This is an accepted manuscript version for an article to be published in the European Journal of Work and Organizational Psychology. Copyright to the final published article belongs to Taylor & Francis Group. The published version of the article may be different from the present one.

If you wish to cite this paper, please use the following reference:

Psychological Detachment: A Moderator in the Relationship of Self-Control Demands and Job Strain
Abstract

In the present article, we investigate psychological detachment as a moderator of the positive relationship of self-control demands (SCDs) and indicators of psychological strain. Based on the propositions that a) SCDs are a source of work stress, which draws on and depletes limited regulatory resources, and b) psychological detachment facilitates the recovery of that resource, we expected that psychological detachment attenuates the positive relationships between SCDs and psychological strain (ego depletion, need for recovery, emotional exhaustion and depersonalization). We tested our prediction in two different studies with hierarchical moderated regression analyses. Results of the first study (N= 445) provided strong support for our prediction that psychological detachment buffers the adverse impact of SCDs on strain. In the second study (N=426), we replicated our initial findings and tested the theoretical assertion that psychological detachment is more effective in buffering those stressors that deplete limited regulatory resources (SCDs) in contrast to stressors (job ambiguity), which are considered to cause strain through other mechanisms. Contrastive comparisons of the differential interaction patterns of psychological detachment with stressors that induce self-control efforts and job ambiguity, supported our prediction that psychological detachment is more effective in attenuating the adverse effects of SCDs on psychological strain.

Keywords: Self-control demands, psychological detachment, burnout, recovery.
Psychological Detachment: A Moderator in the Relationship of Self-Control Demands and Job Strain

The rise of the service-sector in industrialized countries has led self-control demands (SCDs) to become an integral part of the employee work role (Cascio, 2003; Pulakos, Arad, Donovan, & Plamondon, 2000). Self-control involves inhibiting, modifying, or overriding spontaneous and automatic reactions, urges, emotions, and desires that would otherwise interfere with goal-directed behavior and impede goal achievement at work (Baumeister, Heatherton, & Tice, 1994). According to the Model of Self-Control Strength (Muraven & Baumeister, 2000), different processes of self-control draw on and consume a common limited regulatory resource capacity. In line with this well-founded proposition, research revealed that SCDs at work that require individuals to engage in self-control result in strain and impaired well-being (Diestel & Schmidt, 2011). Hence, to protect employees from the adverse consequences of SCDs, studies have focused on moderators such as self-control capacity (Schmidt, Hupke, & Diestel, 2012), organizational commitment (Schmidt & Diestel, 2012), and job control (Neubach & Schmidt, 2006), which attenuate the positive relationships of SCDs and indicators of psychological strain.

However, research on moderators of the relationship between SCDs and job strain suffers from several drawbacks. First, even though empirical evidence suggests that SCDs predict strain (e.g. Diestel & Schmidt, 2011), only few moderators that buffer this relationship have been examined so far. Second, previous research has mostly focused on moderators that are stable and can hardly be influenced by employees (e.g. job control; Neubach & Schmidt, 2006). Thus, research should provide evidence on protective moderators that are more malleable and open to change and development for employees. We address these drawbacks by examining psychological detachment (also referred to as detachment) as a moderator of the relationship between SCDs and strain. Psychological detachment is
defined as an “(...) individual’s sense of being away from the work situation” (Etzion, Eden, & Lapidot, 1998, p. 579). Conceptualized as an experienced state in which employees mentally disengage from work during non-work time (Sonnentag & Bayer, 2005), we expect detachment to facilitate recovery of the limited regulatory resource that is depleted through SCDs and thus, to attenuate the adverse impact of work-related SCDs on strain.

With the present research, we aim to enhance current literature on self-control in at least two ways: First, we examine psychological detachment as a moderator that is expected to buffer the adverse impact of SCDs on strain. Because from an individual’s perspective psychological detachment is considered to be more malleable than moderators that have been examined so far, our research might offer employees better opportunities to reduce the adverse consequences of SCDs at work. Second, we integrate theories from the field of self-control and recovery research to shed light on the mechanisms that underlie the beneficial effects of psychological detachment. We integrate the Model of Self-Control Strength (Muraven & Baumeister, 2000) and the Effort-Recovery Model (Meijman & Mulder, 1998), which propose that a reduction of effort reverses physical and psychological load reactions and facilitates recovery, and we propose that psychological detachment should restore the limited regulatory resource, which is depleted by work-related SCDs.

In two studies we test moderating effects of psychological detachment on the relationship between SCDs and indicators of strain (ego depletion, need for recovery, emotional exhaustion and depersonalization). In line with our argument that psychological detachment restores regulatory resources, it may not be an effective buffer against the adverse impacts of other types of work-related stressors. Thus, we propose that psychological detachment is more effective in buffering the adverse impacts of those stressors that deplete limited regulatory resources (e.g. SCDs) as opposed to stressors which exert their adverse effects through other mechanisms. Consequently, in a second study, we examine the
moderating effect of psychological detachment on the positive relationship between job ambiguity and strain. Job ambiguity indicates employees’ lack of job-related information (Breaugh & Colihan, 1994). Previous research has demonstrated that job ambiguity exerts its adverse effects on strain predominantly through negative appraisal mechanisms (Monat, Averill, James, & Lazarus, 1972). We expect detachment to be less effective in buffering the adverse impact of job ambiguity on strain than the adverse impact of SCDs because it induces enduring stressful states due to negative appraisal even in non-work time that should not be counteracted by detachment.

In the following, we first review the literature on self-control. Then, the concept of detachment will be briefly discussed. Afterwards, we integrate both lines of research to elaborate on the mechanism that underlies the buffering effect of psychological detachment.

**Self-control demands: A source of stress at work**

Results from research on self-control indicate that exerting self-control can lead to impairments in cognitive and behavioral control (Muraven, Tice, & Baumeister, 1998; Schmeichel, Vohs, & Baumeister, 2003). In a series of experimental studies that demanded two successive acts of self-control (e.g. suppressing emotions, attention control), self-control performance on the second act was consistently impaired even in a seemingly unrelated sphere of activity (Hagger, Wood, Stiff, & Chatzisarantis, 2010). Muraven and Baumeister (2000) developed the Model of Self-Control Strength to account for these findings. They labeled the state of short-term reduction in the capacity to engage in self-control as ego depletion (Baumeister, Bratslavsky, Muraven, & Tice, 1998). The model further predicts that the inability to recover the regulatory resource due to recurrent requirements to exert self-control may lead to chronic deficits that can manifest in high levels of strain and impaired well-being (Muraven & Baumeister, 2000).
Recent research on occupational stress and health has also demonstrated that the demands on self-control constitute a major stressor at work. Schmidt and Neubach (2007) examined different forms of SCDs at work and their cumulative effects on job strain. SCDs are conceptualized to cause employees to engage in self-control and thus, to deplete limited regulatory resources. In particular, SCDs involve a set of the following work-related requirements: To control or inhibit spontaneous responses and associated affective states which manifest for example in injudicious expressions (impulse control); to ignore or resist distractions evoked by task irrelevant stimuli (resisting distractions); and to overcome motivational deficits that result from unattractive tasks (overcoming inner resistances). On the basis of several samples from different occupational contexts, cross-sectional and longitudinal studies revealed that SCDs predict indicators of job strain and impaired well-being (e.g. burnout, depressive symptoms, and absenteeism; Diestel & Schmidt, 2011, 2012).

In line with the Model of Self-Control Strength the psychological costs of SCDs are considered to result from repeated depletion of limited regulatory resources (see also Oaten & Cheng, 2005). Consequently, the model predicts that in cases of high SCDs and associated states of ego depletion, recovery of the regulatory resource can be expected to prevent strain. However, we know of no study that has focused on recovery experiences that may restore regulatory resources and thus buffer the adverse effects of SCDs. Drawing on recovery research (Sonnetag & Fritz, 2007), psychological detachment (a state, which enables employees to mentally disengage from work) may be able to restore limited regulatory resources that are taxed by SCDs at work. Thus, in the present study, we examine whether detachment attenuates the positive relationship between SCDs and strain.

**Psychological detachment**

First evidence for the benefits of psychological detachment were provided by Etzion et al. (1998) who found that participants who signed up for reserve military service and
thereby experienced detachment from their jobs reported lower levels of stress and strain when returning to their previous jobs than individuals who did not sign up for reserve military service and thus, did not experience psychological detachment. Consequently, detachment implies that short-term mental absence from work (e.g. in leisure time) may have beneficial effects on strain. Similarly, Sonnentag and Bayer (2005) found that employees who experienced higher levels of detachment from work during leisure time reported an increased positive mood and decreased feelings of fatigue at bedtime.

Sonnentag and Fritz (2007) argue that during periods of psychological detachment, employees experience a reduction of job demands and a break from work-related stressors. Thereby, detachment facilitates recovery processes, which enhance psychological well-being (Meijman & Mulder, 1998). In contrast, individuals who are unable to detach from work in leisure time return to work in a less recovered state. In such a state, handling stressors becomes even more effortful and thus, results in increased strain (Binnewies, Sonnentag, & Mojza, 2009).

Further research on recovery experiences supported the notion that psychological detachment reduces psychological strain, over time (e.g. emotional exhaustion, need for recovery, and psychosomatic complaints; Sonnentag, Binnewies, & Mojza, 2010; Sonnentag, Kuttler, & Fritz, 2010). Additionally, Sonnentag et al. (2010) provided evidence that detachment moderates (buffers) the adverse effects of job stressors (e.g. job demands) on strain and well-being.

**Buffering effects of psychological detachment**

Going beyond previous research and connecting the domains of SCDs and recovery research, we argue that psychological detachment may contribute to the recovery of the regulatory resource, which is depleted by high job-related SCDs. Thus, in cases of high SCDs, detachment is expected to prevent SCDs to manifest in indicators of strain. Based on
the assumptions that a) SCDs are a source of work stress, which draws on and depletes a
limited regulatory resource, and b) detachment contributes to the recovery of that resource,
we expect SCDs to interact with detachment in predicting strain. More specifically, the
positive relationships between SCDs and indicators of psychological strain are hypothesized
to be attenuated (buffered) as a function of psychological detachment.

Our predictions derive from the Effort-Recovery Model (Meijman & Mulder, 1998) and the Model of Self-Control Strength (Muraven & Baumeister, 2000). The Effort-Recovery Model suggests that effort at work leads to physical and psychological load reactions (e.g. fatigue, physical arousal). These load reactions can be reversed through reduction of work-related effort. On the contrary, if individuals are exposed to prolonged work-related effort, load reactions become irreversible and manifest in strain and impaired psychological well-being. On the basis of this theoretical notion, Sonnentag et al. (2010) argue that through the absence of work-related thoughts psychological detachment in leisure time reduces work-related effort. Thus, we propose that during periods of detachment in leisure time work-related SCDs cease to deplete limited regulatory resources. Thus, psychological detachment interrupts load reactions (depletion) on the limited regulatory resource resulting from work-related SCDs. Thereupon, load reactions are reversed and the limited regulatory resource can be restored. Put differently, our proposition implies that individuals experiencing high levels of detachment in leisure time are less strained by high SCDs at work than individuals that experience low levels of detachment. We argue that this effect results from the recovery of the regulatory resource due to detachment. Hence, we propose the following hypothesis:

Hypothesis 1: Psychological detachment moderates the positive relationship of SCDs to indicators of job strain in such a way that the relationship is attenuated as a function of psychological detachment.
We test the effects of psychological detachment on different indicators of job strain and well-being. We use ego depletion and need for recovery as short-term indicators of psychological well-being. Ego depletion refers to a state of regulatory resource depletion and an inner experience of exhaustion resulting from SCDs (Baumeister et al., 1998). Need for recovery reflects the need to recuperate from work tasks that is strongest in the last hours of work and directly after work (Van Veldhoven & Broersen, 2003). Additionally, we use the burnout dimensions emotional exhaustion and depersonalization to demonstrate that psychological detachment also attenuates the effects of SCDs on long-term indicators of strain. Emotional exhaustion is considered as the main component of burnout and is defined as a state of depletion and fatigue resulting from one’s work (Maslach & Jackson, 1981). Depersonalization, another dimension of burnout, refers to the development of negative and cynical feelings towards people at work (Maslach & Jackson, 1981).

Study 1

Methods

Participants

The data for our first study was obtained in cooperation with a German health care provider. Data from 445 healthy participants was collected during a voluntary medical check-up. The aim of this check-up was to assess employees’ physical and psychological health and identify risk factors that may impair employees’ health. Data collection was conducted by physicians that applied self-report measures of all study variables. Most participants were occupied in the financial sector and provided customer service and sold financial products. Thus, they interacted with clients on a regular basis. Because most people tend to be very cautious about issues concerning money, employees were expected to explain products and services multiple times to ensure that customers understand all details. Additionally, to encourage customers to entrust their money to the financial institution, employees must
SELF-CONTROL DEMANDS AND PSYCHOLOGICAL DETACHMENT

control impulses to refrain from speaking and behaving in a way that creates an atmosphere of distrust and insecurity. Employees also frequently deal with difficult customers, foremost when handling complaints (e.g. false transactions or illegitimate withdrawals). During these interactions, employees always have to remain friendly even when responding to clients that behave in a rude or unfriendly manner. These job descriptions imply that self-control is an integral part of the participants’ work roles. Because participants signed up voluntarily for examination, the response rate was 100%. The proportion of female participants was 29.0% and age ranged from 35 to 63 years (M = 49.77; SD = 6.00).

Measures and control variables

We assessed SCDs with ten items from the SCDs scale developed by Schmidt and Neubach (2007). On a 5-point Likert scale (1 = not at all; 5 = a great deal), participants rated their work in terms of the requirements to resist distractions, overcome inner blockades, and control impulses to maintain behaviours at work that are controlled and restrained. Exemplary items are “My job requires me never to lose my temper” and “I am never allowed to lose my self-control at work”. Because all three facets of SCDs were expected to draw on and deplete a common regulatory resource, we computed the scale score as the average of the single item scores (see also Schmidt et al., 2012).

Psychological detachment (four items) was assessed with the detachment subscale from the recovery experience questionnaire developed by Sonnentag and Fritz (2007). Participants were asked to indicate the extent to which they are occupied with job-related thoughts in leisure time (1 = not at all; 5 = a great deal). A typical item from the scale is “During evenings, I don’t think about work at all”.

To assess ego depletion, we used four items from the German translation (Bertrams, Unger, & Dickhäuser, 2011) of the state self-control capacity scale from Ciarocco, Twenge, Muraven, and Tice (2007). An example for an item is “I feel like my willpower is gone”.
Need for recovery was measured with five items from the Need for Recovery Scale (Van Veldhoven & Broersen, 2003). An item from the scale is “I find it difficult to relax at the end of a working day.” Ego depletion and need for recovery were both rated on a 4-point Likert scale (1 = never; 5 = always).

The burnout dimensions of emotional exhaustion (eight items) and depersonalization (four items) were assessed with the German translation (Büssing & Perrar, 1992) of the Maslach Burnout Inventory (Maslach & Jackson, 1981; 1986). Exemplary items are “I feel emotionally drained from my work” (emotional exhaustion) and “I have become more callous toward people since I took this job” (depersonalization). The items were rated on a 6-point Likert scale (1 = not at all; 5 = very strong).

Results

Descriptive statistics including internal consistencies are presented in Table 1.

- Insert Table 1 about here -

Measurement models

We conducted confirmatory factor analyses (CFA) to test the differentiability of the predictors and the criterion variables. SCDs and psychological detachment were tested in a one-factor model that integrates both predictors into one factor, and a two-factor model that specifies SCDs and detachment as separate constructs. Fit indices indicated that a two-factor model yielded a better data approximation for the predictors than a one-factor model (cf. Table 2).

CFAs also provided support for the psychometrical distinctiveness of all outcome variables. We tested ego depletion, need for recovery, emotional exhaustion and depersonalization in a four-factor model that yielded a good data approximation (cf. Table 2). In contrast, a one-factor model showed a poor fit (cf. Table 2). In sum, measurement models
that distinguished between the predictor and the criterion variables accordingly, provided the best data fit.

- Insert Table 2 about here -

**Analysis of main and interaction Effects**

We tested our hypothesis that psychological detachment moderates the relationship between SCDs and indicators of strain by means of hierarchical moderated regression. In the first step, we entered demographic variables (age and gender) into the regressions to control for their potential confounding influences on the relationships under examination. In the second step, we added the main predictors SCDs and detachment. In the third step, the interaction term between SCDs and detachment was added into the regressions. The significance test for the interaction effect is based on the variance explained by the cross-product over and above that accounted for by the main effects. To avoid biased estimations due to multicollinearity, we standardized both predictors prior to calculating the cross-product term (cf. Aiken & West, 1991).

The results are presented in Table 3. After controlling for biographical data, SCDs and detachment yielded significant effects on all indicators of strain, with signs corresponding to expectations. The direct effects were positive for SCDs and negative for detachment (cf. Table 3). Moreover, and theoretically more important, the interaction effects of SCDs and detachment explained additional and significant proportions of variance in all outcomes (cf. Table 3). The incremental amounts of variance explained by the interaction effects varied between 1% and 2%.

- Insert Table 3 about here -

To facilitate the interpretation of the findings, we plotted the interaction patterns (cf. Figure 1). As can be seen, SCDs and detachment had a comparable interactive influence on all indicators of strain, the form of which clearly confirms the hypothesized buffer function of
psychological detachment. For employees with low levels of detachment, the adverse impact of SCDs on all four indicators of strain were much more pronounced than for employees with high levels of detachment. Thus, we were able to confirm our hypothesis in the first sample. Simple slope analyses (Aiken & West, 1991) demonstrated that for all outcomes the slopes for high (one SD above the mean) and low (one SD below the mean) detachment were significantly different from zero (cf. Figure 1). Thus, detachment does not completely nullify the adverse effect of SCDs but rather mitigates the adverse effects of SCDs on strain.

Discussion of Study 1

The findings of our initial study provide support for our prediction that detachment attenuates the adverse effect of SCDs on strain. Our analyses demonstrate that the positive relationships between SCDs and indicators of psychological strain (ego depletion, need for recovery, emotional exhaustion and depersonalization) were attenuated as a function of detachment. Thus, employees who detach from work in leisure time are less susceptible to strain resulting from high SCDs, compared to employees who do not detach from work in leisure time.

Even though, our first study provides convincing evidence for the buffering effect of psychological detachment, some aspects still remain unclear. First, it is not certain whether and to what extent the buffering effect of detachment is generalizable across different samples and contexts. Second, in light of our proposition that the buffering function of detachment is essentially based upon the psychological mechanism of recovery of limited regulatory resources (required for coping with SCDs), it is also unclear, whether detachment may also attenuate the adverse effects of stressors, which operate and tax other mechanisms than depletion of regulatory resources. To address these points, we conducted a second study which aimed at testing the moderating effect of detachment on the adverse impact of SCDs in
another sample. In addition, we examined the effects of detachment on the positive relationship of job ambiguity and strain. Evidence on differential moderating effects of detachment on different stressor-strain relationships may point to relevant work-related boundary conditions under which detachment may or may not be useful to prevent strain.

**Study 2**

**Differential interaction effects of psychological detachment with SCDs and job ambiguity**

In Study 1, we demonstrated that psychological detachment buffers the adverse impact of SCDs on strain. In Study 2, we seek to test whether detachment can also buffer other stressor-strain relationships. Thus, we examine detachment as a moderator of the adverse impact of job ambiguity on strain. Role theory suggests that job ambiguity is considered to be an inherently “noxious” (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964), and thus, stressful state (Breaugh & Colihan, 1994). In general, job ambiguity is characterized by high uncertainty, a lack of opportunities to plan ahead and unpredictable events that cause employees to engage in coping strategies such as defensive strategies which distort the reality of the situation. These coping strategies should increase the probability that individuals will be dissatisfied with their job role (Rizzo, House, & Lirtzman, 1970) and lead to strain through detrimental individual appraisal processes (Monat et al., 1972). On the basis of our theoretical proposition that the adverse effect of job ambiguity is mainly driven by other mechanisms than regulatory resource depletion (e.g. appraisal processes; Monat, et al., 1972), we predict that restoring the regulatory resources through detachment should be less effective in buffering the adverse impact of job ambiguity on strain than the adverse impact of SCDs. Hence, we propose the following hypothesis:

**Hypothesis 2:** The buffering effect of psychological detachment is stronger on the relationship of SCDs with strain than on the relationship of job ambiguity with strain.
Method

Participants

The participants of the second study were recruited from a German financial service provider. 705 employees were contacted via e-mail to participate in an online survey that was conducted during normal working hours. Out of all contacted employees, 458 employees agreed to participate in our survey. Because of missing responses, 32 individuals were excluded from the analyses. Hence, the overall response rate was 60.4%. The final analyses were conducted on the basis of a sample of N = 426 persons. Because we addressed employees from different departments of the organization, we received data from individuals working in different occupational fields. A major part of our sample (73%) worked as financial consultants. Like the participants in the first sample, their main task was selling products and consulting customers (e.g. private customers, business customers). Another part of the sample (15%) worked in the administration department, and 12% were employed in managerial positions and thus, had leadership responsibilities. The work of last both groups was characterized by less frequent client interactions than the work of consultants. Additionally, at work these employees have to face situations that are characterized by lack of information about work methods, work-schedules and goals. For example, financial consultants have to decide about customers being credit-worthy based on the incomplete information that they receive from clients. Furthermore, because clients may arrive and call anytime requesting customer service, it is difficult for employees to properly structure their work tasks. These examples indicate that in their jobs, participants experience different facets of job ambiguity. Again, participation was voluntary and all participants were assured that their responses would remain confidential. Participants’ age ranged from 18 to 60 years (M = 39.12; SD = 10.64). Out of all participants, 44 % were women, and 23 % were part-time employed. The mean organizational tenure was 18.1 years (SD=10.85).
Measures and control variables

The assessment of SCDs, psychological detachment, ego depletion, need for recovery, emotional exhaustion, and depersonalization were based on the same instruments as in the first study.

Job ambiguity was measured with nine items from a scale developed by Breaugh and Colihan (1994), which was translated and validated in German language by Sodenkamp and Schmidt (2000). On a 7-point Likert scale (1 = not at all; 7 = a great deal), participants indicated their perceived lack of job-related information with regard to work methods, work-schedules and goals. Because these three facets of job ambiguity are closely related, we integrated them into a single scale score as recommended by Breaugh and Colihan (1994). An example for an item is “I know how to get my work done (what procedures to use)”. All items were recoded so that higher scores indicated higher job ambiguity.

Results

Descriptive statistics

Descriptive statistics including internal consistencies are presented in Table 4.

- Insert Table 4 about here -

Measurement models

Confirmatory factor analyses were used to test the differentiability of the predictors. In the second sample, SCDs, job ambiguity, and psychological detachment were tested as separate factors in a three-factor model (cf. Table 5). Fit indices demonstrated that a three-factor model yielded a better data approximation for the predictors than a one-factor model that integrates all predictors into one construct (cf. Table 5). CFAs also provided support for the distinctiveness of all outcome variables. As in the first study, ego depletion, need for recovery, emotional exhaustion, and depersonalization were tested in a four-factor model.
which indicated a good data approximation (cf. Table 5). By way of comparison, a one-factor model provided a worse fit (cf. Table 5).

Analysis of main and interaction effects

As in the first study, we conducted hierarchical moderated regression analyses to test our hypotheses. In the first step, we added control variables (gender, age, leadership position and working time status) into the regressions predicting indicators of strain. In the second step, we introduced the main predictors SCDs, job ambiguity, and detachment into the regressions. In the third step, the interaction terms between SCDs and detachment on the one hand and job ambiguity and detachment on the other hand were entered into the regressions. Again, before calculating the product terms and introducing all variables into the regressions, predictors were standardized, in order to reduce the risk of multicollinearity (cf. Aiken & West, 1991).

The moderated regression results are presented in Table 6. As in the first study, SCDs and detachment yielded significant direct effects on all indicators of strain with signs corresponding to expectations (cf. Table 6). In addition, job ambiguity was negatively related to all indicators of strain (cf. Table 6).

In accordance with Hypothesis 1, the interaction term between SCDs and psychological detachment accounted for significant amounts of variance in all indicators of strain (cf. Table 6). In contrast, the interaction term of job ambiguity and detachment did not explain additional proportions of variance in all outcomes (cf. Table 6). These results provide initial support for Hypothesis 2, that the interaction effect of detachment and SCDs on strain is stronger than the interaction effect of detachment and job ambiguity on strain.
To compare the strength of the SCDs-detachment and the job ambiguity-detachment interactions on strain, we computed the differences ($\beta_{\text{diff}}$) between both interaction terms (SCDs-detachment and job ambiguity-detachment) for all indicators of strain and calculated 90% confidence intervals (CI; Zou, 2007). A CI that did not include zero indicates a significant difference between both interaction terms at the 5% level (one-tailed test). For ego depletion and need for recovery, the differences between interaction terms were $\beta_{\text{diff}} = -0.65$ and $\beta_{\text{diff}} = -0.08$, respectively. The 90% CIs for both short-term outcomes (ego depletion: -0.177, 0.048; need for recovery: -0.187, 0.038) did include zero indicating that detachment was not stronger in buffering the adverse effects of SCDs than the adverse effects of job ambiguity on these indicators of strain. For emotional exhaustion and depersonalization, the differences between both interaction terms were $\beta_{\text{diff}} = -0.14$ and $\beta_{\text{diff}} = -0.13$, respectively. For these outcomes, both 90% CIs (emotional exhaustion: -.252, -.027; depersonalization: -.242, -.017) did not include zero indicating that the SCDs-detachment interaction was significantly stronger than the job ambiguity-detachment interaction. In sum, our results show that detachment is more effective in buffering the adverse effects of SCDs than the adverse effects of job ambiguity on emotional exhaustion and depersonalization.

We plotted the significant interaction effects of SCDs and psychological detachment and conducted simple slope analyses (Aiken & West, 1991) which demonstrated that the form of the moderating effects of detachment is comparable to those reported in the first study (cf. Figure 2).

General discussion

The aims of the present studies were first to provide evidence that detachment attenuates the relationship between SCDs and strain across different samples and second to test the consistency of the buffering function of detachment across different kinds of
We conducted two studies to analyse the hypothesized relationships and demonstrated that detachment indeed buffers the positive relationships between SCDs and indicators of strain (ego depletion, need for recovery, emotional exhaustion, and depersonalization). In Study 2, we further analysed whether the moderating effect of detachment is a) generalizable across different samples and b) is also valid for stressors that rely foremost on other mechanisms than regulatory resource depletion to cause strain. Again, the results of our second study indicate that detachment buffers the relationship between SCDs and indicators of strain demonstrating that our findings are generalizable across different samples. Furthermore, we tested moderating effects of detachment on the adverse impact of job ambiguity on strain and conducted contrastive comparisons between the SCDs-detachment and job ambiguity-detachment interactions. Difference tests of the interaction terms demonstrated a stronger effect of the SCDs-detachment interaction than the job ambiguity-detachment interaction on the outcomes of emotional exhaustion and depersonalization.

All in all, the present research contributes to the current stress literature in at least four ways. First, our results deliver empirical evidence for detachment as a further moderator of the relationship between SCDs and strain. Second, it provides evidence for the adverse effects of SCDs and the buffering effects of detachment in multiple samples and for multiple indicators of strain. Third, the present research integrates theories from the field of self-control and recovery research to disentangle the mechanism that is responsible for the attenuating effect of detachment. This mechanism involves recovery of the regulatory resource that is depleted through SCDs at work. Fourth, our results demonstrate that detachment is more effective in buffering SCDs that are supposed to deplete limited regulatory resources as compared to job ambiguity that is supposed to cause strain through other mechanisms such as adverse appraisal processes. Differential effects of detachment on
different stressor-strain relationships indicate that psychological detachment did not buffer
the adverse effects of all stressors but that it is only effective in buffering the adverse effects
of stressors that deplete limited regulatory resources.

Theoretical and practical implications

From a theoretical perspective, we integrate the lines of research on self-control and
recovery: The proposed recovery mechanism adds to our understanding of the relationships
between stressors, indicators of strain and psychological resources. It is possible that
previously published attenuating effects of detachment on specific stressor-strain
relationships such as job demands (Sonnentag et al., 2010) or workplace conflicts (Sonnentag
& Nägel, 2013) may at least partially rely also on recovery of regulatory resources. For
example, during workplace conflicts employees need to inhibit spontaneous responses such
as outbursts of anger. Since inhibiting spontaneous responses is also an integral part of the
SCDs construct (Schmidt & Neubach, 2007) and thus is thought to deplete regulatory
resources, one might argue that the moderating effects of detachment on the adverse effects
of workplace conflicts may be based upon recovery of regulatory resources.

From a practical point of view, findings in the present sour findings suggest that
detachment is able to reduce the adverse consequences of stressors that deplete regulatory
resources, such as SCDs. Thus, to prevent adverse consequences of these stressors,
practitioners need to develop interventions at the organizational and at the individual level
that enable detachment from work in leisure time. From the organizational point of view,
reducing day specific work hours, workload and time pressure may facilitate detachment.
Sonnentag and Bayer (2005) argue that these factors contribute to a prolonged activation of
job-related thoughts, which drag on into employees’ leisure time. Thus, reducing these
factors should improve detachment. Another aspect of modern work that hinders employees
to detach from work is the increasing use of work-related mobile communication devices,
(Lanaj, Johnson, & Barnes, 2014). Work-related communication in leisure time may remind employees of work related issues and thus prevent detachment. Therefore, it may be useful for organizations to establish policies or guidelines for the use of mobile communication devices. For example, car manufacturer Volkswagen disables e-mail communication 30 minutes after the end of the working day and allows it 30 minutes before the start of the next working day (Spiegel Online, 2011).

From the individual perspective, employees may also enhance psychological detachment by refraining from using work-related communication technologies in leisure time. Furthermore, Ashforth, Kreiner, and Fugate (2000) proposed that high segmentation between work and private life may prevent employees from being occupied with work-related issues during leisure time and thus, enhance psychological detachment. In line with this argument, Sonnentag, Kuttler, and Fritz (2010) suggest that being occupied with non-work activities that require the individual’s full attention may facilitate psychological detachment. Another aspect that has been demonstrated to improve psychological detachment is recovery-related self-efficacy. Sonnentag and Krueel (2006) argue that like task-related self-efficacy (Bandura, 1997) recovery-related self-efficiency can be improved through mastery experience, vicarious learning and verbal persuasion. Based on the previously mentioned arguments, Hahn, Binnewies, Sonnentag, & Mojza (2011) developed a training program and demonstrated beneficial impacts of this training on recovery experiences, recovery related self-efficacy, and well-being.

Limitations and suggestions for further research

Despite the contributions, our studies are subject to several limitations, which need to be discussed. First, most of the study variables were operationalized through self-report measures. Thus, common method variance or a self-report bias might have contaminated the relations observed (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, our results
show that psychological detachment interacts with SCDs but does not interact with job ambiguity to predict emotional exhaustion and depersonalization. The differential influences resulting from the combination of detachment with either SCDs or job ambiguity are unlikely to be attributable to common method variance because such variance tends to blur differential relationships. Furthermore, the differentiability of the predictors as well as the criterion variables as indicated by CFAs also demonstrates that common method bias is rather unlikely. Nevertheless, future research could gain more methodological clarity and practical significance by considering more event-related and situation-based approaches for measuring SCDs at work (Reis & Gable, 2000).

The second limitation refers to the cross-sectional design of our studies. Although we hypothesized a particular causal order of the variables, other causal directions or even reciprocal relations could be possible as well. For example, an alternative reverse causal interpretation of the results might be that employees in high strain jobs perceive self-control demands as more threatening than employees in low strain jobs. However, several longitudinal studies have provided strong empirical arguments against this hypothesis (for an overview, see Zapf, Dormann, & Frese, 1996). For example, drawing on a cross-lagged panel design, Diestel and Schmidt (2011) have found SCDs to predict burnout and absenteeism whereas, the lagged effects of burnout and absenteeism on SCDs at a later point in time failed to reach significance.

The third limitation is related to our prediction that detachment is more effective in buffering the adverse impact of SCDs than the adverse impact of job ambiguity on strain. Our data showed that there was a significant difference between the interaction terms on the outcomes of emotional exhaustion and depersonalization. However, our analyses failed to provide corresponding differences between the interaction terms predicting ego depletion and need for recovery. However, these results must be interpreted carefully because a
precondition for the test to compare interaction terms is that these terms follow a normal
distribution. However, Kendall & Stuart, (1958) demonstrated that interaction terms in
moderator analysis are not normally distributed. Hence, the test may have failed to
demonstrate significant differences in the outcomes ego depletion and need for recovery.

Furthermore, it is possible that methodological drawbacks such as measurement
deficits or flaws in study design (McClelland & Judd, 1993) may have prevented us from
demonstrating moderating effects of detachment on the adverse impact of job ambiguity.
However, according to previous research the job ambiguity measure as it is used in our study
is valid and highly reliable (Breaugh & Colihan, 1994; Schmidt & Hollmann, 1998).
Accordingly, our measurement of job ambiguity is more reliable than our measurement of
SCDs (cf. Table 2). Thus, it is highly unlikely that measurement deficits have influenced our
results. Furthermore, because deficits in our study design (e.g. common method bias) should
apply to SCDs and job ambiguity likewise, it is also highly unlikely that these deficits have
influenced our results.

Additionally, one might argue that our findings concerning the absent moderating
effect of detachment on the adverse impact of job ambiguity may be random or exploratory in
nature. However, matching hypothesis suggests that a functional match between stressors and
buffering moderators increases the strength of interaction effects on strain (Cohen & McKay,
1984; Cohen & Wills, 1985). On the basis of the argument that SCDs deplete common
regulatory resources and detachment recovers these resources, psychological detachment
matches better with SCDs than with job ambiguity that relies for the most part on appraisal
mechanisms to cause strain. Thus, the effect of the SCDs-detachment interaction on strain
should be as hypothesized stronger than the effect of the job ambiguity-detachment
interaction on strain. Consequently, the demonstrated differential effects of detachment
correspond with the matching hypothesis and thus are not likely to reflect random effects.
This theoretical notion is further supported by the fact that we demonstrated consistent relationships of the SCDs-detachment interaction to four different indicators of strain that according to our CFAs are distinct. In contrast, we consistently demonstrated that detachment did not moderate the adverse impact of job ambiguity on all four indicators of strain. The consistency of the differential effects on distinct indicators of strain strongly suggests that our findings are not random or exploratory in nature but that we deliberately chose job ambiguity as a stressor to demonstrate that detachment does not moderate all kinds of stressors.

Conclusions

In the present study, we analysed the impact of SCDs as a work stressor and psychological detachment as a recovery experience on strain. In two different samples, we were able to provide evidence that detachment attenuates the adverse effects of SCDs on strain. Additionally, in the second sample we demonstrated that detachment was more effective in buffering the adverse impact of SCDs than buffering the adverse impact of job ambiguity. We hope that our study adds to the understanding of the relationships between stressors, strain and buffering moderators and consequently provides employees and organizations alike with the knowledge to protect employees from work-related stressors depleting regulatory resources.
References


Table 1

*Means, Standard Deviations, Internal Consistencies (Cronbach’s Alpha) and Intercorrelations (Study 1)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gender&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.13</td>
<td>–</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Self-control demands</td>
<td>.06</td>
<td>.03</td>
<td>(.85)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Psychological detachment</td>
<td>-.08</td>
<td>-.03</td>
<td>-.37</td>
<td>(.92)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Ego depletion</td>
<td>.09</td>
<td>.03</td>
<td>.46</td>
<td>-.46</td>
<td>(.84)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Need for recovery</td>
<td>.12</td>
<td>-.07</td>
<td>.44</td>
<td>-.59</td>
<td>.65</td>
<td>(.86)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Emotional exhaustion</td>
<td>.10</td>
<td>.05</td>
<td>.54</td>
<td>-.55</td>
<td>.73</td>
<td>.78</td>
<td>(.90)</td>
<td></td>
</tr>
<tr>
<td>8. Depersonalization</td>
<td>.04</td>
<td>.11</td>
<td>.37</td>
<td>-.34</td>
<td>.49</td>
<td>.44</td>
<td>.63</td>
<td>(.71)</td>
</tr>
</tbody>
</table>

*Note.* Gender (1 = female, 2 = male). Internal consistency estimates (Cronbach’s alpha) are presented in parentheses in the diagonal.

Numbers in bold $p < .05$. $N = 445$.  

...
Table 2

Results of Confirmatory Factor Analyses for Testing the Differentiability of the Variables (Study 1)

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>$df$</th>
<th>RMSEA</th>
<th>CI$_{90%}$ (RMSEA)</th>
<th>SRMR</th>
<th>CFI</th>
<th>AIC</th>
<th>BIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement models of predictors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-factor model</td>
<td>2.20$^{a.n.s.}$</td>
<td>4</td>
<td>.000</td>
<td>.000 – .054</td>
<td>.006</td>
<td>1.00</td>
<td>3939.34</td>
<td>4004.91</td>
</tr>
<tr>
<td>1-factor model$^a$</td>
<td>408.61$^{**}$</td>
<td>5</td>
<td>.426</td>
<td>.391 – .461</td>
<td>.147</td>
<td>.621</td>
<td>4374.82</td>
<td>4436.29</td>
</tr>
<tr>
<td>Measurement models of criteria</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-factor model</td>
<td>19.51$^{a.n.s.}$</td>
<td>14</td>
<td>.030</td>
<td>.000 – .058</td>
<td>.011</td>
<td>.997</td>
<td>5848.68</td>
<td>5971.62</td>
</tr>
<tr>
<td>1-factor model$^b$</td>
<td>262.57$^{**}$</td>
<td>20</td>
<td>.165</td>
<td>.148 – .183</td>
<td>.062</td>
<td>.872</td>
<td>6136.33</td>
<td>6234.68</td>
</tr>
</tbody>
</table>

Note. $^a$Self-control demands and Psychological detachment as one factor; $^b$Ego depletion, Need for recovery, Emotional exhaustion and Depersonalization as one factor.

* $p < .05$. ** $p < .01$. $N = 445$. 


### Table 3

Regression Results (β Values) for Study 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>.09</td>
<td>.04</td>
<td>.03</td>
<td>.13 **</td>
<td>.08 *</td>
<td>.08 *</td>
<td>.09</td>
<td>.04</td>
<td>.03</td>
<td>.03</td>
<td>-0.00</td>
<td>-0.01</td>
</tr>
<tr>
<td>Age</td>
<td>.02</td>
<td>.01</td>
<td>.01</td>
<td>-.08</td>
<td>-.10 *</td>
<td>-.10 *</td>
<td>.04</td>
<td>.03</td>
<td>.03</td>
<td>.11 *</td>
<td>.10 *</td>
<td>.10 *</td>
</tr>
<tr>
<td>Self-control demands</td>
<td>.36 **</td>
<td>.37 **</td>
<td>.28 **</td>
<td>.29 **</td>
<td>.41 **</td>
<td>.42 **</td>
<td>.29 **</td>
<td>.29 **</td>
<td>.29 **</td>
<td>.29 **</td>
<td>.29 **</td>
<td>.29 **</td>
</tr>
<tr>
<td>Psychological detachment</td>
<td>-.28 **</td>
<td>-.25 **</td>
<td>-.41 **</td>
<td>-.38 **</td>
<td>-.36 **</td>
<td>-.34 **</td>
<td>-.22 **</td>
<td>-.20 **</td>
<td>-.20 **</td>
<td>-.20 **</td>
<td>-.20 **</td>
<td>-.20 **</td>
</tr>
<tr>
<td>Interactiona</td>
<td>-.15 **</td>
<td>-.13 **</td>
<td>-.12 **</td>
<td>-.12 **</td>
<td>-.12 **</td>
<td>-.12 **</td>
<td>-.10 *</td>
<td>-.10 *</td>
<td>-.10 *</td>
<td>-.10 *</td>
<td>-.10 *</td>
<td>-.10 *</td>
</tr>
<tr>
<td>$R^2(\Delta R^2)$</td>
<td>.01(.01)</td>
<td>.29(.28)</td>
<td>.30(.01)</td>
<td>.02(.02)</td>
<td>.35(.33)</td>
<td>.36(.01)</td>
<td>.01(.01)</td>
<td>.41(.40)</td>
<td>.43(.02)</td>
<td>.02(.02)</td>
<td>.19(.17)</td>
<td>.20(.01)</td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td>1.89</td>
<td>86.99 **</td>
<td>14.15 **</td>
<td>4.92 **</td>
<td>112.02 **</td>
<td>10.36 **</td>
<td>2.62</td>
<td>154.81 **</td>
<td>11.31 **</td>
<td>3.31 *</td>
<td>48.50 **</td>
<td>4.84 *</td>
</tr>
</tbody>
</table>

Note. aSCDs x Psychological detachment

* $p < .05$. ** $p < .01$. $N = 445$. 
Table 4  

*Means, Standard Deviations, Internal Consistencies (Cronbach's Alpha) and Intercorrelations (Study 2)*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Gender&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Leadership position&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-.20</td>
<td>-.27</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Working time status&lt;sup&gt;c&lt;/sup&gt;</td>
<td>-.14</td>
<td>-.43</td>
<td>-.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Self-control demands</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.09</td>
<td>-.01</td>
<td>.03</td>
<td>.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Job ambiguity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.16</td>
<td>-.01</td>
<td>.01</td>
<td>-.06</td>
<td>.21</td>
<td></td>
</tr>
<tr>
<td>7. Psychological detachment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.05</td>
<td>.00</td>
<td>.07</td>
<td>-.05</td>
<td>-.42</td>
</tr>
<tr>
<td>8. Ego depletion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Need for recovery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Emotional exhaustion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Depersonalization</td>
<td>-.14</td>
<td>.14</td>
<td>.01</td>
<td>.12</td>
<td>.34</td>
<td>.37</td>
<td>-.31</td>
<td>.46</td>
<td>.48</td>
<td>.63</td>
<td>(.71)</td>
</tr>
</tbody>
</table>

| M                              | 39.12| 1.44| 1.88| 1.78| 3.45| 2.77| 2.89| 1.74| 2.12| 2.63| 2.05 |
| SD                             | 10.64| 0.50| 0.33| 0.42| 0.56| 0.95| 0.97| 0.56| 0.68| 0.93| 0.87 |

*Note.* <sup>a</sup>Gender (1 = female, 2 = male), <sup>b</sup>Leadership position (1 = leadership position, 2 = no leadership position), <sup>c</sup>Working time status (1 = part time, 2 = full time). Internal consistency estimates (Cronbach’s alpha) are presented in parentheses in the diagonal. Numbers in bold $p < .05$. $N = 426.$
Table 5

Results of Confirmatory Factor Analyses for Testing the Differentiability of the Variables (Study 2)

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>df</th>
<th>RMSEA</th>
<th>CL90% (RMSEA)</th>
<th>SRMR</th>
<th>CFI</th>
<th>AIC</th>
<th>BIC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Measurement models of predictors</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-factor model</td>
<td>11.84</td>
<td>17</td>
<td>.000</td>
<td>[.000 – .028]</td>
<td>.012</td>
<td>1.00</td>
<td>6178.12</td>
<td>6287.59</td>
</tr>
<tr>
<td>1-factor model$^a$</td>
<td>1401.44</td>
<td>20</td>
<td>.403</td>
<td>[.385 – .421]</td>
<td>.211</td>
<td>.284</td>
<td>7580.47</td>
<td>7677.77</td>
</tr>
<tr>
<td><strong>Measurement models of criteria</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-factor model</td>
<td>23.14</td>
<td>14</td>
<td>.039</td>
<td>[.000 – .067]</td>
<td>.014</td>
<td>0.996</td>
<td>5807.55</td>
<td>5929.18</td>
</tr>
<tr>
<td>1-factor model$^b$</td>
<td>349.24</td>
<td>20</td>
<td>.197</td>
<td>[.179 – .215]</td>
<td>.066</td>
<td>.848</td>
<td>6141.87</td>
<td>6239.18</td>
</tr>
</tbody>
</table>

*Note.* $^a$Self-control demands, Job ambiguity and Psychological detachment as one factor; $^b$Ego depletion, Need for recovery, Emotional exhaustion and Depersonalization as one factor.

* $p < .05$. ** $p < .01$. $N = 426$. 
Table 6

Regression Results ($\beta$ Values) for Study 2.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ego depletion</th>
<th>Need for recovery</th>
<th>Emotional exhaustion</th>
<th>Depersonalization</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
<td>Step 3</td>
<td>Step 1</td>
</tr>
<tr>
<td>Gender</td>
<td>-.04</td>
<td>-.02</td>
<td>-.03</td>
<td>-.11 *</td>
</tr>
<tr>
<td>Age</td>
<td>.17 **</td>
<td>.16 **</td>
<td>.16 **</td>
<td>.14 **</td>
</tr>
<tr>
<td>Leadership position $^a$</td>
<td></td>
<td></td>
<td></td>
<td>.20 **</td>
</tr>
<tr>
<td>Working-time status $^b$</td>
<td></td>
<td></td>
<td></td>
<td>.14 **</td>
</tr>
<tr>
<td>Self-control demands</td>
<td>.23 **</td>
<td>.24 **</td>
<td>.22 **</td>
<td>.22 **</td>
</tr>
<tr>
<td>Job ambiguity</td>
<td>.25 **</td>
<td>.25 **</td>
<td>.11 **</td>
<td>.11 **</td>
</tr>
<tr>
<td>Psychological detachment</td>
<td>-.33 **</td>
<td>-.32 **</td>
<td>-.47 **</td>
<td>-.46 **</td>
</tr>
<tr>
<td>Interaction 1 $^c$</td>
<td>-.10 *</td>
<td></td>
<td></td>
<td>-.10 *</td>
</tr>
<tr>
<td>Interaction 2 $^d$</td>
<td>-.04</td>
<td></td>
<td></td>
<td>-.01</td>
</tr>
</tbody>
</table>

$R^2$ (AR$^2$)              | .06(.06)      | .40(.34)          | .41(.01)             | .04(.04)         | .43(.39)          | .44(.01)            | .04(.04)         | .47(.43)         | .48(.01)              |

$F$ for change in $R^2$    | 6.62**        | 77.87**           | 4.65*                | 5.24**           | 96.45**           | 2.77                 | 3.95             | 114.67**         | 3.54*                 |

* $p < .05$. ** $p < .01$. N = 426

Note: $^a$Leadership position (1=leadership position, 2=no leadership position), $^b$Working time status (1=part time, 2=full time)

$^c$SCDs x Psychological detachment, $^d$Job ambiguity x Psychological detachment.
Figure captions

*Figure 1.* Interaction effects of SCDs and Psychological detachment on Ego depletion, Need for recovery, Emotional exhaustion and Depersonalization (Study 1).

*Figure 2.* Interaction effects of SCDs and Psychological detachment on Ego depletion, Need for recovery, Emotional exhaustion and Depersonalization (Study 2).
Figure 1.
Figure 2.

- **Ego depletion**:
  - Low SCDs: $t = 5.75; p < 0.01$
  - High SCDs: $t = 2.47; p < 0.05$

- **Need for recovery**:
  - Low SCDs: $t = 5.41; p < 0.01$
  - High SCDs: $t = 2.65; p < 0.01$

- **Emotional exhaustion**:
  - Low SCDs: $t = 6.73; p < 0.01$
  - High SCDs: $t = 5.60; p < 0.01$

- **Depersonalization**:
  - Low SCDs: $t = 4.09; p < 0.01$
  - High SCDs: $t = 3.49; p < 0.01$