

1-1-2012

# The role of psychological resources in the relationship between work stressors and proactive behavior

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<https://doi.org/10.15760/etd.770>

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The Role of Psychological Resources in the Relationship Between  
Work Stressors and Proactive Behavior

by

Allison Marie Ellis

A thesis submitted in partial fulfillment of  
the requirements for the degree of

Master of Science  
in  
Psychology

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**Abstract**

As contemporary organizations are met with increasing demands and uncertainty, their continued success relies on employees' willingness and ability to think proactively and take action in the face of challenges. Some scholars have reasoned that stressors in the work environment may serve as indicators, to employees, that change is needed, therefore promoting proactive work behavior. However, current theories related to work stress assert that demands in the environment may exert effects dependent on the degree to which resources are available to cope with demands. Drawing on the Job Demands-Resources model and others, the present research examines the interplay between psychological resources, work stressors, and proactive work behavior in a sample of 229 preschool teachers in Germany. Specifically, the focus is on the moderating role of state-level psychological resources (e.g., enthusiasm, self-assurance, attentiveness, and feeling recovered) in the relationship between work stressors and proactive work behavior. Data was collected at three time points and included both self- and co-worker reports of proactive work behavior. Results indicate that psychological resources, characterized by positive mood and high energy, play an important motivational role in the face of work stressors. Findings support the importance of considering individual factors (e.g. availability of psychological resources) when examining relationships between environmental factors and proactive behavior. Implications for future research are discussed.

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**Chapter 1**  
**Introduction**

As companies across the world endure significant economic challenges, they are continually faced with questions of how to maintain a functioning organization in the face of unpredictable and changing conditions. As such, a growing number of organizations must rely on future-focused and action-oriented thinking from employees to streamline operations and reduce overhead (Crant, 2000; Frese, Fay, Hilburger, Leng, & Tag, 1997). The role of organizational psychologists, therefore, should be to aid organizations through these times of economic hardship by helping employers understand what factors influence proactive behavior among employees. Understanding the psychological processes that help or hinder proactive behaviors is imperative for the health of organizations as they continue to navigate through these times of economic uncertainty.

Furthermore, individual employees in today's workforce are faced with increasing demands and pressures to perform efficiently and effectively. As the global marketplace forces organizations to undertake rapid change, employees must learn to think ahead and take action in order to maintain high levels of productivity. For example, with advances in technology employees may need to seek out additional training opportunities in order to remain at the forefront of their respective industry; economic conditions that have led to reductions in the workforce may mean there is more work to be done with fewer people to do that work. These situations describe the increasingly dynamic nature of the workplace and point to the importance of employees' willingness and ability to take action to improve processes in a proactive manner. Accordingly, the current study

examines the relationship between chronic demands in the workplace and proactive work behavior.

However, the current study expands on past research by examining the role of psychological resources as boundary conditions in the relationship between stressors and proactive work behavior. This expands on the current literature in two important ways. First, previous research on antecedents of proactive work behavior has tended to focus on long term aspects of the individual or the work context, such as autonomy at work (Grant & Ashford, 2008; Ohly & Fritz, 2010). Similarly, this research has tended to focus on cognitive aspects of the individual as predictors of proactive work behavior (Parker, Williams, & Turner, 2006). However, Parker and colleagues (2010) argue that research should also be examining “energized to” pathways by which proactive behavior occurs. In other words, affective states characterized by energy and positive mood may play an important motivational role in the initiation of proactive behavior (Parker et al., 2010; Seo et al., 2004). In accordance with this line of reasoning, the current study examines psychological resources, characterized by short-term positive affect, as potential moderators to the relationship between stressors and proactive work behavior.

Furthermore, understanding the interplay between psychological resources, job stressors, and proactive behavior may also provide insight into how people cope with stress at work. Often work stressors are studied in association with their negative outcomes such as burnout. The current study employs aspects of the Job Demands-Resources Model (JDR; Demerouti et al., 2001) to examine the relationship between demands (e.g. work stressors) and motivated, discretionary action (e.g. proactive work



behavior), thereby expanding the knowledge surrounding work stress by incorporating potentially positive ways in which individuals cope with stress at work. Furthermore, the current study expands the JD-R model by incorporating psychological resources (e.g. mood states) that one brings to the work environment. These resources may serve as potential moderators that further enhance the relationship between work stressors and proactive behavior. The following review and argument suggests that psychological resources are functional in that they interact with work stressors and affect proactive forms of coping as evidenced by proactive behavior in the workplace.

### **Proactive Behavior at Work**

Research has repeatedly noted the shift in the modern work environment from one of stability and loyalty to an increasingly transient and unpredictable one. The modern work environment is characterized by increases in technological demands, moves toward decentralized management, and reductions in the workforce. For example, economic challenges have forced downsizing resulting in the move toward autonomous work teams and the elimination of supervisory personnel in many manufacturing companies (Spector, 2006). These “dynamic challenges” can threaten the progress of modern organizations and often require proactive solutions (Thomas et al., 2010). Rapid technological advancements and a need to capture global markets means organizations are forced to adapt and innovate in order to compete. In truth, “proactivity has transitioned from a novelty to necessity” for today’s organizations (Thomas et al., 2010, p. 275).

In the context of uncertain and ambiguous work-roles, the need for employees to be proactive is essential (Griffin et al., 2007; Williams, Parker, & Turner, 2010). Griffin

and colleagues (2007) argue that, in the work context, "uncertainty influences the extent to which work roles can be formalized and hence determines whether an individual can be effective by simply complying with the requirements of a work role or can only be effective by adapting to and initiating change" (p. 328). In other words, due to the "uncertain" nature of contexts that lack predictability, it is difficult to anticipate the exact requirements of the job or prescribe definitive protocols. Rather, these situations require initiative and adaptability on the part of the employee in order to be effective (Griffin et al., 2007). Thomas and colleagues (2010) agree that when faced with changing conditions and demands, simply adhering to work specifications is not sufficient for the success of the organization. Rather, employees need to be able to anticipate challenges before they arise and take charge of such situations by initiating needed change. Thus, the effectiveness of organizations depends on employees finding innovative and proactive ways to meet long-term goals despite these contemporary challenges.

Proactive behavior has been categorized in a number of ways throughout the last decade. However, recent work by Parker and colleagues (2010) suggests that these conceptualizations tend to fall within three major categories: proactive work behavior, proactive strategic behavior, and proactive person-environment fit behavior. Proactive work behavior refers to behaviors such as taking charge and problem prevention. Proactive strategic behavior refers to a cluster of behaviors that are aimed at changing or controlling the broader environmental context. Proactive person-environment fit behavior is characterized by behaviors aimed at creating a greater degree of compatibility between the individual and the organization (e.g. feedback inquiry). The current study will focus on two proactive behaviors, namely personal initiative and pursuit for learning. While

these behaviors are not directly mentioned by Parker and colleagues (2010), based on the definitions of the higher-order constructs identified by their work, personal initiative can be identified as a proactive work behavior, while pursuit of learning is a manifestation of person-environment fit behavior.

Though proactive behavior has been defined and operationalized in a variety of ways in the literature, for the purposes of the current study proactive behavior is conceptualized in accordance with Bindl and Parker's (2010) definition which is comprised of three parts: (1) proactive behavior is self-directed, (2) future-focused action in an organization, (3) in which the individual aims to bring about change, including change to the situation (e.g., introducing new work methods, influencing organizational strategy) and/or change within oneself (e.g., learning new skills to cope with future demands). Additionally, in accordance with Griffin and colleagues (2007) the current study includes a fourth component of proactive behavior which notes that proactive action is in line with the organization's goals, and serves to promote the interest of the overall organization. Two proactive work behaviors will be examined in the current study, namely personal initiative and pursuit for learning, both of which are consistent with the broader definition of proactive work behavior as discussed above.

### **Personal Initiative**

Personal initiative is one proactive behavior that has garnered substantial interest in the field (Crant, 2000). Frese, Kring, Soose, and Zempel (1996) define personal initiative as a "behavior 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" (p. 38). Frese and colleagues (1996) identify five aspects of personal initiative including

behavior that is consistent with the goals of the organization, long-term in focus, goal-directed and action-oriented, persistent in spite of challenges, and proactive in nature.

For example, personal initiative might include an employee who identifies a protocol that can be improved and advocates for the change knowing it will have beneficial time-saving effects in the future. Frese and colleagues (1996) stress that personal initiative is about employees demonstrating actions that are “extra-role” in the sense that they are going above and beyond task requirements, and the actions exhibit a long-term focus. This type of proactive behavior may be especially important in ambiguous or unpredictable situations where tasks cannot be regimented and where initiative is required in order to deal effectively with barriers to productivity or efficiency (Frese et al., 1996).

### **Pursuit of learning**

Pursuit of learning, another form of proactive behavior, refers to seeking out opportunities for learning or development for the purpose of gaining competencies and mastering new situations (Fritz & Sonnentag, 2005; VandeWalle, 1997). Pursuit of learning is an important component of proactive behavior for several reasons. For example, initiating change in the work environment may not be useful, or may even be detrimental if an individual has an incomplete understanding of the work processes or the reasons behind certain protocols (Frese & Fay, 2001). In fact, in some situations, despite good intentions, changing things may be a hindrance rather than an improvement to the process. Adequate knowledge and competency may be especially important with more complex jobs that feature more autonomy. Taking initiative and proactively engaging with the environment may be essential functions of the job. However, a lack of

knowledge or insufficient skills could mean wasted time and energy on change initiatives that do not make sense.

Furthermore, pursuit of learning is an important aspect of proactive behavior as it relates to reducing ambiguity, or uncertainty, within the work context. The current work environment is increasingly subject to restructuring due to economic conditions. Thus, employees are likely to find themselves in situations requiring increased responsibility without adequate training or direction. Hall (1996) referred to the state of “boundary-less” careers and suggested that the ability to regularly grow and change by learning will become indispensable for successful careers. For example, Lankau and Scandura (2002) reported that personal skill development, a dimension of personal learning, was significantly and negatively related to role ambiguity and turnover, and positively related to job satisfaction. Thus, it seems that opportunities for learning and professional development reduce the presence of at least one stressor, role ambiguity, by creating a greater sense of role clarity through information and increasing employee efficacy.

Proactively seeking out such opportunities for learning and professional development may be a consequence of both contextual (e.g. stressors, management support for learning) and intra-individual factors (e.g. self-efficacy; openness to experience) wherein employees are actively engaging their environment with the goal of affecting change within themselves. Such acquisition of knowledge, or skills, may result from a desire to better cope with the demands of their work or increase individual performance. Learning and development opportunities may be seen as a way to bolster competence and mastery within oneself (VandeWalle, 1997). Furthermore, in the context of economic uncertainty, employees who seek out opportunities for development can be

more confident in their abilities and better prepared to take on the challenges of a changing work environment.

### **Antecedents of Proactive Behavior at Work**

Research has begun to recognize the importance of proactive behavior at both the individual and organizational level. Consequently, there has been a surge in attention on the topic over the last decade (Crant, 2000). Of significant interest has been the investigation of what factors lead to proactive behavior (for a review see Grant & Ashford, 2008; Parker et al., 2006). However, because of the phenomenon-driven approach to the study of proactive behavior, and the rapidity with which interest has grown on the topic, much of the field has been developed in isolation (Crant, 2000; Parker & Collins, 2010). Fortunately, scholars have recently synthesized relevant research in hopes of finding common ground from which to move forward (Crant, 2000; Parker & Collins, 2010; Parker et al., 2006; Thomas et al., 2010).

To date, the literature regarding predictors of proactive behavior at work has identified both inter-individual differences as well as aspects of the work context that seem to play a role. For example, proactive personality, one dispositional characteristic, has been found to relate positively to proactive behavior at work (Bateman & Crant, 1993; Parker et al., 2010). Proactive personality is characterized by one who is unconstrained by situational forces and who acts on the environment to effect change (Bateman & Crant, 1993). In their study of antecedents of proactive behavior, Parker and colleagues (2006) found that proactive personality influenced proactive work behavior through role breadth self-efficacy. Role breadth self-efficacy refers to the belief that one is capable of a variety of proactive, interpersonal and integrative tasks at work (Parker,

1998). A related, but distinct construct, flexible role orientation, has also been found to be an important mediator affecting proactive work behavior (Parker et al., 2006). An important distinction in the literature on employee proactivity is made between personality or dispositional characteristics that are associated with proactive work behavior and other more proximal environmental antecedents of proactive behavior, such as work characteristics.

Factors of the work context related to proactive behavior at work range from aspects of the individual job design, such as the degree of autonomy a position provides, to larger aspects of the organizational climate, such as support for innovation. For example, Morrison and Phelps (1999) found that perceptions of top management openness predicted taking charge, one type of proactive behavior, in a sample of white-collar employees. In a large electronics organization in Korea, Choi (2007) showed that strong vision and an innovative climate influenced change-oriented organizational citizenship behaviors, including individual initiative and behaviors aimed at change. Thus, there is growing support for the notion that characteristics of the larger work environment are important for promoting a variety of proactive behaviors.

Other individual characteristics of the job have been shown to influence proactive behavior as well. For example, Parker and colleagues (2006) showed that amongst production employees in a manufacturing company in the United Kingdom job autonomy and co-worker trust were positively associated with proactive work behavior. Similarly, Ohly and Fritz (2010) found that job control predicted daily proactivity in their sample of engineers at an automotive manufacturer. In their review, Grant and Ashford (2008) point to the importance of role ambiguity and accountability which they hypothesize interact

with certain individual characteristics to predict proactive behavior at work. Also, felt responsibility for change has been shown to predict proactive behavior (Fuller, Marler, & Hester, 2006; Morrison & Phelps, 1999) which may reflect a larger organizational climate of individual responsibility. As discussed in greater detail below, stressors in the work environment, such as time pressure, have also been found to positively predict proactive behaviors, such as taking initiative and taking charge (Binnewies, Sonnentag, & Mojza, 2009; Fritz & Sonnentag, 2009).

It is apparent that proactive behavior is likely influenced by a combination of both person and environmental variables (Crant, 2000). In line with this perspective, Parker and colleagues (2010) developed a model of proactive motivation processes that provides a useful framework for future research on the factors influencing proactive work behavior. Specifically, the model identifies proximal, motivational states that are thought to directly impact proactive goal generation and goal striving, as well as more distal individual and contextual variables that might indirectly influence proactive behavior. Furthermore, Parker and colleagues (2010) suggest future research interested in the antecedents of proactive behavior should examine affective motivational states in addition to the more traditional intellectually based motivations such as self-efficacy. In accordance with these suggestions, the current study examines the relationship between work stressors and proactive behavior within the context of affective psychological resources.

### **Work Stressors and Employee Outcomes**

Stressful work situations are an inevitable part of most jobs (Jex & Britt, 2008). For employees, finding ways to cope with such stressors is essential to job performance



as well as one's own physical and mental well-being. Jex and Beehr (1991) defined job stressors as conditions or situations at work that require an adaptive response by the employee. For example, commonly researched job stressors include workload/time pressure (Spector & Jex, 1998), role stressors (Jackson & Schuler, 1985), and lack of control (De Lange, Taris, Kompier, Houtman, & Bongers, 2003) which are associated with job strain. Job strain refers to the negative reactions employees have to stressors, and can be described as psychological, physical, or behavioral reactions (Spector, 2006). Psychological manifestations of strain reactions might include anxiety, frustration, or intentions to turnover, while physical manifestations include headaches, stomachaches, or illness, and behavioral manifestations include accidents, withdrawal behavior, or turnover. Research has found that sustained demands at work coupled with a lack of available resources can result in feelings of burnout and withdrawal, suggesting that the effects of stressors extend beyond the individual and can have negative effects on the organization as well (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001).

Findings regarding relationships between work stressors and employee outcomes tend to indicate a negative relationship in which increases in work stress are associated with direct or indirect decrements in employee well-being and performance (Jex, 1998). For example, role stressors, such as role ambiguity and role conflict, have been associated with lower levels of job satisfaction, increases in anxiety, intentions to quit, and withdrawal behavior including absences (Spector, 2006). Workload has most often been studied as it relates to health problems, and is thought to affect job performance through poor health (Jex, 1998). Organizational constraints have been consistently associated with poorer task performance in laboratory studies; however, field studies have shown

inconsistent results with respect to performance (Jex, 1998). Interpersonal conflict, another workplace stressor, has been shown to positively relate to a number of counterproductive employee behaviors including sabotage and theft (Jex, 1998). Thus, research indicates strong negative relationships between work stressors and employee well-being. However, the relationships between work stressors and job performance seem to be weaker and somewhat inconsistent (Jex, 1998).

Jex (1998) suggests this could be the case due to several complicating factors. For example, the effects of stressors on performance may be indirect, rather than direct, thereby “influencing the *choices* employees make regarding where to direct their efforts, the level of effort to exert, and whether or not to utilize their innate abilities fully” (p. 36). Furthermore, issues of performance measurement (i.e. rater error or bias) surrounding range restriction, the dynamic nature of job performance over time, and the form of the relationship between stressors and performance (i.e. linear or nonlinear), are issues that further complicate research investigating this relationship (Jex, 1998). LePine, Podsakoff, and LePine (2005) argue that differences in work-related outcomes associated with stress are meaningful in that they represent differences in the nature of the stressors and the way in which they are appraised by employees. LePine and colleagues (2005) point to the importance of reconciling these findings in order to make meaningful recommendations to organizations concerned with managing employee stress and optimizing job performance.

### **Time Pressure and Organizational Constraints**

The present study focuses on time pressure and organizational constraints because they are highly prevalent in most jobs and have been found to be strongly related to

employee well-being (Jex, 1998). Both stressors are more likely to be perceived as obstacles that can be overcome, compared to office politics or conflicting roles (LePine et al., 2005). Time pressure can be defined as a lack of sufficient time to complete required tasks at work (Kinicki & Vecchio, 1994). For example, an employee may feel that they are unable to complete a project by the deadline due to other impeding responsibilities.

Time pressure falls under the larger umbrella of workload. Spector (2006) refers to two types of workload, namely quantitative and qualitative workload. As their names suggest, quantitative workload refers to the amount of work a person has to do, and may result in time pressure. Qualitative workload refers to the difficulty of the work tasks and may cause frustration or strain in the event that tasks are too difficult for an employee (Spector, 2006). Traditionally, workload has been associated with detrimental outcomes such as psychological strain (e.g. frustration, anxiety; Jex, 1998; Spector, 2006). Past research specifically examining time pressure has found that time pressure leads individuals to engage in more heuristic processing and close themselves off from input (Kruglanski & Webster, 1996), reduce exploratory behaviors (Amabile et al., 2002), and exhibit more negative affect (Garbarino & Edell, 1997). In the context of employee well-being, high levels of workload, including time pressure, have consistently been associated with decrements in employee health (Jex, 1998). However, despite these findings, as noted in the following section, time pressure also seems to encourage individuals to take initiative to change the situation so tasks are manageable in the time available.

Organizational constraints, the second stressor examined in this study, denote organizational factors that impede an employee's ability to complete a job task, such as computer malfunctions or insufficient materials (Fay & Sonnentag, 2009). Organizational

constraints have the capacity to largely hinder productivity of employees (Spector, 2006).

Additionally, organizational constraints may add to the level of strain because they impede the ability of the employee to work efficiently, resulting in dissatisfaction and frustration (O'Connor, Peters, Rudolf, & Pooyan, 1982). For example, an employee may find themselves highly engaged in a given work task only to be interrupted by a computer malfunction impeding their ability to continue the task. These interruptions are stressful to the individual because they increase time pressure due to falling behind on work or they may lead to feelings of helplessness. Additionally, the organization suffers because of lost time and productivity.

Peters, O'Connor, and Rudolf (1980) identified eight different areas of the work environment wherein situational or organizational constraints might appear: job-related information, tools and equipment, materials and supplies, budgetary support, help from others, task preparation, time availability, and work environment (e.g. physical features of the job). By definition, deficiencies in these areas interfere with, or prevent, job performance (Spector, 2006). However, interestingly, recent research, primarily conducted in Germany has suggested an opposite relationship with performance, in which organizational constraints are positively associated with certain aspects of proactive performance (Fay & Sonnentag, 2002; Fritz & Sonnentag, 2009). Such contradictory findings speak to the work by Webster and colleagues (2011) as discussed earlier, and suggest the existence of moderating variables that may help explain why the same stressor is experienced as an impediment in some situations and a signal motivating proactive behavior in other situations.

### **Work Stressors and Proactive Behavior**

In some instances, certain work stressors have been shown to be positively associated with performance related behaviors (Binnewies, Sonnentag & Mojza, 2010; Fay & Sonnentag, 2002; Fritz & Sonnentag, 2009; Ohly & Fritz, 2010). For example, LePine and colleagues (2005) suggested that in the case of some stressors, such as time pressure, people are more likely to believe that with effort these stressors can be successfully overcome and may even lead to a sense of personal accomplishment. In support of this reasoning, some research has found that time pressure and situational constraints were positively related to personal initiative and other proactive behavior on the job (Binnewies et al., 2009; Fay & Sonnentag, 2002; Fritz & Sonnentag, 2009). In a longitudinal study in Germany, Fay and Sonnentag (2002) reported that time pressure and situational constraints were positively associated with personal initiative, suggesting that stressors may be seen as indicative of a situation or process that requires change. Fritz and Sonnentag (2009) showed that day-level situational constraints were associated with taking charge, a proactive work behavior, the same day. The same relationship initially occurred between time pressure and taking charge, though it was reduced to non-significance when positive mood was included in the regression. Binnewies and colleagues (2009) reported that day-level time pressure was associated with daily personal initiative in their sample of German employees of a non-profit organization. A positive relationship between time pressure and personal initiative was also reported by Ohly, Sonnentag, and Plunke (2006). Thus, one explanation for this relationship may be that behaviors aimed at addressing the stressor may reduce pressure in the present as well as mitigate future stressors.

To understand these findings, it may be helpful to turn to Aspinwall and Taylor's (1997) concept of proactive coping. Proactive coping is defined as an attempt to actively cope with current stressors, while focusing on alleviating and anticipating future demands. For example, an employee may be experiencing time pressure at work due to a procedure that is laborious and ineffective. In order to address the stressor the employee may take initiative, a type of proactive behavior, by developing a more effective, less time-consuming procedure that accomplishes the same goal. As a result, the employee has both successfully coped with the stressor and addressed the faults of the old procedure. Or perhaps an employee experiences difficulty on a regular basis with technology and must rely on others to come to their aid to troubleshoot. This employee may actively seek out an opportunity to develop their own skills so that he or she can deal with such issues individually, thereby reducing their reliance on others and saving time.

In the context of the relationship between stressors and proactivity, Fritz and Sonnentag (2009) suggest that engaging in proactive behavior could be a way of overcoming impediments to progress toward goal attainment. In other words, factors at work that hinder goal accomplishment are experienced as stressors because they threaten job performance. Thus, one way of actively coping with the stressors might be taking charge of a situation and developing a way to circumvent those stressors in the future. Therefore, proactive behavior can be viewed as a behavior motivated by a need to compensate for prior impediments to goal achievement.

Although the relationship between stressors at work and proactive work behaviors is an intriguing one, little is understood regarding the context within which this relationship occurs. With regard to time pressure, it may be that under certain conditions

(e.g., availability of psychological resources) employees are motivated to take initiative to improve procedures. Or perhaps, when employees attribute time pressure to a lack of skills or knowledge, they may respond by seeking out opportunities for development. As in the case of time pressure, it may be that organizational constraints force employees to find better ways to cope with insufficient or ineffective materials and systems. This may be especially true in the case of those individuals with a flexible role orientation, where they perceive the action required as part of their own responsibilities, as opposed to “someone else’s job” (Parker et al., 2010; Parker et al., 2006). The decision to engage in proactive behavior in the face of time pressure or organizational constraints may also be attributable to whether a person feels they have sufficient personal resources (e.g. skills, knowledge, energy) to take on behaviors above and beyond their task requirements and deal with the potential for negative reactions.

### **Psychological Resources**

**Job demands-resources model.** Models of work stress such as the job demands-resources model (JD-R; Demerouti, Bakker, Nachreiner, & Schaufeli, 2001) suggest that strain is the result of more than just the presence of work stressors. Strain also results when the means available to cope with the stressors are inadequate. The JD-R model proposes that resources can offset negative strain reactions such as emotional exhaustion (Bakker et al., 2005). Thus, the relationship between stressors and employee and organizational outcomes needs to be viewed in the context of other social, emotional, and environmental factors. Such factors, especially those that are protective against the experience of stress, serve as resources. Bakker and colleagues (2005) described job resources as, “those physical, psychological, social or organizational aspects of the job

that (a) are functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, or (c) stimulate personal growth and development” (p.170).

The JD-R model (Bakker et al., 2005) proposes a dual-process model in which job demands increase strain while job resources influence work motivation. Additionally, Bakker and colleagues (2005) propose a buffering effect in which demands and resources can interact and influence strain and motivation. Furthermore, on the basis of Hobfoll’s (1989) conservation of resources theory (as discussed below), Bakker and colleagues (2005) argue that job resources will become more salient in the context of high job demands.

The JD-R model has largely been applied to understanding burnout; however, recent research using the JD-R model suggests its applicability in the study of job performance. For example, Bakker, Demerouti, and Verbeke (2004) reported that job resources, such as social support, autonomy, and possibilities for self-growth were negatively related to disengagement, one aspect of burnout. In turn, disengagement was associated with extra-role performance. Furthermore, Xanthopoulou, Bakker, Demerouti, and Schaufeli (2009) showed that personal resources (e.g. self-efficacy, organization-based self-esteem, and optimism) exhibited reciprocal relationships with work engagement. High levels of work engagement have been shown to predict day-level pursuit of learning and personal initiative (Sonnetag, 2003). Thus, resources appear to play a vital role in buffering against the deleterious effects of job demands and motivating a positive, engaged experience of work.



The current study expands on the JD-R model in two important ways. First, while the JD-R model includes psychological resources in the description of job resources, past research on the model has largely focused on social and organizational aspects of the work environment such as work-related autonomy (Bakker et al., 2005) or supportive supervision (Demerouti, et al., 2001). One exception is Xanthopoulou and colleagues (2009) who examined the role of self-efficacy, organization-based self-esteem, and optimism as personal resources. Similarly, the current study will look at positive affective states as psychological resources. Secondly, the JD-R model defines resources specifically as “aspects of the job” (Demerouti, et al., 2001, p. 501); however research has suggested that emotions, both positive and negative, can spillover from one domain to another (Zimmerman & Hammer, 2011). As such, moods generated outside of work may be important psychological resources that one can draw on while at work.

**Broaden and build theory.** Fredrickson’s broaden and build model (1998) suggests that positive emotions broaden a person’s cognitions and “...prompt individuals to discard time-tested or automatic (everyday) behavioral scripts and pursue novel, creative, and often unscripted paths of thought and action” (p. 304). Through this broadened, more global frame of reference, one is more likely to engage in experiences that lead to increased intellectual, social or other personal resources. Fredrickson (1998) further suggests that these resources can be drawn from in times of need. In the context of the workplace, individual resources, such as positive affect, help promote learning and understanding of complex situations and which may be particularly relevant to proactive behavior. When faced with stressors in the workplace, high levels of positive affect may drive subsequent behavior through (a) providing an expanded view of the situation as a

potential for the acquisition of knowledge or the opportunity for a new experience, or (b) providing a reserve of personal resources that can be drawn upon, communicating to the individual that they have adequate coping resources available to deal with the stressor. As such, under conditions of positive affect, engaging in proactive behaviors such as taking advantage of developmental or learning opportunities or initiating change in the workplace may be more likely.

**Ego depletion model.** Baumeister and colleagues' model of ego depletion posits that exerting control over one's own behavior requires effort and consumes a finite, personal resource (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Muraven & Baumeister, 2000). The exact nature of these personal resources is unknown; however the model proposes that they are necessary for overriding typical patterns of thought, emotion, or behavior (Muraven & Baumeister, 2000). Baumeister and colleagues (1998) refer to these resources as self-regulatory resources, and suggest they are finite in nature. Thus, engaging in work tasks that are cognitively demanding depletes these resources such that they cannot be utilized in the tasks that immediately follow. Over time, it becomes more difficult and requires more effort on the part of the individual to sustain behavior because resources are required to, and expended in, the process of carrying out self-control. Muraven and Baumeister (2000) liken this process to a muscle that is fatigued through exertion, and must be replenished in order to continue functioning. In order to recover these resources individuals must either discontinue the effortful behavior or engage in a preferred behavior (Baumeister et al., 1998; Muraven and Baumeister, 2000).

Muraven and Baumeister (2000) propose that coping with stress requires

inhibition and emotional regulation that taxes self-control resources. Thus, in the absence of adequate resources, employees may rely more heavily on automatic or routine processes that conserve self-regulatory resources. Therefore, proactive behavior would be unlikely when resources are depleted, as in the case of high levels of experienced stressors. However, research has suggested that an inverse relationship between stressors and proactive behavior is not always the case (Binnewies et al., 2009; Fay & Sonnentag, 2002; Fritz & Sonnentag, 2009; Ohly & Fritz, 2010). In accordance with the ego depletion model, one explanation for the inconsistent findings surrounding stressors and proactive behavior may be differing degrees of available self-regulatory resources. For example, in a recent experimental study, Tice, Baumeister, Shmueli, and Muraven (2007) showed that positive emotion buffered regulatory resource loss in participants. Perhaps, in the context of sufficient psychological resources, an employee is empowered to take on work stressors by actively engaging their environment.

**Conservation of resources theory.** Hobfoll's (1989) conservation of resources (COR) theory can be viewed as an alternative to the traditional theories of stress. The central tenet of the theory is that individuals strive to maintain, protect and acquire resources. Resources are defined as "those objects, personal characteristics, conditions, or energies that are valued by the individual" (Hobfoll, 1989, p. 516). Thus, stress is experienced as a result of (1) the threat of resource loss, (2) the actual loss of resources, or (3) a failure to regain resources after the investment of a large amount of resources (Hobfoll, 1989). According to COR theory, resources are classified as belonging to one of four categories. *Objects* are those resources that are valued because they provide some

kind of survival need, such as a house that provides shelter, or status. *Conditions* are resources to the extent that they are valued or aid in the acquisition of other valued resources (i.e. marriage, tenure). *Personal* resources are those valued aspects of the self that aid in reducing stress, such as self-esteem. The final category of resources is *energies*, which includes things like money, time, and knowledge, and are valued based on the role they serve in acquiring new resources (Hobfoll, 1989).

Within the work context, resources aid in the ability to cope with stress and may provide conditions that facilitate the initiation of proactive behavior. For example, initiating change in the workplace has been described as a “risky” behavior in terms of the risk to the ego (in case of failure) and of negative reactions from others (Grant et al., 2009). COR theory would suggest that one would take inventory of their available resources, for example self-efficacy, a personal resource, and either engage or not engage in the behavior depending on the extent of the resource they felt they could risk to invest. Similarly, if stressors impede performance, they threaten the loss of valued resources (e.g., employment, ego, self-efficacy). To cope with this threat of resource loss, one may actively “invest” in proactive behaviors, perhaps by seeking out learning opportunities that facilitate future performance. Therefore, investing resources may serve to mitigate further loss of resources and aid in acquiring future resources.

### **The Current Study**

The current study contributes to the extant literature on proactive behavior by examining the role of state-level psychological resources as antecedents. Demerouti and colleagues (2001) reason that individuals will withdraw from their work situation when they feel that there is a lack of resources to adequately cope with job demands.

Conversely, when sufficient resources are available to an individual they will be more engaged in their work, as characterized by being vigorous, dedicated and absorbed in one's work (Sonnentag, 2003). Therefore, in the context of high levels of resources, research supports the notion that individuals are able to address the demands of the work situation and will be more engaged in their work. However, with the exception of Xanthopoulou and colleagues (2009), the research to date has largely focused on external social and organizational resources. For example, Demerouti and colleagues (2001) examined feedback, rewards, job control, participation, job security and supervisor support. Similarly, Bakker and colleagues (2005) added social support and autonomy to their list of job resources. In terms of a relationship with proactive behavior specifically, the focus has also primarily concentrated on relatively stable, external resources such as job control (Ohly & Fritz, 2010), co-worker trust and supportive supervision (Parker et al., 2006).

However, there is reason to believe that more internal, psychological resources are also important in buffering against detrimental job demands and promoting proactive behavior. For example, Sonnentag (2003) found that day-level recovery predicted work engagement which subsequently predicted proactive behavior. Similarly, Fritz and Sonnentag (2009) in their day-level study found that positive mood was related to taking charge the same day and the next day. Parker and colleagues (2010) in their recent review explicate the importance of looking at "energized to" motivational states, such as positive affect, in addition to more traditional "can do" and "reason to" pathways, that predict proactive behavior. Thus, this study will examine the extent to which psychological resources act as boundary conditions in the relationship between work stressors (i.e., time

pressure and organizational constraints) and proactive work behaviors. Specifically, the current study will examine the moderating role of internal, state-level resources such as enthusiasm, attentiveness, self-assurance and feeling recovered within the stressor-proactive behavior relationship.

### **Enthusiasm**

As noted above, much of the work on antecedents of proactive behavior have focused on trait level dispositional characteristics or situational variables. However, a recent review by Bindl and Parker (2010) has called for more research investigating state level motivational processes that may impact the relationship between stable features of an individual and work environment and exhibited proactive behavior. In particular, affect-related processes may be especially important in this relationship (Seo, Barrett, & Bartunek, 2004). Based on Fredrickson's (1998) broaden and build model, positive affect both momentarily increases one's thought-action repertoire, and over time, the actions associated with this frame of mind are cultivated in the form of additional social, psychological and intellectual resources.

Accordingly, Fritz and Sonnentag (2005) found that positive work reflection during the weekend predicted pursuit of learning the following work week. Den Hartog and Belschak (2007) found that organizational commitment mediated the relationship between positive affect and personal initiative. In a series of experimental studies, Tice, Baumeister, Shmueli, and Muraven (2007) showed that inducing positive emotion counteracted ego depletion in participants. For these reasons, positive affect, particularly enthusiasm, can be interpreted as an additional resource available to individuals when appraising their ability to cope with work stressors.

While past research seems to support the idea that, generally, positive affect may play a role in the initiation of proactive behavior, it may be the *activated* level of positive affect that is important for stimulating proactive behavior (Bindl & Parker, 2010). A high level of positive activation is thought to translate into feelings of energy (Brehm, 1999). This is in contrast to a positive, but low activation level, such as feeling relaxed or contented, which presumably would lead to inactivity (Frijda, 1986). As such, the current study focuses on enthusiasm, characterized by high activation positive affect.

Enthusiasm is a psychological resource that an employee can draw upon when confronted with a stressor at work. It is characterized by feelings of joyfulness and excitement (Watson & Clark, 1994) which may be interpreted by the employee as a willingness to take on the challenges of a stressor. According to Seo and colleagues (2004) those in a positive affective state tend to focus on the possibility of more positive outcomes and have stronger expectancy judgments regarding those outcomes. Furthermore, time pressure is considered a challenge stressor and is often associated with the potential for growth or other positive employment outcomes (Cavanaugh et al., 2000). As such, in the context of high levels of enthusiasm employees will be even more likely to interpret time pressure as a challenge that can be overcome, thereby motivating the employee to take action in the form of proactive behavior.

Similarly, with organizational constraints, employees may interpret computer malfunctions, or other organizational constraints, as unchangeable aspects of the work environment. However, as noted above Seo and colleagues (2004) suggest that positive affective states, such as high levels of enthusiasm, lead individuals to make more positive expectancy judgments. Therefore, when confronted with organizational constraints,

enthusiastic employees may view these stressors as restrictions or setbacks that can be overcome and are likely to result in positive outcomes. Furthermore, broaden and build theory (Fredrickson, 1998) would suggest that those in a state of positive affect are more likely to approach their environment with a more broadened attentional scope. In this case, employees facing organizational constraints at work might be more cognizant of possible solutions, thereby increasing the likelihood that they will engage in proactive behaviors rather than be overcome by negative thoughts or emotions. High levels of enthusiasm that successfully mitigate typical negative reactions to organizational constraints may promote the mobilization of positive, energetic feelings toward behaviors that are proactive and goal-directed. Therefore, enthusiasm may be a psychological resource that provides a boundary condition in which the positive relationship between stressors at work and proactive behavior is further enhanced.

*Hypothesis 1: Enthusiasm moderates the relationship between work stressors (time pressure and organizational constraints) and proactive behavior (personal initiative and pursuit of learning). Specifically, under high levels of enthusiasm, there will be a stronger positive relationship between work stressors and proactive behaviors than under low levels of enthusiasm.*

### **Self-assurance**

Conceptually, self-assurance can be thought of as an extension of self-efficacy that taps into more affective reactions about one's own competencies and abilities. Self-assurance is associated with feeling proud, strong, confident, bold, daring, and fearless (Watson & Clark, 2004). In the context of proactive behavior, an individual who is self-assured is more likely to initiate change to the work environment because they are



confident in their ability and willing to face the potential costs of speaking up, such as resistance to new ideas.

Research surrounding proactive behavior at work has established self-efficacy, and particularly role-breadth self-efficacy, as clear predictors of proactivity (Grant & Ashford, 2008; Ohly & Fritz, 2007; Parker et al., 2006). Parker and colleagues (2006) argue that perceptions of one's own capability with respect to their work are an important antecedent to proactive work behavior. Role-breadth self-efficacy has been associated with proactive job performance (Griffin et al., 2007; Ohly & Fritz, 2007) suggesting improvements (Axtell, Holman, & Unsworth, 2000) and proactive problem solving (Parker et al., 2006). Similarly, organization based self-esteem (OBSE), referring to employees' self-perceived value as organization members, has been found to positively predict overall job performance and organizational citizenship behavior (Pierce, Gardner, Cummings, & Dunham, 1989; Van Dyne, Van de Walle, Kostova, Latham, & Cummings, 2000).

In terms of psychological resources, feeling self-assured may be a salient factor that influences whether or not someone engages in proactive behavior in the context of high demands. The process of engaging in proactive behavior may be more than making a cognitive judgment about one's own ability (as in the case of self-efficacy). Behaving proactively may also be influenced by a feeling of self-assurance in which one's willingness to engage in such behaviors is more salient than whether or not one is capable of doing so.

In the context of high levels of self-assurance, an employee is more likely to approach work stressors by taking action. As noted above, an employee in such a state is

fearless, bold, and confident. Such momentary, affective states may be important for overcoming fear or hesitation associated with the risks of proactive behavior. Grant and Ashford (2008) note that proactive behavior may be considered risky due to the potential for challenges to new ideas or negative reactions from co-workers. However, despite the risks associated with proactive behavior, Pearsall and colleagues (2009) using an experimental design showed that, in a sample of students in a southwestern university, time pressure encourages engagement in problem-solving strategies and has been shown to relate positively to proactive behavior. Therefore, it is reasonable to assume that when such risks are less salient to an employee, as in the case of high levels of self-assurance, then the employee should be even more inclined to engage in proactive behaviors. Thus, in the context of high levels of self-assurance time pressure should be associated with higher levels of proactive behavior.

A similar relationship is expected with organizational constraints. Fay and Sonnentag (2002) showed that organizational constraints were also associated with proactive behavior. In the context of high levels of self-assurance employees bring a sense of competence and energy to their work environment. In this state, employees will take steps to alleviate felt pressure or frustration due to the particular constraint by calling upon resource reserves that bolster confidence and boldness in the face of challenges. Therefore, I propose that employees with high levels of self-assurance should experience an enhanced positive association between organizational constraints and proactive behavior.

*Hypothesis 2: Self-assurance moderates the relationship between work stressors (time pressure and organizational constraints) and proactive behavior (personal*

*initiative and pursuit for learning). Specifically, under high levels of self-*

*assurance, there will be a stronger positive relationship between work stressors*

*and proactive behaviors than under low levels of self-assurance.*

### **Attentiveness**

Attentiveness is characterized by a state of concentration, a feeling of being determined and focused, and is conceptually opposite from being fatigued. Presumably, when employees are highly attentive they feel that they have sufficient resources, such as the ability to engage cognitively, or to take on new learning opportunities. Demerouti, Taris and Bakker (2007), in their longitudinal study, found a significant positive relationship between concentration and in-role task performance, such that when concentration levels were high, performance was correspondingly high.

In accordance with COR theory (Hobfoll, 1989), attentiveness serves as a coping resource available to individuals. When that resource is depleted, as in the case of fatigue, individuals will withdraw from activities that further tax the resource and instead strive to protect or maintain what available resource they have. Conversely, under conditions of high attentiveness, employees should interpret a surplus of resources, thereby allowing them the ability to complete current job tasks, and anticipate future challenges that require proactivity. In the context of time pressure, employees who are highly attentive can utilize such resources enabling them to engage in effortful, goal-directed behavior that alleviates the stressor and addresses future stressors. Given the nature of time pressure, high levels of attentiveness will serve to enhance the relationship between time pressure and subsequent engagement in proactive behavior.

Organizational constraints are expected to display a similar relationship with proactive behavior in which increases in organizational constraints are associated with increases to proactive behavior. Based on Baumeister and colleagues' (1998) ego depletion model, low levels of attentiveness would be indicative of depletion of the personal resources required for self-regulation. Therefore, when faced with organizational constraints, an employee lacking adequate psychological resources, like attentiveness, will be less likely to take on work stressors in a meaningful and proactive way. However, in combination with high levels of attentiveness, employees will be better able to focus their attention on the problem at hand leading them to engage in behavior oriented toward a solution.

*Hypothesis 3: Attentiveness moderates the relationship between work stressors (time pressure and organizational constraints) and proactive behavior (personal initiative and pursuit for learning). Specifically, under high levels of attentiveness, there will be a stronger positive relationship between work stressors and proactive behaviors than under low levels of attentiveness.*

### **Feeling recovered**

Engaging in recovery experiences outside of work allows the individual an opportunity to recharge their batteries and alleviate felt pressure from work stressors (Sonnentag & Fritz, 2007). If these experiences are successful, the individual returns to work with all resources available, and is more likely to engage in their work (Sonnentag, 2003) and perform better with less perceived effort expended (Binnewies et al., 2010). As a result of feeling recovered, these individuals will appraise stressors at work as challenges that can be effectively dealt with. In turn, they are more likely to engage in

behavior that involves going beyond their task requirements, such as initiating change or pursuing learning and development opportunities. The psychological state of feeling recovered may be interpreted by individuals as available, internal resources that can be called upon in times of stress and aid in effective coping (Meijman & Mulder, 1998).

Recent research supports this reasoning. For example, Sonnentag (2003) found that feeling recovered from work was associated with work engagement, which includes aspects of vigor, dedication and absorption in one's work. In turn, work engagement was associated with day-level pursuit of learning and personal initiative (Sonnentag, 2003). Binnewies and colleagues (2010) found that the "state of being recovered" predicted weekly task performance, personal initiative, and engagement in organizational citizenship behaviors, with the strongest relationship between the state of being recovered and weekly personal initiative. Bakker, Van Emmerik, Geurts, and Demerouti (2008) found that recovery from work stress moderated the relationship between job demands and work engagement, where high levels of recovery were associated with a positive relationship between demands and work engagement.

These studies support the notion that under conditions of feeling recovered from work stress employees have more resources at their disposal, therefore providing a context for engaging in proactive activities. Furthermore, an employee who is faced with time pressure is likely to interpret the stressor as a challenge and engage in coping strategies that address the problem (LePine et al., 2005). In the context of high levels of feeling recovered, the employee is likely to feel that they are even more capable of taking on such challenges, therefore enhancing the relationship between time pressure and proactive behavior.

Similarly, it is expected that organizational constraints will also be positively associated with proactivity. In a recent study, Binnewies and colleagues (2009) showed that feeling recovered was positively predictive of task performance but not personal initiative. The authors reasoned that based on COR theory (Hobfoll, 1989) feeling recovered indicates the availability of psychological resources which can be invested in job tasks. However, with regard to personal initiative, a discretionary behavior, the authors argued that feeling recovered might influence whether or not an employee could behave proactively, but not whether or not they would engage in the behavior. In other words, feeling recovered is not in itself a sufficient predictor of proactive behavior. However, organizational constraints that impede job performance may be the missing piece that together with feeling recovered motivates proactive behavior. For example, if a lack of materials is hindering an employee from reaching their goals, the interaction of the presence of a stressor and the feeling of being recovered and able to cope with the stressors may motivate the employee to take action to solve the problem. Therefore, in the context of high levels of feeling recovered, employees should feel better prepared and more willing to take on the challenges associated with organizational constraints leading them to engage in proactive behavior.

*Hypothesis 4: Feeling recovered moderates the relationship between work stressors (time pressure and organizational constraints) and proactive behavior (personal initiative and pursuit for learning). Specifically, under high levels of recovery, there will be a stronger positive relationship between work stressors and proactive behaviors than under low levels of feeling recovered.*

**Chapter 2**  
**Method****Participants**

Data for the current study were previously collected as part of a larger research project. The sample was comprised of 229 preschool teachers in Germany. After consenting to participate, supervisors of several preschools provided an estimate of the number of respondents within their organization. Based on this information, survey packets were sent directly to the head of the organization who distributed the packets to employees. Survey packets included instructions, three surveys and a stamped return envelope. Each survey included specific instructions with regard to when to complete the survey (Friday evening, Sunday evening, the following Friday evening). In total, 460 survey packets were sent. Of the 236 surveys that were returned, seven participants were dropped due to not returning surveys for all time periods, yielding a response rate of 50%. The final sample included 229 participants, of which 223 were female (97.4%). On average, participants were 38.19 ( $SD = 9.56$ ) years old and had 15.13 ( $SD = 9.27$ ) years of job experience. The average working time per week was 30.81 ( $SD = 5.88$ ) hours with an average of 1.76 ( $SD = 1.65$ ) hours of overtime each week. 203 of the 229 participants worked five days a week. Although many of the participants worked fewer than 40 hours per week, most worked 5 days a week. German preschool hours are generally from 8am to 1pm, thus the reported average working time is common in this occupation.

**Procedure**

Participants were asked to complete the first survey Friday evening (Time 1) which included measures of job stressors (time pressure and organizational constraints)

as well as demographics. The second survey measured psychological resources (enthusiasm, self-assurance, attentiveness, and feeling recovered) and was completed at the end of the weekend, on Sunday evening (Time 2). The third survey was completed the following Friday (Time 3) and measured self-reported proactive behavior (personal initiative and pursuit for learning). In addition to the self-report measure of proactive behavior, participants were also asked to have a co-worker complete an additional survey measuring the proactive behavior (personal initiative and pursuit for learning) engaged in by the participant throughout the last week. Participants' and co-worker surveys were later matched using a code created by the participant. By including co-workers as a source of performance information, an attempt is made to reduce common method variance. To ensure confidentiality, completed surveys were mailed directly back to the researchers.

### **Measures**

**Job stressors.** Job stressors were assessed at Time 1 (Friday). Measures of job stressors included two scales (time pressure and organizational constraints) developed by Semmer (1984) and often employed in German speaking countries (e.g. Fay & Sonnentag, 2002; Fritz & Sonnentag, 2009; Ohly et al., 2006; Ohly & Fritz, 2010). Each scale included five items. Responses to items assessing time pressure were provided on a five-point Likert scale (1 = "never or very rarely" to 5 = "very often or constantly"). Items asked participants to rate the amount of time pressure that they typically experienced. Sample items included "I am under time pressure." Organizational constraints were assessed by five items that asked participants to identify one of two scenarios as 1 = "exactly like A" to 5 = "exactly like B." A sample item was "Person A



has a workplace that has available updated materials and information” and “Person B has materials and info that is incomplete and outdated.” Cronbach’s alpha was .81 for time pressure, and .74 for organizational constraints.

**Psychological resources.** Psychological resources were measured using subscales of the Positive and Negative Affect Schedule-Extended Version (PANAS-X; Watson & Clark, 1994). The PANAS-X was developed and validated in the United States (Watson & Clark, 1994), but has been translated and successfully employed by past research with German samples (e.g. Gruhn, Kotter-Gruhn, & Rocke, 2010). *Enthusiasm* was measured using a subscale of the PANAS-X (Watson & Clark, 1994). Enthusiasm was assessed with eight items (e.g. “happy”, “joyful”, “excited”) and participants were asked to rate on a five-point scale (1 = “not at all” to 5 = “very much”) the extent to which they currently experienced each of the feelings (as adapted in the instructions). The subscale captured how much the participant felt positive emotions, especially focusing on those that capture high levels of activation. Cronbach’s alpha was .93 in the current sample. *Self-assurance* was also measured using a subscale of the PANAS-X (Watson & Clark, 1994). Self-assurance was measured with six items (e.g. “confident”, “strong”) and, as noted above, participants were asked to rate on a five-point scale (1 = “not at all” to 5 = “very much”) the extent to which they currently experienced each of the feelings (also adapted in the instructions). Cronbach’s alpha was .86. *Attentiveness* was also measured using a subscale of the PANAS-X (Watson & Clark, 1994). The subscale was comprised of four items (e.g. “alert”, “concentrating”) and participants were asked to rate on a five-point scale (1 = “not at all” to 5 = “very much”) the extent to which they currently experienced each of the feelings (also adapted in the instructions). Cronbach’s alpha was .84. *Feeling*

*recovered* was assessed using three items that asked participants about the degree to which they felt rejuvenated. Answers were rated on a five-point Likert scale (1 = “not at all” to 5 = “very much”). The items were: “I am well rested”, “I am physically recharged”, and “I am mentally refreshed.” This scale was developed for the purposes of the current study. Cronbach’s alpha was .86 in the current sample.

Confirmatory factor analyses were conducted to test the factor structure of the psychological resources scales (i.e. enthusiasm, self-assurance, attentiveness, and feeling recovered). I examined whether a four-factor model was superior to a one-factor model using a chi-square difference test to compare model fits. The four-factor model provided superior fit to that of the one-factor model,  $\Delta\chi^2(6, N = 229) = 459.50, p < .001$ .

**Proactive behavior.** At the end of the work week (Friday), two aspects of proactive behavior, personal initiative and pursuit for learning, were assessed. Each proactivity scale was completed by the target participant and a co-worker close to them. *Personal initiative* was measured using Frese et al.’s (1997) scale comprised of seven items, referring to taking initiative and actively solving problems at work over the past week. This scale has been validated using largely German samples (Fay & Frese, 2001) and has been successfully employed in a number of German studies (Binnewies et al., 2009; Frese et al., 1996, 1997; Ohly et al., 2006; Sonnentag, 2003). A sample item was “This past week I attacked a problem actively.” Cronbach’s alpha was .79 for both self and co-worker reported personal initiative. *Pursuit for learning* was measured using five items from VandeWalle’s (1997) learning goal orientation scale. Items referred to employees’ search for opportunities to develop new skills and knowledge over the past

week. A sample item was, “This past week I actually looked for opportunities to develop new skills and knowledge.” Participants responded on a five-point Likert scale ranging from 1 = *not true at all* to 5 = *very true*. This scale was developed and validated in the United States (VandeWalle, 1997) and has since been successfully employed in a number of German samples (Fritz & Sonnentag, 2005; Sonnentag, 2003). Cronbach’s alpha was .78 for self-reported, and .87 for co-worker reported pursuit for learning.

Given the high correlations between the dependent variables, personal initiative and pursuit for learning, confirmatory factor analyses were conducted to test the factor structure of the proactive behavior scales (i.e. personal initiative, pursuit for learning). I examined whether a one-factor model was superior to a two-factor model using a chi-square difference test to compare model fits. With regard to self-reports of proactive behavior, the two-factor model provided superior fit to that of the one-factor model,  $\Delta\chi^2(1, N = 229) = 161.42, p < .001$ . Similarly, with regard to co-worker reports of proactive behavior, the two-factor model provided superior fit to that of the one-factor model,  $\Delta\chi^2(1, N = 229) = 57.42, p < .001$ .

**Chapter 3**  
**Results**

Moderated regression analysis was used to test the hypotheses. Moderated regression allows the researcher to examine the way the relationship between an independent variable and a dependent variable is affected by a third variable (Tabachnick & Fidell, 2007).

**Preliminary Analysis**

In order to maximize power and accuracy of results, Tabachnick & Fidell (2007) suggest identifying the fewest independent variables (IVs) necessary to predict the dependent variable (DV), where each IV predicts a substantial and unique portion of the variability in the DV. Thus, in preliminary data analyses, control variables were identified based on their relationships with study variables and their theoretical importance based on past research. An examination of correlations between study variables indicated that the demographic information collected was not significantly related to the outcome variables. However, despite these results, both age and work experience, in years, were included in further analyses as control variables given their use in past literature and theoretical importance (e.g. Binnewies et al., 2009; Fritz & Sonnentag, 2009; Parker et al., 2006; Sonnentag, 2003). Specifically, past studies have found that age correlates positively with many proactive work behaviors including taking charge (Fritz & Sonnentag, 2009), personal initiative (Binnewies, et al., 2009; Ohly et al., 2006), change-oriented OCB's (Choi, 2007). It was not necessary to include gender as a control variable due to the already majority female sample (97.4%).

A preliminary analysis of the data was conducted and confirmed compliance with the assumptions of multiple regression and that no statistical outliers were present. Table 1 shows means, standard deviations, intercorrelations, and reliabilities of study variables. Overall, although relationships were not statistically significant, correlations between work stressors and proactive behavior indicate a positive relationship, with the exception of organizational constraints, which showed a negative relationship with co-worker reports of proactive behavior. Generally, psychological resources showed positive relationships with both self- and co-worker reports of proactive behavior. Only weak associations were found between self- and co-worker reports of proactive behavior (personal initiative,  $r = .25$ ; pursuit for learning,  $r = .07$ ).

### **Hypothesis Testing**

The current study aimed to examine the role of state-level psychological resources as moderators in the relationship between work stressors and proactive behaviors. The independent and moderating variables (work stressors and psychological resources) were grand mean centered to alleviate potential issues of multicollinearity. Also, centering prevents the problem of evaluating one main effect at an extreme value of the other main effect improving interpretability (Howell, 2010). Furthermore, given the high correlations among the different moderating variables (enthusiasm, attentiveness, self-assurance, feeling recovered) all interactions were entered separately into different regression models, rather than including all interactions in the same model.

Hypotheses 1, 2, 3, and 4 proposed that psychological resources (enthusiasm, attentiveness, self-assurance and feeling recovered) moderate the relationship between

work stressors (e.g. time pressure and organizational constraints) and proactive behavior.

A total of sixteen regression analyses were conducted to test Hypotheses 1-4; eight regressions with self-reported proactive behavior as the outcome variable, and eight regressions with co-worker reports of proactive behavior as the outcome variable. Tables 3-6 provide results of the regression analyses. In each case, the respective proactive behavior (e.g. personal initiative or pursuit for learning) was regressed onto work stressors and each psychological resource individually (e.g. enthusiasm). Control variables, as determined in the preliminary analysis, were entered in Step 1 of the regression analysis, followed by work stressors in the second step. In Step 3 of the regression analysis, the centered psychological resource (e.g. enthusiasm) was entered, followed by the interaction term (e.g. time pressure x enthusiasm) in the final step of the regression model. Regression analyses were also run without control variables in the equation in order to assess any substantive differences in the findings that may have been a result of decreased power or multicollinearity of predictors. No meaningful differences were found with regard to relationships between study variables or significance levels.

Hypothesis 1 proposed that enthusiasm would moderate the relationship between work stressors and proactive behavior. Results of the analyses indicate that Hypothesis 1 was not supported. While a significant direct effect of enthusiasm on self-reported pursuit for learning was found ( $\beta = .17, t(195) = 2.37, p < .05$ ), when controlling for all other variables in the model, the interaction between work stressors and enthusiasm did not explain significant variance in self-reported personal initiative,  $\Delta R^2 = .02, F(2,193) = 1.94, p = .15$ , or self-reported pursuit for learning,  $\Delta R^2 = .00, F(2,193) = .02, p = .98$ . Interestingly, the interaction between work stressors and enthusiasm did play a role in co-

worker reports of personal initiative,  $\Delta R^2 = .04$ ,  $F(2,192) = 4.27$ ,  $p < .05$ , although not as hypothesized. A further examination of the partial regression slopes indicate that when controlling for all other variables, the interaction between time pressure and enthusiasm was statistically significant, ( $\beta = -.16$ ,  $t(192) = -2.15$ ,  $p < .05$ ). Specifically, for individuals low in enthusiasm, as time pressure increases so does their personal initiative at work; according to their co-workers. For individuals high in enthusiasm personal initiative stays relatively stable regardless of the degree of time pressure. The interaction between organizational constraints and enthusiasm was also statistically significant when controlling for all other variables in the equation, ( $\beta = .19$ ,  $t(192) = 2.60$ ,  $p < .05$ ). However, in this case those individuals low in enthusiasm reduce personal initiative, according to their co-workers, as organizational constraints increase. Conversely, those high in enthusiasm showed increased personal initiative as organizational constraints increased. Figures 2 and 3 provide a graphical representation of these interactions. The interaction between work stressors and enthusiasm did not explain significant variance in co-worker reports of pursuit for learning,  $\Delta R^2 = .03$ ,  $F(2,195) = 2.56$ ,  $p = .08$ .

Hypothesis 2 proposed that self-assurance would moderate the relationship between work stressors and proactive behavior. Hypothesis 2 was not supported. While significant direct effects of self-assurance on self-reports of proactive behaviors ( $\beta = .18$ ,  $t(200) = 2.45$ ,  $p < .05$  personal initiative;  $\beta = .16$ ,  $t(200) = 2.18$ ,  $p < .05$  pursuit for learning) were found, results indicate that when controlling for other study variables, the interaction between work stressors and self-assurance was not a significant predictor of self or co-worker reports of personal initiative ( $\Delta R^2 = .01$ ,  $F(2,198) = 1.30$ ,  $p = .27$ ;  $\Delta R^2 = .01$ ,  $F(2,196) = .47$ ,  $p = .63$  respectively). Similar results were found for both self and co-

worker reports of pursuit for learning, ( $\Delta R^2 = .01$ ,  $F(2,198) = .45$ ,  $p = .64$ ;  $\Delta R^2 = .01$ ,  $F(2,199) = 1.32$ ,  $p = .27$  respectively).

Hypothesis 3 proposed that attentiveness would moderate the relationship between work stressors and proactive behavior. In addition to main effects of attentiveness on self-reported proactive behavior ( $\beta = .19$ ,  $t(199) = 2.76$ ,  $p < .05$  personal initiative;  $\beta = .12$ ,  $t(199) = 2.59$ ,  $p < .05$  pursuit for learning), results of the regression analysis indicate that when controlling for other study variables, the interaction between work stressors and attentiveness was a significant predictor of self-reported personal initiative,  $\Delta R^2 = .06$ ,  $F(2,197) = 6.45$ ,  $p < .05$ , although not as hypothesized. Thus, Hypothesis 3 was not supported. Further examination of the partial regression slopes indicate that when controlling for all other variables, the interaction between time pressure and attentiveness was statistically significant ( $\beta = -.15$ ,  $t(197) = -2.05$ ,  $p < .05$ ). Specifically, results suggest that as in the case of enthusiasm and time pressure, those high in attentiveness displayed a stable tendency to show initiative despite low or high levels of time pressure. This was contrary to expectations that proactive behavior would increase with increases in work stressors. Conversely, those low in attentiveness seemed to exhibit increased levels of personal initiative as time pressure moved from low to high. The interaction between organizational constraints and attentiveness was marginally significant,  $\beta = -.14$ ,  $t(197) = -1.98$ ,  $p = .05$ . Unlike the interaction between organizational constraints and enthusiasm, the results suggest that those high in attentiveness tended to exert less personal initiative as organizational constraints increased which was again contrary to expectations. However, those low in attentiveness showed increased personal initiative in conditions of high organizational constraints in



the hypothesized direction (see Figures 4 and 5). The interaction between work stressors and attentiveness did not explain significant variance in self-reported pursuit for learning or co-worker reports of proactive behavior ( $\Delta R^2 = .01$ ,  $F(2,197) = 1.17$ ,  $p = .31$  for self-reported pursuit for learning;  $\Delta R^2 = .03$ ,  $F(2,196) = 2.61$ ,  $p = .08$  for co-worker reported personal initiative;  $\Delta R^2 = .02$ ,  $F(2,199) = 2.24$ ,  $p = .11$  for co-worker pursuit for learning).

Hypothesis 4 proposed that feeling recovered would moderate the relationship between work stressors and proactive behavior. Hypothesis 4 was not supported. Results of the regression analyses indicate that when controlling for other study variables, the interaction between work stressors and feeling recovered was not a significant predictor of self or co-worker reports of personal initiative or pursuit for learning ( $\Delta R^2 = .00$ ,  $F(2,198) = .05$ ,  $p = .95$  for self-reported personal initiative;  $\Delta R^2 = .00$ ,  $F(2,198) = .23$ ,  $p = .79$  for self-reported pursuit for learning;  $\Delta R^2 = .00$ ,  $F(2,197) = .00$ ,  $p = .99$  for co-worker reported personal initiative;  $\Delta R^2 = .01$ ,  $F(2,200) = 1.43$ ,  $p = .24$  for co-worker pursuit for learning).

**Chapter 4**  
**Discussion**

The current research sought to provide insight into the relationship between demands at work (e.g. work stressors) and proactive behavior by examining the role of psychological resources that are characterized by activated, positive mood states. In doing so, this study attempted to answer the call for more research examining the stressor-performance relationship (Sonnentag & Frese, 2003), as well as the role of positive, affective states in motivating proactive work behavior (Parker et al., 2010). Generally, results of regression analyses suggest that psychological resources play an important motivational role that allows employees to maintain a high level of proactive behavior regardless of the degree of work stressors in the environment. On the contrary, employees low in psychological resources were seemingly motivated to engage in proactive behavior due to the external demands of high work stressors rather than intrinsic interest or drive. Hypothesis 1 proposed that enthusiasm would moderate the relationship between work stressors and proactive behavior (personal initiative, pursuit for learning); however results indicate that this was only the case for co-worker reports of personal initiative. Interestingly, the interactions themselves were quite different for the two work stressors examined. Results indicate that under conditions of high organizational constraints, those high in enthusiasm showed increased personal initiative (according to co-workers) as predicted. This finding is in accordance with both COR theory (Hobfoll, 1989) and more specifically the JD-R model (Demerouti et al., 2001) in that the saliency of resources increases with increases in demands in the environment. As a result, we see increases in motivated behavior, in this case, proactive behavior.

However, those low in enthusiasm showed a decrease in personal initiative as organizational constraints increased. This is contrary to the expectation that organizational constraints represent impediments to goal-achievement, thereby motivating employees to take steps to overcome obstacles in the environment.

In the case of time pressure the direction of the interaction is reversed. Results showed that those high in enthusiasm maintained a relatively high and stable level of personal initiative across both low and high levels of time pressure. On the other hand, those who reported low levels of enthusiasm showed an increase in personal initiative as conditions changed from low to high levels of time pressure. These findings suggest that rather than stressors promoting higher levels of personal initiative, those high in enthusiasm will maintain high levels of personal initiative regardless of the degree of time pressure. Through the lens of Fredrickson's (1998) Broaden and Build theory, positive emotions (e.g. enthusiasm) serve to broaden an individual's cognitions and action tendencies and promote positive expectancy judgments. This broadened state of consciousness appears to be particularly relevant in the face of certain stressors such as time pressure. Findings support the assertion that positive emotional states may enable individuals to overcome demands and maintain action associated with positive change.

As expected those low in enthusiasm did increase personal initiative at time pressure increased. However, interestingly under conditions of high time pressure those low in enthusiasm showed higher levels of personal initiative than those high in enthusiasm. One possible reason for this could be that the high enthusiasm group may engage in high levels of personal initiative because it is inherently rewarding, whereas the low enthusiasm group may feel forced to take initiative due to the external demands of

time pressure. Those in the latter group may feel that the demands are unfair or unreasonable and therefore be more vocal to their co-workers about the steps they've had to take, essentially seeking more social support to cope with the stressor. Taking such actions may make their co-workers more aware of their proactive behavior, which would tend to increase coworker reports of personal initiative. An alternative explanation for this finding may be related to individual preferences. It may be that higher levels of time pressure provide a sense of urgency and structure to the work environment that functions as external motivation for those employees low in enthusiasm.

Hypothesis 2 proposed that self-assurance would moderate the relationship between work stressors and proactive behavior. While a main effect of self-assurance on personal initiative was found, the interaction with work stressors was not significant. In other words, the state of feeling self-assured did not affect the relationship between work stressors and proactive behavior. Rather, the main effect of self-assurance was stronger and more predictive of proactive behavior than work stressors or the interaction between work stressors and self-assurance. While this was not hypothesized in the current study, these results fit well into the larger literature on proactive behavior and performance. Specifically, the related concept of role-breadth self-efficacy, defined as, "the extent to which people feel confident that they are able to carry out a broader and more proactive role, beyond traditional prescribed technical requirements" (Parker, 1998, p. 835), has been shown to predict a number of proactive work behaviors (e.g. Parker et al., 2006). The results of the current analysis suggest that one who feels highly self-assured will engage in proactive behavior irrespective of the presence or absence of work stressors in the environment.

Hypothesis 3 proposed that attentiveness would moderate the relationship

between work stressors and proactive behavior. Results showed that attentiveness seemed to be especially important in the case of self-reported personal initiative. Those low in attentiveness showed positive relationships between work stressors and personal initiative, perhaps indicating an “investment” of resources in the face of resource loss. However, contrary to expectations, those high in attentiveness showed decreased personal initiative as organizational constraints increased, and relatively stable personal initiative in the case of increased time pressure. One possible explanation for this finding may be that those high in attentiveness are internally motivated to be proactive, therefore demands that serve as external motivation for some, may actually undermine internal motivation in those already highly attentive and proactive. In both cases, when work stressors are low, those high in attentiveness showed much higher initiative compared to those low in attentiveness. These results support the theoretical propositions of Baumeister and colleagues’ (1998) ego depletion model, which suggests that when psychological resources are high, individuals are able to engage cognitively. Indeed, Demerouti and colleagues (2007) found that high concentration was positively related to job performance.

Finally, Hypothesis 4 proposed that feeling recovered would moderate the relationship between work stressors and proactive behavior. Results showed that this was not the case, indicating that in the face of work stressors feeling recovered may not provide sufficient psychological resources to encourage effort toward proactive behavior. This finding is in contrast to prior research which has found that recovery activities, or being in a state of feeling recovered, is predictive of proactive behavior and other

discretionary work behaviors (Binnewies et al., 2010; Fritz & Sonnentag, 2005; Sonnentag, 2003). However, one notable exception is Binnewies and colleagues' (2009) study which showed that feeling recovered was positively related to task performance but not to personal initiative. The authors reasoned that feeling recovered might influence whether or not an employee *could* behave proactively, but not whether or not they *would* behave proactively. The current study proposed that work stressors may be the missing environmental factor that prompts one who is feeling recovered into action. However, results of the analysis do not support this assumption. An alternative explanation may be that in the context of work stressors, rather than providing a sense of energy and motivation, feeling recovered may simply represent bringing one back to baseline. Furthermore, according to Sonnentag and Fritz (2007) certain recovery activities (e.g. mastery experiences) may build resources, while others (e.g. relaxation) are more likely to mitigate the loss of additional resources. An examination of the specific recovery activities engaged in during non-work, rather than an overall feeling of being recovered may provide further insight.

### **Contributions and Limitations**

The current study contributes to the literature in several important ways. First, this study addresses an important gap in the literature surrounding proactive behavior at work by examining the role of state-level psychological resources in the relationship between work stressors and proactive behavior. A majority of research surrounding proactive work behavior has focused on relatively stable aspects of the work environment or the individual (e.g. job control, proactive personality respectively). The extant

research is clear that such factors are important influences on proactive behavior, however scholars have noted the importance of examining more intra-individual, affective experiences of work that may also play a role in the initiation of proactive behavior (Fritz & Sonnentag, 2009; Parker et al., 2010; Seo et al., 2004). Thus, the current study attempted to answer this call, and therefore helps to garner a broader understanding of what drives proactive behavior in the workplace.

Furthermore, in accordance with suggestions by Parker and colleagues (2010), the psychological resources in this study include aspects of high-arousal positive affect (e.g. enthusiasm) that prior to this study, had yet to be examined in relation to proactive work behavior. Seo and colleagues (2004) suggest that motivational processes are not always thought-based, discrete choice processes, but rather that core affective experiences also have direct and indirect impacts on motivation. Furthermore, Seo and colleagues (2004) note that “affective activation itself creates a motivational state associated with the experience of energy that urges individuals to make an active effort to attain or avoid a particular outcome” (p. 11). Results of the current study show that this is a promising route for future research. While results were somewhat mixed, both enthusiasm and attentiveness seem to be important affective psychological resources that can facilitate proactive behavior in the context of work stressors. Furthermore, a number of main effects of psychological resources on proactive behavior were significant, supporting the notion that psychological resources, characterized by high-activation positive mood, are important predictors of proactive behavior.

The present study further contributes to the current understanding of how work stressors affect performance-related behaviors. As noted by Jex (1998) and others, findings surrounding the relationship between stressors and job performance are often inconsistent and weak in magnitude. Previous examinations of the nature of work stressors (i.e. challenge or hindrance) have provided useful insight into this relationship by acknowledging the differential ways in which employees interpret their ability to cope with different stressors (Boswell et al., 2004; Cavanaugh et al., 2000). However, Webster and colleagues (2011) have pointed out that individuals do not always categorize stressors as either challenge or hindrance stressors, suggesting that there is more to this relationship than the properties of the stressors themselves. Thus, the current study examined the interaction between work stressors and internal, psychological resources in an effort to further tease apart past inconsistencies with regard to job performance. Results suggest that high levels of certain psychological resources (e.g. attentiveness) are a more important predictor of proactive performance than stressors, while low levels of psychological resources may leave one more vulnerable to the effects of the environment. For example, in the case of high attentiveness, personal initiative remained relatively high and stable. However, for those low in attentiveness performance increased as a result of increased stressors in the work environment. One important difference between this study and other research on work stressors and performance is the examination of proactive behavior versus task performance. Future research should also look at the role of psychological resources as they relate to more traditional measures of performance.

Results of the current study should be interpreted in light of strengths and limitations of the current research design. The current study attempted to reduce issues



related to common method variance by including co-worker reports of proactive behavior in addition to self-report measures. Furthermore, measuring key variables at different time points allows for a greater understanding of the relationships between variables. However, one limitation of the current study may be that psychological resources are measured at the end of the weekend rather than while at work. This may raise questions as to what extent resources transfer from the home domain to the work domain. Greenhaus and Powell (2006) posit that this process of spillover, termed work-family enrichment, can occur through instrumental and affective pathways. Further, Fredrickson's (1998) broaden and build model would suggest that in fact resources are durable and can be accumulated for retrieval at a later time. Accordingly, Fritz and Sonnentag (2005) reported that positive work reflection during the weekend was associated with pursuit of learning at the beginning of the following work week. Therefore, it seems plausible that psychological resources measured at the end of the weekend should carry over and play a role in employee proactive behavior throughout the work week. However, future day-level studies should be conducted to further understand the interplay between work stressors, psychological resources, and proactive behavior on a daily basis.

Another potential limitation to the current study is that at Time 3, employees were not asked about significant negative events that may have occurred between the second measurement point, when psychological resources were assessed and the third time point when proactivity was assessed. It is possible that the extent to which an employee engaged in proactive behavior throughout the week was influenced by other situations (work or non-work) occurring after psychological resources were measured. Such

situations may have depleted available resources that otherwise may have influenced the relationship between work stressors and proactivity. Future research may benefit by including measures of other non-work related stressors (i.e. spousal interpersonal conflict) in order to control for potential confounds or adopt a design in which psychological resources could be measured on a daily basis.

Finally, data collected for the current study included a primarily female sample of preschool teachers from Germany. These factors limit the generalizability of the results in a number of ways. For example, while it is reasonable to assume that proactive behavior is possible in any profession, differing occupations allow for varying levels of autonomy which can limit or facilitate proactive behavior. In the current sample, variability with regard to personal initiative ( $M = 3.5$ ,  $SD = .60$ ) and pursuit for learning ( $M = 3.07$ ,  $SD = .74$ ) was limited, suggesting perhaps that autonomy is high with regard to running one's own classroom, but outside opportunities for learning or development may be more limited. In other occupations or organizations opportunities for development may be more readily available to employees thereby promoting more pursuit for learning types of proactive behavior. Future research should take into account the larger organizational context (e.g. organizational support for proactive behavior, availability of developmental opportunities) as control variables or focal independent variables.

Furthermore, it is important to note that in this particular sample correlations between work stressors and proactive behaviors were not significant which differs from positive and statistically significant associations found in past samples (i.e. engineers, Ohly & Fritz, 2010; administrative employees, Sonnentag, 2003). In addition to the other

potential moderators noted above, these differences across occupations may be related to individual differences in employees that are drawn to these differing industries. For example, preschool teachers, as displayed in the current sample show high levels of proactive behavior, but not in correlation with work stressors. Therefore, this sample may represent a group of already highly intrinsically motivated individuals that seek change and improvement for the sake of challenge or personal growth rather than in response to work stressors. Conversely, in a different population proactive behavior may be more heavily contingent on the need to overcome stressors like time pressure or organizational constraints for the sake of promotion or some other external reward. Another explanation for this lack of finding may be related to the saliency of the stressors measured. Perhaps in this sample stressors related to interpersonal conflict or emotional labor are more relevant. Future research may consider examining differential work stressors as well as a comparison between those industries characterized by more hierarchical structures that emphasize performance-based promotions and opportunities for upward movement, and those with characteristically lateral structures that emphasize longevity in a single position.

As noted above, the primarily female sample limits the generalizability of the present findings as well. Past research has suggested that males tend to engage in more proactive behavior when compared to women (e.g. Choi, 2007; Fritz & Sonnentag, 2009; Sonnentag, 2003). Due to the nature of the sample, a comparison between men and women was not warranted, meaning these results cannot be generalized to male employees in similar occupations. In addition, generalizability is further limited due to the fact that participants sampled were all of German nationality. Although many

cultural commonalities exist between Germany and the United States with regard to individualistic orientation (Hofstede, 1983), it is inappropriate to assume that relationships between study variables will be replicable in the United States. Prior research conducted in the United States with regard to discretionary employee behaviors has tended to focus largely on more passive, contextual behaviors (e.g. organizational citizenship behaviors; Borman & Motowidlo, 1997) rather than proactive behavior. More research should be conducted in the United States with American samples to determine whether constructs, such as personal initiative (Frese et al., 1996), exist and relate to organizational factors as they do in Germany and other western European countries.

A final limitation may be a lack of statistical power due to sample size. In some cases when a very small effect size is present a higher ratio of cases to independent variables is required in order to reach statistical significance (Tabachnick & Fidell, 2007). In the current analysis some results bordered on statistical significance indicating that a larger sample size may have made a difference in the findings and the interpretations that could have been drawn from the data relative to the research questions.

### **Implications and Directions for Future Research**

Findings from the current research point to the importance of examining the role of affective, motivational states in promoting proactive work behavior, as previously suggested by Parker and colleagues (2010) and others (i.e. Seo et al., 2004). In particular, examining how affective states, or psychological resources, interact with other stable contextual factors, such as work stressors, is an important step toward a more comprehensive understanding of the phenomenon.

Future research would benefit by further exploring the role that psychological resources play in the perceptions, or appraisals, of work stressors in the environment, and how this relates to well-being in addition to performance. For instance, the current study found that in many cases employees low in psychological resources increased proactive behavior when work stressors were high. What are the effects on health and well-being for individuals that are engaging in proactive behavior due to external demands rather than the intrinsic drive to do so? Conversely, are there positive effects of proactive behavior on health and well-being? Are those that engage in proactive behaviors due to intrinsic reasons more satisfied with their jobs, more committed to their organization, or healthier?

The current study also builds on and extends the Job Demands-Resources model (JD-R; Demerouti et al., 2001), by including affective states as resources that may be generated in the home domain, but called on while at work. In accordance with propositions from theories of work-family enrichment (e.g. Greenhaus & Powell, 2006) and empirical literature on recovery from work stress (e.g. Fritz & Sonnentag, 2005), the current research demonstrates the importance of considering individuals' experiences in both work and non-work domains when examining organizational phenomenon.

Future research may also benefit from a further examination of the variables in the current study. For example, why do we find differential directions of interactions for certain hypothesis and not others? Perhaps an examination of the nature of the work stressors (e.g. challenge vs. hindrance) would provide useful insight into these questions. Also, a deeper look into the differences between the psychological resources may provide

further explanation for the differential findings. For example, in the current study enthusiasm and attentiveness showed distinct patterns in terms of their interaction with work stressors. It is possible that the subtle differences between these resources are important with respect to certain stressors or certain types of proactive behavior. Another explanation for these seemingly contrary findings may be the existence of a third moderating variable that defines the conditions under which affective resources and work stressors interact and relate to proactive behavior.

Finally, the current research points to a number of important implications for practice; first, managers should be aware of the motivational role that psychological resources play in performance-related behaviors. Finding ways to generate positive mood states amongst employees is likely to have real implications for subsequent proactive behavior. One possible way to do this may be through positive leader-subordinate relations. Second, based on the current findings, the state of attentiveness is especially important in overcoming stressors in the workplace and driving proactive behavior. Conceptually, attentiveness is the opposite of a state of fatigue, a symptom burnout. As such, emphasizing the importance of stress management and recovery from work stress during non-work time could be an important step in reducing fatigue and increasing attentiveness in employees.

### **Conclusion**

The current research provides insight into how certain environmental and individual factors interact and relate to proactive behavior. Specifically, this study has shown that in certain instances, the relationship between work stressors and proactive

behavior is influenced by the availability of psychological resources that are characterized by positive mood and high energy. In doing so, this study takes a positive psychological approach to the study of workplace stressors and provides an important step in understanding (1) the protective role of psychological resources, and (2) their motivational role with regard to proactive behavior. As the work environment is met with increasing demands and uncertainty, the willingness of employees to think broadly and behave proactively will become central to the success of today's organizations (Thomas et al., 2010). Additionally, understanding the factors within the work environment that facilitate employee growth and engagement are likely to be key to retaining talent in a dynamic economy. Therefore, continued research aimed at understanding what factors facilitate proactive behavior is an important step toward a more competitive and engaged workforce.

Table 1

*Table of Variables and Measurement Scales*

Variable	Author	Number of Items	Scale
<i>Job Stressors</i>	Semmer, 1984		1-5
Time pressure <sup>1</sup>		5	
Organizational constraints <sup>1</sup>		5	
<i>Psychological Resources</i>			
Enthusiasm <sup>1</sup>	Watson & Clark, 1994	8	1-5
Attentiveness <sup>1</sup>		6	1-5
Self-Assurance <sup>1</sup>		4	1-5
Feeling Recovered <sup>1</sup>	Self-developed	3	1-5
<i>Proactive behavior</i>			
Pursuit of learning <sup>1,2</sup>	VandeWalle, 1997	5	1-5
Personal initiative <sup>1,2</sup>	Frese, Kring, Soose, & Zempel, 1996	7	1-5

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<sup>1</sup> *Self-report*, <sup>2</sup> *Co-worker report*



Table 2  
Means, Standard Deviations, and Zero-Order Correlations Between Study Variables

Variable	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Age	38.19	9.56	-														
2. Number of children	1.98	.81	.64**	-													
3. Work experience	15.13	9.27	.86**	-.02	-												
4. Contract work hours	30.81	5.88	-.09	-.01	-.01	-											
5. Work days per week	4.93	.55	.02	-.16	.02	.13	-										
6. Overtime per week	1.76	1.65	.06	-.03	.13	.03	.12	-									
7. Org constraints	2.56	.66	.07	.08	.05	.03	.05	.03	(.74)								
8. Time pressure	2.81	.85	.24**	-.04	.28**	.09	.10	.25**	.32**	(.81)							
9. Enthusiasm	3.04	.92	-.08	-.08	-.03	.01	.02	-.06	-.23**	-.16*	(.93)						
10. Attentiveness	3.15	.80	.02	-.09	.08	.01	.01	.00	-.25**	-.13	.80**	(.84)					
11. Self-assurance	2.52	.95	.07	-.12	.10	.07	.08	.07	-.27**	-.03	.66**	.65**	(.86)				
12. Feeling recovered	3.29	1.00	.18**	-.03	.12	.05	-.02	-.05	-.24**	-.18**	.56**	.54**	.45**	(.86)			
13. Personal initiative (self)	3.50	.60	.03	-.12	.06	.09	.01	-.08	.04	.13	.09	.18**	.16*	.10	(.79)		
14. Pursuit for learning (self)	3.07	.74	.09	-.10	.12	.08	.01	.02	.00	.10	.14*	.18**	.16*	-.01	.52**	(.78)	
15. Personal initiative (co-worker)	3.73	.73	.01	.04	.04	.10	.01	.09	-.03	.08	-.03	.02	.08	-.06	.25**	.12	(.79)
16. Pursuit for learning (co-worker)	3.34	.90	.02	.03	.02	.09	.07	.13	-.04	.07	-.03	.02	.10	-.07	.11	.07	.78**
																	(.87)

Note. Values on the diagonal represent Cronbach's alpha for the measures.

\* $p < .05$ , \*\* $p < .01$

Table 3  
*Hierarchical Multiple Regression Analyses Predicting Proactive Work Behavior From Work Stressors and Enthusiasm*

Predictor	Proactive Work Behavior					
	Personal Initiative			Pursuit for Learning		
	Self	Co-worker	Co-worker	Self	Co-worker	Co-worker
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
Step 1	.00		.00	.02	.00	
Age		-.06				.07
Work Experience		.06				-.02
Step 2	.01		.01	.00	.01	
Time Pressure (TP)		.14				.08
Org Constraints (OC)		.01				-.08
Step 3	.01		.00	.03*	.00	
Enthusiasm		.11				.17*
Step 4	.02		.04*	.02	.03	
TP x Enthusiasm		-.09				-.06
OC x Enthusiasm		-.08				.17*

\* $p < .05$

Table 4  
*Hierarchical Multiple Regression Analyses Predicting Proactive Work Behavior From Work Stressors and Self-Assurance*

Predictor	Proactive Work Behavior											
	Personal Initiative				Self				Pursuit for Learning			
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
Step 1	.01		.00		.02				.00			
Age		-.11		-.04								.11
Work Experience		.10		.08								-.07
Step 2	.02		.01		.01			.01				.07
Time Pressure (TP)		.15		.07								-.03
Org Constraints (OC)		.01		-.05								
Step 3	.03*		.01		.03*			.01				.10
Self-Assurance		.18*		.08								
Step 4	.01		.01		.00			.01				.07
TP x Self-Assurance		-.12		.00								.07
OC x Self-Assurance		.01		.07								.07

\* $p < .05$

Table 5  
*Hierarchical Multiple Regression Analyses Predicting Proactive Work Behavior From Work Stressors and Attentiveness*

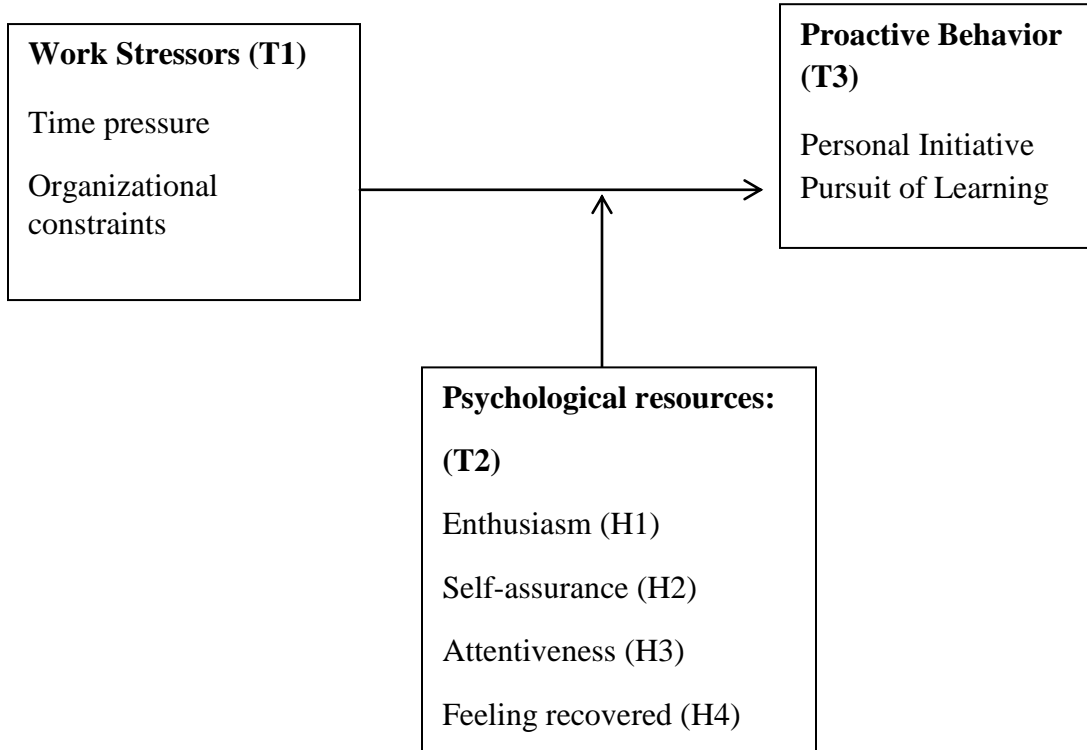
Predictor	Proactive Work Behavior											
	Personal Initiative				Pursuit for Learning				Co-worker			
	Self		Co-worker		Self		Co-worker		Self		Co-worker	
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
Step 1	.01		.00		.02		.00		.00		.00	
Age		-.09		-.02		-.05						.09
Work Experience		.08		.07		.13						-.06
Step 2	.02		.01		.01		.01		.01		.01	
Time Pressure (TP)		.17*		.08		.11						.07
Org Constraints (OC)		.00		-.04		.00						-.03
Step 3	.04*		.00		.04*		.00		.00		.00	
Attentiveness		.19*		.02		.12*						.03
Step 4	.06*		.03		.01		.02		.02		.02	
TP x Attentiveness		-.15*		-.10		-.08						.02
OC x Attentiveness		-.14		.17*		-.05						.14

\* $p < .05$

Table 6  
*Hierarchical Multiple Regression Analyses Predicting Proactive Work Behavior From Work Stressors and Feeling Recovered*

Predictor	Proactive Work Behavior					
	Personal Initiative			Pursuit for Learning		
	Self	Co-worker	Co-worker	Self	Co-worker	Co-worker
	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$	$\Delta R^2$	$\beta$
Step 1	.01		.00		.02	.00
Age		-.13		-.01		.12
Work Experience		.12		.06		-.08
Step 2	.02		.01		.01	.01
Time Pressure (TP)		.16*		.07		.09
Org Constraints (OC)		.01		-.07		-.04
Step 3	.02		.00		.00	.00
Feeling Recovered		.15		-.04		-.02
Step 4	.00		.00		.00	.01
TP x Feeling Recovered		.02		.00		.04
OC x Feeling Recovered		-.02		.00		.02

\* $p < .05$



*Figure 1.* Model of study variables. Solid lines denote hypothesized relationships.

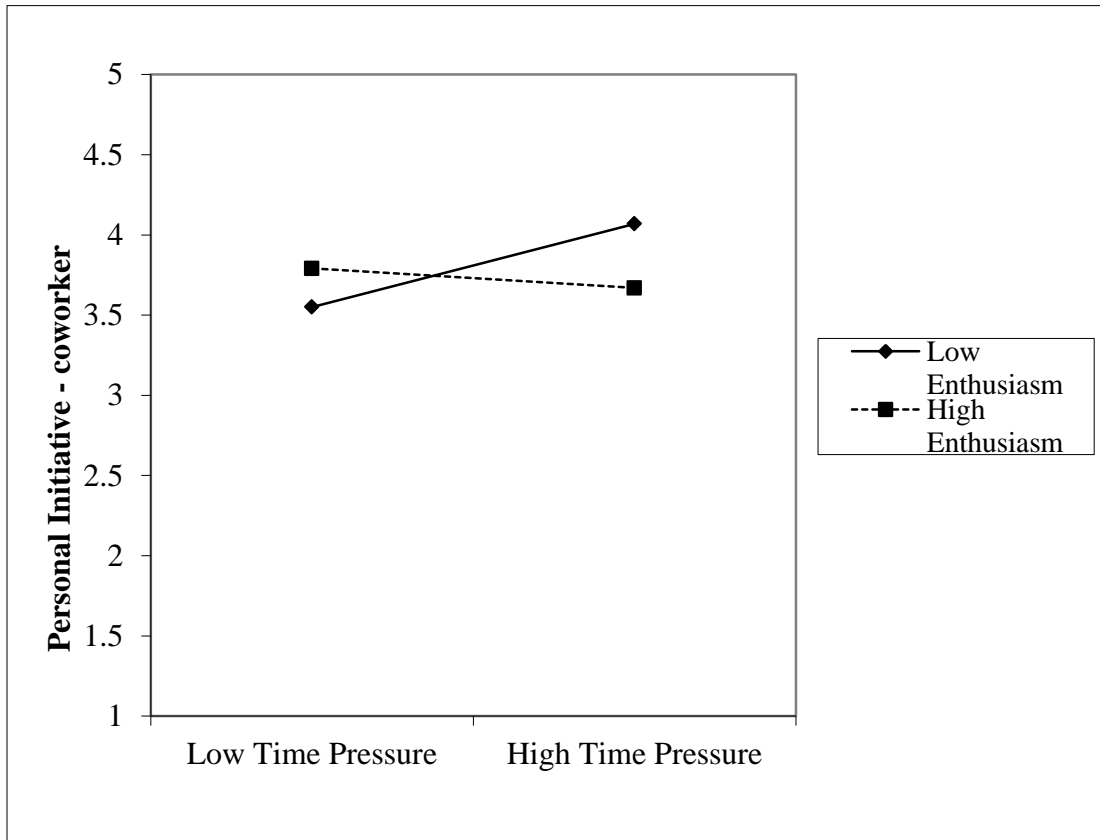


Figure 2. Interaction between time pressure and enthusiasm on co-worker reports of personal initiative.

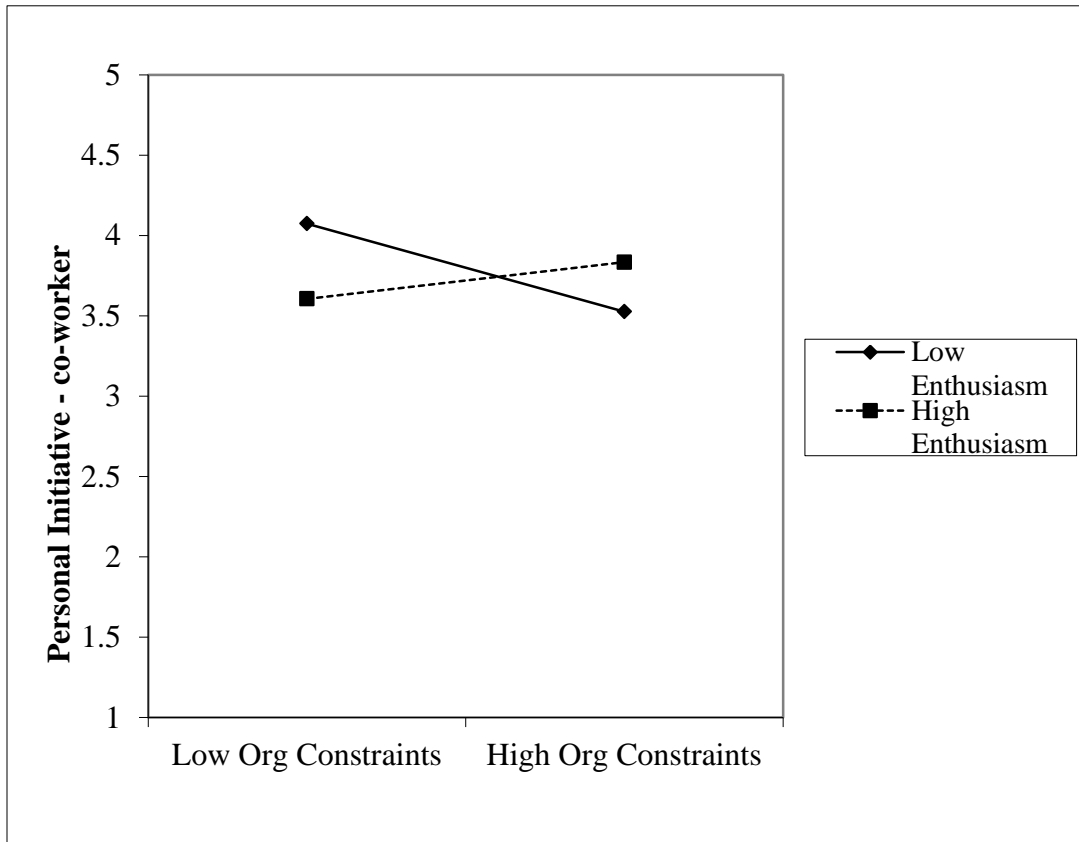


Figure 3. Interaction between organizational constraints and enthusiasm on co-worker reports of personal initiative.



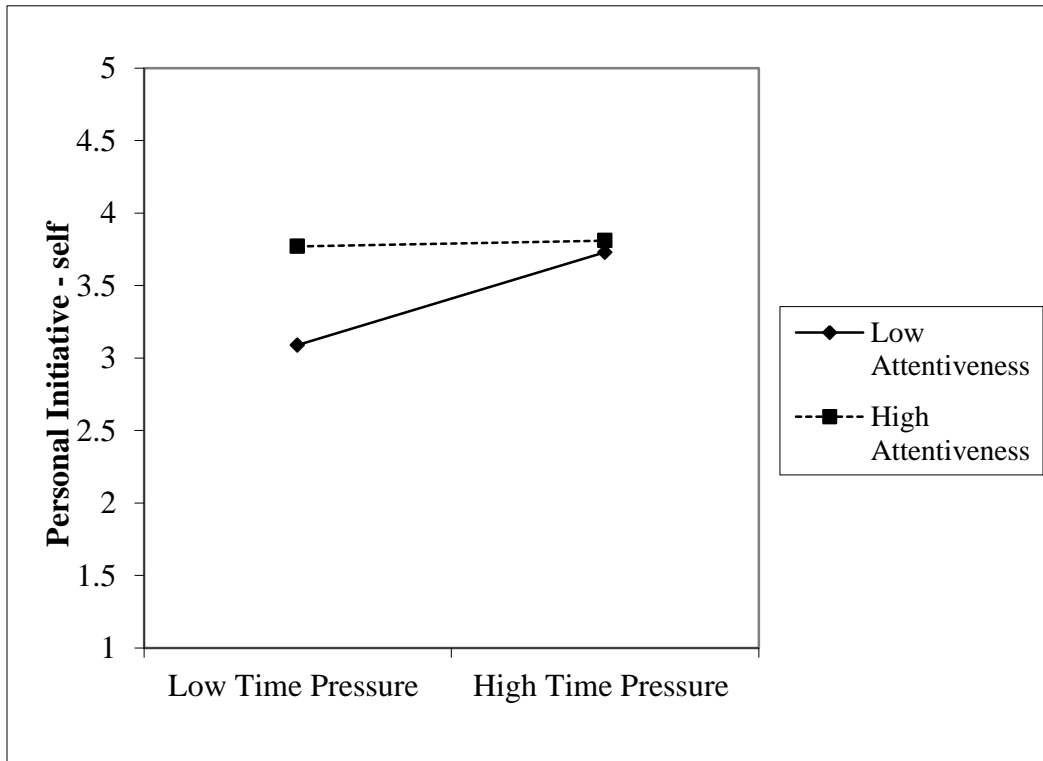


Figure 4. Interaction between time pressure and attentiveness on self-reported personal initiative.

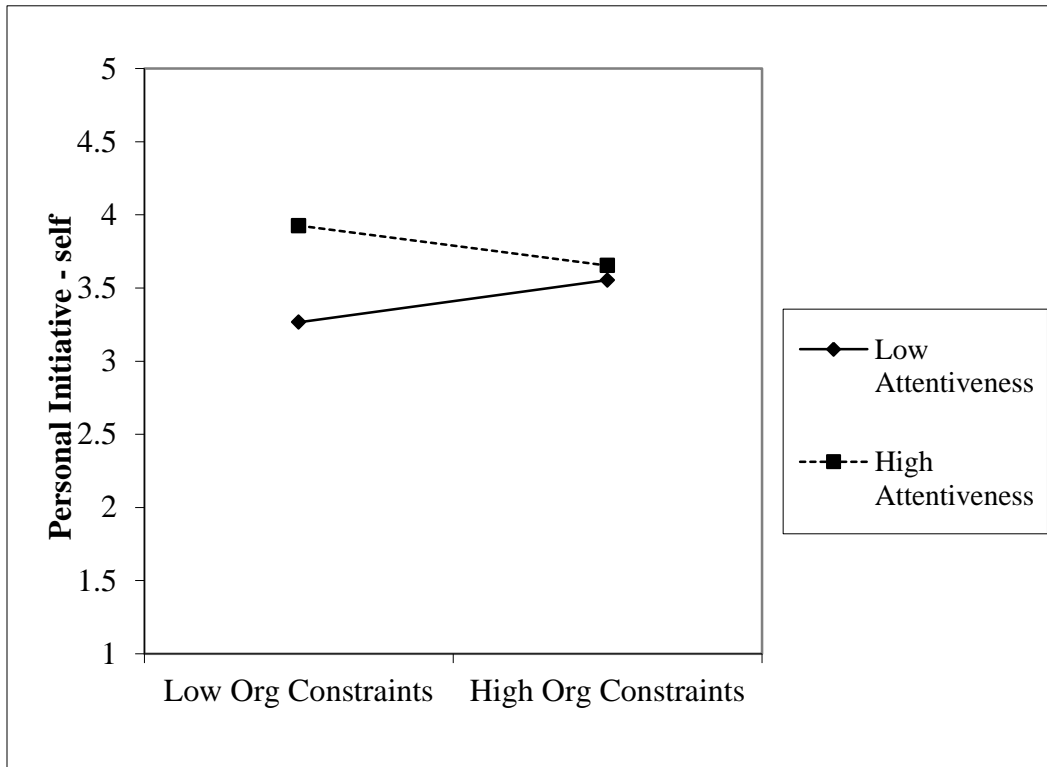


Figure 5. Interaction between organizational constraints and attentiveness on self-reported personal initiative.

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### Appendix Survey Items

#### Work Stressors

##### Time Pressure

1. How often are you under time pressure?
2. How often does it occur that you need to work faster than usual to finish your work tasks?
3. How often does it occur that you delay or skip your break because of too much to do?
4. How often does it occur that you have to stay late at work because of too much to do?
5. To what extent are you required to work quickly in order to get your work done?

*Response Options:*

*(1= Never or Very Rarely to 5 =Very Often or Constantly)*

#### Organizational Constraints

1. Person A can fulfill his/her work tasks easily when he/she sticks to organizational procedures.

Person B can fulfill his/her work tasks only when he/she deviates from organizational procedures.

2. Person A has a workplace that is general set up in a way that allows one to work efficiently and easily.

Person B has a workplace that often hinders efficient work.

3. Person A always has available updated materials and information.

Person B has materials and info that is incomplete and outdated.

4. Person A needs to spend a lot of time on finding the right information, materials, and tools to complete his/her work tasks.

Person B always has the necessary information, materials, and tools available.  
*Reverse coded.*

5. Person A has to work with materials and tools that are inadequate.

Person B works with materials and tools that are flawless.

*Response Options: My workplace is...*

*(1 = Exactly Like A to 5 = Exactly Like B)*

### **Psychological Resources**

#### Feeling Recovered

1. I am well rested.
2. I am physically recharged.
3. I am mentally refreshed.

*Response Options:*

*(1 = Not at All to 5 = Very Much)*

#### Enthusiasm

1. happy
2. joyful
3. delighted
4. cheerful
5. excited
6. enthusiastic
7. lively
8. energetic

*Response Options:*

*(1 = Not at All to 5 = Very Much)*

Self-Assurance

1. proud
2. strong
3. confident
4. bold
5. daring
6. fearless

*Response Options:*

*(1= Not at All to 5 = Very Much)*

Attentiveness

1. alert
2. attentive
3. concentrating
4. determined

*Response Options: (1= Not at All to 5 = Very Much)*

**Proactive Behavior**

Personal Initiative

1. I actively attack problems.
2. Whenever something goes wrong, I search for a solution immediately.
3. Whenever there is a chance to get actively involved, I take it.
4. I take initiative immediately even when others don't.
5. I use opportunities quickly in order to attain my goals.
6. Usually I do more than I am asked to do.
7. I am particularly good at realizing ideas.

*Response Options:*

*(1=Not True at All to 5 =Very True )*

Pursuit of Learning



1. I am willing to select a challenging work assignment that I can learn a lot from.
2. I look for opportunities to develop new skills and knowledge.
3. I enjoy challenging and difficult tasks at work where I'll learn new skills.
4. For me, development of my work ability is important enough to take risks.
5. I prefer to work in situations that require a high level of ability and talent.

*Response Options:*

*(1=Not True at All to 5 =Very True )*