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## The relationships between family-work interaction, job-related exhaustion, detachment, and meaning in life: A day-level study of emotional well-being

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### ABSTRACT

The aim of this research was to provide an integrative overview of the associations between employees' daily emotional well-being (positive and negative affect) and family-work interaction, job-related exhaustion, detachment, and meaning in life. Service sector employees in Spain ( $N = 105$ ) filled out a general measure and daily survey measures over five working days. Results showed that daily family-work conflict, job-related exhaustion and search for meaning in life predicted employees' negative affect at night; conversely, daily detachment and presence of meaning in life had a negative relation with negative affect at night. In contrast, employees' family-work facilitation, detachment, and presence of meaning in life predicted positive affect at night. Moreover, detachment moderated the relationship between family-work conflict and negative affect, and between the presence of meaning in life and positive affect. These findings have practical implications for individuals and organizations and suggest possible avenues for future research.

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## La relación entre interacción familia-trabajo, agotamiento relacionado con el trabajo, distanciamiento y significado de la vida: estudio del bienestar emocional a nivel diario

### RESUMEN

El objetivo de la presente investigación fue proporcionar una visión integradora de las relaciones entre el bienestar diario emocional de los empleados (afecto positivo y negativo) y la interacción entre la familia y el trabajo, el agotamiento relacionado con el trabajo, el distanciamiento y el significado de la vida. Trabajadores del sector de servicios en España ( $N = 105$ ) completaron un cuestionario general y cuestionarios diarios durante cinco días laborables. Los resultados mostraron que el conflicto familia-trabajo, el agotamiento relacionado con el trabajo y la búsqueda de sentido en la vida predecía a nivel diario el afecto negativo de los empleados por la noche. Por el contrario, el distanciamiento y la presencia de significado en la vida tenían una relación negativa con el afecto negativo por la noche. Por otra parte, la facilitación familia-trabajo, el distanciamiento y la presencia de sentido de la vida predecían el afecto positivo por la noche. Además, el distanciamiento moderaba la relación entre el conflicto familia-trabajo y el afecto negativo y entre la presencia de sentido de la vida y afecto positivo. Estos resultados tienen implicaciones prácticas para los individuos y las organizaciones y sugieren posibles vías de investigación futura.

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#### Palabras clave:

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It is important to identify mechanisms which can help employees to mentally switch off from work stress, and contribute to recovery and well-being (Bakker, Rodríguez-Muñoz, & Derks, 2012; Demerouti, Bouwman, & Sanz-Vergel, 2011; Moreno-Jiménez, Garrosa, Corso, Boada, Rodríguez-Carvajal, 2012; Sonnentag, Unger, & Nägel, 2013). Rather than one specific activity, it is likely that common, underlying attributes, which are related to the employee's personality and overall well-being, are generated through ongoing recovery experiences. In fact, people may differ with regard to the specific activities they experience as recovery. Among such experiences, psychological detachment has awakened much interest, revealing its effects on employee health and well-being (Hahn & Dormann, 2013; Moreno-Jiménez, Mayo et al., 2009; Sonnentag, 2012). Attention is also being paid to theoretical models introducing meaning in life in the organizational setting as a personal resource. Researchers focus on clarifying and identifying the social and sociocognitive factors that emerge during this process, which are also related to employee well-being and recovery experiences (Steger & Dik, 2010). From this perspective, and based on Positive Occupational Health Psychology (POHP) (Bakker et al., 2012), the objective of this study was to explore employees' daily emotional well-being and its association with family-work interaction, job-related exhaustion (JRE), detachment, and meaning in life, by means of an integrative overview including both positive and negative spirals.

The present study contributes to the literature on family-work interaction, JRE, detachment, and meaning in life in several ways. First, we present an integrative model of well-being by merging the literature on positive and negative variables such as family-work interaction, recovery, and meaning in life. In addition, we included detachment, and its possible role as moderator, in order to more fully understand how these processes unfold for employees. This allows for the simultaneous study of how these variables contribute to daily well-being, as well as their possible interaction effects with meaning in life. Second, we examined meaning in life as a personal resource that protects and promotes growth and personal well-being (Steger, Kashdan, & Oishi, 2008; Lent, 2004). Researchers have pointed out the importance of this variable for well-being, daily decision making, and taking action (Maddi, 1970; Steger & Kashdan, 2013), or that of self-transcendence (Seligman, 2002) on the creation of meaning. From this point of view, people must engage in a variety of compensatory strategies to maintain stable levels of meaning (Hicks, Schlegel, & King, 2010). These compensatory efforts are consistent with the theory that meaning in life is a stable resource used to maintain well-being and stave off despair (Frankl, 1963). However, the current study of meaning in life requires further investigation regarding its stability or instability. According to Steger and Kashdan (2013), meaning in life from a daily perspective has not yet received sufficient attention, despite the relevancy of its possible influence on fluctuations in well-being, as well as the consequences of its instability on negative emotions. Third, we studied fluctuations in emotional well-being by analyzing positive and negative affect (PA and NA, respectively) at day-level. The advantage of daily survey methods is that they allow the analysis of on-the-job activities as they occur, within specific time frames and in the natural context in which they occur (Fisher & To, 2012; Ohly, Sonnentag, Niessen, & Zapf, 2010; Sonnentag, Binnewies, & Ohly, 2013). Finally, we explored the existence of positive and negative spirals between the variables, in order to add an integrative stress-well-being overview to the study and we observed the dynamic within-subject processes involving affect at night from the perspective of previous studies (Sanz-Vergel, Demerouti, Moreno-Jiménez, & Mayo, 2010).

#### *Theoretical framework and hypotheses*

Hobfoll's (1989) conservation of resources theory (COR) provided a useful framework for the present study. This theory proposes that

stress takes place when a person is threatened with resource loss, or fails to gain resources after expending effort. In the context of the family-work interaction, COR theory has been applied with the assumption that people lose resources when attending to family and work responsibilities (Grandey & Cropanzano, 1999). From this point of view, detachment and meaning in life could be considered as ways to restore exhausted resources or to gain new resources. More specifically, meaning of life helps with committing to daily activities and problem solving, and can provide a new, positive health perspective from which to determine the mechanisms that make people feel better at work and protect them from psychosocial risks. For example, detachment restores the energy resources available prior to the stress and meaning of life can help the person to gain new ways of approaching a stressful situation and committing to a certain course of action (Sonnentag, Unger et al., 2013; Steger et al., 2008). Based on the argument that detachment has a positive impact on intra-individual well-being processes (Sonnentag, 2012) and that meaning in life is an indicator of well-being (Steger, Shin, Shim, & Fitch-Martin, in press), we proposed daily detachment and meaning in life as positive variables that promote positive affect while protecting employees from the negative effects of family-work conflict and JRE on emotional well-being. In accordance with previous literature, we used a daily diary methodology for this study for two reasons (Fisher & To, 2012; Sonnentag, Binnewies et al., 2013). First, to reduce the bias and error that are inherent in global retrospective reporting of transient experiences. Second, in order to study within-subject processes as they unfold over time.

#### *Family-work interaction, job-related exhaustion and well-being*

Since authors first defined the term "work-family conflict," most empirical evidence has revealed numerous negative effects of such conflict on employee well-being (i.e., JRE and emotional cost) both in the work and family domain (Amstad, Meier, Fasel, Elfering, & Semmer, 2011; Ford, Heinen, & Langkamer, 2007; Sanz-Vergel, Demerouti, Mayo, & Moreno-Jiménez, 2011). For example, women report more sleeping problems than men, even when performing the same job. In addition, employees report differences in the distribution of family responsibilities and work obligations (Maume, Sebastian, & Bardo, 2009). Moreover, women's difficulties in balancing this relationship have an impact on workplace absenteeism (Demerouti et al., 2011). Additionally, the growing need to find a balanced model of family to work dynamics has become a central issue that has been poorly explored (Sanz-Vergel, Demerouti, Mayo et al., 2011). Hence, we look at two aspects of family-work interaction: Family-Work facilitation (FWF), which refers to the positive interaction between family and work, and Family-Work Conflict (FWC), which refers to the negative interaction. In the case of JRE, which implies excessive work leading to employees feeling exhausted, it is positively related to FWC (Kinnunen, Feldt, Geurts, & Pulkkinen, 2006; Noor, 2003). Building on these earlier studies, this investigation examines positive and negative reactions from the family domain that are transferred to the work domain, an effect known as spillover (Noor, 2003).

Focusing exclusively on the negative aspects of family and work dynamics limits the possibility of adopting a comprehensive view of its study. Many researchers increasingly focus on the positive aspects of the "work-family interface", leading to the emergence of new approaches such as positive spillover (Hanson, Hammer, & Colton, 2006), work-family facilitation (Frone, 2003) and work-family enrichment (Nicklin & McNall, 2013). Following this approach, in addition to FWC, the present study includes the positive family-work interaction as a precursor of employee emotional well-being. The following hypotheses were elaborated:

*Hypothesis 1.* Day-level FWF after work will be (a) negatively related to NA at night and (b) positively related to PA at night.

*Hypothesis 2.* Day-level FWC after work will be (a) positively related to NA at night and (b) negatively related to PA at night.

*Hypothesis 3.* Day-level JRE after work will be (a) positively related to NA at night and (b) negatively related to PA at night.

### Detachment

Psychological detachment from work is an “individual’s sense of being away from the work situation” (Etzion, Eden, & Lapidot, 1998, p. 579). This recovery experience implies leaving work behind during leisure time. It is experienced as mentally switching off in everyday life (Sonnentag & Bayer, 2005). Detachment takes place when people achieve mental disengagement during their time outside of work (Sonnentag & Fritz, 2007). People who feel mentally disengaged will experience higher levels of vigor at the end of the day (Sanz-Vergel, Demerouti et al., 2010), greater well-being (Sonnentag, Unger et al., 2013), and more energy in their daily performance at work (Binnewies, Sonnentag, & Mojza, 2009).

The emergence of recent empirical research shows that detachment is an important way for employees to recover from job stress and it restores their energy for the next work day (Sanz-Vergel, Demerouti, Bakker, & Moreno-Jiménez, 2011; Sonnentag, Binnewies, & Mojza, 2008). The key process is the underlying psychological experience of disengaging, not the specific activity itself. This detachment process can occur when job demands do not exceed an individual’s resources (Meijman & Mulder, 1998) and when either spent resources are replenished or new resources are built up (Hobfoll, 1989).

Growing empirical research on the “switching off” issue include daily diary (Sanz-Vergel, Demerouti, Bakker et al., 2011; Sonnentag, Unger et al., 2013), cross-sectional (e.g., Fritz, Yankelevich, Zarubin, & Barger, 2010), and longitudinal studies (e.g., Sonnentag, Binnewies, & Mojza, 2010). Such research has shown important direct effects of detachment on well-being. However, the relevance of detachment exceeds these effects as it is shown to play a role in recovery by moderating daily fluctuations as well as the spillover effect from work to home (Sonntag & Binnewies, 2013). For example, Hahn and Dormann (2013) examined the role of partners and children in employees’ psychological detachment during their leisure time. Their results showed that employees’ and their partners’ work-home segmentation preferences were related to employees’ psychological detachment. Also, employees’ and their partners’ psychological detachment were positively related (Hahn & Dormann, 2013). Based on these effects, we proposed detachment as a protective variable promoting employee emotional well-being:

*Hypothesis 4.* Day-level detachment at night will be (a) negatively related to NA at night, and (b) positively related to PA at night.

*Hypothesis 5.* Day-level detachment at night will moderate the relation between the predictor variables (i.e., FWF, FWC, JRE, presence and search of meaning in life) and the daily emotional well-being, (a) NA at night and (b) PA at night.

### Meaning in life

Meaning in life is an important indicator of health and well-being (Krause & Hayward, 2013; Steger, Sheline, Merriman, & Kashdan, in press; Wong, 2012), and includes all spheres of life: Biological, psychological, social, and spiritual. Therefore, any approach to the study of meaning in life must be holistic. Although finding meaning in life requires investing effort, this process helps the person to understand and encounter meaning in their actions, thereby increasing feelings of self confidence and control (Wong, 2012). The literature assumes that judgments of meaning in life are a stable resource, a finding supported by the subjective judgments of meaningfulness in life rather than people’s qualitative experience. There are insufficient empirical studies on the instability of meaning in life judgments over

short-time periods, such as day-to-day reports (Steger & Kashdan, 2013). In this sense, studies have shown that daily meaning in life is positively related to daily well-being (King, Hicks, Krull, & Del Gaiso, 2006; Steger & Frazier, 2005; Steger, Frazier, Oishi, & Kaler, 2006), but that in order to better understand well-being, it is important to further explore the instability in meaning of life (Steger & Kashdan, 2013). From this point of view, the present study takes an intrapersonal approach that helps to explore the daily changes undergone over one week and at different times during the day to test for the influence of daily meaning on daily well-being (Kashdan, Steger, & Breen, 2007; Steger & Kashdan, 2013; Steger, Shin et al., in press).

Experts argue that people attempt to construct meaning in their life, defend it from threats, and repair it following any harm they suffer (e.g., Steger, 2009, 2012; Steger & Frazier, 2005; Steger et al., 2006). Since Viktor Frankl (1963) began this line of research, meaning in life has been extensively studied and considered an essential ingredient of human well-being (Kobau, Snizek, Zack, Lucas, & Burns, 2010; Ryff & Singer, 1998). Different models and theories have attempted to explain what meaning in life is. Some propose that it is “making sense of life” (Battista & Almond, 1973), and that it even has an affective quality (Reker & Wong, 1988). Others state that it is, above all, goal-directed behavior (Klinger, 1977; Ryff & Singer, 1998); that it is related to the transcendental and spiritual facets of a person’s life (Emmons, 2003; Mascaro, Rosen, & Morey, 2004); or that meaning comes from a sense of self-esteem, efficacy, self-justification, and purpose (Baumeister, 1991). Despite the variety of conceptual differences, experts agree on the relationship between meaning in life and eudaimonic well-being, focused on strengthening one’s capabilities and assets in order to explain personal growth. In this sense, people who feel that their lives are full of meaning are more optimistic (Kelly, 2002), have higher levels of self-esteem (Steger et al., 2006) and positive emotions (King et al., 2006). Therefore, the PML may increase daily well-being by restoring those resources that have been lost due to stress, by generating new personal resources that give meaning one’s behavior and increase a sense of commitment to a course of action and problem solving, as well as by increasing levels of self-confidence (Steger et al., 2006). The interest awakened by this phenomenon has led to controversy even in the very use of certain concepts. The terms “meaning” and “purpose” have been used interchangeably. However, some authors consider “meaning” as a higher-order term referring to the capacity to give meaning to and understand one’s own life, including one’s self-view, one’s view of the external world, and the way one adapts to oneself and to the world (Steger, 2009, 2012). “Purpose” is more general, and refers to one or more long-term life aspirations that are self-concordant and that motivate one towards the activity that helps to achieve such aspirations (Steger, Sheline et al., in press). In this work, we introduce the presence of and the search for meaning in life (PML and SML, respectively) to determine its effect on employee emotional well-being; that is, its application in the work context. Our interest was focused on the effect of meaning in life not only as a promoter of PA, but also to determine its protective role from NA at night. Specifically, the following hypotheses were proposed:

*Hypothesis 6.* Day-level PML at night will be (a) negatively related to NA at night and (b) positively related to PA at night.

*Hypothesis 7.* Day-level SML at night will be (a) positively related to NA at night and (b) negatively related to PA at night.

### Method

#### Participants and overview of procedure

The final group of participants was composed of 105 employees from various service sector organizations in Madrid (Spain) who took part in the multilevel study (60% female and 39% male). Mean age was

35.01 years ( $SD = 0.49$ ). About one half of participants were married or living with a partner (48.1%), whereas the other half were single (47.1%). Most of them did not have children (66.3%), and the majority (55%) had a university degree. Most of them had a permanent contract (58.4%) and worked on average 40.30 hours per week ( $SD = 8.08$ ).

Participants were recruited through different meetings with diverse associations from the service sector, during which we explained the project and its objectives. Employees who agreed to participate received paper copies of each survey as well as clear instructions and information to ensure the anonymity and confidentiality of their responses. They filled in the general questionnaire (person-level) and afterwards, they completed daily questionnaires (day-level) three times a day – in the morning, before going to work, in the afternoon after work, and at night before going to bed – resulting in 1,575 evaluations for five consecutive working days (Monday–Friday). Participants received personal instructions to complete the daily questionnaire at these three times, and the researchers underlined the importance of following this procedure and also programmed cell-phone alarms to prompt reports and collect responses.

### Measures

Participants rated the same variables in the general and daily questionnaires. These variables were assessed using similar measures for both general and daily moments, but they included the appropriate instructions for the time of day. In summary, employees rated the variables family-work interaction, JRE, detachment, meaning in life, and affect on 6-point Likert-type scales ranging from 1 (not at all true) to 6 (absolutely true). According to the daily instructions, participants completed (1) PA and NA in the morning; (2) family-work interaction and JRE in the afternoon after work; and (3) detachment, meaning in life, and PA and NA at night. Alpha coefficients for all measures are shown in Table 1.

**Affect.** We used the short-version (Thompson, 2007) of the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988). It includes five items each for both PA (i.e., interested) and NA (i.e., irritable).

**Family-Work Interaction.** We assessed FWF and FWC variables using two subscales from the Work-Home Interaction Survey-Nijmegen (Geurts et al., 2005) adapted to Spanish by Moreno-Jiménez, Sanz-Vergel, Rodríguez-Muñoz, and Geurts (2009). We selected three items for each subscale that matched our employees' characteristics (e.g., "I took my responsibilities at work more seriously be-

cause I was required to do the same at home" or "I had difficulties concentrating on my work because I was worried about domestic matters"). They responded by indicating which situations described in each of the 6 items they had experienced at work.

**Job-Related Exhaustion (JRE).** We used six items from Wharton's (1993) scale. The items addressed the extent to which the job made the participants feel, for example, "emotionally drained," "used up," and "burnt out".

**Detachment.** This recovery experience was evaluated using the Spanish version of the Detachment subscale (Sanz-Vergel, Sebastián et al., 2010) from the Recovery Experience Questionnaire (Sonnentag & Fritz, 2007). Participants filled in the four items to show the frequency with which they had felt this experience. Two item examples are "I distance myself from my work" and "I don't think about work at all".

**Meaning in life.** We used The Meaning in Life Questionnaire (Steger et al., 2006). The five PML items evaluate the extent to which people perceive their lives as meaningful (e.g., "I understand my life's purpose"). The five-item SML subscale measures the extent to which participants are actively seeking meaning in their lives (e.g., "I am looking for something that makes my life feel meaningful").

**Control variables.** Gender, work shift, general affect, and affect in the morning were measured. We included these additional variables at both general and day-level to increase control of the variables under study and to avoid spurious relationships between these variables (Sanz-Vergel, Demerouti et al., 2010; Sonnentag & Fritz, 2007).

### Data Analysis

We analyzed the data using the hierarchical linear modeling approach (Bryk & Raudenbush, 1992; Snijders & Bosker, 1999) and MLwiN software. We centered all day-level predictor and control variables (Level 1, day-level) at the respective person mean, and the person-level control variables (Level 2) at the grand mean. Centering day-level variables at the person mean implies that all between-subject variance in these variables is removed, so that interpretations of outcomes referring to stable differences between people can be ruled out.

### Results

Table 1 shows the means, standard deviations, Cronbach alphas, and correlations among all the study variables. Day-level variables

**Table 1**  
Means, standard deviations, alpha reliabilities, and intercorrelations

Variables	M	SD	$\alpha$	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender <sup>a</sup>	1.61	0.49	–	1													
2. Shift <sup>a</sup>	5.65	7.92	–	-.04	1												
3. PA <sup>a</sup>	3.82	0.53	.80	.16**	-.06	1											
4. NA <sup>a</sup>	2.16	0.63	.76	.01	.07	-.20**	1										
5. PA in the morning <sup>b</sup>	3.17	1.03	.89	.03	.07	.33**	-.27**	1									
6. NA in the morning <sup>b</sup>	1.50	0.68	.79	.05	-.02	-.07	.43**	-.22**	1								
7. FWC after work <sup>b</sup>	1.63	1.08	.92	.03	.02	-.06	.34**	-.16**	.39**	1							
8. FWF after work <sup>b</sup>	4.08	1.31	.72	.07	.05	.33**	-.12**	.34**	-.21**	-.07	1						
9. JRE after work <sup>b</sup>	2.04	1.63	.90	.13**	-.14**	-.16**	.24**	-.13**	.39**	.41**	-.25**	1					
10. Detachment at night <sup>b</sup>	3.60	1.07	.86	.04	-.05	.07	-.09*	-.02	-.10*	-.17**	.11**	-.47**	1				
11. PML at night <sup>b</sup>	4.38	1.18	.66	.14**	.18**	.33**	-.17**	.32**	-.16**	-.16**	.49**	-.35**	.23**	1			
12. SML at night <sup>b</sup>	2.98	1.81	.96	.10*	-.10*	.03	.17**	-.01	.31**	.24**	.03	.20**	-.03	-.06	1		
13. PA at night <sup>b</sup>	2.45	1.11	.79	-.21**	.09*	.22**	-.09	.36**	-.05	-.05	.41**	-.24**	.15**	.42**	.08	1	
14. NA at night <sup>b</sup>	1.44	0.69	.81	.05	-.05	-.11*	.40**	-.08	.52**	.45**	-.22**	.45**	-.25**	-.28**	.27**	-.04	1

Note. <sup>a</sup>Person-level variables, <sup>b</sup>Day-level variables

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$



across the 5 days were averaged to assess the correlations between them and those measured at the person-level.

### Preliminary Analyses

Prior to testing the hypotheses, we examined the variability of the day-level measures over time. Results showed that 45.6 % of NA variance and 43.7% of PA variance can be attributed to within-subject variation, similar to previous research (Sonnetag et al., 2008). All predictor variables showed an intra-class correlation coefficient above 25% (Hox & Robers, 2011), except PML (24%) and SML (13%). Overall, these findings suggest that an important portion of the variance in emotional well-being at night can be attributed to within-subject fluctuations across the 5 days, supporting the usage of multilevel analysis (Fisher & To, 2012; Ohly et al., 2010).

### Hypotheses Testing

Data were analyzed at the specific general and daily moments of the evaluations. Hence, we added five nested hierarchical linear models for each emotional well-being criterion – PA and NA at night – as outcome variables. Firstly, we started with a null model which showed the intercept. In Model 1, we included person-level variables (gender, work shift, general affect) and day-level variables (PA and NA in the morning) as control variables. In Model 2, we entered day-level family-work interaction and JRE, which were assessed after work, in the afternoon. In Model 3, we added detachment as a recovery experience measured at night. In Model 4, we included meaning

in life measured at night (i.e., PML and SML). Finally, in Model 5, we included the five interaction terms of the predictor variables and detachment to test the moderator hypotheses. To assess the improvement of each model over the previous one, we examined the difference between the respective likelihood ratios. Tables 2 and 3 display model fit information (difference of  $-2 \times \log$ ), estimates for the fixed parameters, and estimates for the variance components.

For PA at night as an outcome variable (see Table 2), Model 1, which includes person-level and day-level control variables, showed a better fit than the null model, with general PA and PA in the morning as significant predictor variables ( $t = 2.79$ ,  $p < .05$  and  $t = 2.25$ ,  $p < .05$ , respectively). When we introduced day-level predictor variables into Model 2, the model fit improved (difference of  $-2 \times \log = 9.61$ ,  $df = 3$ ,  $p < .001$ ), with FWF showing a significant positive relation with PA at night ( $t = 2.82$ ,  $p < .01$ ), but the effect of PA in the morning was non-significant. Model 3, which included detachment, produced a better model fit. High detachment predicted PA at night ( $t = 2.31$ ,  $p < .05$ ). Model 4 fit the data better than Model 3, with the positive effect of PML at night ( $t = 2.98$ ,  $p < .01$ ) contributing to an increased model fit (difference of  $-2 \times \log = 9.44$ ,  $df = 2$ ,  $p < .001$ ). High PML predicted PA at night. In this model, the effect of detachment was nonsignificant. Model 5, which included the five interaction terms of the predictor variables and detachment to test our moderator Hypothesis, increased model fit with the interaction effect between PML and detachment ( $t = 2.15$ ,  $p < .05$ ). Figure 1 shows that on days with high detachment after work, high PML is more positively related to PA at night than on days with low detachment. In total, all predictor and control variables entered into the models explained 8% of the variance at Level 2

**Table 2**  
Multilevel estimates for models predicting PA at night

Variables	Null Model			Model 1			Model 2			Model 3			Model 4			Model 5		
	Estimate	SE	T	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t
Intercept	2.45	0.09	27.88	2.46	0.09	28.86	2.45	0.09	28.86	2.45	0.09	28.86	2.45	0.09	28.86	2.46	0.09	28.91
Gender <sup>a</sup>				-0.00	0.01	0	-0.00	0.01	0	-0.00	0.01	0	-0.00	0.01	0	-0.00	0.01	-0.11
Shift <sup>a</sup>				-0.00	0.01	-0.4	-0.01	0.01	-0.4	-0.00	0.01	-0.4	-0.00	0.01	-0.4	-0.00	0.01	-0.4
PA <sup>a</sup>				0.45	0.16	2.79*	0.45	0.16	2.79**	0.45	0.16	2.79*	0.45	0.16	2.79**	0.46	0.16	2.9*
PA in the morning <sup>b</sup>				0.12	0.05	2.25*	0.10	0.05	1.92	0.09	0.05	1.82	0.10	0.05	1.92	0.10	0.05	1.90
NA in the morning <sup>b</sup>				0.11	0.08	1.31	0.14	0.08	1.74	0.12	0.08	1.45	0.13	0.08	1.59	0.11	0.08	1.28
FWF after work <sup>b</sup>							0.13	0.05	2.82**	0.13	0.05	2.78*	0.12	0.04	2.68**	0.13	0.04	2.84*
FWC after work <sup>b</sup>							-0.06	0.05	1.17	-0.06	0.05	-1.11	-0.06	0.05	-1.08	-0.07	0.05	-1.26
JRE after work <sup>b</sup>							0.01	0.04	0.32	0.06	0.05	1.17	0.07	0.05	1.51	0.08	0.05	1.66
Detachment at night <sup>b</sup>										0.12	0.05	2.31*	0.10	0.05	1.88	0.10	0.05	2.02*
PML at night <sup>b</sup>													0.19	0.06	2.98**	0.20	0.06	3.22**
SML at night <sup>b</sup>													-0.06	0.05	-1.06	-0.07	0.05	-1.34
FWF X detachment <sup>b</sup>																-0.03	0.07	-0.47
FWC X detachment <sup>b</sup>																-0.09	0.07	-1.19
JRE X detachment <sup>b</sup>																0.07	0.05	1.41
PML X detachment <sup>b</sup>																0.22	0.10	2.15*
SML X detachment <sup>b</sup>																-0.02	0.09	-0.21
-2 X Log(lh)	1379.87			1366.35			1356.74			1351.31			1341.86			1334.23		
Difference of -2 X Log				13.52***			9.61***			5.43**			9.44***			7.63***		
Df				5			3			1			2			5		
Level 1 intercept variance (SE)	0.54 (0.04)			0.54 (0.04)			0.52 (0.04)			0.52 (0.04)			0.51 (0.04)			0.50 (0.04)		
Level 2 intercept variance (SE)	0.70 (0.11)			0.64 (0.10)			0.65 (0.10)			0.65 (0.10)			0.65 (0.10)			0.64 (0.10)		

Note. <sup>a</sup>Person-level variables, <sup>b</sup>Day-level variables  
\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

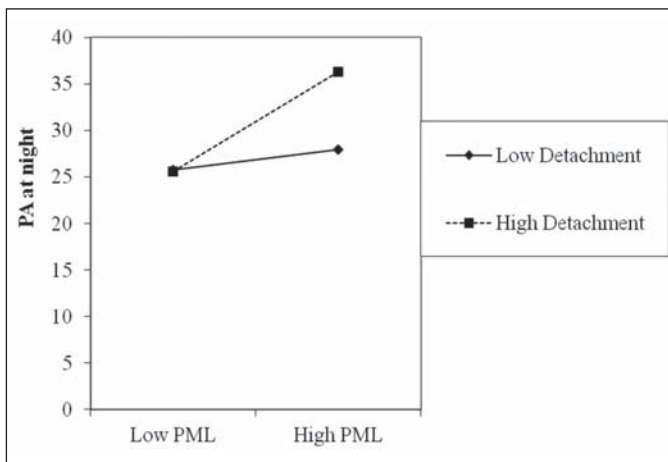


Figure 1. Interaction effects of PML and detachment in predicting PA at night

(.70–.64/.70 = .08) and 8% of the variance at Level 1 (.54–.50/.54 = .08). In this case, both general and day-level variables showed the same amount of explained variance for Level 1 and Level 2.

In the case of NA as an outcome variable (see Table 3), Model 1 showed a significant improvement over the null model (difference of  $-2 \times \log = 38.49$ ,  $df = 5$ ,  $p < .001$ ). General NA was a strong predictor of NA at night ( $t = 6.09$ ,  $p < .001$ ) and of the remaining control variables, only NA in the morning had a significant effect ( $t = 2.29$ ,  $p < .05$ ). Variables entered in Model 2 increased model fit (difference of

$-2 \times \log = 43.74$ ,  $df = 3$ ,  $p < .001$ ). Specifically, FWC and JRE after work were significant predictors of NA at night ( $t = 3.70$ ,  $p < .01$  and  $t = 4.89$ ,  $p < .01$ , respectively), and the effect of NA in the morning disappeared. In Model 3, detachment at night as a negative predictor contributed to increased model fit ( $t = -3.45$ ,  $p < .05$ ). Model 4, which included PML and SML, showed improved fit over the previous model. In particular, PML at night was negatively and significantly related to NA at night ( $t = -2.24$ ,  $p < .05$ ). In contrast, SML was positively related to NA at night ( $t = 2.28$ ,  $p < .05$ ). Finally, the variables entered in Model 5 increased model fit (difference of  $-2 \times \log = 8.94$ ,  $df = 5$ ,  $p < .001$ ). Results from Model 5 showed that detachment moderated the relation between daily FWC after work and NA at night ( $t = -2.45$ ,  $p < .05$ ). To better explore the pattern of the interaction effects, we followed the procedure proposed by Aiken and West (1991). Figure 2 shows that on days with low psychological detachment after work, high FWC is more positively related to NA at night than on days with high detachment. In sum, all predictor and control variables entered into the models explained 29% of the variance at Level 2 (.27–.19/.27 = .29) and 17% of the variance at Level 1 (.22–.18/.22 = .17).

## Discussion

The objective of this study was to explore employee daily emotional well-being through the relationship between family-work interaction, JRE, detachment, and meaning in life in an integrative overview. Some diary studies have shown the direct influence of psychosocial factors on employee emotional well-being at the end of the day (Sanz-Vergel, Demerouti et al., 2010; Sonnentag, Unger et al.,

Table 3  
Multilevel estimates for models predicting NA at night

Variables	Null Model			Model 1			Model 2			Model 3			Model 4			Model 5		
	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t	Estimate	SE	t
Intercept	1.44	0.05	26.65	1.44	0.05	31.28	1.44	0.05	31.28	1.44	0.05	31.28	1.44	0.05	31.28	1.43	0.05	30.43
Gender <sup>a</sup>				0.00	0.01	0.2	0.00	0.01	0.2	0.00	0.01	0.2	0.00	0.01	0.2	0.00	0.01	0.2
Shift <sup>a</sup>				-0.01	0.00	-1.67	-0.01	0.00	-1.67	-0.01	0.00	-1.67	-0.01	0.00	-1.67	-0.01	0.00	-1.67
NA <sup>a</sup>				0.45	0.07	6.09***	0.45	0.07	6.09***	0.45	0.07	6.09**	0.45	0.07	6.09***	0.45	0.07	6.03***
PA in the morning <sup>b</sup>				0.03	0.03	1	0.05	0.03	1.56	0.06	0.03	1.77	0.05	0.03	1.74	0.06	0.03	1.77
NA in the morning <sup>b</sup>				0.12	0.05	2.29*	0.07	0.05	1.31	0.09	0.05	1.78	0.08	0.05	1.6	0.07	0.05	1.42
FWF after work <sup>b</sup>							-0.03	0.03	-1.18	-0.03	0.03	-1.15	-0.03	0.03	-1.07	-0.04	0.03	-1.30
FWC after work <sup>b</sup>							0.12	0.03	3.70**	0.12	0.03	3.72*	0.12	0.03	3.78**	0.11	0.03	3.56**
JRE after work <sup>b</sup>							0.13	0.03	4.89**	0.09	0.03	3.24*	0.09	0.03	2.97**	0.10	0.03	3.38**
Detachment at night <sup>b</sup>										-0.11	0.03	-3.45*	-0.09	0.03	-3.03**	-0.10	0.03	-3.13**
PML at night <sup>b</sup>													-0.09	0.04	-2.24*	-0.08	0.04	-2.05*
SML at night <sup>b</sup>													0.07	0.03	2.28*	0.07	0.03	2.19*
FWF X detachment <sup>b</sup>																0.04	0.04	0.93
FWC X detachment <sup>b</sup>																-0.11	0.04	-2.45*
JRE X detachment <sup>b</sup>																-0.00	0.03	-0.03
PML X detachment <sup>b</sup>																0.03	0.06	0.42
SML X detachment <sup>b</sup>																-0.09	0.05	-1.71
-2 X Log(lh)	904.81			866.33			822.58			810.63			801.33			792.39		
Difference of -2 X Log				38.49***			43.74***			11.95**			9.30**			8.94***		
Df				5			3			1			2			5		
Level 1 intercept variance (SE)	0.22 (0.02)			0.22 (0.02)			0.20 (0.01)			0.19 (0.01)			0.19 (0.01)			0.18 (0.01)		
Level 2 intercept variance (SE)	0.27 (0.04)			0.18 (0.03)			0.19 (0.03)			0.19 (0.03)			0.19 (0.03)			0.19 (0.03)		

Note. <sup>a</sup>Person-level variables <sup>b</sup>Day-level variables

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

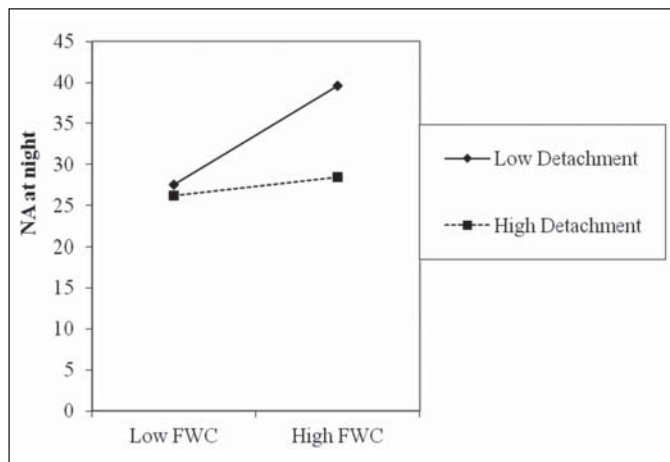


Figure 2. Interaction effects of FWC and detachment in predicting NA at night

2013). This study yields similar results and adds the effect of positive and negative spirals on well-being as well as the significant effect of detachment and meaning of life on the daily well-being of service sector employees. On the basis of our working hypotheses, PA at night was explained by positive variables, such as FWF, detachment, and PML (Hypotheses 1b, 4b, 5b). The evidence found in this study shows that daily processes of emotional well-being are associated with the proposed variables. Specifically, an employee who maintains balance between family and work domains will feel PA at the end of the day. These results are also relevant in the service sector field where there is a large presence of female employees and are along the same lines as the enriching effect of FWF, which is still insufficiently addressed at the daily level (Nicklin & McNall, 2013). If employees can detach themselves from workday stress and they have a clear presence of meaning in life, then the dynamics of the relationship of these positive variables will induce a state of emotional well-being at night, with important consequences for their psychological well-being (Fredrickson, 2008; Steger, 2012).

The study allowed us to analyze employees' daily activities as they occurred during the day and in a more natural setting (Sonnentag, Binnewies et al., 2013). Additionally, knowing how the workday influences employees' affect at night is essential for the promotion of their health and well-being and for the development of preventive programs within organizations (Bakker et al., 2012). Thus, we can better understand the noxious effects of FWC, JRE, and SML on employee emotional well-being at night, contributing to employees feeling NA at night on a daily basis. Therefore, in light of the results of our study, our data supports Hypotheses 2a, 3a, and 7a.

There are many examples in the literature of the positive effects of PML on people's well-being (Krause & Hayward, 2013; Steger, 2009, 2012; Wong, 2012). Our study provides similar results: PML had a positive relation with PA at night (Hypothesis 6b). Furthermore, in our study, PML had a negative and significant relation with NA at night (Hypothesis 6a). These results support the independence of PML and SML (Steger et al., 2006) and as we expected, PML is a promoter of PA, but it also alleviates discomfort through its effect on NA at night. In addition to determining the positive effect of meaning in life on employee daily well-being, we focused our study on the benefits of psychological detachment from work and its interaction effect with the predictor variables. There is a lot of recent evidence supporting the beneficial effect of detachment on well-being (e.g., Demerouti et al., 2011; Hahn & Dormann, 2013; Sonnentag et al., 2008; Sonnentag, Unger et al., 2013). Our study further contributes to these findings; the results have revealed direct effects on affect at night (Hypotheses 4a and 4b), as well as the moderating effect of detachment on the relationship between FWC and NA at night (Hypothesis 5a). Likewise, PML and PA at night were moderated by de-

tachment (Hypothesis 5b). The study thus indicates that employees who disengage from work in the afternoon experience an important process to increase their PA at night when PML is high. In fact, such detachment protects them from the negative influence of FWC on their affect at night. Moreover, it seems that detachment helps to increase the beneficial effect of PML on employee emotional well-being at night. Furthermore, the significant effects of PML and detachment, both on PA and on NA, permit us to address the positive consequences these variables may have on hedonic and eudaimonic well-being (Ryan & Deci, 2001). More specifically, the interaction between detachment and PML, and its relationship with positive affect can be understood in terms of the energy levels that are restored as a result of detachment, which frees up cognitive resources that aid in creating meaning and decrease the sense of overload, thereby contributing to personal well-being.

However, contrary to our Hypotheses 1a, 2b, 3b, and 7b, FWF showed a non-significant negative effect on NA at night; FWC showed a non-significant negative effect on PA at night; JRE showed a non-significant negative effect on PA at night; and SML showed a non-significant negative effect on PA at night. These findings appear to indicate that only the positive predictors (i.e., FWF, detachment, and PML) help to explain PA at night. These results can help us to understand the independence of PA and NA, which is in line with other research on employees (Ekkekakis & Russell, 2013), and further understanding of how positive affect is related to positive emotionality variables (Larsen & Fredrickson, 1999). Another relevant finding is the significant effect of detachment and PML, in both PA and NA at night during the workweek. This contributes to research on potential resources that can increase daily well-being and protect against negative emotions by permitting individuals to reinterpret stressful experiences in such a way that stress is reduced and energy is increased (Sonnentag & Binnewies, 2013; Steger, 2012). Learning to disconnect and understand or make sense of behavior on a daily basis increases personal well-being, which may simultaneously contribute to organizational well-being due to employees carrying out virtuous behavior. In short, the present study adds to our knowledge of the processes behind employee daily well-being. First, it contributes to the study of the relationships of family-work interaction, JRE, detachment, and meaning in life using an integrative positive and negative spiral approach. Based on the POHP (Bakker et al., 2012) we included not only negative, but also positive variables to extend the employee well-being process. Second, the study captures employees' daily fluctuations of emotional well-being by analyzing PA and NA at night as outcomes variables, both at a general level (between-person variation) and at day-level (within-person variation) according to multi-level methodology (Hox & Robers, 2011). This method provides a new way to explore details of organizational and personal variables associated with daily emotional well-being, like diary affect at night. Third, it provides positive evidence that detachment and PML promote PA at night and protect employees from the negative effects of the FWC and JRE on NA at night. This positive spiral is also associated with negative outcomes, diminishing their toxic effect. Fourth, the positive effects are also relevant in the FWF dynamics, showing that a balance in this relationship has positive effects on employee daily emotional well-being. The FWF spillover effect strengthens the contemporary research line of family-work interaction as a precursor of employee emotional well-being. Finally, further supporting the current evidence on spillover (Sonnentag & Binnewies, 2013), detachment was also shown to be a moderator, revealing its significant role in day-to-day emotional well-being and its dynamic relationship with meaning in life which contributes to daily well-being. Likewise, although research on meaning in life has often considered it to be a stable trait, the current perspective on this topic also takes into consideration the need to study its effects on a daily basis (Steger & Kashdan, 2013), which is something that has also been observed in the present study.

However, this study has also some limitations. A key issue is that the need to carefully follow instructions for questionnaire completion may clash with the participants' daily rhythm, leading to fatigue and random responses. In addition, the printed format provided could be uncomfortable to fill in, especially when taking into account the strict demands of the assessment during five consecutive days. In future studies, digital formats could be used and emotions at night could be assessed, for example, by means of psychophysiological recordings. Considering that previous research has already tested the positive connection of the stability of meaning in life and well-being using daily reports (King et al., 2006; Steger & Frazier, 2005; Steger et al., 2006), we added this variable and despite its lower within-person variation, all predictor variables taken together explained enough daily variability (Hox & Robers, 2011). In this sense, it would be interesting to carry out a daily follow-up measurement after some time has passed in order to determine longitudinally the status of the variables studied.

This study provides a detailed view of the indicators of emotional well-being in the context of occupational health, including the daily positive effect of FWF, PML, and detachment, which may help in the promotion of employee well-being and health, as well as in the development of preventive programs within organizations. In conclusion, within the work environment the balance between home and work life and recovery from stress is essential, as well as the exploration of the mechanisms which contribute to the sense of meaning and daily well-being.

## Conflicts of interest

The authors of this article declare no conflicts of interest.

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