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"Positive experiences at work and daily recovery: Effects on couple's well-being"

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Abstract

The present diary study investigates, at the within-person level, how job satisfaction mediates the relationship between self-rated job performance and recovery experiences (i.e., psychological detachment from work and relaxation) during off-job time. Furthermore, we explore the effects of these two recovery experiences on couple's well-being. Data were collected from 145 dual-earner couples ($N = 290$ participants; $N = 1450$ occasions) with a daily diary design (five consecutive working days). Multilevel analyses showed that daily job performance positively predicted psychological detachment and relaxation, and that daily job satisfaction partially mediated this relationship. In addition, we found that psychological detachment and relaxation have positive effects on own and partner's indicators of well-being (i.e., relationship satisfaction and positive emotions). The benefits of recovery go beyond the individual and affect their partner's level of well-being.

Keywords: Diary research, Job performance, Job satisfaction, Positive emotions, Recovery experiences.

Research on recovery has increased in the last years, and has demonstrated that employees who are able to unwind during off-job hours enjoy better health and well-being (e.g., Sonnentag & Fritz, 2015). Recovery has been defined as “*a process of psychophysiological unwinding after effort expenditure*” (Geurts & Sonnentag, 2006, p. 485). Two strategies have been widely analysed in the field of recovery: Psychological detachment from work and relaxation. These two strategies allow individuals to keep resources as they do not require investing an extra effort (Sonnentag & Fritz, 2007). In the attempt to better understand the antecedents of recovery, scholars and practitioners have tried to identify what job-related conditions hinder the possibility to disconnect and relax from work-related issues during non-work time (Sonnentag & Fritz, 2015). However, we know very little about the job-related experiences that enhance recovery. The aim of the present study is to fill this gap.

More specifically, the present study aims to make two important contributions to the literature. First, most studies have analyzed job demands (e.g., workload, role conflict, time pressures) as obstacles to recover during off-job time (Sonnentag & Bayer, 2005). However, studies examining the role of job-related behaviors and attitudes as facilitators of psychological detachment from work and relaxation are still lacking. In the present study, we address this gap by examining the role of daily job performance and job satisfaction as potential antecedents that increase the likelihood to psychologically detach from work and to relax at the end of the day during leisure time. Studying facilitators of detachment is relevant over and above studying prototypical hindrances of recovery.

Second, although there is emerging research on the effects of recovery on partner’s well-being (Hahn, Binnewies, & Dormann, 2014; Hahn & Dorman, 2013; Park & Fritz, 2015), recovery has been mainly considered as an individual strategy to recover from work-related stress (Sonnentag & Fritz, 2007). There has been a call for research on the impact of recovery on family members (Hahn, & Dormann, 2013) but to our knowledge, the effect on

other individuals has not been examined. The present study carried out among dual-earner couples allows us to examine recovery from an interpersonal perspective, demonstrating that the effects of lack of recovery go beyond own well-being.

Finally, we use a complex design, taking measures over several days among couples. Research shows that behaviours and affect vary on a day-to-day basis. Therefore, intensive longitudinal design is best suited to examine the within-subject/couple processes. In the present study, we specifically use a daily diary design, taking measures twice a day, during five consecutive working days. The design of the study can be seen on Figure 1. Moreover, we use the Actor-Partner Interdependence Model (APIM; Kenny, Kashy, & Cook, 2006), which allows us to examine the impact of work-related experiences on employees' own well-being, but also the impact of these work-related experiences on employees' partner's well-being.

Theoretical Background and Hypotheses

Job performance and recovery experiences: The mediating role of job satisfaction

Psychological detachment refers to the individual's sense of being away from the work situation (Etzion, Eden, & Lapidot, 1998), whereas relaxation refers to a state of low activation and increased positive affect that results from activities such as muscle relaxation, taking a walk, or listening to music (Sonnentag & Fritz, 2007). Over and above job demands hindering recovery, the study of facilitators is crucial to help employees to foster recovery. We would like to bring to academics and practitioners attention the importance of job performance not only to increase organizational productivity but to foster recovery and facilitate the functioning of employees outside work. This study may contribute to highlight the importance of appropriate job designs to help employees perform better not only as a mean to increase productivity but as a mean of increasing their own well-being.

So far, studies have demonstrated that recovery and job performance are related variables. For example, psychological detachment and relaxation may increase next day's level of performance because individuals' psychophysiological systems are restored, and people have more resources available to invest at work (e.g., Sonnentag & Bayer, 2005; Sonnentag & Fritz, 2007). Fritz, Yankelevich, Zarubin, and Barger (2010) found curvilinear relationships between psychological detachment and co-worker-reported job performance (task performance and proactive behaviour), suggesting that medium levels of detachment were most beneficial to achieve an optimal performance. The latter authors argued that the relationship between detachment and performance is complex and still not sufficiently examined.

In the present study, we argue that on days when job performance is high, the likelihood to detach psychologically from work and to relax in the evening will be increased. Job performance is conceptualized as those actions and behaviors that are under the control of the individual and contribute to the goals of the organization (Rotundo & Sackett, 2002). It can be divided in two main categories; task performance (also known as in-role performance) refers to behavior directed toward formal tasks, duties, and responsibilities such as those included in a job description (Williams & Anderson, 1991). Contextual performance (also known as extra-role performance) refers to activities that are discretionary, not directly or explicitly recognized by the formal reward system, but are essential for organizational effectiveness (e.g., acting courteously, helping others; Organ, 1988). In relation to recovery, we argue that when employees perceive that they have performed the formal job-related activities, they will be no longer occupied with unfinished tasks when they come home, and they will be better able to mentally disengage and relax from job-related issues. For example, it has been found that employees with unfinished tasks find it difficult to disengage from the task and regulate their attention to other issue (Leroy, 2009). In line with this, a recent

research found that job unfulfilled goals were associated with reduced detachment (Smit, 2016). Furthermore, the same research demonstrated that creating plans to resolve incomplete goals increased employee's psychological detachment. In this sense, the likelihood of goal attainment is higher when performance is better (e.g., Locke & Latham, 1990). We also base our arguments on the theoretical framework proposed by Sonnentag and Fritz (2015), who suggest that recovery is easier to achieve after having brought work matters to a cognitive closure. Therefore, we hypothesize that:

Hypothesis 1: Daily performance at work (task and extra-role performance) will be positively related to daily recovery experiences (i.e., psychological detachment from work and relaxation) during non-working hours.

But what is the mechanism explaining this link? We propose job satisfaction as a mediator in this relationship. Performance involves obtaining internal and external rewards, which increases job satisfaction (e.g., Vroom, 1964). In the case of extra-role performance, it has been shown that helping others has been related to higher positive affect (Weinstein & Ryan, 2010). That is, performing well at work creates a positive state, and this positive circumstance explains why people are better able to disconnect and relax. According to the affective events theory (Weiss & Cropanzano, 1996), work events generate affective (positive or negative) states. For example task accomplishment may lead to positive affective states (Gabriel, Diefendorff, & Erickson, 2011). Based on this theory, we argue that performance leads to job satisfaction because employees have the feeling that they have accomplished their tasks on that specific day. Also according to the affective events theory, a specific affective state predisposes subsequent behavior and attitudes. In our study, job satisfaction (a positive state), will predispose the individual to recover during non-work time. In that way, the organism can return to a pre-stressor level. For example, for psychological detachment to

occur, the individual has to stop thinking about one's job related problems (Sonnentag & Fritz, 2007). If individuals are not satisfied with the job and are experiencing a negative state, it will be more likely that he/she continues thinking about work. However, if they are satisfied, they will be more able to focus on different activities during non-work time. Similarly, to achieve relaxation, the person needs to have low activation and increased positive affect (Stone, Kennedy-Moore, & Neale, 1995). This will be more likely if the person is already experiencing a positive state such as satisfaction. Therefore, the link between job performance and psychological detachment and relaxation would be explained by job satisfaction, as proposed in our second hypothesis:

Hypothesis 2: The relationship between daily job performance and recovery experiences (i.e., psychological detachment from work and relaxation) during the evening will be mediated by daily job satisfaction.

The effects of daily psychological detachment and relaxation: Positive emotions and satisfaction with the relationship

There is ample evidence of the negative impact of lack of detachment and relaxation on own well-being. For example, lack of detachment has been related to exhaustion and high need for recovery (Sonnentag et al., 2010), to next morning's negative activation and fatigue (Sonntag, Binnewies & Mojza, 2008a) as well as to positive mood in the evening (Sonntag & Bayer, 2005) and positive affect at the end of the week (Sonntag, Mojza, Binnewies, & Scholl, 2008b). Less studies have focused on relaxation, but to date, evening relaxation has been positively related to next morning's serenity (Sonntag et al., 2008a). Cross-sectional studies also relate this recovery experience to higher need for recovery and exhaustion (Siltaloppi, Kinnunen, & Feldt, 2009). Finally, both recovery experiences have been positively related to life satisfaction (Sonntag & Fritz, 2007). In the present study, we

have decided to analyse two variables/states that have not been previously examined among couples in relation to recovery: positive emotions and relationship satisfaction. Relationship satisfaction is defined as an interpersonal evaluation of the positivity of feelings for one's partner and attraction to the relationship (Rusbult & Buunk, 1993), whereas positive affect denotes pleasant moods and emotions, such as joy and affection. There are several reasons to focus on these variables. First, relationship satisfaction is one of the most important variables in dyadic processes research (Falconier, Jackson, Hilpert, & Bodenmann, 2015). Second, positive emotions and relationship satisfaction are indicators of subjective well-being (e.g., Diener, Suh, Lucas, & Smith, 1999). Therefore, daily recovery experiences may significantly influence on own's levels of well-being. For example, detaching from work through having a good dinner and conversations with the partner and children is a social event that may contribute to increased positive affect and marital satisfaction (e.g. Oerlemans, Bakker, & Demerouti, 2014)". Based on above reasoning, we hypothesize that:

Hypothesis 3: Daily recovery experiences will be positively related to one's own level of daily relationship satisfaction and positive emotions during the evening.

All these studies focus on intra-individual effects. However, psychological detachment and relaxation have been mainly considered as individual strategies that have an impact on own levels of well-being and there is a lack of research examining how employees' level of recovery affects significant others. This effect is known as crossover, which refers to the transmission of negative or positive states from one member of the dyad to another (Westman, 2001). There is incipient research on the crossover of detachment between members of the couple (Hahn, Binnewies, & Dormann, 2014), and it has been shown that psychological detachment and relaxation is related to partner's life satisfaction (Hahn & Dormann, 2013; Park & Fritz, 2015). As Sonnentag, Perrewe, and Ganster (2009) suggest, recovery is not merely and internal process, and experiences such as psychological

detachment can be observed by the partner. For example, lack of detachment is observed when one is not “*fully present*” at home because of performing job-related activities, which may affect partner’s ratings of well-being or satisfaction with the relationship. In addition, while previous studies among couples analyse general levels recovery and life satisfaction, we provide evidence on a daily basis. Therefore, our final hypothesis is:

Hypothesis 4: Daily recovery experiences will be positively related to partner’s level of daily relationship satisfaction and positive emotions during the evening.

Method

Procedure and sample

Participants were recruited on a voluntary basis through social networks of the researchers and their students from different companies in Spain. To obtain access to employee samples, students from an introductory course in Organizational Psychology were asked to contact at least one employee and his/her partner who would be willing to participate in our study. The use of student contacts to obtain access to employee samples is quite common in organizational behaviour field (e.g., Demerouti & Rispens, 2014). Participants filled in the general paper and pencil survey before starting with the daily survey booklets, which they completed twice a day during five consecutive working days (Monday-Friday). Specifically, job performance and job satisfaction were measured at the end of the workday (afternoon), whereas psychological detachment, relaxation, relationship satisfaction and positive emotions were reported before going to bed (evening). Responses of partners were linked by means of anonymous codes provided by the participants. The diaries were returned to the researchers via the students who were collaborating with the research team. Written consent forms ensuring anonymity and confidentiality of responses were collected.

In total, 380 employees agreed to participate and received the surveys. Of these employees, 306 valid questionnaires were returned, reaching a response rate of 80.5%. Of these, 16 questionnaires were excluded because information of at least one day was missing or participants did not complete the surveys at the appropriate time. The final sample comprised 145 heterosexual couples ($N = 290$ participants and $N = 1450$ occasions). Participants came from a broad range of occupational backgrounds, with most of them working in the following sectors; health (13.2%), financial institutions (12.9%), trade (11.5%), industry (10.8%), and education (6.3%). For participating in the study both members of the couple had to be employed, living together, and interact at least one hour during the evening. We excluded employees who worked a night shift or not on Monday-Friday. Mean age was 43.74 years ($SD = 9.96$); mean job tenure was 20.44 years ($SD = 11.22$). On average, they worked 40.05 hours per week ($SD = 8.43$). The majority of the couples (70.2%) had at least one child, while 51.5% of the sample had a university degree or postgraduate studies. Most of them were salaried (85.3%) and about one-third (39.4%) of the participants had a supervisory position.

Measures

Daily survey data

Job performance

Daily job performance was measured with six items adapted from the performance scale of Williams and Anderson (1991). We examined two aspects of job performance: task or in-role (performance on required duties and responsibilities) and extra-role (performance on discretionary behaviours that go beyond the formal job description). A sample item of task performance was, “*Today, I have adequately completed assigned duties*”, and an example of extra-role performance “*Today, I have taken time to listen to my co-worker’s problems and worries*”. Items were rated on a 6-point scale, ranging from 1 = *not true at all* to 6 = *totally*

true. Reliability was assessed using Geldhof, Preacher, and Zyphur's (2014) procedure for computing omega (ω) separately for the within- and between-person level. Omega is conceptually similar to the more familiar Cronbach's alpha, but makes less restrictive assumptions about the relations between items and constructs. The within-person omega reliability coefficient was .81 and .62 for task and extra-role performance, respectively. Regarding between-person omega reliability, the coefficient was .96, and .83 for task and extra-role performance, respectively

Daily Job Satisfaction

Our measure of daily job satisfaction was based on Kunin (1955). It was measured using a single item at the end of the workday (afternoon questionnaire): "*Today, how satisfied are you with your job?*" We used faces as response options. The scale consists of five faces, ranging from "*very unsatisfied*" to "*very satisfied*". One-item measure of affective states is commonly used in diary designs (e.g., Fisher, Matthews, & Gibbons, 2016).

Daily Recovery Experiences

Daily psychological detachment from work and relaxation were measured with six items of the daily version (Bakker, Sanz-Vergel, Rodríguez-Muñoz, & Oerlemans, 2015) of the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007). Participants had to indicate how often they had experienced each situation (e.g., "*Today, during my off-job time..., I didn't think about work at all; I kicked back and relaxed*"). Items were rated on a 6-point scale, ranging from 1 = *not true at all* to 6 = *totally true*. The within-person omega reliability coefficient was .71 and .67 for detachment and relaxation, respectively. Regarding between-person omega reliability, the coefficient was .95, and .89 for detachment and relaxation, respectively

Daily Relationship Satisfaction

Our measure of daily satisfaction with the relationship was also based on Kunin (1955). It was measured using a single item at the end of the day (evening questionnaire): “Today, how satisfied are you with your partner/personal relationship?”. We used faces as response options. The scale consists of five faces, ranging from “very unsatisfied” to “very satisfied”.

Positive Emotions

Positive emotions in the evening were measured with four items from the Job-related Affective Well-being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000). As the JAWS has items that reflect both pleasant and unpleasant emotions, we decided to include in the study only the positive emotions. Participants were requested to indicate in the evening questionnaire if they experienced each of four positive distinct emotions at the moment (e.g., “At this moment, I feel... at ease, energetic, enthusiastic, and inspired”). Items were rated on a 6-point scale, ranging from 1 = *not true at all* to 6 = *totally true*. The within-person omega reliability coefficient was .70, while the between-person omega reliability coefficient was .92.

General survey data

Control variables. To rule out alternative interpretations, we assessed a number of control variables. Existing empirical evidence has shown that number of hours worked (e.g., Volmer, Binnewies, Sonnentag, & Niessen, 2012) and number of children (e.g., Hahn, et al., 2014) may impact the levels of psychological detachment. Therefore, we assessed gender and number of hours worked per week at the person level, and number of children at the dyad level.

Data analyses

Due to the nested data structure; days (Level 1; $N = 1450$ observations) were nested in persons (Level 2; $N = 290$ participants), which were, in turn, nested in couples (Level 3; $N = 145$ dyads), we applied multilevel modeling using the MLwiN software (Rasbash, Browne, Healy, Cameron, & Charlton, 2002). Following the methodological recommendations regarding diary studies, we centered person-level variables at the grand mean and day-level variables at the respective person mean (Ohly, Sonnentag, Niessen, & Zapf, 2010).

We analyzed our data following the actor-partner interdependence model (APIM; Kenny et al., 2006). When data are collected from both members of a dyad, it cannot be treated as independent from one another (Kashy & Kenny, 2000). Thus, APIM was designed to deal with violations of statistical independence, as well as for investigating dyadic effects in close relationships. The dyad is considered as the highest unit of analysis, with individuals nested within the dyad. Specifically, APIM allows examining how an individual's predictor variable simultaneously and independently relates to his or her own criterion variable (actor effect), and to his or her partner's criterion variable (partner effect). In APIM models, the partner effect allows to test the mutual (i.e., reciprocal) influence between the members of the dyad (Kenny et al., 2006). Thus, each member could be considered either as the actor or as the partner in the hypothesized relationships.

Results

Preliminary analyses

We calculated means, standard deviations, and correlations among the study variables. As can be seen in Table 1, the pattern of correlations was in the expected direction. Before APIM estimation, we examined the discriminant validity of all the variables included in the study. We conducted multilevel confirmatory factor analyses with Mplus 6.12 (Muthén & Muthén, 2010). We compared a seven-factor measurement model discriminating between the

constructs with a one-factor model with all the items loading on one single factor. Due to the high correlation between relaxation and positive emotions, we also tested a six-factor measurement model in which both variables loaded on the same factor. The chi-square difference test showed that the seven-factor model fit much better to the data than (a) the one-factor model ($\Delta\chi^2(18) = 3615.1, p < .001$); and (b) the six-factor model ($\Delta\chi^2(12) = 1118.5, p < .001$). The seven-factor model showed a good fit to the data, ($\chi^2(248) = 1003.41, p < .001, CFI = .92, TLI = .91, RMSEA = .04, SRMR(\text{within}) = .04$ vs. $SRMR(\text{between}) = .08$). All loadings were statistically significant and suggest that all items adequately load on each construct. Overall, the factor loadings at the between-person level were higher (mean = .87; range .75–.99) than at the within-person level (mean = .76; range .51–.92). Results indicate that variables included in the study can be empirically distinguished.

An essential question in dyadic data analysis is whether dyad members are distinguishable or indistinguishable. This issue must be assessed on two levels: the conceptual and the empirical level (Kenny & Kashy, 2011). First on a conceptual level, dyad members are considered to be distinguishable when there is a meaningful, dichotomous variable that can identify or differentiate the individuals (e.g., heterosexual couples). The distinguishability also needs to be established empirically (Kenny & Kashy, 2011). That is, there must be significant differences in the means, variances, and covariances of both dyad members' scores as a function of the distinguishing variable (Ackerman, Kashy, Donnellan, & Conger, 2011). Using MPLUS we carried out the omnibus test of distinguishability (Kenny et al., 2006). The omnibus test simultaneously evaluates gender differences in mean levels, variances and covariances. We found that although men and women only differed in the mean scores of some of the study variables (work detachment and positive emotions), there were no differences in variances and correlations between both genders ($\chi^2(228) = 129.1, p > .05$). Furthermore, we also tested gender as a potential moderator of our model, but we did

not find significant results. According to Ledermann and Kenny (2017), when the distinguishing variable may show no empirical effects, it may be preferable to treat the dyad members as if they were indistinguishable, mainly due to parsimonious reasons. Thus, we decided to treat men and women as indistinguishable and control for gender in the subsequent analyses to take the mean differences into account. In addition, number of children ($r = .07, p < .01$), and number of hours worked per week ($r = -.20, p < .01$) were associated with psychological detachment from work during evening. Similarly, relaxation was negatively related to number of hours worked per week ($r = -.07, p < .01$). Therefore, these variables were used as covariates in the following analyses.

To provide statistical evidence for the use of a three-level (dyads, persons, days) model, we calculated whether all our study variables exhibited sufficient variability at all levels of analyses. We calculated the intraclass correlations with the intercept-only model. Results showed that in all cases the three-level models explained a significant amount of variance. Specifically, variance attributable to within-person variations ranged from 42.1% to 47.2%. Regarding, variance attributable to between-person variations ranged from 30.1% to 47%. Finally, variance attributable to between-dyad ranged from 5.6% to 25.3%. According to Byrne (2011), when ICC values are larger than .10 and smaller than .90 there is a substantive amount of variance at that level of analysis. Furthermore, the $-2 \times \log$ likelihood difference showed that a three-level model fit much better to the data than a two-level model with the dependent variables of our model; detachment ($\Delta\chi^2(1) = 4.09, p < .05$) relaxation ($\Delta\chi^2(1) = 3.74, p < .05$), positive emotions ($\Delta\chi^2(1) = 8.13, p < .01$) and relationship satisfaction ($\Delta\chi^2(1) = 16.53, p < .001$). Thus, our hypothesized relationships were investigated at the within and person level, while controlling for variation in the variables at the couple-person level (i.e., we also estimated the variances at the dyad-level). This was done to acknowledge the existence of meaningful variance at the couple-person level when

estimating our model. These results clearly support the use of multilevel modelling with three levels of analysis, because the variance attributed to the dyad was significant.

Hypotheses testing

To test our study hypotheses, we examined a series of nested models. In the Null Model, we included the intercept as the only predictor (Model 1). Intercept only model, also known as null model or baseline model, contained only intercept and corresponding error terms. It is important to include this information because the intercept is used to decompose the total variance and to compute the intraclass correlation (Kenny et al., 2006). In Model 2, we included the control variables (gender, number of children, and worked hours per week). In Model 3, we entered task and extra-role performance of both actor and partner. Finally, in Model 4, we included job satisfaction of both actor and partner. We compared the model fit of these models by calculating the difference between the likelihood ratio of one model and the likelihood ratio of the previous one. This difference follows a chi-square distribution (with degrees of freedom being the number of variables added in each model). Model 4 showed the best fit to the data. Table 2 and 3 presents unstandardized estimates, standard errors, and t values for all predictors.

Hypothesis 1 stated that daily job performance would be positively related to daily recovery experiences during non-working hours (within-person level). Please note that in APIM models, this is called an actor effect, which means that the predictor and the outcome refer to the same person. Results from multilevel analysis partially supported our hypothesis, because employee's task performance was positively related to both employee's psychological detachment ($\gamma = 0.315$, $SE = 0.051$, $t = 6.17$, $p < .001$) and relaxation ($\gamma = 0.184$, $SE = 0.046$, $t = 4.00$, $p < .01$). However, extra-role performance was significantly related to relaxation ($\gamma = 0.073$, $SE = 0.025$, $t = 2.92$, $p < .01$), but not to psychological detachment ($\gamma = 0.007$, $SE = 0.027$, $t = 0.25$, $p > .05$).

Hypothesis 2 suggests a mediating effect of employee's daily job satisfaction on the relationship between job performance and recovery experiences. To ascertain whether the mediated effect was statistically significant, we followed recommendations by Bauer, Preacher, and Gil (2006) for testing mediation in multilevel models. For each mediated effect we conducted a Monte Carlo simulation with 20,000 replications, and calculated the distribution of the mediation effect using the estimate and the standard error of the effect of the predictor (x) on the mediator (m), as well as the estimate and the standard error of m on the outcome variable (y). The Null hypothesis that m does not significantly mediate the relationship between x and y is rejected when the distribution of possible estimates for m lies above or below zero. Results showed that employee's daily task performance was positively related to both employee's daily psychological detachment and relaxation via daily job satisfaction. The Monte Carlo test showed that the indirect effect was significant since the biased corrected 95% confidence interval did not include zero (detachment as dependent variable: lower bound [LB] = .051, upper bound [UB] = .126; relaxation as dependent variable: lower bound [LB] = .073, upper bound [UB] = .192). After the inclusion of the mediator (daily job satisfaction), the initial effect of task performance on psychological detachment is reduced from $t = 6.17$ ($p < .001$) to $t = 4.12$ ($p < .01$), and on relaxation is reduced from $t = 4.00$ ($p < .001$) to $t = 2.38$ ($p < .05$).

In addition, employee's daily extra-role performance was positively related to both employee's daily psychological detachment and relaxation via daily job satisfaction. The Monte Carlo test showed that the indirect effect was significant since the bias- corrected 95% confidence interval did not include zero (detachment as dependent variable: lower bound [LB] = .009, upper bound [UB] = .028; relaxation as dependent variable: lower bound [LB] = .043, upper bound [UB] = .121). After the inclusion of the mediator (daily job satisfaction), the initial effect of extra-role performance on relaxation is reduced from $t = 2.92$ ($p < .001$) to

$t = 2.48$ ($p < .05$). In the case of detachment, although it was not significantly related to extra-role performance ($t = 0.25$, $p > .05$), results suggest that there is a significant indirect effect. Indirect effects are a special form of intervening effects whereby the predictor and the dependent variable are not related directly, but they are indirectly related through significant relationships with a linking mechanism (Mathieu & Taylor, 2006). Thus, Hypothesis 2 was supported.

Hypothesis 3 and 4 suggest that daily recovery experiences will be positively related to one's own and partner's level of daily relationship satisfaction and positive emotions during the evening. Results showed that daily levels of psychological detachment was positively related to own daily level of relationship satisfaction ($\gamma = 0.062$, $SE = 0.015$, $t = 4.13$, $p < .01$), but it was not related to partner's perception of relationship satisfaction ($\gamma = 0.016$, $SE = 0.015$, $t = 1.06$, $p > .05$). Regarding relaxation, results showed a positive association with both own ($\gamma = 0.129$, $SE = 0.017$, $t = 7.58$, $p < .001$) and partner's relationship satisfaction ($\gamma = 0.041$, $SE = 0.017$, $t = 2.41$, $p < .05$).

Furthermore, detachment was positively related to both own ($\gamma = 0.100$, $SE = 0.015$, $t = 6.66$, $p < .001$) and partner's daily level of positive emotions ($\gamma = 0.035$, $SE = 0.015$, $t = 2.33$, $p < .05$). Similarly, relaxation was also positively related to both own ($\gamma = 0.283$, $SE = 0.018$, $t = 15.7$, $p < .001$) and partner's daily level of positive emotions ($\gamma = 0.036$, $SE = 0.018$, $t = 2.00$, $p < .05$).

Discussion

Main findings and implications for theory

The aim of the present study was to analyse, at the within level, whether job performance is related two main recovery experiences (i.e., detachment and relaxation) and whether this relationship can be explained by daily job satisfaction. Moreover, we aimed to

show that these two recovery experiences influence one's own and the partner's levels of daily relationship satisfaction and momentary positive emotions during the evening.

We first proposed daily job performance as a predictor of psychological detachment from work in the evening. This is the first study providing evidence that job performance reported in the afternoon predicts psychological detachment during the evening. It is worth mentioning that this significant relationship only exists between task performance and psychological detachment. Fulfilling the requirements of the job helps people to disconnect from work and relax; they are not pre-occupied for not having finished their tasks. This is in line with Sonnentag and Fritz' (2015) cognitive explanation: performing well may facilitate cognitive closure, making psychological detachment more likely during the evening.

However, extra-role performance was significantly related to relaxation but not to psychological detachment. It seems that doing more than what is formally required (extra-role performance) helps people relax but it does not mean that the person will be better able to disconnect from work in the evening. A possible explanation for this is that "*going the extra mile*" may lead to a different outcome than the one proposed here, such as positive work reflection. Sonnentag and Fritz (2015) have recently discussed this issue and suggest that detaching from work does not always have to be beneficial because sometimes the employee wants to savour achievements. This opens a debate about whether disconnecting from work is always needed. In this line of thinking, Fritz and Sonnentag (2006) demonstrated the differences between positive and negative work reflection. In their study, it was found that while positive work reflection was related to increased performance and well-being after vacation, negative work reflection was related to higher exhaustion and disengagement. Moreover, in a longitudinal study, it has been recently found that positive work reflection mediates the relationship between work engagement and work-to-life enrichment (Daniel & Sonnentag, 2014). Future studies should integrate these aspects and

analyze the role of positive work reflection in the relationship between job performance and psychological detachment.

Therefore, we make two clear contributions with this first finding: (a) on days that employees perform well, they are better able to detach from their work and relax in the evening whereas (b) extra-role performance helps to relax but it is not related to detachment, so it may be related to other variables such as positive work reflection, savouring, or work-family capitalization. If we take into account previous findings and the results obtained in this study, future studies could hypothesize and test a reciprocal relationship between job performance and detachment. Recent research has demonstrated the existence of reciprocal relationships between detachment and job- and health-related outcomes such as work engagement or anxiety (Sonnentag, Mojza, Demerouti, & Bakker, 2012).

Our study went one step further as we proposed that job satisfaction would mediate the relationship between job performance and recovery. Our findings partially support this hypothesis and provide evidence that attitudes play a role on the relationship between performance and detachment and relaxation. Performing well may lead to detaching from work and relax partially because the employee feels more satisfied with the job. Having performed well creates a positive state, which spills over to the home domain, so that employees are able to invest this affective resource in other activities that create the underlying psychological experience of detachment from work and relaxation. These finding can be interpreted based on affective events theory. Interestingly, there is still a significant effect of task performance on detachment and relaxation even after job satisfaction is included in the model. Similarly, extra-role performance still has a significant effect on relaxation after including job satisfaction. These findings suggest that job-related behaviours have enough strength to make people detach from work and relax. Future studies should

analyze whether other variables (e.g., rumination, work engagement) could mediate this relationship given that job satisfaction does not totally explain this link.

Next, we explored whether daily psychological detachment and relaxation were related to one's own and the partner's levels of positive emotions and relationship satisfaction as experienced in the evening. This is a contribution to the literature because satisfaction in specific domains in life has not been previously tested in relation to recovery, and because the influence of recovery on partner's satisfaction has been scarcely analysed and not examined on a daily basis. Indeed, most studies focus on the effects of detachment, and there is only one study analysing the effect of relaxation on partner's outcomes. Our findings reveal that daily psychological detachment and relaxation have positive effects on own levels of positive emotions and relationship satisfaction. The effects on positive emotions are in line with previous studies (Sonnetag et al., 2008a, Sonnetag et al., 2008b), so these strategies have the potential to restore individual mood, as they imply that no further demands are made on functional systems called upon during work (Sonnetag & Bayer, 2005; Sonnetag & Fritz, 2007).

We also found evidence for the crossover of psychological detachment and relaxation on partner's positive emotions. This is the first study providing evidence for this link, and this finding shows how important it is to detach and relax not only to improve own but also partner's mood. This finding suggests that those employees who detach from work and are relaxed are open to do other distracting and positive activities and enjoy during non-work time (Hahn et al., 2014). This state creates a favourable environment which increases partner's positive emotions. Taken together, our findings extend previous research (e.g., Hahn et al., 2014; Park & Fritz, 2015), as psychological detachment and relaxation have the potential to increase positive emotions in both members of the couple, as well as satisfaction in more specific life domains (relationship satisfaction vs. life satisfaction). We did not find

evidence for the influence on employee's detachment on partner's relationship satisfaction. We think this may be explained based on the different nature of the dependent variables. Whereas mood is transient and may change more easily with contextual factors, satisfaction with the relationship may depend on other aspects apart from momentary detachment from work (e.g., time spent together, employees' involvement in family responsibilities).

Finally, our findings provide additional evidence for the daily fluctuations of job performance, job satisfaction and recovery. Our results are in line with previous studies showing that these variables are dynamic and vary within-persons (e.g., Ilies, Wilson, & Wagner, 2009). We encourage researchers to examine these and other job-related behaviours and attitudes using different time frames, given that the traditional conceptualizations are not always reflecting the reality of the phenomena under study.

Limitations and suggestions for future research

Despite the strengths of our study (e.g., large number of observations, high response rate, and daily diary design with two sources of information), there are several limitations to consider when drawing conclusions about the results. First, we assessed job satisfaction and relationship satisfaction with a single item what might question the reliability and validity of this measure. We chose this short one-item measure to limit the burden for our participants, and to motivate regular participation. In this sense, in diary designs the use of short measures as well as single items has been strongly recommended in order to minimize the impact of data nonresponses (Ohly et al. 2010). Moreover, there is evidence that single item measures for satisfaction are valid and reliable. For example, Fisher et al. (2016) have found convergent validity between single-item and multi-item measures of global job satisfaction, suggesting that single-item measures are adequate. Nevertheless, future studies could use multi-item measures to analyze particular aspects of job and relationship satisfaction on a daily basis.

Second, the association between employee's recovery and partner's well-being may be explained by some unmeasured third variables. For example, we did not collect information regarding how much time couples spent together after work or the leisure activities that couples did together. In addition, although in this study we were interested in measuring two recovery experiences, future studies could analyse the effect on other recovery experiences such as mastery and control.

Third, all measures demonstrated good reliability at both the between- and within-person levels, with the exception of extra-role performance and relaxation at the within-person level. Within-person reliabilities may be underestimated when cluster sizes are small, and cutoff scores for reliability are not well-established in multilevel models (Geldhof et al., 2014). Furthermore, previous studies (e.g., Rush, & Hofer, 2014) have found that reliability values are substantially higher at the between-person level than at the within-person level (< .70). In addition, it has been suggested that average inter-item correlation is a good measure of a scale internal consistency, even better than coefficient alpha, and recommend values should be within the range .15-.50 (Clark & Watson, 1995, p. 316). Mean inter-item correlations observed in the present study for in-role performance was .21, and for relaxation .34. Thus, the low within-person reliabilities values of two variables do not seem to threaten the validity of our findings.

Finally, regarding the method of data collection, we are aware that the use of paper booklets might constitute another limitation. Specifically, concerns have been raised about participants' compliance, especially with regard to the timing of report, in paper-and-pencil diary studies as opposed to technology-based tools (e.g., Stone, Shiffman, Schwartz, Broderick, & Hufford, 2003). Nevertheless, studies comparing paper-delivered versus electronic-delivered diaries indicate that both methods yielded data that were equivalent

psychometrically and in patterns of findings (e.g., Green et al., 2006). Thus, we do consider that the use of paper booklets does not invalidate our findings.

Practical implications

The findings of our study can be used to design training programs as well as to organise job tasks in such a way that employees can perform better. In this respect, the Job-Demands Resources theory provides clear steps on how to coordinate job characteristics (i.e., workload, autonomy) in order to achieve high performance. In addition, job crafting, that is, the possibility to shape and modify aspects of the job, is a form of job redesign that may help employees perform better (Bakker & Demerouti, 2014).

Through effective training to learn specific skills, employees can make the most of their strengths and improve in those areas that may be weaker. These skills can be applied at work as well as on their leisure time at home (e.g., time management, emotion regulation strategies). In the same line, training courses should provide employees with the skills that could help them detach from the demands and relax, so training programmes on how to recover are crucial (Hahn, Binnewies, Sonnentag, & Mojza 2011). Also, it is desirable to create cognitive routines during leisure time to think regularly about the positive sides of their work and share it with the significant others (Daniel & Sonnentag, 2014).

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Table 1
Mean, standard deviations, and correlations (N = 145 Dyads, N = 290 Individuals, N = 1450 Observations)

Variable	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Daily task performance, actor	5.16 (0.83)	---												
2. Daily task performance, partner	5.16 (0.83)	.24**	---											
3. Daily extra-role performance, actor	3.78 (1.51)	.32**	.05*	---										
4. Daily extra-role performance, partner	3.78 (1.51)	.05*	.32**	.12**	---									
5. Daily job satisfaction, actor	4.04 (0.87)	.38**	.10**	.23**	.08**	---								
6. Daily job satisfaction, partner	4.04 (0.87)	.10**	.38**	.08**	.23**	.17**	---							
7. Daily psychological detachment, actor	4.46 (1.46)	.23**	.08**	.02	.11**	.18**	.01	---						
8. Daily psychological detachment, partner	4.46 (1.46)	.08**	.23**	.11**	.02	.01	.18**	.07**	---					
9. Daily relaxation, actor	4.37 (1.56)	.14**	.08**	.12**	.10**	.19**	.07**	.35**	.08**	---				
10. Daily relaxation, partner	4.37 (1.56)	.08**	.14**	.10**	.12**	.07**	.19**	.08**	.35**	.21**	---			
11. Daily relationship satisfaction, actor	4.32 (0.87)	.24**	.16**	.16**	.06*	.37**	.14**	.26**	.15**	.30**	.17**	---		
12. Daily relationship satisfaction, partner	4.32 (0.87)	.16**	.24**	.06*	.16**	.14**	.37**	.15**	.26**	.17**	.30**	.38**	---	
13. Daily positive emotions, actor	3.82 (1.02)	.29**	.15**	.20**	.14**	.39**	.11**	.40**	.07**	.43**	.15**	.39**	.22**	---
14. Daily positive emotions, partner	3.82 (1.02)	.15**	.29**	.14**	.20**	.11**	.39**	.07**	.40**	.15**	.43**	.22**	.39**	.28**

* p < .05. ** p < .01.

Table 2
 Multilevel estimates for models predicting psychological detachment from work of the partner (N = 145 Dyads, N = 290 Individuals, N = 1450 Observations)

Variable	Model 1			Model 2			Model 3			Model 4		
	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t
Intercept	4.465	0.071	62.8***	4.457	0.069	64.5***	4.544	0.066	68.7***	4.458	0.066	67.5***
Gender				0.026	0.039	0.66	0.024	0.037	0.64	0.021	0.037	0.56
Number of children				0.115	0.060	1.91	0.110	0.057	1.92	0.117	0.057	2.05*
Number of hours worked per week				-0.024	0.006	-4.00**	-0.024	0.005	-4.80***	-0.025	0.005	-5.00***
Task performance (actor)							-0.039	0.051	-0.76	0.024	0.054	0.44
Task performance (partner)							0.315	0.051	6.17***	0.223	0.054	4.12**
Extra-role performance (actor)							0.054	0.027	2.00*	0.052	0.027	1.92
Extra-role performance (partner)							0.007	0.027	0.25	0.010	0.027	0.37
Job satisfaction (actor)										0.038	0.051	0.74
Job satisfaction (partner)										0.247	0.051	4.90***
-2 X Log (lh)		4669.071			4472.360			4391.223			4335.431	
Difference of -2 X Log					196.7***			81.13***			55.79***	
df					3			4			2	
Level 1 intercept variance (SE)		1.015 (0.042)			1.016 (0.043)			1.005 (0.043)			0.988 (0.042)	
Level 2 intercept variance (SE)		1.015 (0.144)			0.952 (0.140)			0.885 (0.135)			0.828 (0.125)	
Level 3 intercept variance (SE)		0.116 (0.112)			0.080 (0.106)			0.055 (0.098)			0.088 (0.096)	

p < .05. ** p < .01. *** p < .001.

Table 3
Multilevel estimates for models predicting relaxation during evening of the partner (N = 145 Dyads, N = 290 Individuals, N = 1450 Observations)

Variable	Model 1			Model 2			Model 3			Model 4		
	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t
Intercept	4.368	0.074	59.0***	4.383	0.076	57.6***	4.384	0.074	59.2***	4.386	0.073	60.0***
Gender				-0.018	0.036	-0.50	-0.021	0.036	-0.58	-0.023	0.036	-0.63
Number of children				-0.002	0.065	-0.03	-0.003	0.063	-0.04	-0.001	0.062	-0.01
Number of hours worked per week				-0.008	0.005	-1.60	-0.009	0.005	-1.80	-0.010	0.005	-2.00*
Task performance (actor)							-0.035	0.046	-0.76	-0.021	0.050	-0.42
Task performance (partner)							0.184	0.046	4.00**	0.119	0.050	2.38*
Extra-role performance (actor)							0.045	0.025	1.80	0.047	0.025	1.88
Extra-role performance (partner)							0.073	0.025	2.92**	0.062	0.025	2.48*
Job satisfaction (actor)										0.038	0.047	0.80
Job satisfaction (partner)										0.175	0.047	3.73**
-2 X Log (lh)		4432.585			4232.292			4163.639			4128.294	
Difference of -2 X Log						200.2***			68.65***			35.34***
df						3			4			2
Level 1 intercept variance (SE)		0.862 (0.036)			0.838 (0.036)			0.825 (0.035)			0.824 (0.035)	
Level 2 intercept variance (SE)		0.633 (0.095)			0.626 (0.096)			0.646 (0.099)			0.636 (0.098)	
Level 3 intercept variance (SE)		0.399 (0.105)			0.416 (0.109)			0.354 (0.104)			0.332 (0.101)	

p < .05. ** p < .01. *** p < .001.

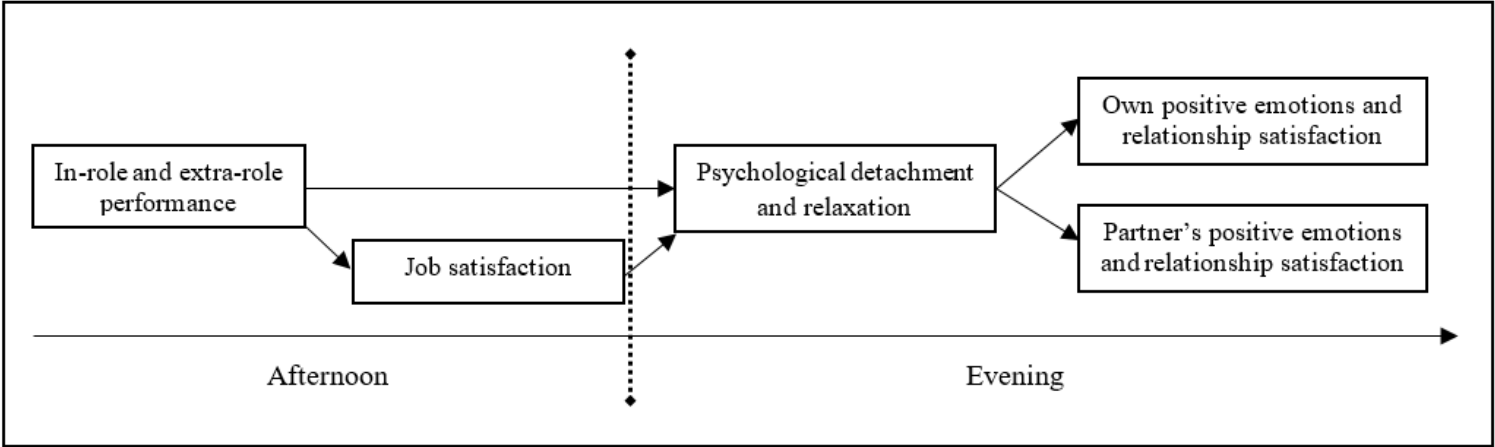


Figure 1. *Theoretical model of the study*