaviour by revealing productive organizational energy as a moderator in the relationships between antecedents and proactive work behaviour (Study 2) and by regarding undesired outcomes of proactive work behaviour (Study 3).

Prior research confirmed the significance of proactive work behaviour for organizations (e.g., Fay & Frese, 2001; Parker et al., 2006; Raabe et al., 2007) and individual characteristics of proactive employees have been widely studied before (e.g., Bindl & Parker, in Press; Crant, 2000; Fay & Frese, 2001). By this knowledge, managers were able to adapt their hiring requirements and specifically select proactive employees. Beyond these individual antecedents, this dissertation revealed possibilities how managers can influence employees' proactive work behaviour by modifying the closer work environment of their employees and even by shaping climate factors that affect the whole organization. Therefore, to get a competitive advantage, organizations may not just hire proactive employees but may also manage the work environment and organizational culture and climate to increase proactivity throughout the whole organization. However, potential negative consequences have to be taken into account. Especially, increase of task conflicts in the short run by engaging in promotion-oriented proactive behaviour has been shown. Therefore, managers have always be prepared for negative side-effects and may introduce coping systems as well as give emphasis to conflict management and error management culture.

## **Strengths and Limitations**

In this section, I will discuss several methodological strengths and limitations of this dissertation. In particular, I will address generalizability as well as usage of multiple methodological approaches throughout the studies as main strengths and usage of questionnaire data as well as missing of adequate study designs to answer questions of causality as main limitations.

### ***Generalizability***

Throughout this dissertation, I used field studies with various samples to investigate the research questions. Specifically, I examined blue- and white-collar workers from the electronic industry (Study 1), a heterogeneous sample of employees from various small-and medium-sized companies (Study 2), student assistants (Study 3) as well as employees from public health and pension insurance companies (Study 3). In contrast to experiments conducted in laboratory settings, investigation of samples from field studies provides a more authentic picture of processes and relationships in employees' work settings. Moreover, external validity of this dissertation is high as results may be generalized to a broad range of employees, including various industries, company sizes, and task areas.

### ***Usage of Multiple Methodological Approaches***

An additional strength of this dissertation is the usage of multiple methodological approaches throughout the conducted field studies. Therefore, the studies complement each other and compensate limitations of the individual studies.

First, I used cross-sectional data (Study 1) as well as data from a split-sample design (Study 2) and longitudinal data (Study 3). Usage of cross-sectional data goes along with problems such as common method bias (Podsakoff et al., 2003) as well as lack of causal interpretation. However, a split sample design, i.e., collecting cross-sectional data from different sources, reduces common method biases, especially common rater effects that may generate systematic measurement errors with regard to relationships between predictor and criterion variable (Podsakoff et al., 2003). Longitudinal designs reduce common rater effects as well as measurement context effects because measurement of predictor and criterion variable are separated temporally (Podsakoff et al., 2003). Furthermore, longitudinal designs allow testing reverse relationships. Although causal interpretations are not possible, proposed directions of relationships are more likely if effects do not occur for the reverse direction.

Second, I complemented self ratings of employees' proactive behaviour (Study 1 to 3) with supervisor ratings of employees' proactive behaviour (Study 1). On the one hand, the use of self ratings to assess predictor and criterion variables may lead to an overestimation of the relationships between these variables because of common method biases, especially common rater effects and measurement context effects (Podsakoff et al., 2003). On the other hand, with regard to the individual appraisal of attitudes and discretionary behaviour, self ratings seem to be an appropriate way because colleagues and supervisors might not always be able to fully observe and evaluate this behaviour. However, supervisor ratings in comparison to self ratings of proactive work behaviour broaden the understanding of proactive behaviour. Supervisors may expect behaviour as formal task accomplishment while employees themselves interpret this behaviour as proactive work behaviour. Therefore, it is additionally interesting to examine behaviour that is actually recognized as proactive behaviour by supervisors.

Third, I used a broad range of proactive behaviour concepts throughout this dissertation, including personal initiative (Study 1 and 2), taking charge (Study 1), and two newly developed concepts, namely promotion-oriented initiative and prevention-oriented initiative (Study 3). Prior research often used only one conceptualization of proactive behaviour. Thus, it stayed unclear whether results occurred only because of this particular operationalization or can be generalized to other proactive behaviours, too. Thus, the usage of different concepts increases generalizability.

Fourth, data analysis took place on the individual (Study 1 and 3) as well as the organizational level (Study 2). Analyses on the individual level consider proactive work behaviour as an employee's individual behaviour and predict this individual behaviour by an employee's individual characteristics as well as his or her individual work environment. However, beyond employees' individual proactive behaviour, organizations may benefit more and be more competitive if they are able to keep a high level of proactive behaviour throughout all employees. Therefore, analyses on an organizational level predict shared proactive behaviour by organizational variables and differences between whole organizations with regard to proactive behaviour are in the centre of attention.

By this mixture of methods and designs, several alternative explanations may be ruled out. For instance, results may not have occurred solely due to a specific operationalization of proactive behaviour or due to common method biases (Podsakoff et al., 2003). Although causal interpretations are not possible with these studies, with regard to outcomes of proactive behaviour, Study 3 showed that proactive behaviour predicted change in the outcome variable while the reverse effect did not occur which makes the proposed direction more plausible.



### ***Questionnaire Data***

A central limitation of all conducted studies within this dissertation is the sole use of questionnaire data. Although using questionnaires goes along with collecting comparably data from large samples in a standardized way, a central concern with questionnaire data is the potential overestimation of relationships due to a common method bias (Podsakoff et al., 2003). However, as recommended by Podsakoff et al. (2003), respondents' answers were anonymous and I used items and scales that described the constructs in a very concrete manner (all studies). Additionally, I used supervisor ratings instead of mere self ratings (Study 1), separated measurement points to different points of time (Study 3), and used the outcome variable as well as general negative affectivity as further control variables in the analyses (Study 3). Furthermore, as recommended by Ostroff et al. (2002), I used a split sample design in Study 2, i.e., antecedents, moderator, and proactive work behaviour were assessed by different randomly assigned employees within each organization and individual measurements were aggregated and analysed on an organizational level. Therefore, common method biases should be reduced. Nevertheless, future studies may additionally focus on objective data or data from various sources when studying proactive work behaviour.

### ***Causality***

A second crucial limitation of this dissertation is that no one of the conducted studies represents a research design that justifies causal conclusions. Thus, although the overall theoretical model of this dissertation (Figure 1) implies causal relationships, the causal processes await an explicit test in future studies and one might also imagine reverse causal paths. However, strong theoretical reasons support this model and the model is in line with earlier research on proactive behaviour (cf., Bindl & Parker, in press; Crant, 2000; Fay & Frese, 2001) which was partly based on longitudinal data making the proposed directions more plausible. Moreover, in Study 3 I used longitudinal data to investigate relationships between proactive work behaviour and outcomes and also tested reverse effects making the proposed direction from proactive work behaviour to task conflicts as outcome more likely. Nevertheless, to gain a deeper understanding, future studies may also consider longitudinal designs (e.g., over days, weeks, or years) that focus on processes between certain antecedents and proactive work behaviour as well as compare these processes with processes for the reciprocal relationships, respectively. With regard to causal interpretations, experimental designs may help to better understand the interplay among antecedents, proactive work behaviour, and outcomes.

## **Implications for Research**

Although this dissertation answered many research questions concerning proactive work behaviour, various new research questions emerged. First, this dissertation showed that prior models on antecedents of proactive behaviour can be generalized to an organizational level of analysis (Study 2). Future studies should take into account different levels of analysis (e.g., teams, sub-units, organization, industries) to further broaden the understanding of proactive work behaviour and its influences. For instance, team processes may be taken into account when examining proactive work behaviour and reasons why teams vary with regard to their mean level of proactive work behaviour should be investigated.

Second, generalizability of mediation mechanisms between positive workplace characteristics and proactive work behaviour to negative workplace characteristics (i.e., job stressors) was supported (Study 1). As I tested role breadth self-efficacy as the only linking mechanism, future studies should also consider other possible mediators, for instance active coping, motives to reduce uncertainty, problem-focused planning, negative affect, or fatigue. Investigating processes that explain relationships between proactive work behaviour and its antecedents may lead to further aspects that can be influenced in order to increase employees' proactive work behaviour. For instance, assuming that situational constraints are related to reduced active coping and active coping being a predictor for proactive work behaviour, managers may put more emphasis on providing their employees with active coping skills.

Third, Study 2 revealed the importance of taking moderators into account when analysing relationships between antecedents and proactive work behaviour. Beyond productive organizational energy other moderators seem to be plausible and should be tested in future studies, for instance change oriented culture, job security, and competitiveness of markets may play a role. While productive organizational culture boosted the effects of antecedents on proactive work behaviour other moderators may expose opposing effects. For instance, one might speculate that situational constraints are positively related to proactive work behaviour under the condition of high job insecurity while even negative relationships may occur under very low job insecurity because employees do not have to present themselves as indispensable.

Fourth, this dissertation challenged the traditional view of proactive work behaviour as behaviour which is globally functional and desirable by revealing undesired outcomes of proactive work behaviour (Study 3). Bateman and Crant (1999) as well as Campbell (2000) already discussed potential undesired consequences of proactive behaviour. However, empirical investigation was missing to validate their propositions. Future studies are

encouraged that also focus on the potential negative impact of proactive work behaviour on other outcome variables (e.g., work-related attitudes, turnover intention, or employees' mental and physical health).

Fifth, Study 3 revealed differences between separate types of proactive work behaviour. As I focused on a promotion-oriented type of proactive work behaviour and on a prevention-oriented type also other classifications may be plausible and should further be investigated. For instance, Parker and Collins (in press) identified even four different types of proactive behaviour which build a higher-order factor proactive work behaviour, Den Hartog and Belschak (2007) suggested a pro-self versus a pro-organization focus of proactive behaviour, and Griffin et al. (2007) distinguished proactivity that is focused on the individual task from team member and organization member proactivity. So far, various classifications coexist but more research is necessary to discover which classification fits best or how various classifications can be integrated.

Finally, differences between self and supervisor evaluations of proactive work behaviour occurred (Study 1). Future research may further investigate which specific behaviour aspects differ and which ones overlap between employees' self ratings and their supervisor ratings. Moreover, future research should keep in mind these different perspectives and may focus on potential consequences that go along with these incongruent perceptions.

### **Implications for Practice**

With regard to practical implications, fostering proactive work behaviour of employees is still warranted although this may also go along with undesired outcomes (at least in the short run as results of Study 3 revealed). To utilize positive outcomes of proactive work behaviour, incorporation of a compatible organizational culture might be helpful (Baer & Frese, 2003).

Possibilities how to enhance proactive work behaviour can be derived from results on relationships between antecedents and proactive work behaviour. First, managers may enhance job control of their employees. To realize higher job control, managers may involve employees in decisions about rules for working procedures, award complex tasks, and it should be upon the employees themselves to decide which steps are necessary to fulfil the tasks. However, to prevent overload of employees, managers may also support their employees by information systems (Leach et al., 2003) or a positive feedback environment (Sparr & Sonnentag, 2008).

Second, results of Study 1 showed that employees who are often confronted with situational constraints (e.g., who have to work with outdated information or with equipment that does not work well) report lower role breadth self-efficacy and thus show lower proactive work behaviour. However, beyond this negative indirect relationship, employees directly react on situational constraints with higher proactive work behaviour. These results show that employees' role breadth self-efficacy suffers from situational constraints but partialling this negative effect out they react on these constraints by engaging in proactive work behaviour. Therefore, proactive work behaviour may be further increased if managers are able to compensate negative effects of hindrance stressors on employees' efficacy expectations. For instance, managers may provide their employees with coping strategies to overcome this negative effect (e.g., external attribution).

Third, leadership trainings, that focus on conscious goal setting and feedback giving on the one hand and transformational behaviour (e.g., individual consideration, communication of organization's vision, relevance of being a role model) on the other hand, as well as coaching and mentoring programs that enhance transformational leadership might help to implement desired leadership behaviour (Barling et al., 1996). As results of Study 2 confirmed, especially transactional and transformational leadership are positively related to high levels of proactive behaviour in organizations.

Fourth, this dissertation revealed the importance of productive organizational energy for proactive work behaviour (Study 2). To unleash productive energy in an organization, managers may articulate an imminent external threat to release negative emotions and emphasize own strengths to channel this negative energy toward overcoming the threat. Additionally, managers may define and vividly describe a vision for the whole organization, specify this vision for sub-units and teams, continuously communicate this vision, and emphasize own strengths that will make it possible to realize the supposed unobtainable objective.

Finally, incongruent expectations and perspectives of employees and their supervisors with regard to proactive work behaviour might have implications for motivation, performance evaluations and payment as supervisors may reward this behaviour less than anticipated by the employees. To align expectations, supervisors may set greater importance to exchange ideas with their employees, to regular appraisal and feedback discussions, and they may also more often informally talk to their employees.

## **General Conclusion**

This dissertation extended research on antecedents of proactive work behaviour by showing that (1) mechanisms that link positive workplace characteristics to proactive work behaviour can also be applied for negative workplace characteristics (i.e., job stressors), (2) prior models on antecedents of proactive behaviour can be generalized to an organizational level of analysis, and (3) moderators have to be taken into account when examining antecedents of proactive work behaviour. Moreover, this dissertation challenged the traditional view of proactive work behaviour as behaviour which is globally functional and desirable by revealing undesired outcomes of proactive work behaviour, particularly promotion-oriented initiative.

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