

# A Diary Study on Work-Related Perseverative Cognition and Employees' Need for Recovery

## *The Role of Emotional Support from Family and Neuroticism*

Annie Foucreault<sup>1</sup>, Julie Ménard<sup>1</sup> & Celestine Stevens<sup>1</sup>

<sup>1</sup> Department of Psychology, Université du Québec à Montréal, Montréal, Québec, Canada

Correspondance: Annie Foucreault, Department of Psychology, Université du Québec à Montréal, C. P. 8888, Succ. Centre-Ville, Montréal, Québec, H3C 3P8. Tel: 1-514-987-3000 #2437. E-mail: foucreault.annie@courrier.uqam.ca

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### Abstract

Daily Work-related Perseverative Cognition (WPC) increases employees' need for recovery by maintaining physical activation of work-related stressors, thus depleting employees' resources further. The aim of this study was to highlight factors that influence the WPC/need for recovery relationship on a daily basis. It is hypothesized that daily satisfaction with emotional support from family would have both a direct and a moderating effect on the relationship between employees' daily WPC and need for recovery. Since individuals higher in neuroticism tend to report more distress symptoms and perseverative cognition, it was expected that neuroticism would: (1) have a direct effect on WPC and need for recovery, (2) accentuate the WPC/need for recovery relationship and (3) reduce the buffering effect of emotional support from family on need for recovery. A sample of 31 employees completed diaries for five consecutive days before sleep (122 data points). Results from hierarchical linear modeling analyses revealed that daily family support had no direct effect on daily need for recovery. However, daily family support buffered the WPC/need for recovery relationship but only among individuals low in neuroticism. For those high in neuroticism, daily family support was not associated with a reduction of daily need for recovery from work after resources had been depleted due to WPC. These findings suggest that individual characteristics (neuroticism) should be considered in order to interpret the effect of key resources (family support) on recovery. The discussion highlights how organizations can foster family support and offer alternative strategies for those higher in neuroticism.

**Keywords:** employees' need for recovery, emotional support from family, neuroticism, work-related perseverative cognition

### 1. Introduction

When fatigue builds up after effort expenditure to meet work-related demands, employees usually feel a sense of urgency to take a break from work. This emotional state is defined as daily need for recovery (Sonnentag & Zijlstra, 2006). Studies have shown that an inadequate response to one's own daily need for recovery is detrimental as it increases both physical (e.g., cardiovascular diseases; Sluiter, van der Beek, & Frings-Dresen, 1999) and psychological (e.g., psychological distress; Jansen, Kant, & van den Brandt, 2002) health problems related to occupational stress. In order to recover from spent resources, employees should avoid using the systems that are called upon during work periods (Hobföll, 1989; Meijman & Mulder, 1998). Among factors that impede recovery from work demands, research has increasingly focused on work-related perseverative cognition (WPC; i.e., worry and rumination about work-related issues) during non-work periods (Cropley & Millward, 2009; Flaxman, Ménard, Kinman, & Bond, 2012; Radstaak, Geurts, Beckers, Brosschot, & Kompier, 2014; Sonnentag, Kuttler, & Fritz, 2010). Indeed, when worrying and ruminating about work-related issues, employees continue to use personal resources and functional systems that have been active during the day. Although the direct effect of WPC on the recovery process has been widely investigated, few studies have considered moderators that may influence this relationship (e.g., Ménard, Foucreault, & Trépanier, under review). The present study aims to expand the understanding of employees' need for recovery during respite periods by

verifying, through a diary design, whether family emotional support (i.e., a personal resource) and neuroticism (i.e., an individual difference) affect the relationship between WPC and need for recovery on a daily basis.

Recent research in the field of employees' recovery (for review, see: Demerouti, Bakker, & Sanz-Vergel, 2013; Geurts, 2014) have only rarely taken into account the role of family life. Work-family research has clearly shown that family life, and particularly family support, contributes to employees' well-being (e.g., Greenhaus & Powell, 2006; Greenhaus, Ziegert, & Allen, 2011). Building on these insights, it appears relevant to examine whether family life also facilitates the recovery process. Previous studies have highlighted the twofold effect that emotional support can have on the stressor-strain relation: (1) emotional support may have a positive effect on health regardless of the individual's stress level (direct effect on strain), and (2) emotional support may buffer the relationship between stressors and strain (buffering effect; Cohen & Syme, 1985; Cohen & Wills, 1985; LaRocco, House, & French, 1980; Viswesvaran, Sanchez, & Fisher, 1999). However, to our knowledge, such relationships have never been tested on a daily basis. Therefore, the first aim was to investigate both the direct and the buffering effects of emotional support from family on the relation between WPC and employees' daily need for recovery.

When studying the influence of personal resources such as emotional support on need for recovery, it is also important to consider individual characteristics, as there is evidence that such resources may have different effects depending on the employee's attributes (Park et al., 2012). Neuroticism may act as a moderator by amplifying the negative consequences of WPC and by reducing the beneficial contribution of emotional support to recovery. In fact, it has been shown that those higher in neuroticism engage in more perseverative cognition and are less likely to benefit from the positive effect of perceived emotional support (Park et al., 2012; Robinson, Wilkowski, Kirkeby, & Meier, 2006). Thus, following the recommendation of Ragsdale et al. (2011) on the need to investigate the role of emotional stability (i.e., low neuroticism) in employees' recovery, the second aim was to verify the effect of neuroticism on WPC/need for recovery relationship.

In the following section, need for recovery is first defined. Second, on the basis of both the effort-recovery model (ER; Meijman & Mulder, 1998) and the conservation of resource model (COR; Hobföll, 1989), the potential influence of WPC on individuals' daily need for recovery is presented. Lastly, a description of the ways emotional social support from family and neuroticism could both independently and jointly influence individuals' daily need for recovery is presented.

### *1.1 Theoretical Perspectives on the Need for Recovery*

Recovery is crucial to employees' well-being and performance (Binnewies, Sonnentag, & Mojza, 2010). When employees respond to work-related demands, they use up personal resources and energy, which leads to need for recovery (Sonnentag & Zijlstra, 2006). Sonnentag and Zijlstra (2006) defined need for recovery as an urgent sense that one needs to take a break from demands and recover depleted resources. Both the ER model (Meijman & Mulder, 1998) and the COR model (Hobföll, 1989) deepen the understanding of such a need and the ensuing recovery process.

The ER model (Meijman & Mulder, 1998) posits that the efforts mobilized during workdays lead to the activation of various systems depending on the nature of the task that is performed (e.g., cognitive system to make a decision). Such activations are called "load reactions". On a short-term basis, load reactions are both normal and reversible. However, if the systems used do not return to their baseline level on a regular basis (i.e., during respite periods) due to continuous demands, need for recovery occurs. When employees worry and ruminate about work during leisure time, they promote prolonged activation of work-related stressors and tax the same systems used to meet work demands (Flaxman et al., 2012). In doing so, they maintain their fatigued state, thereby compromising both their health and performance (Cropley & Millward, 2009; Meijman & Mulder, 1998).

Hobföll's COR model (1989) completes ER model in explaining need for recovery. COR states that people attempt to retain, protect and consolidate resources, which are defined as any objects (e.g., home), energies (i.e., stamina), personal characteristics (e.g., self-esteem) and life conditions (e.g., having a job) they value. According to this model, a stress reaction occurs when faced with an event that represents a threat of an eventual loss, an immediate loss or an insufficient gain after the investment of resources. Accordingly, resources recovery is essential to healthy functioning. When employees experience WPC after their workday, they remain in an activated mode, thus continuously losing personal resources (Sonnentag et al., 2010). If resources are not replenished, employees may be unable to compensate for those they have lost, and a "spiral of loss" may occur and eventually lead to burnout (Hobföll, 1989).

### 1.2 Theoretical Perspectives on Perseverative Cognition

On the basis of the ER model (Meijman & Mulder, 1998) and COR model (Hobföll, 1989), Binnewies et al. (2010) showed that when individuals actively think about work during leisure time, they experience a higher need for recovery than when they are able to psychologically detach from work. However, in another study, these researchers found that positive cognitions about work are positively related to individual performance and well-being (Binnewies, Sonnentag, & Mojza, 2009). They suggested that positive thoughts about work allow a reappraisal of the employee's experience, and thus facilitate resource acquisition such as self-esteem (Binnewies et al., 2009). Building on previous work on psychological detachment, Flaxman et al. (2012) showed that perseverative and negative cognition about work (i.e., WPC), explained employees' need for recovery during a short-break, over and above the mere act of thinking about work. Hence, in the current study, the main focus was on daily WPC and its effect on daily need for recovery instead of on employees' psychological detachment from work.

Perseverative cognition is defined as a cognitive representation of psychological stressors (e.g., time pressure and workload) that is repeatedly or chronically activated through ruminations about the past and worries about the future (Brosschot, Gerin, & Thayer, 2006). The perseverative cognition hypothesis (Brosschot et al., 2006) provides an explanation for the negative influence that work-related worry and rumination (i.e., WPC) have on employees' respite. According to this hypothesis, WPC prolongs stressor activation after the workday and thus promotes chronic over-activity of the same stress-related systems and repeated use of the same work-related resources (e.g., concentration; Sonnentag et al., 2010) during off-job periods. This prolonged activation impairs the recovery process as WPC put extra demands on individuals who do not have a temporary break from job demands that allow their functional systems and their resource reservoir to return to their baseline level (Meijman & Mulder, 1998; Hobföll, 1989). Accordingly, the following hypothesis is proposed:

Hypothesis 1: Daily WPC (Level 1) will be positively related to need for recovery before sleep (Level 1), throughout the workweek. Specifically, employees will have a higher level of need for recovery than one's personal average on evenings they experienced WPC than on evenings they experienced no WPC.

### 1.3 Theoretical Perspectives on Satisfaction with Emotional Support from Family

Whereas perseverative cognition may impede recovery through resource depletion and system activation, social support may be a key resource to promote recovery (Hobföll, 1998). In the present study, emotional support from family members (e.g., spouse, children, mother, and any other significant relatives), a form of social support, was of interest. It refers to demonstrations of protection, love and empathy toward the individual (House, 1981). This form of social support is the most studied, and empirical evidence suggests that its influence on health is greater than that of others (i.e., informational, instrumental, and esteem; LaRocco, House, & French, 1980). Furthermore, Cohen and Wills' (1985) meta-analysis showed that emotional support from a spouse is more efficient than any other source of social support in buffering stress. Indeed, Ferguson et al. (2012) suggested that family-based resources (e.g., intimacy with a partner) could promote the perception that the employee has successfully met role-related expectations in his/her family domain, thus reinforcing personal resources (e.g., self-esteem).

According to Cohen and Syme (1985), social (and emotional) support acts on the process of work stress in a twofold manner. First, such support may directly reduce the tension felt by employees, regardless of the intensity of the stressors they experienced at work. This *direct effect hypothesis* can be explained theoretically by the work-family enrichment hypothesis (Greenhaus & Powell, 2006). Based on this hypothesis, Ten Brummelhuis and Bakker (2012) argued that emotional support from a spouse is a contextual resource (i.e., home-based) that helps to build other resources, thereby facilitating the recovery process (i.e., both from home and work demands). Thus, the mere perception that family members are willing to help (if needed) may promote a *spiral gain* of personal resources (e.g., positive mood, self-esteem), which in turn, can enrich the work domain by fostering a vigorous attitude at work. Accordingly, it is proposed that emotional support from family have a direct effect on employees' strain (i.e., need for recovery).

Hypothesis 2: Satisfaction with perceived emotional support from family in the evening (Level 1) will be negatively related to need for recovery before sleep (Level 1; *direct-effect hypothesis*). Employees will have a lower level of need for recovery than one's personal average on evenings they reported satisfaction with family emotional support than on evenings they experienced no satisfaction with family support.

Social (and emotional) support's second role is to relieve the effects of stressors on strain (Cohen & Syme, 1985). It has been argued that resources provided by family members through support may help redefine and decrease negative effects of work stressors by strengthening individuals' perception that they can cope with work-related

demands (Cohen & Syme, 1985). House (1981) also posited that support tranquilizes the neuroendocrine system and thereby reduces employees' negative reactions to work-related demands. Since WPC can be considered as a negative work-related demand (Hobföll, 1989; Meijman & Mulder, 1998), it is thus expected that emotional support from family buffers the relationship between prolonged physical activation of stressors (due to WPC) and need for recovery.

Hypothesis 3: Satisfaction with perceived emotional support from family in the evening (Level 1) will moderate the relation between daily WPC (level 1) and need for recovery before sleep (Level 1). The lowest need for recovery will be when individuals report daily WPC and satisfaction with their emotional family support. The highest need for recovery will be when employees who report daily WPC also report no satisfaction with their perceived emotional support from family.

#### *1.4 Theoretical Perspectives on Neuroticism*

Along with resources from the employees' environment, individual characteristics also can have a considerable influence on employees' daily WPC and need for recovery. Neuroticism is a disposition to interpret events that occur in one's life negatively (Watson & Clarke, 1984). It has been shown in self-administrated questionnaires that those high in neuroticism are more susceptible to reporting negative outcomes such as distress symptoms than those who are low on this trait (Le, Donnellan, Spilman, Garcia, & Conger, 2014). The state-trait theory of anxiety (Eysenck, 1967) gives an explanation for those research results. This theory posits that individuals high in neuroticism have a tendency to react quickly to minor stressors in their environment since they have a lower threshold for activation of their limbic (i.e., emotional) system than those low in neuroticism. These individuals are thus more likely to report a higher level of need for recovery than their emotionally stable counterparts when they are exposed to daily work-related stressors such as time pressure. Accordingly, the following hypothesis is posited:

Hypothesis 4: Neuroticism (Level 2) will be positively related to employees' daily need for recovery before sleep (Level 1). Individuals high in neuroticism will tend to report a higher level of need for recovery on a daily basis than those low in neuroticism.

Along with being more reactive, individuals high in neuroticism are more inclined to maintain perseverative cognition about stressful events than those low in neuroticism (e.g., Roelofs, Huibers, Peeters, & Arntz, 2008). It has been suggested that the relationship between neuroticism and perseverative cognition could be explained by the moderating effect of a low level of executive function that limits the capacity of those high in neuroticism to regulate their mental processes (Robinson, 2007). In order to confirm the findings of previous studies, it is hypothesized that:

Hypothesis 5: Neuroticism (Level 2) will be positively related to employees' daily WPC (Level 1). Individuals high in neuroticism will tend to report WPC on a daily basis contrary to those low in neuroticism.

Some researchers have argued that those with a higher level of neuroticism perceive less support from others than those who score lower on this personality trait (Bolger & Eckenrode, 1991). In this vein, Aryee et al. (2005) maintained that individuals high in neuroticism inhibit efforts to elicit social support to cope with stress, and as a consequence experience a higher level of work-family conflict than those with a low level of neuroticism. Another study showed that the buffering effect of support on health is less likely to occur among individuals high in neuroticism (Park et al., 2012). This could be explained by the tendency of people high in neuroticism to engage in negative conversations about work-related issues with those who offer them emotional support, rather than conversing with them on topics that are either constructive or unrelated to work (Zellars & Perrewé, 2001). Hence, the kind of social support obtained by those who are high in neuroticism could result in WPC because of their own negative input into interactions with their relatives.

Consequently, as those high in neuroticism are more likely to report a higher need for recovery and are less likely to benefit from their social support than emotionally stable individuals, it is crucial to account for this personality trait in the study's model. It is therefore proposed that a three-way interaction would be more appropriate than a usual two-way interaction to show how neuroticism, daily WPC and satisfaction with family emotional social support together affect employees' respite. Thus, the following hypothesis was posited:

Hypothesis 6: Neuroticism (Level 2) and satisfaction with perceived emotional support from family (Level 1) will moderate the relationship between daily WPC (Level 1) and need for recovery (Level 1). The buffering effect of emotional support from family between daily WPC and need for recovery will only be observed among those low in neuroticism.

## 2. Method

### 2.1 Participants

Participants were recruited from a range of private (45.3%) and public organizations (48.4%) as well as non-profit organizations (6.5%) in Canada, using snowball sampling (Goodman, 1961). Inclusion criteria were the following: (a) intention to work on a majority of days during the week of the study (b) at least 18 years of age and (c) Internet access at home, in order to complete the online diaries. A total of 36 employees expressed interest in participating in this study and received the questionnaires through their personal email address. Five participants were excluded from the analyses because of failure to complete at least three diaries out of five. For the 31 remaining participants (122 data points), the Little's MCAR test (Little, 1988) indicated that the data were missing completely at random,  $\chi^2 = .116$  ( $df = 1$ ,  $p = .733$ ). The majority of participants were women (70.97%) and averaged 36 years of age ( $SD = 9.87$ ). Most worked on a full-time basis (77.4%; i.e., 35 hours per week, on average). The majority had no children (54.8%) and 48.4% were married or had a partner.

### 2.2 Procedure

The Institutional Review Board of Université du Québec à Montréal's Human Sciences Faculty approved this study. Participants received a flyer explaining the major goals of the research project, and those interested were provided with the initial questionnaire. The first page of this questionnaire included a consent form that informed participants about confidentiality and anonymity as well as instructions on when to complete the questionnaire and online diaries. The questionnaire was to be completed on the Sunday evening, while daily diaries had to be completed over five consecutive workdays, from Monday to Friday, before going to sleep. The questionnaire assessed socio-demographic variables and neuroticism. Diaries assessed daily need for recovery, emotional support from family, and WPC. Each daily diary that was completed by participants gave them a chance to win a prize (2 X 50\$).

### 2.3 Measures

#### 2.3.1 Self-Reported Neuroticism

Neuroticism was assessed using the Neuroticism-Anxiety (N-Anx) subscale of the Zuckerman-Kuhlman Personality Questionnaire (ZKPQ; Aluja et al., 2006). It consists of ten items (e.g., "*I often worry about things that other people think are unimportant.*"). Participants had to indicate to which extent each statement described them on a four-point scale ranging from 1 (*totally disagree*) to 4 (*totally agree*). The Cronbach's alpha subscale ( $\alpha = .81$ ) was similar to that in the original study ( $\alpha = .83$ ; Aluja et al., 2006).

#### 2.3.2 Daily Need for Recovery

Daily need for recovery was assessed before going to sleep from Monday to Friday, using the acute fatigue subscale of the Occupational Fatigue, Exhaustion, Recovery scale (OFER15; Winwood, Lushington, & Winnefield, 2006). This subscale has 5 items (e.g., "*After work I had little energy left today.*"). The instructions, which were adjusted for the purpose of this study, asked participants to indicate on a scale of 0 (*strongly disagree*) to 6 (*strongly agree*) to which extent each item represented how they felt during the evening. The original scale had a Cronbach's alpha of .84 and, in this study, alphas varied from .55 to .87 over the five measurements.

#### 2.3.3 Daily Work-Related Perseverative Cognition

The Work-related Worry and Rumination Scale (WWRS) was used to assess work-related perseverative cognition (5 items; Flaxman et al., 2012). Participants were asked to indicate whether they had the types of work-related thoughts mentioned in each statement (e.g., "*My thoughts kept returning to a stressful situation at work.*") on a 5-point Likert scale (i.e., 1 = *not at all* to 5 = *a great deal*). However, the distribution of this variable was positively skewed since participants did not have WPC after every workday. Thus, this scale was dichotomized: 0 = *had no daily WPC*, and 1 = *had daily WPC*. Internal reliability of the original scale ( $\alpha = .86$ ) was similar to that of the current study (alphas varied from .76 to 1.00 over the five measurements).

#### 2.3.4 Daily Satisfaction about Perceived Emotional Support from Family

Satisfaction about perceived emotional support provided by family was measured using a single item from the Questionnaire of Perceived Social Support (QSSP; Bruchon-Schweitzer & Quintard, 2001). Participants had to answer the following question: "*Are you satisfied with the comfort and listening you had received from your family when you needed it during the evening*". Family refers to spouse, children, and any other significant relatives. Their answers were on a 6-point Likert scale (i.e., 0 = *Not applicable* to 5 = *Very satisfied*). However, the distribution of this variable was also positively skewed, since participants did not always have the

opportunity to receive emotional support from their family after every workday. Thus, this scale was dichotomized: 0 = *had no family support or were not at all satisfied with their family support*, and 1 = *were satisfied with their family support*.

### 2.3.5 Control Variables

Since some sociodemographic variables are expected to have an influence on individuals' daily need for recovery (e.g., Sonnentag et al., 2010), gender, age, number of children, hours of work per week, and contract work hours (i.e., full-time or part-time) were assessed.

## 2.4 Data Analyses

### 2.4.1 Correlation Analyses

SPSS v.21 (IBM Corp., 2012) was used to conduct preliminary analyses. In order to verify bivariate correlations with between-person variables (i.e., Level 2 variables; socio-demographical variables and neuroticism) and within-person variables (i.e., Level 1 variables; need for recovery, WPC and emotional support from family), averages of individuals' scores for the overall workweek were calculated. Pearson's correlation coefficients were used for all the relations examined except for gender and contract work hours. For the latter, Spearman's correlation coefficient for ordinal data were employed.

### 2.4.2 Hierarchical Linear Models

To examine the positive relation between WPC and need for recovery as well as potential influence of satisfaction with emotional family support and neuroticism, a series of Hierarchical Linear Models (HLM) were created using HLM 7 (Raudenbush, Bryk, & Congdon, 2011). Hierarchical linear models are the most commonly used analyses in diary studies as they enable scholars to test hypotheses in which repeated situational measures (i.e., need for recovery, WPC and emotional support from family at Level 1) are nested within individuals' dispositional measures (i.e., neuroticism at Level 2; Reis & Glabe, 2000). Thus, based on the recommendations by Ohly et al. (2010), the predictors at the within-person level of analysis (i.e., WPC and emotional support from family) were centered to the group mean, while the predictor at the between-person level of analysis (i.e., neuroticism) was centered to the grand mean. The analyses included random effects of the intercept and slopes. Equations were verified in a two-tailed manner. The restricted maximum likelihood was used as the estimation method.

In order to test the hypotheses related to daily need for recovery (hypotheses 1, 2, 3, 4, and 6), six nested models were created. The intercept was the only predictor included in the null model. To test hypotheses 1, 2, and 4, daily WPC, satisfaction with emotional support from family, and neuroticism were entered separately in the HLM regression equation (see Models 1, 2, and 4). In order to verify hypothesis 3, the variables forming the WPC X family support interaction term were centered and their cross product were calculated and entered in Model 3 with the main effects of WPC and family support. The three-way interaction hypothesis (i.e., hypothesis 4) was tested in Model 5 by adding neuroticism to the Model 4 equation. To test hypothesis 5, two nested models were conducted: (1) the null model included WPC and (2) the Model 1 including neuroticism at Level 2.

## 3. Results

### 3.1 Correlation Analyses

The zero-order correlations and descriptive statistics are presented in Table 1. The pattern of correlations is in line with expectations. WPC in the evening was positively related to need for recovery before going to sleep at the within level ( $r = .27, p = .002$ ). Furthermore, as expected, neuroticism was positively related to need for recovery at the between level ( $r = .56, p = .001$ ). Results also revealed that women in the sample reported higher level of neuroticism ( $r = -.59, p < .001$ ) and need for recovery during the workweek ( $r = -.43, p = .017$ ) than men. Finally, the number of hours typically worked per week was positively related to WPC at the between level ( $r = .40, p = .026$ ).

HLM was conducted in order to verify whether gender needed to be controlled for in the main analyses, as it was positively correlated with need for recovery at the between-level. Gender was not related to daily need for recovery at the within-level ( $\gamma_{01} = 1.00, p = .058$ ) so it was not included as a control variable in the main analyses.

Table 1. Means, standard deviation and zero-order correlations

Variables	$\alpha$	$M$	$SD$	1	2	3	4	5	6	7	8	9
1. Age		35.61	9.87	–								
2. Gender		1.29	.46	.12	–							
3. Number of children		.97	1.17	.58**	.30	–						
4. Contract work hours		1.23	.43	.12	-.18	-.18	–					
5. Hours of work / week		39.10	7.80	.15	-.02	.10	-.58*	–				
6. Neuroticism	.81	2.08	.49	.00	-.59**	-.18	-.03	-.10	–			
7. Daily need for recovery	.55 à .94	2.97	.99	-.02	-.43*	-.09	.15	.19	.56**	–	.27*	.05
8. Daily WPC	.76 à 1.00	1.49	.36	.06	-.32	.00	-.20	.40*	.34	.45*	–	-.07
9. Daily emotional support from family		1.44	.33	.08	-.02	.33	-.10	.28	.02	.05	.07	–

Notes.  $n$  at Level 1 = 122.  $n$  at Level 2 = 31.  $\alpha$  variation = Cronbach's alpha variation across the day of the study. Gender = women (0), men (1). Contract work hours = full time (0) or part time employment (1). Hours of work/week = number of hours typically worked per week. Daily WPC = daily work-related perseverative cognition. \* = significant at  $p < .05$ . \*\* = significant at  $p < .01$ .

### 3.2 Hierarchical Linear Models

Results for need for recovery as the outcome are presented in Table 2 while those for WPC as the outcome are depicted in Table 3. Hypothesis 1 was first tested. Contrary to expectations, daily WPC was not positively related to daily need for recovery before sleep ( $\gamma_{10} = .30, p = .180$ ; Model 1). Subsequently, Hypothesis 2 on the direct effect of daily satisfaction with emotional support from family was verified. Results did not support the prediction. The daily relationship between family support and need for recovery was not significant ( $\gamma_{20} = -.19, p = .272$ ; Model 2). Likewise, Hypothesis 3 that daily satisfaction with emotional support from family would moderate the daily relation between WPC and need for recovery was not significant ( $\gamma_{30} = -.14, p = .256$ ; Model 3). Hypothesis 4 was supported. Neuroticism significantly predicted daily need for recovery ( $\gamma_{01} = 1.11, p = .009$ ; Model 4), with those high in neuroticism reporting a higher need on a daily basis than those low on the trait. Although the relationship is in the predicted direction, neuroticism was not positively related to WPC as expected in Hypothesis 5 ( $\gamma_{01} = .44, p = .070$ ; Model 1).

The three-way interaction of WPC, emotional support from family and neuroticism in relation to daily need for recovery was also tested (i.e., Hypothesis 6). Results revealed that the interaction was significant ( $\gamma_{31} = .20, p = .045$ ). As shown in Figure 1, the highest level of daily need recovery was among those high in neuroticism, on days when they experienced WPC and no satisfaction with family support. Also, daily WPC hindered the recovery process among those high in neuroticism, regardless of whether or not they were satisfied with the support they received from family. However, for those low in neuroticism, WPC was only associated to need for recovery on days when they were dissatisfied with emotional support from family. In fact, when they were satisfied with emotional support from family and also reported WPC during the evening, their need for recovery was lower than when they had no WPC. Therefore, the most successful recovery pattern was found among those low in neuroticism when they perceived emotional support from family and reported WPC. Thus, emotional support's effect on need for recovery was potentialized when individuals low in neuroticism worried and ruminated about work. Hypothesis 6 was thus supported. Results are discussed in details in the next section.

Table 2. Hierarchical linear modeling analyses for variables predicting need for recovery

	Null model			Model 1			Model 2			Model 3			Model 4			Model 5		
	Coef.	$t$	$p$	Coef.	$t$	$p$	Coef.	$t$	$p$	Coef.	$t$	$p$	Coef.	$t$	$p$	Coef.	$t$	$p$
Intercept $\gamma_{00}$	3.61	15.38	<.001	3.62	15.36	<.001	3.61	15.38	<.001	3.51	15.34	<.001	3.61	16.92	<.001	3.61	16.87	<.001
<b>Level 1</b>																		
WPC $\gamma_{10}$				.30	1.37	.180				.25	1.27	.215				.24	0.96	.348
Emotional support from family $\gamma_{20}$							-.19	-1.12	.272	-.12	-0.80	.429				-.12	-0.71	.483





#### 4. Discussion

This study addresses an important question linking two research areas that have rarely been combined: recovery and work-family enrichment. The main objective was to determine the influence of emotional support from family and neuroticism on the daily relationship between work-related perseverative cognition and employees' need for recovery. It was hypothesized that emotional support from family and neuroticism would have a direct effect on need for recovery and also play a buffering role on a daily basis. Results from the hierarchical linear models did not support neither the hypothesized positive relationships between WPC, family support and need for recovery nor the buffering effect of family support between WPC and need for recovery. These results contradict findings from previous studies (e.g., Cohen & Wills, 1985; Cropley & Millward, 2009; Flaxman et al., 2012) and are probably due to the presence of a three-way interaction with WPC, emotional support from family and neuroticism. In fact, this significant interaction highlights the key role of neuroticism to fully understand the relationship between WPC, family support and recovery.

The results support all of the assumptions regarding neuroticism. First, neuroticism was significantly predictive of individuals' daily need for recovery. This finding provides some support to the state-trait theory of anxiety (Eysenck, 1967) and the finding by Langelaan et al. (2006) that neuroticism is the personality trait most strongly related to burnout among the "Big Five". According to these researchers, those high in neuroticism tend to magnify the perceived burden of job demands, which promotes burnout. Therefore, employees high in neuroticism may also exacerbate their daily work-related stressors (e.g., chronic pressure from supervisors) and feel more exhausted on a daily basis. Second, in this study, neuroticism significantly predicted daily WPC. This result is in line with the proposition that a ruminative response style is a prominent cognitive process for those high in neuroticism (Roelofs et al., 2008).

Third, the results support the existence of an interaction between neuroticism, emotional support from family and WPC that affects employees' daily need for recovery. As predicted, the relations of emotional support and WPC to need for recovery were not the same among employees who are high versus low in neuroticism. On the one hand, the highest daily level of need for recovery was observed among those high in neuroticism when they were dissatisfied with emotional support from family. Moreover, for this subsample, emotional support did not have a buffering effect on the relationship between WPC and need for recovery. Among those high in neuroticism, the strength of the relationship remained the same whether or not employees were satisfied with emotional support from family, showing no beneficial outcome from such support. This result could be explained by the strong likelihood that individuals high in neuroticism will have negative conversations (about their work) with those who offer them social support (Zellars & Perrewé, 2001). It could also be explained by their tendency to interpret information from their environment emotionally and negatively (i.e., interpretation bias; Mathews & MacLeod, 1994). Therefore, even if they reported to be satisfied with emotional support from family, they failed to benefit from it.

When employees low in neuroticism worried and ruminated about work, they benefited from emotional support from family in the reduction of their daily need for recovery. Conversely to those high in neuroticism, these emotionally stable employees seem to benefit from discussing work-related issues when they received emotional support, by accumulating resources, such as self-esteem, that help them to address their problems at work. As emotionally stable individuals are less prone to interpretation bias (Mathews & MacLeod, 1994), they may have used the comments made by their relatives in a constructive manner, which reduced the deleterious effects of WPC on their need for recovery. However, when they do not report worry and rumination about work-related issues during the evening, they may not take advantage of the protective mechanism associated with emotional support from family. This may explain why they had a higher need for recovery when they had no WPC and were not satisfied with their family support than when they had WPC and were satisfied about their support. Furthermore, it could be particularly important to them to receive support when they have negative thoughts, but when it is not the case, there are other factors that could affect their need for recovery. If, for example, their worries are about domestic tasks, there is no need for emotional support, but rather for instrumental support.

##### 4.1 Theoretical Implications

The findings support previous research based on the ER model (Meijman & Mulder, 1998) and COR model (Hobföll, 1989) by suggesting that individuals should try to take a break from work demands by psychologically detaching themselves from work-related negative thoughts as they use the same functional systems and resources than those needed during the workday (e.g., Flaxman et al., 2012; Sonnentag et al., 2010). This study also presented emotional support from family as a home-related contextual resource that helps to reduce the deleterious effect of WPC on need for recovery, thus supporting the work-home resources model (Ten

Brummelhuis & Bakker, 2012). However, the principal contribution of the study is highlighting that emotional support from family was a resource only for those low in neuroticism.

This study reinforces previous findings that family can be a source of social support strongly associated with resource replenishment (Greenhaus & Powell, 2006; Ruderman, Ohlott, Panzer, & King, 2002; Ten Brummelhuis & Bakker, 2012). In this study, emotional support from family was resourceful only to those low in neuroticism. This finding converges with the work-family enrichment hypothesis (Greenhaus & Powell, 2006), which states that having multiple roles, such as being a parent, a spouse and a worker, can be a source of enrichment for employees (for review, see: McNall, Nicklin, & Masuda, 2010). Recently, Ferguson et al. (2012) found that employees acquire personal resources (e.g., self-esteem) when they receive social support from their partner. According to these scholars, when additional resources are acquired through emotional support from family, it boosts their emotional state, helping them manage family and work demands, thus leading to increased satisfaction in both family and work domains. This boosted emotional state may reduce the importance of WPC among those low in neuroticism, which could explain the decreased need for recovery notwithstanding the presence WPC. In this case, emotional support from family could be perceived as being even more resourceful when they worry or ruminate. In this vein, Maslach and Jackson (1985) showed that those who have a spouse and children were less likely to experience burnout than those who were single. Accordingly, family appears to be an important emotional resource for those who can benefit from it (i.e., those low in neuroticism, and especially when they have a high level of WPC). Even if having a family involves additional demands and efforts after the workday, results indicate that family members may help employees low in neuroticism to generate more personal resources than strain. Supporting the enrichment hypothesis (Greenhaus & Powell, 2006) rather than the scarcity hypothesis (see Goode, 1960), the results show that individuals do not necessarily experience conflict and stress by participating in multiple roles. This study also goes further by suggesting that the assumptions related to the enrichment model mainly apply to employees low in neuroticism.

While this study failed to confirm the direct-effect hypothesis of emotional support proposed by some researchers (e.g., Ten Brummelhuis & Bakker, 2012; Viswesvaran et al., 1999), the meta-analysis by Cohen and Wills (1985) offers explanations for this result. These scholars highlighted that studies supporting the buffering hypothesis evaluated support's *function*, whereas those showing evidence for a direct effect assessed the individual's degree of *integration* in a social network (i.e., the number of people with whom the individual is engaged in a social relationship). The scale used in the present study (QSSP; Bruchon-Schweitzer & Quintard, 2001) assesses employees' satisfaction with the comfort and listening received from family members (i.e., function of emotional support), and does not account for their degree of integration in their social network. Consequently, direct effect of emotional support from family on employees' daily need for recovery was not observed. Since functional support and social integration represent two different processes by which support may improve employees' well-being (Cohen & Wills, 1985), researchers are encouraged to combine a functional as well as a structural measure to assess support in future studies.

#### 4.2 Strengths, Limitations and Future Research

This study established the nature of the relationship between WPC, need for recovery, emotional support from family and neuroticism through daily diaries. Using diaries over five consecutive workdays allowed the observation of the variability of participants' affects in their real context of occurrence (Reis & Gable, 2000).

In spite of the relevant results obtained in this study, it is important to note its limitations. First, the study is correlational; it is therefore impossible to establish causality between the variables tested. Researchers are encouraged to replicate this study's findings with an experience sampling method (ESM; see Larson & Csikszentmihalyi, 1983). Second, there is a potential bias due to the self-reported nature of the data. Future studies could use physiological indicators of need for recovery (e.g., adrenaline secretion) to vary the sources of information (Flaxman et al., 2012). Finally, while it is recognized that the sample size was small, Ohly et al. (2010) built a strong argument showing that sample size greater than 30 is sufficient to reduce biased results. However, researchers are encouraged to replicate this study with a larger sample size among various types of professional occupations.

#### 4.3 Practical Implications and Conclusion

Findings from this study have considerable implications for intervention. In fact, these results suggest that organizations would benefit from establishing conditions (e.g., work-life policies) that promote the replenishment of their employees' personal resources, since the replenishment of energy during periods of respite has been found to be related to performance at work (Sonnentag, 2003). For instance, organizations could

permit staff to adjust work schedules to allow for time with their partner, as this may enable them to receive more emotional support.

These results also highlight that family support did not help reduce the harmful effects of WPC among individuals high in neuroticism in this sample. Thus, interventions oriented toward emotional support from family may be less effective with these employees. However, other interventions may be resourceful to them. As the current state of knowledge implies that WPC may have negative effects on employees' well-being in the long term (Sonnentag et al., 2010), fostering actions to reduce the frequency of worry and rumination among those high in neuroticism, who are particularly prone to such cognition, seems of particular importance. Martin and Tesser (1996) propose three mechanisms that can alleviate perseverative cognition over time: goal attainment, distraction and disengagement from the goal. Employers could encourage goal attainment by training their employees to divide their responsibilities into tasks that can be achieved on a daily basis (Cropley & Millward, 2009). Mastery experiences (e.g., through sports, learning activities and volunteer work) have been identified as efficient for distracting individuals from job-related issues. Finally, disengagement from work goals can be facilitated by establishing clear work/home boundaries (e.g., not using work-related technologies at home; Cropley & Millward, 2009). Ultimately, resources are an important aspect to consider, but in order to benefit from them, they have to be considered as resources. For those low in neuroticism, emotional support from family is a valuable resource when they feel worried. On the other hand, for those high in neuroticism, emotional family support does not seem to be perceived as a resource regardless of the level of WPC.

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