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RESEARCH REPORT

Costs of Simultaneous Coping With Emotional Dissonance and Self-Control Demands at Work: Results From Two German Samples

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In the present study, we examine interactive effects of emotional dissonance (ED) and self-control demands (SCDs; impulse control, resisting distractions, and overcoming inner resistances) on emotional exhaustion, depersonalization, depressive symptoms, and absenteeism. We derived the prediction of interactive effects from the well-founded theoretical argument that both sources of work stress draw on and compete for a common limited regulatory resource. On the basis of 2 German samples (1 cross-sectional and 1 longitudinal sample; $N_{TOTAL} = 367$), 7 of the 8 interactions tested were found to explain significant proportions of variance in all 4 outcomes considered over and beyond that accounted for by demographic characteristics, outcome stability (longitudinal sample), and main effects. Consistent with our hypotheses, the positive relations of 1 of both stressors (ED or SCDs) to psychological strain and absenteeism were amplified as a function of the other stressor. Theoretical and practical implications of the findings are discussed.

Keywords: emotional dissonance, self-control demands, burnout, depressive symptoms, absenteeism

Because of the development of the service sector in Western economies, employees are increasingly required to exert self-control in regulating their emotions, adjusting and monitoring their goal-directed behavior, and encouraging themselves to perform unattractive and highly demanding tasks (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). Prior research has repeatedly revealed that exerting self-control entails psychological costs, which are manifested as psychological strain (Muraven & Baumeister, 2000; Oaten & Cheng, 2005).

In view of the adverse effects of self-control, two recent lines of research on organizational stress have focused on sources of work stress that call for self-control (K.-H. Schmidt & Neubach, 2007; Zapf, Vogt, Seifert, Mertini, & Isic, 1999). First, K.-H. Schmidt and Neubach (2009) have found self-control demands (SCDs) at work, which require employees to exert self-control, to positively relate to indicators of job strain. Second, research on emotional labor has demonstrated that psychological strain emerges when emotions contrary to one's truly felt emotions have to be displayed (Cheung & Tang, 2007). The discrepancy between emotions felt and those required by the job role is commonly referred to as emotional dissonance (ED; Abraham, 1998). Experimental studies showed that portraying emotions, which are not truly felt, constitutes a form of self-control (Gross, 2001; Schmeichel, 2007).

Although the majority of past research has reported main effects of ED and SCDs on job strain, little is known about the combined effects of both sources of stress. On the basis of the theoretical notion that both ED and SCDs require employees to exert self-control, drawing on and depleting a common limited regulatory resource (Muraven & Baumeister, 2000; Schmeichel, 2007), we predict that ED and SCDs will exert interactive effects on psychological strain. The combination of high levels of both stressors should overtax the limited regulatory resource, resulting in higher levels of strain than accounted for by the sum of their additive effects. As both lines of research have developed independently from each other, this prediction has not been tested yet. To test this prediction, we analyzed longitudinal data and included a measure of absenteeism to demonstrate the long-term impact of simultaneous coping with ED and SCDs on psychological strain and organizational outcomes.

SCDs—A Source of Stress at Work

The main research finding on self-control is that exercising self-control can lead to impairments in cognitive and behavioral control and cause psychological strain (Muraven, Tice, & Baumeister, 1998; Oaten & Cheng, 2005; Schmeichel, Vohs, & Baumeister, 2003). In a series of experimental studies that demanded two successive acts of self-control (e.g., suppressing emotions or attention control), self-control performance on the second

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act was consistently impaired. Besides impulse control and persistence at difficult tasks, indicators of self-control performance have also included executive functioning, such as logical reasoning (Schmeichel, 2007). Moreover, Oaten and Cheng (2005, 2007) found that chronically high SCDs can lead to psychological strain. According to their longitudinal studies, students faced with chronic academic stress reported significantly higher levels of depressive symptoms, emotional distress, and anxiety compared with those reporting low stress levels. Academic stress is characterized by SCDs, such as resisting distractions or overcoming inner resistances.

Muraven and Baumeister (2000; see also Baumeister, Vohs, & Tice, 2007) proposed a model of self-control to account for these observations. According to this model, different processes of self-control draw on and consume a common limited regulatory resource. Parts of this resource are depleted each time self-control is exerted. Two key propositions of this model have relevant implications for research on organizational stress. First, if certain circumstances—such as recurrent requirements to exert self-control—prevent recovery of the limited resource, people will become chronically deficient with respect to this resource and suffer from psychological strain. Second, if two different SCDs have to be met simultaneously or successively, the amount of the resulting resource decrement will be higher than the sum of resources expended by each self-control process. The latter proposition of a two-way amplification of the effects of different SCDs is derived from well-established and empirically founded cognitive resource theories, which explain interaction patterns observed, for example, during the performance of dual-tasks (Norman & Bobrow, 1976; A. M. Schmidt & Dolis, 2009).

Theoretically, both propositions imply that simultaneous occurrence of different stressors, which require people to exert self-control and tax the same limited resource, should result in higher levels of psychological strain than accounted for by the additive effects of both stressors. The conclusion that the interaction effect of different SCDs is not only limited to actual self-control performance but is also reflected in strain received some empirical support from a longitudinal study conducted by Oaten and Cheng (2005). They reported an interaction effect between academic stress and additional SCDs related to internships in firms or other jobs. The effects of such SCDs on psychological strain were more pronounced for those who reported high levels of academic stress. Given the increasing relevance of emotional labor and self-control for goal achievement at work (Pulakos et al., 2000), the two-way amplification of the adverse effects of different stressors that call for self-control and deplete the same limited resource should also be found in organizational settings.

Recently, Neubach and Schmidt (2007) identified three forms of SCD in work settings and analyzed their cumulative effects on job strain. First, impulse control refers to the demand to inhibit spontaneous, impulsive response tendencies and affective states associated with, for example, injudicious expressions. Second, resisting distractions involve the requirement to ignore or resist distractions evoked by task-irrelevant stimuli, which would otherwise interfere with a successful accomplishment of tasks. Third, overcoming inner resistances relate to the requirement to overcome motivational deficits to complete unattractive tasks that cannot be postponed or evaded.

In longitudinal studies, SCDs have been found to be very stable over 12 and 24 months, indicating that this stressor is a stable characteristic of a given job (K.-H. Schmidt & Neubach, 2010). In addition, after controlling for biographical and sample attributes, SCDs explained additional amounts of variance in indicators of job strain over and beyond that accounted for by other established work stressors, such as work load, role stress, and lack of support (K.-H. Schmidt & Neubach, 2009). Finally, and consistent with the idea of a limited regulatory resource, the relation of SCDs to burnout was found to be moderated by the reported frequency of self-control problems in daily life (K.-H. Schmidt, Neubach, & Heuer, 2007). Specifically, the adverse effects of SCDs at work were more pronounced for those employees who were often required to exert self-control in other life domains and reported frequent self-control failures. The authors concluded that the limited resource was already depleted by frequent self-control exercises, making employees more vulnerable to the adverse effects of SCDs at work.

Research on Emotional Labor

Emotional labor refers to the goal-directed regulation and expression of organizationally desired emotions. Since Hochschild's (1983) seminal work, emotional labor has repeatedly been found to act as a source of work stress and to cause strain (e.g., burnout), especially when ED is experienced (Abraham, 1998; Heuven & Bakker, 2003; Zapf & Holz, 2006).

Several scholars have considered the adverse effects of ED from the perspective of self-control (Judge, Woolf, & Hurst, 2009; Zapf & Holz, 2006). Accordingly, portraying emotions contrary to one's genuinely felt emotions is a form of response-focused emotion regulation (Gross, 1998, 2001). This regulation strategy is associated with efforts to control emotional expressions as required (e.g., suppressing felt emotions or displaying required emotions exaggeratedly) after an emotional response has been triggered. Robinson and Demaree (2007) have experimentally demonstrated that ED causes people to exert response-focused emotion regulation, which elicits high sympathetic arousal and results in psychological strain (Gross & Levenson, 1997). This finding led scholars to conceptualize response-focused emotion regulation as an act of self-control that resolves the discrepancy between felt and required emotions (Schmeichel et al., 2003). In support of this view, Schmeichel, Volokhov, and Demaree (2008) found that performance in self-control tasks in which emotions have to be displayed, which are not truly felt, is a function of the current regulatory resource capacity. Hence, ED has been taken as a proximal indicator for response-focused emotion regulation and, similar to SCDs, is hypothesized to exert its adverse effects on job strain through the depletion of a limited regulatory resource (Zapf & Holz, 2006).

Development of Hypotheses

We propose that if coping with ED involves exerting self-control in the form of response-focused emotion regulation, and thus consumes a limited regulatory resource, ED and SCDs will exert interactive effects on job strain such that the positive relation of one of both stressors to strain is amplified as a function of the other. Our proposition builds on the argument that ED depletes the

same resource as other SCDs do (Schmeichel, 2007). According to the self-control model, if ED and SCDs occur simultaneously or successively, depletion of the regulatory resource will be more likely, and recovery will be more difficult compared with coping with only one stressor. For example, a service employee may be required to articulate positive emotions to an unfriendly customer and thus experience ED. Immediately after exerting self-control and expending some of the limited resource, the same person may have to control spontaneous response tendencies and inhibit impulses while having an appraisal interview with a problematic employee, thus taxing the already decreased resource again. As stated above, coping with both demands simultaneously or successively should result in higher levels of strain than accounted for by the additive effects of both demands.

Drawing on the longitudinal results of Oaten and Cheng (2005, 2007), we also predict that the hypothesized interactive effects will result in disproportionally high job strain over time, if such or similar situations occur frequently enough to prevent the recovery of the impaired regulatory resource (Baumeister, Gailliot, DeWall, & Oaten, 2006). To test this prediction, we chose burnout, depressive symptoms, and absenteeism as outcomes. Past research has repeatedly found ED and SCDs to exert positive effects on both core dimensions of burnout, emotional exhaustion, and depersonalization (K.-H. Schmidt & Neubach, 2009; Zapf & Holz, 2006). To explain these effects, authors have argued that both burnout dimensions are very sensitive to decrements in the regulatory resource and thus may reflect overstraining by SCDs and ED (Lam, Huang, & Janssen, 2010; Maslach, Schaufeli, & Leiter, 2001). Strong support for this argument is provided by experimental findings demonstrating that deficits in self-control predict exhaustion and depersonalization (van der Linden, Keijsers, Eling, & van Schaijk, 2005).

Recently, research on organizational stress has focused on depressive symptoms as a result of emotional labor and SCDs (K.-H. Schmidt & Neubach, 2009). According to the control theory of depression (Hyland, 1987), depressive symptoms result from chronic self-control failures in goal-directed behavior (see also Baumeister & Vohs, 2004). Decrements in the regulatory resource cause self-control failures. In support of this view, Neshat-Doost, Dalgleish, and Golden (2008) reported SCDs to predict disturbed affective states, which are strongly related to depressive symptoms. Similarly, Oaten and Cheng (2005) found that chronic SCDs predict future depressive symptoms. Therefore, ED and SCDs should also exert interaction effects on depressive symptoms in organizational contexts.

Three arguments support the prediction of interactions between ED and SCDs on absenteeism (Johns, 2009). First, Staw and Oldham (1978) claimed that absenteeism can fulfill a "maintenance" or "restorative" function. Seen from the self-control perspective, this amounts to recovery of a depleted regulatory resource (Tourigny, Baba, & Lituchy, 2005). Second, absence behavior can also be seen as a form of self-control failure that results from chronic resource depletion. Specifically, employees can fail to overcome inner resistances to go to work and meet job demands (Oaten & Cheng, 2005). Third, in their meta-analysis, Darr and Johns (2008) showed that genuine health problems due to job demands are related to absence behavior that has thus been conceptualized as an indicator of job strain.

Hypothesis 1: ED interacts with SCDs in predicting burnout (Hypothesis 1a), depressive symptoms (Hypothesis 1b), and absenteeism (Hypothesis 1c) such that the positive relations of one stressor to all three outcomes are amplified by the other stressor.

The Present Study

Our hypotheses were tested in two German samples. The first sample involved staff members of nursing homes of a municipal organization for elderly care. Data from the first sample were mainly cross-sectional in nature. As cross-sectional data suffer from methodological problems such as common method biases and third variable influences, we conducted a second study that included two waves of data collection. Participants of the second study were recruited from a large tax and revenue office.

Method

Participants and Procedure

The first sample consisted of health care workers of a municipal organization for residential elderly care located in a federal state of Germany. All participants were involved in the daily care of elderly people, including physical care, medical support, and social activities. Approximately 80% of their daily working time was invested in interactions with elderly people. Participants were recruited through announcements at staff meetings and memos sent by the home managers. Participants were assured that completing the questionnaire was voluntary and that their data would remain confidential. A response rate of 60% yielded a final sample of 154 participants who completed the questionnaire and gave their consent for using their data on absenteeism. The participants averaged 36.12 years of age ($SD = 10.34$; range = 20–58). Of the participants, 83% were women, and 71.4% were full-time employees. All participants completed junior high school and were trained as geriatric nurses.

Participants of the second sample were recruited from a large tax and revenue office of a federal state in Germany. The core tasks of the surveyed employees included providing consulting services in face-to-face interactions; requesting and evaluating information about citizens' income, budget, and financial assets; and collecting tax. About 60% of the daily working time involved interactions with citizens. The management of the institution provided approval for employees to participate in the study. Questionnaires were administered in small groups of about 15 people during normal working hours. Completing the questionnaire was voluntary, and all participants were assured that the data would remain confidential. At Time 1, a total of 327 employees completed the questionnaire. This accounts for 63.13% of the total sample asked to participate in the study. After 24 months, 278 employees responded to the survey, yielding a response rate of 72.77%. Dormann and Zapf (2002) have shown a time interval of 24 months (2 years) to be most appropriate to identify lagged effects of job characteristics on job strain. A final sample of 213 employees completed the questionnaire on both survey times. Absence data for the 12-month period before the first and after the second survey were available for all participating employees. Participants were between 19 and 59 years of age ($M = 42.56$,

SD = 9.11). Of the sample, 53% were women, and 87.3% were employed on a full-time basis. Participants were educated as finance experts and tax collectors after finishing high school.

Measures

ED. The measurement of ED was based on five items that assessed the frequency of experienced discrepancies between genuinely felt emotions and those required by the job role (e.g., "How often do you have to show feelings at work that you do not really feel?"). The items were adapted from the Frankfurt Emotion Work Scales (FEWS 3.0; Zapf et al., 1999); some questions were slightly modified for both target groups by specifically asking about interactions with patients (Sample 1) and citizens (Sample 2). The response format of this scale ranges from 1 (*never*) to 5 (*very often*).

SCDs. We assessed SCDs using Neubach and Schmidt's (2007) 15-item scale that covers three forms of SCD. Impulse control (six items) refers to the extent to which a given job requires employees to inhibit spontaneous response tendencies and affective states (e.g., "My work requires me to weigh every word before saying something"). Resisting distractions (four items) relates to the degree to which work tasks require actively fading out and ignoring distractions (e.g., "In order to achieve my performance goals, I must not let myself be distracted"). Overcoming inner resistances (five items) refers to the extent to which the job requires employees to overcome inner dislikes of or aversions in dealing with unattractive work tasks (e.g., "Some of my tasks are such that I really need to force myself to get them done"). All items are scored on a 5-point intensity rating format (1 = *not at all*, 5 = *a great deal*). K.-H. Schmidt and Neubach (2010) found the scale to be sufficiently sensitive to discriminate professional groups with different levels of SCDs.

Burnout. The two burnout dimensions of *emotional exhaustion* and *depersonalization* were measured by Büssing and Perrar's (1992) German translation of the Maslach Burnout Inventory (Maslach & Jackson, 1986; Maslach et al., 2001). Emotional exhaustion (nine items) refers to feelings of being overextended and drained by work demands (e.g., "I feel emotionally drained from my work"). Depersonalization (four items) is characterized by a detached, indifferent, and cynical attitude toward people with whom one has to interact at work (e.g., "I have become more callous toward people since I took this job"). All items are scored on a 6-point intensity rating scale (1 = *not at all*, 6 = *very strong*).

Depressive symptoms. We assessed depressive symptoms with a shortened, German version (Schmitt & Maes, 2000) of the Beck Depression Inventory (Beck, Steer, & Garbin, 1988). The 15 items address various symptoms such as reduced initiative, irritation, sadness, tiredness, and listlessness. Intensity/severity of symptoms is rated on a 6-point frequency rating format (0 = *never*, 5 = *very often*). The scale refers to feelings of depressive symptoms in general and does not focus on a specific time frame or life domain (see Beck et al., 1988).

Absence behavior. Sum of days absent (the total sum of days absent from work) was used as a measure of absence behavior. Absence data were drawn from personnel records and related to a period of 12 months after the survey in Sample 1, and 12 months before the first wave and after the second wave of data collection in Sample 2. Because the distribution of the absence measure deviated from normality, leading to biases in parameter estimations (Hammer & Landau, 1981), all raw scores were subjected to a square root transformation (see Clegg, 1983). After transformation, skewness and kurtosis were less than 1 and 2 in both samples, respectively, and thus met the criteria for covariance-based analyses (see Geurts, Buunk, & Schaufeli, 1994).

Statistical Analysis Procedure

We tested the hypothesized interactions using latent moderated structural equation modeling (LMS; Dimitruk, Schermelleh-Engel, Kelava, & Moosbrugger, 2007), estimated with Mplus 5.1 (Muthén & Muthén, 2007). Recent simulation studies have consistently revealed the superiority of LMS compared with other available methods with regard to efficiency, robustness, and unbiasedness of estimations (Dimitruk et al., 2007; Kelava, Moosbrugger, Dimitruk, & Schermelleh-Engel, 2008). Accordingly, latent product terms of the hypothesized interacting variables were computed and specified to predict the outcome variables. As no chi-square values and fit indices are provided by LMS estimations due to nonnormality of the outcomes, the log-likelihood difference test ($\Delta -2LL$) was applied to test for the improvement in fit of the moderated structural equation modeling (SEM) compared with a linear SEM without product terms.

All items for assessing the study variables were aggregated into parcels, each representing a manifest variable for the respective latent constructs. The parceling procedure is based on the item-to-construct balance method that places lower loaded items with higher loaded items and thus minimizes the loading differences among the manifest variables (see Little, Cunningham, Shahar, & Widaman, 2002). On the predictor side, two parcels were created for ED. As SCD constitutes a multidimensional construct (Neubach & Schmidt, 2007), we applied the domain-representative method to create parcels (three) for SCDs, joining items from each of the three subscales: impulse control, resisting distractions, and overcoming inner resistances (Kishton & Widaman, 1994; Little et al., 2002). Thus, the latent variable of this formative measurement specification represented the total or cumulative SCD on the limited regulatory resource. On the outcome side, the latent variance of exhaustion and depressive symptoms was estimated with three parcels each, whereas two parcels were created for depersonalization, depending on the different numbers of items involved. The use of two parcels is adequate, as long as they are tau-equivalent (homogenous loadings and error variances) and the underlying construct is uni-dimensional (Sass & Smith, 2006). Sum of days absent was introduced as a manifest variable.

In the tax and revenue office sample (Sample 2), we applied the cross-lagged panel method to predict intra-individual changes in the outcomes at Time 2 as a function of changes in the predictors at Time 1 and thus to minimize confounding influences (Dormann, Zapf, & Perels, 2010). Temporal stabilities of the four outcomes between both measurement times and all correlations among the outcomes and predictors at Time 1 (control variables, ED, and SCDs) were estimated accordingly. This procedure allowed us to partial out lagged main effects and to determine the additional amount of the outcome variance (ΔR^2) at Time 2 that is explained by the lagged interactive effects of ED and SCDs. In both samples, age, gender, and working time status (part vs. full time) were also specified to predict the outcomes to reduce the

risk of spurious relationships due to biographical differences in the study variables.

For testing the validity of the psychometrical distinctiveness of the study variables, confirmatory factor analyses (CFAs) were conducted before applying the LMS-procedure.

Results

Descriptive Statistics

For both samples, descriptive statistics, coefficient alphas, and intercorrelations for all measures are presented in Tables 1 and 2.

Measurement Models

CFA provided support for the differentiability between ED and SCDs. In both samples, the proposed two-factor model yielded a good data approximation: Sample 1, $\chi^2(4) = 2.07$, *ns*, root-mean-square error of approximation (RMSEA) $< .001$, 95% CI [.000, .089], comparative fit index (CFI) = 1.00, standardized root-mean-square residual (SRMR) = .013, gamma hat = 1.00; Sample 2 (Time 1), $\chi^2(4) = 3.71$, *ns*, RMSEA $< .001$, 95% CI [.000, .100], CFI = 1.00, SRMR = .021, gamma hat = 1.00; Sample 2 (Time 2), $\chi^2(4) = 1.93$, *ns*, RMSEA $< .001$, 95% CI [.000, .072], CFI = 1.00, SRMR = .012, gamma hat = 1.00. Other models that combined two or all latent variables failed to fit the data, in both samples. On the outcome side, the proposed three-factor model also showed a good fit: Sample 1, $\chi^2(17) = 16.95$, *ns*, RMSEA $<$ .001, 95% CI [.000, .073], CFI = 1.00, SRMR = .028, gamma hat = 1.00; Sample 2 (Time 1), $\chi^2(17) = 22.66$, *ns*, RMSEA = .040, 95% CI [.000, .078], CFI = .99, SRMR = .024, gamma hat = .99; Sample 2 (Time 2), $\chi^2(17) = 20.11$, *ns*, RMSEA = .029, 95% CI [.000, .072], CFI = 1.00, SRMR = .023, gamma hat = .99. Again, other models that combined two or all latent variables showed a worse fit, in both samples. In the best fitting models, the standardized factor loadings ($\lambda > .71$; $p < .01$) indicated adequate, valid, and reliable measurement models. For all latent variables with two indicators, the factor loadings and error variances were homogenous, indicating tau-equivalence and thus justifying the use of two parcels.

Analysis of Latent Main and Interaction Effects

Nursing homes (Sample 1). In Table 3, the corresponding LMS estimations are given. After controlling for biographical data and the main effects of SCDs and ED, both sources of work stress exerted significant interaction effects on exhaustion (Hypothesis 1a), depressive symptoms (Hypothesis 1b), and sum of days absent (Hypothesis 1c). In contrast, depersonalization failed to reflect an interaction effect between ED and SCDs. Thus, the nursing home data provided some support for Hypothesis 1a. The log-likelihood difference test ($\Delta -2LL$) confirmed the improvement of fit of the moderated SEM compared with the corresponding linear SEM. The signs of the significant interaction parameters indicate that the positive relations of one stressor (SCDs or ED) to the three outcomes were amplified as a function of the other stressor (ED or SCDs). The estimated effect sizes (ΔR^2) of the significant interactive effects varied between .09 and .20.

To facilitate the interpretation of the findings, interaction plots were generated using the method recommended by Aiken and West (1991). The resulting simple slope plots are depicted in Figure 1. In support of Hypothesis 1a, the relationship between SCDs and emotional exhaustion was positive and significantly stronger when ED was high (1 *SD* above the mean) than when ED was low (1 *SD* below the mean). A similar interaction pattern was revealed when analyzing the effects of SCDs and ED on depressive symptoms: The positive relation of SCDs to depressive symptoms was amplified by ED, supporting Hypothesis 1b. Finally, and consistent with Hypothesis 1c, ED strengthened the adverse effects of SCDs on absence behavior. Vice versa, the relations of ED to the three outcomes were positive and stronger when SCDs were high compared with low levels of SCDs.

Tax and revenue office (Sample 2). Table 4 shows the LMS estimations for the tax and revenue office. After partialling out the influences of biographical variables and intra-individual changes due to ED and SCDs at Time 1, both stressors exerted significant lagged interactive effects on both burnout dimensions (Hypothesis 1a), depressive symptoms (Hypothesis 1b), and sum of days absent (Hypothesis 1c) at Time 2. As in Sample 1, the signs of the parameters indicate that the positive longitudinal relations of one stressor to all four outcomes were amplified as a function of the

Table 1
Means, Standard Deviations, Intercorrelations, and Internal Consistencies Estimates of Variables in Sample 1

Variable	1	2	3	4	5	6	7	8	9
1. Age	—								
2. Gender[a]	.07	—							
3. Working time status[b]	.17*	−.05	—						
4. Emotional dissonance	−.14	−.13	−.06	(.84)					
5. Self-control demands	−.11	.06	−.14	.34**	(.84)				
6. Emotional exhaustion	.10	−.01	−.05	.43**	.44**	(.83)			
7. Depersonalization	−.15	−.09	−.11	.53**	.24**	.47**	(.67)		
8. Depressive symptoms	−.05	.07	−.05	.41**	.33**	.68**	.34**	(.89)	
9. Sum of days absent	.06	.14	−.07	.24**	.24**	.36**	.15	.38**	—
M	36.12	1.82	1.29	2.65	3.22	2.33	2.00	1.13	7.50
SD	10.38	0.38	0.45	0.68	0.65	0.80	0.84	0.81	17.55

Note. $N = 154$. Descriptive statistics of absence data represent nontransformed scores. Internal consistency estimates (Cronbach's alpha) are in parentheses on the diagonal.
[a] Gender (1 = female, 2 = male). [b] Working time status (1 = part-time, 2 = full-time).
* $p < .05$ (two-tailed test). ** $p < .01$ (two-tailed test).

Table 2
Means, Standard Deviations, Intercorrelations, and Internal Consistencies Estimates of Variables in Sample 2

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
							Time 1								
1. Age	—														
2. Gender[a]	.19**	—													
3. Working time status[b]	.06	.30**	—												
4. Emotional dissonance	.07	.17*	.07	(.91)											
5. Self-control demands	.04	.18**	.03	.55**	(.92)										
6. Emotional exhaustion	.03	.20**	.11	.55**	.57**	(.89)									
7. Depersonalization	−.13	.22**	.03	.56**	.49**	.52**	(.80)								
8. Depressive symptoms	−.07	.11	−.04	.47**	.55**	.57**	.56**	(.92)							
9. Sum of days absent	−.04	.01	−.06	.20**	.25**	.14*	.17*	.19**	—						
							Time 2								
10. Emotional dissonance	.12	.18**	.13	.56**	.41**	.54**	.40**	.34**	.10	(.92)					
11. Self-control demands	.14*	.28**	.12	.40**	.62**	.61**	.30**	.37**	.13	.49**	(.91)				
12. Emotional exhaustion	−.03	.19**	.06	.58**	.61**	.69**	.69**	.74**	.22**	.37**	.39**	(.89)			
13. Depersonalization	−.11	.17*	.01	.58**	.49**	.70**	.76**	.54**	.12	.56**	.46**	.62**	(.79)		
14. Depressive symptoms	.04	.19**	.07	.47**	.48**	.73**	.46**	.74**	.18**	.44**	.48**	.64**	.54**	(.89)	
15. Sum of days absent	.15*	.05	−.12	.10	.16	.08	.14*	.11	.45**	.03	.06	.15*	.11	.06	—
M	42.56	1.47	1.89	2.75	3.24	2.74	2.31	1.17	9.07	2.80	3.29	2.71	2.29	1.01	7.15
SD	9.11	0.50	0.31	0.93	0.75	0.99	1.04	0.87	13.98	0.90	0.71	0.96	1.00	0.74	8.87

Note. $N = 213$. Descriptive statistics of absence data represent nontransformed scores. Internal consistency estimates (Cronbach's alpha) are in parentheses on the diagonal.
[a] Gender (1 = female, 2 = male). [b] Working time status (1 = part-time, 2 = full-time).
* $p < .05$ (two-tailed test). ** $p < .01$ (two-tailed test).

other stressor. The log-likelihood difference test ($\Delta -2LL$) confirmed the improvement of model fit of the moderated SEM compared with the linear SEM, and the estimated effect sizes (ΔR^2) of the interactions ranged from .03 to .08.

Again, we applied the plotting procedure suggested by Aiken and West (1991) for visualizing the significant interactions (see Figure 2). In support of Hypotheses 1a and 1b, the positive lagged effects of one stressor (ED or SCDs) on exhaustion, depersonalization, and depressive symptoms at Time 2 were amplified by the other stressor (ED or SCDs). In one case, the relation of SCDs at Time 1 to depressive symptoms at Time 2 seemed to be negative when low levels of ED were reported, suggesting that SCDs are only positively related to depressive symptoms when ED is high. Finally, the adverse effects of SCDs at Time 1 on absence behavior at Time 2 were amplified by ED at Time 1 (Hypothesis 1c).

Discussion

In the present study, we integrated two areas of research on organizational stress that previously had only been examined separately. First, research on emotional labor has repeatedly found that portraying emotions inconsistent with one's genuinely felt emotions results in psychological strain. Second, job-related demands on self-control have recently been established as a source of

Table 3
Unstandardized LMS Estimates of the Effects of Biographical Variables, Emotional Dissonance, and Self-Control Demands on Burnout, Depressive Symptoms, and Absence Behavior (Sample 1)

	Criterion variable			
Predictor variable	Emotional exhaustion	Depersonalization	Depressive symptoms	Sum of days absent
γ: Age	.01	−.01	−.00	.02
γ: Gender	−.10	−.09	.09	.66
γ: Working time status	−.09	−.18	−.08	−.37
R^2	.02	.05	.01	.03
γ: Self-control demands	.47**	−.04	.31*	.76*
γ: Emotional dissonance	.46**	.94**	.50**	.83*
R^2 (ΔR^2)	.41 (.39)	.47 (.41)	.32 (.31)	.13 (.11)
ω: Interaction	.76**	.05	.85**	1.61*
R^2 (ΔR^2)	.59 (.18)	.47 (.00)	.52 (.20)	.22 (.09)
$\Delta -2LL$ (df_{diff})		2,029.13 (4)**		

Note. $N = 154$. LMS = latent moderated structural equation modeling.
* $p < .05$ (two-tailed test). ** $p < .01$ (two-tailed test).

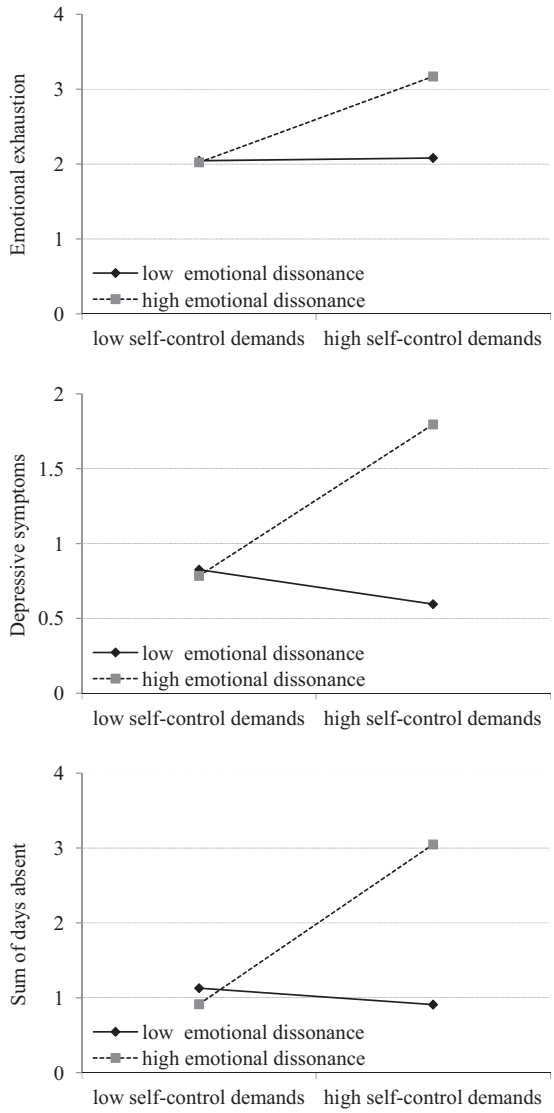

Figure 1. Interaction effects of emotional dissonance and self-control demands on burnout, depressive symptoms, and absence behavior in the nursing home sample ($N = 154$).

stress at work that predicts burnout. Theoretically, both ED and SCDs are hypothesized to draw on and compete for a common limited regulatory resource. This argument implies interactive effects of ED and SCDs on strain and absenteeism such that the positive effects of one stressor on the outcomes are amplified as a function of the other stressor. In organizational settings, this proposition has been neither elaborated nor tested so far. Consequently, drawing on two different samples, we analyzed interactive effects between ED and SCDs on burnout, depressive symptoms, and absence behavior. Although previous research studies on emotional labor and SCDs have used cross-sectional data, our analysis also draws on a panel design to account for outcome stability and to test for lagged effects. In sum, we found seven significant (out of eight tested) interactive effects (three cross-sectional and four lagged effects). Thus, our results support the idea that simultaneous coping with both ED and SCDs results in higher levels of strain and absenteeism than accounted for by the additive effects of both stressors.

Our research offers some contributions to the existing knowledge on ED and SCDs. First, our results clarify competing theoretical views regarding the mechanisms through which ED results in job strain. Whereas most authors have claimed that ED triggers control processes depleting a limited regulatory resource (Zapf & Holz, 2006), other scholars have argued that ED constitutes an aversive and frustrating psychological state that is evaluated as disturbing and threatening (Ashforth & Humphrey, 1993; Brotheridge & Lee, 1998). According to the latter view, portraying emotions that are not genuinely felt is proposed to create a "sense of strain" (Ashforth & Humphrey, 1993, p. 96) that leads to work-related maladjustment and, subsequently, to burnout. However, if ED exerts its adverse effects through such evaluative processes, no interactive effects between ED and SCDs will emerge because their effects on strain would not evoke common mechanisms. Thus, our results support the view that, like other SCDs, ED leads employees to exert self-control, which depletes a limited resource.

In addition, using a time-delayed measure of absenteeism and panel data corroborates the expected direction of the relationships. One might argue that employees suffering from job strain may perceive job-related requirements to exercise self-control and emotional labor as more demanding than employees who feel less strained. To test the possibility of reverse causality, we also analyzed lagged effects of the four outcomes on SCDs and ED in the second sample (tax and revenue office). Consistent with longitudinal results provided by Schaufeli, Bakker, and van Rhenen (2009), the paths from strain to both stressors were insignificant. Thus, ED and SCDs, conceptualized as job demands, are likely to affect strain and absenteeism but not vice versa (see also Zapf, Dormann, & Frese, 1996).

Finally, our study shows that simultaneous coping with ED and SCDs results in both psychological and organizational costs. Absenteeism constitutes a widespread phenomenon that costs organizations millions of dollars each year (Hausknecht, Hiller, & Vance, 2008). Thus, the interactions found are likely to lead to losses of organizational productivity and performance emphasizing the relevance of emotional labor and SCDs for organizational efficiency.

Two aspects of our analysis and results demand closer attention. First, in the nursing home sample, depersonalization was only predicted by ED and failed to reflect the hypothesized interactive effect. Taking into account the high correlation between ED and depersonalization, a likely reason might be that common method variance artificially increased the linear relations among self-report measures and thus prevented the interaction from being detected (Podsakoff, MacKenzie, Podsakoff, & Lee, 2003). Alternatively, the items of the depersonalization scale may have been responded to incorrectly or misunderstood. Although CFA supports the construct validity of the scales of the Maslach Burnout Inventory (Büssing & Perrar, 1992; Maslach & Jackson, 1986), the low bivariate relations of depersonalization to exhaustion and depressive symptoms suggest that the health care workers did not interpret depersonalization as a form of job strain. Consistent with the latter suggestion, some authors have argued that depersonalization is not only a manifestation of strain but also involves a kind

Table 4
Unstandardized LMS Estimates of the Lagged Effects of Biographical Variables, Emotional Dissonance, and Self-Control Demands on Burnout, Depressive Symptoms, and Absence Behavior (Sample 2)

Predictor variable	Criterion variable (Time 2)			
	Emotional exhaustion	Depersonalization	Depressive symptoms	Sum of days absent
γ: Age	.00	−.01	.01	−.02
γ: Gender	.03	.01	.08	−.11
γ: Working time status	.22	−.06	.19	.01
γ: Criterion variable (Time 1)	.41**	.58**	.46**	.32**
R^2	.50	.73	.57	.22
γ: Self-control demands	.35*	.16	.12	.40*
γ: Emotional dissonance	.21**	.19*	.09	.11
R^2 (ΔR^2)	.58 (.07)	.76 (.02)	.59 (.03)	.26 (.04)
ω: Interaction	.42**	.26**	.31**	.38*
R^2 (ΔR^2)	.65 (.07)	.79 (.03)	.67 (.08)	.28 (.03)
$\Delta -2LL$ (df_{diff})	1,943.79 (4)**			

Note. $N = 213$. LMS = latent moderated structural equation modeling.
* $p < .05$ (two-tailed test). ** $p < .01$ (two-tailed test).

of coping strategy aimed at reducing stress and feelings of exhaustion (Diestel & Schmidt, 2010; Hobfoll & Freedy, 1993).

Second, in some cases, SCDs were not at all or only moderately related to psychological strain, whereas ED exerted stronger effects. This difference in effect size was found—for example in a negative relationship between SCDs and depressive symptoms (in Sample 2)—when ED was low, suggesting that SCDs result in strain, only when ED is high. Basic research on self-control has found that coping with ED in terms of response-focused emotion regulation is more straining and thus demands more parts of the regulatory resource compared with other self-control processes (Gross, 2001; Schmeichel, 2007). To explain this finding, Tice and Bratslavksy (2000, p. 151) have argued that, because of its high self-relevance, a perceived discrepancy between felt and required emotions has a higher priority and is more difficult to regulate compared with other demands on self-control. Thus, ED may have occasionally stronger adverse effects than SCDs because it consumes more of the limited regulatory resource.

Because of the growth of the service sector and the competition in industrialized countries, demands on emotional labor and self-control can be expected to increase in the future (Baumeister & Vohs, 2004; Cascio, 2003; Gross, 2007). Thus, our findings have several practical implications for dealing with both sources of work stress. First, the vast bulk of stress-reduction interventions has failed to consider SCDs or ED as stressors (for a review, see Richardson & Rothstein, 2008). The most promising programs

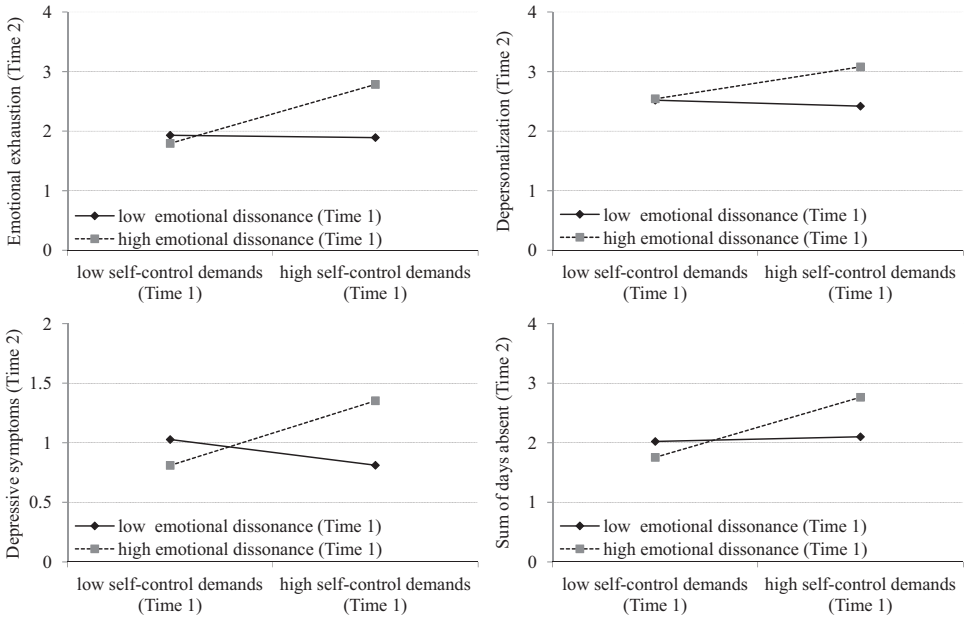

Figure 2. Lagged interaction effects of emotional dissonance and self-control demands on burnout, depressive symptoms, and absence behavior in the tax and revenue office ($N = 213$).

for dealing with both stressors are probably cognitive-behavioral interventions, which are designed to train employees in regulating emotions and thoughts when coping with stressful events (Bond & Bunce, 2000). A recent meta-analysis revealed that these interventions are more effective with regard to stress reduction than other intervention programs (Richardson & Rothstein, 2008).

Recent experimental studies suggest the development of intervention programs that focus on enhancing the resource for exercising self- and emotional control. These studies revealed that the ability to execute self-control can be enhanced through the repeated exertion of self-control (Baumeister et al., 2006). For example, Oaten and Cheng (2007) had participants enter a 4-month monitoring program that was intended to train self-control. Participants showed significant improvements in self-control as indicated by enhanced performance in laboratory tasks. A key finding was that this improvement is not only related to a specific self-control domain but also expands to other domains such as response-focused emotion regulation. In contrast, a control group largely failed to improve their self-control ability over the same time span. Thus, self-control training seems to result in a generalized improvement across several domains and an enhancement of the ability to exert self-control.

Second, the improvement of fit between job demands and personal characteristics may also prevent high job strain and absence behavior (Judge et al., 2009). Such an improvement could be achieved by assigning especially vulnerable employees to job tasks with low ED and SCDs or by recruitment strategies that prevent vulnerable employees from entering into jobs that require emotion-labor and self-control.

Finally, on the organizational level, job control (such as decision latitude; Neubach & Schmidt, 2006; K.-H. Schmidt & Diestel, 2010) and emotional job resources (such as emotional support; de Jonge, Le Blanc, Peeters, & Noordam, 2008) were found to mitigate the adverse effects of SCDs and ED on job strain. In conclusion, in many occupational contexts, SCDs and ED represent new challenges for human resource managers, occupational health professionals, and supervisors.

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