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Research Article

Workaholism and daily recovery: A day reconstruction study of leisure activities

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Summary This study among 85 individuals used a day reconstruction approach to examine whether workaholism moderates the relationship between daily activities during non-work time and daily well-being in the evening (evening happiness, momentary vigor before bedtime, and momentary recovery before bedtime). Specifically, it was hypothesized that daily work-related activities during the evening have a stronger negative relationship with daily well-being for employees high (versus low) in workaholism and that daily physical and social activities have a stronger positive relationship with well-being for employees high (versus low) in workaholism. The results of multilevel analyses largely supported the hypotheses for daily physical and work-related activities but not for social activities during non-work time. These findings imply that organizations should not encourage their employees and particularly those who score high on workaholism to work during non-work time and instead promote physical exercise. Copyright © 2012 John Wiley & Sons, Ltd.

Keywords: day reconstruction method; diary; happiness; recovery; vigor; workaholism

Research suggests that employees feel more engaged and perform better if they recover from their work-related efforts on a daily basis (Sonnentag, 2003). However, some employees are so involved in their work that they find it very difficult to detach from it; they have an inner drive to work excessively hard (Schaufeli, Taris, & Bakker, 2008). These "workaholics" seem to neglect their need for recovery and experience work-to-family conflict (Taris, Schaufeli, & Verhoeven, 2005). How does this lack of recovery affect their daily happiness and well-being? Can daily social activities and exercise or sports during the evening help workaholics recover?

In this diary study, we will examine what employees scoring high (versus low) on workaholism do in the evening during workdays, and how they react to these activities. We use a day reconstruction method (DRM; Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004), in which participants are asked to reconstruct their days before they go to bed, and indicate their state levels of well-being (evening happiness and momentary vigor and recovery before bedtime). Whereas general questionnaires on (recovery) activities and well-being often suffer from social desirability and are dependent on peoples' memories that are often inaccurate, behavioral and well-being measures that are collected on a daily basis have the advantage of minimizing the filter of memory and social desirability (Kahneman et al., 2004). Using this research methodology, this study examines whether the impact of three non-work time activities (i.e., daily off-job time devoted to work-related activities, physical exercise, and social activities) on well-being differs between workaholics and non-workaholics.

This study aims to contribute to the literature in the following ways. First, this study is the first to examine daily off-job activities among people low or high in workaholism. The vast majority of studies on workaholism have

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investigated between-person differences and thus answered questions such as whether individuals with workaholic tendencies (versus those who do not have those tendencies) work more hours, suffer more from work–family conflict, are less healthy, and so on (e.g., Schaufeli, Taris, & Van Rhenen, 2008; Taris et al., 2005). By using a diary research design and the DRM, we can more precisely investigate what individuals do and find out which activities are particularly important for recovery. Second, the majority of studies on recovery examine recovery experiences, and the recent studies that do examine recovery activities have the underlying assumption that the various activities are beneficial for all employees. This is the first study to examine differential effects of recovery activities for specific groups of individuals. By applying for the first time the DRM to recovery activities, we are able to find out which categories of activities foster recovery, vigor, and happiness for which groups of individuals. Consistent with previous research on recovery (e.g., Sonnentag, 2003; Sonnentag & Bayer, 2005; Sonnentag, Binnewies, & Mojza, 2008), we included an affect measure (evening happiness), an energy measure (vigor before bedtime), and a measure to directly assess the momentary state of being recovered before sleep.

Workaholism

Workaholism is defined as a strong inner drive to work excessively hard (Oates, 1971; Schaufeli, Taris, & Bakker, 2008). Workaholics have the compulsion to work incessantly and tend to allocate an exceptional amount of time to work. They work beyond what is reasonably expected to meet organizational or economic requirements (Taris, Schaufeli, & Shimazu, 2010). Their compulsive tendencies make workaholics devote more resources (e.g., time, effort) to work, leaving them with fewer resources to devote to their family and other facets of their non-work life (Bakker, Demerouti, & Burke, 2009). As a consequence, workaholics often neglect their life outside their job. Compulsive workers recognize that work is excessive but are unable to reduce or control it; they continue to work despite social or health problems; and they experience unpleasant withdrawal symptoms (or anxiety) when away from work (Scott, Moore, & Miceli, 1997). Their motive to work excessively is not because they enjoy their work or their high achievement orientation but because they are perfectionist and set overly stringent standards (Porter, 2001).

For example, survey studies have shown that workaholism is positively related to working overtime and work–family conflict (Bonebright, Clay, & Ankenmann, 2000; Taris et al., 2005). This suggests that workaholics often work in the evenings, which intrudes with family life. Because workaholics are willing to sacrifice personal relationships to derive satisfaction from work (Porter, 2001), it is not surprising that research shows a negative relationship between workaholism and relationship quality (Bakker et al., 2009; Robinson, Flowers, & Carroll, 2001). There is also accumulating evidence that workaholism is related to poorer psychological and physical well-being (e.g., Andreassen, Ursin, & Eriksen, 2007; Burke & Matthiesen, 2004; Spence & Robbins, 1992; Taris, Geurts, Schaufeli, Blonk, & Lagerveld, 2008). Workaholics love to work, but the repetitive and addictive character of their behaviors seems to drain their energy resources. It is therefore not surprising that workaholics also report lower levels of energy and happiness with life as a whole (Schaufeli, Bakker, Van der Heijden, & Prins, 2009). Moreover, Schaufeli, Taris, and Van Rhenen (2008) have shown that workaholics report not only relatively high levels of exhaustion, anxiety, and depression but also relatively low levels of work engagement.

In sum, previous survey research has shown that workaholics' uncontrollable need to work very hard in order to meet stringent standards is satisfied by working long hours. This compulsive behavior reduces two types of resources, namely the available time and energy resources that could be invested in non-work activities and psychological and mental resources because of unpleasant withdrawal symptoms (or anxiety) when away from work.

It should be noted that previous studies have examined *between-person* differences in workaholism, work–home interference, and well-being, and have not tried to map the *within-person* processes workaholics set in motion on a daily basis. The only exception is the experience sampling study by Snir and Zohar (2008), who operationalized workaholism as working 11.5 hours/day or more. They found that workaholism was associated with continued

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cognitive engagement with work, accompanied by a preference for work over leisure activity, and higher positive affect during work activity than during leisure activity. Workaholics and non-workaholics did not differ in the likelihood of performing work-related activities during leisure time or in the levels of physical discomfort and negative affect during the weekend. However, workaholism in the Snir and Zohar study is heavily overlapping with working overtime, which is indicative of working excessively, but not necessarily of working compulsively—the core dimension of workaholism that is consistently related to negative consequences (Schaufeli, Taris, & Van Rhenen, 2008; Taris et al., 2008).

Recovery during leisure time

Adequate daily recovery from work-related strain is crucial for the maintenance of well-being (Demerouti, Bakker, Geurts, & Taris, 2009). The crucial role of recovery can be understood from the perspective of effort-recovery theory (Meijman & Mulder, 1998). Its central assumption is that effort expenditure at work is unavoidably associated with acute load reactions (e.g., accelerated heart rate, elevated blood pressure levels, and fatigue). Under very stressful circumstances, the hypothalamic–pituitary–adrenal system with the stress hormone cortisol as its main indicator may be activated as well to mobilize supplementary effort needed to deal with the stressful situation (Clow, 2001). Under optimal circumstances, the stress-related acute load reactions return to pre-stressor levels during after-work hours, and recovery is completed before the next working period starts. In this situation, health is not at risk.

However, when the stress-related acute load reactions prolong or re-occur during after-work hours (i.e., sustained sympathetic activation), recovery is incomplete (Geurts & Sonnentag, 2006). As a consequence, the worker will start the next working period while being in a suboptimal condition and will have to invest compensatory effort to perform adequately at work (Binnewies, Sonnentag, & Mojza, 2009).

An important question is under what circumstances the crucial process of daily recovery is hampered by prolongation or re-occurrence of stress-related acute load reactions during after-work hours. According to Geurts and Sonnentag (2006), particularly the prolonged exposure to work demands (e.g., daily overtime work, working at home in the evening) is a risk factor, as a demand is made on the same psycho-physiological systems that were already activated on the job. Prolonged exposure to work demands prevents these systems from unwinding and returning to their baseline levels. From the perspective of recovery after work, it seems important that people engage in activities that appeal to other systems than already used during work and that are not stressful in themselves.

In this study, we will examine three types of activities, namely work-related activities, physical activities, and social activities. We expect that particularly employees scoring high (versus low) on trait workaholism may profit from the restoring effect of daily physical and social activities, whereas their recovery may be most seriously undermined by daily work-related activities in the evening. Moreover, we focus on physical and social activities because they are typically activities with restoring effects (Demerouti et al., 2009).

Work-related activities

The traditional work–rest cycle including eight hours of work, eight hours of time for personal needs and free time, and eight hours of sleep is based on the idea that the time between two work periods is sufficient to recover from work. Normally, people feel fatigued after work, but this fatigue is not a problem because it is reversible by changing tasks or by stopping the fatigue-inducing activity (Meijman & Mulder, 1998). If the psychobiological systems used during work are activated during recovery time, as will be the case for those high on workaholism who often work overtime, a cumulative process involving prolonged fatigue, poor sleep, and psychosomatic complaints may ensue (Rook & Zijlstra, 2006). Continuously drawing on the same resources during the evening can empty the resource reservoir and increase strain.

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Sonnentag (2001) found in her diary study that time spent on work-related activities resulted in lower levels of day-specific well-being at bedtime. Similarly, Sonnentag and Zijlstra (2006) found that the time employees devoted to work-related activities during off-work time was positively related to their need for recovery and negatively to their well-being during bedtime. Thus, work-related activities carried out after work may impair daily recovery (for a review, see Taris, Beckers, Dahlgren, Geurts, & Tucker, 2007). We expect that this will particularly be true for those high on workaholism, because these employees who work excessively hard repeatedly draw on the same energy resources. Workaholics are known to work longer hours (Taris et al., 2010) and to experience more stress—for example, anxiety (Robinson, 1996), distress, and exhaustion (Schaufeli, Taris, & Van Rhenen, 2008)—than non-workaholics. Therefore, workaholics' energy levels might be more depleted at the end of the working day. As a consequence, working in the evening will require even higher effort investment (Hockey, 1997), which eventually will accelerate the fatigue/depletion process. This means that time spent on work-related activities will show stronger negative associations with vigor and the state of being recovered for workaholics than for their counterparts.

Moreover, workaholics work because they feel a compulsion to work, without necessarily enjoying it (Schaufeli, Taris, & Bakker, 2008). In contrast, non-workaholics may work in the evening because they like to work and because they enjoy spending time on specific work tasks. Thus, non-workaholics may see work during evening hours as a more positive experience and benefit from this in terms of happiness and vigor (cf. Sonnentag & Zijlstra, 2006). Moreover, their psychological or mental resources are not drained as a result of unpleasant withdrawal symptoms (or anxiety) when away from work as is possibly the case for workaholics. On the basis of this literature review, we hypothesize that

Hypothesis 1: Daily work-related activities during the evening have a stronger negative relationship with (i) evening happiness, (ii) vigor before bedtime, and (iii) the state of being recovered before bedtime for employees high (versus low) in workaholism.

Physical activities

Physical activities refer to behaviors including exercise, physical training, and sports. Physical exercise is important to maintain fitness and contributes to physical and mental health (McAuley, Kramer, & Colcombe, 2004). Both physiological and psychological explanations have been suggested to account for the recovery-enhancing effects of exercise (Sonnentag, 2001; Yeung, 1996). One physiological explanation is the thermogenic hypothesis of exercise suggesting that an elevation of body temperature is responsible for subjectively increased mood following exercise (Raglin & Morgan, 1985). The monoamine hypothesis is a second physiological explanation referring to the enhanced secretion of noradrenalin, serotonin, and dopamine that have an antidepressant effect (for an overview, see Cox, 2002).

Next to these physiological mechanisms, the distraction hypothesis asserts that it is not the exercise as such that may enhance happiness, vigor, and recovery, but rather the respite or "time out" that it provides from daily stressors and worrisome thoughts (Raglin & Morgan, 1985; Yeung, 1996). Finally, the completion of an important and effortful task (including exercise) brings about a sense of mastery or achievement and self-efficacy beliefs, thereby enhancing positive mood and well-being.

In addition to this favorable, main effect, physical activity has been found to buffer the relationship between (weekly) minor life events and both physical health and anxiety (Carmack, Boudreaux, Amaral-Melendez, Brantley, & de Moor, 1999). More specifically, it was shown that weekly physical activity did not impact upon physical health symptoms or anxiety when few minor life events occurred (e.g., being late for appointments, having arguments with colleagues). In contrast, weekly physical activity had a positive impact on physical health and anxiety when many minor life events occurred. Thus, physical exercise showed the strongest buffering effects when it was most needed.

Because workaholics are deeply committed to their work, often also during the evenings, they have limited energy resources. We therefore expect that daily physical exercise will be most favorable for workaholics. Workaholics will

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benefit more from spending non-work time on sport and exercise. A recent study by Feuerhahn, Sonnentag, and Woll has shown that sport activities during leisure time enhance psychological detachment from work. It is conceivable that workaholics particularly need this detachment function of sport and exercise because otherwise they would continue to ruminate about work (cf. Snir & Zohar, 2008). Non-workaholics, however, might also find other ways to detach from work during their leisure time and thereby increase their happiness, vigor, and level of recovery. In sum, we predict that

Hypothesis 2: Daily physical activities during the evening have a stronger positive relationship with (i) evening happiness, (ii) vigor before bedtime, and (iii) the state of being recovered before bedtime for employees high (versus low) in workaholism.

Social activities

Social activities refer to activities that focus on social contact including going to a party, dining, or phoning other people (Sonnentag, 2001). During such activities, people meet and spend time with others they like such as family members, friends, or other individuals or groups (Fritz & Sonnentag, 2005; Sonnentag, 2001). Baumeister and Leary (1995) have argued and shown that individuals have a pervasive drive to form and maintain a minimum of lasting, positive, and significant interpersonal relationships. Vittengl and Holt (1998) found that positive, active, and informational types of social interactions correlated positively with positive affect and were unrelated to negative affect—on a daily basis. Sonnentag (2001) proposes several mechanisms through which social activities can have a recovery function. The first possible function of social activities is that by meeting others, people open channels of social support. Social support has been found to reduce the negative influence of job demands on well-being (e.g., Bakker, Demerouti, & Euwema, 2005). The second possible function is that social activities draw on different resources than those necessary for work-related tasks. Consequently, recovery processes can take place. Note that there is a difference between the social contact we have when used in human service occupations and the social contacts during leisure time. Work-related social interactions, for instance, with customers, often require emotion regulation or “emotion work” (Zapf, 2002). Emotion regulation is an effortful process in which employees have to show emotions that they do not necessarily feel at the moment but that are in accordance with the rules of the organization. That kind of emotion regulation is less required with respect to social interactions during leisure time (Sonnentag, 2001). Third, and similar to physical activities, a third possible function is that social activities provide distraction from daily (work) stressors and worrisome thoughts.

There is some evidence that engagement in social activities is beneficial for recovery. Sonnentag (2001) found that social activities were positively related to well-being at bedtime. In a similar vein, Sonnentag and Zijlstra (2006) found in their dairy study that social activities were positively related to well-being at bedtime and negatively related to need for recovery. In addition, in their diary study among Australian supermarket employees, Garrick, Winwood, and Bakker found that socializing in the evening (with either friends or family, purely for fun and pleasure) was positively related to next morning’s recovery. However, social activities were unrelated to positive mood as well as to fatigue at bedtime (Sonnentag & Bayer, 2005) and general fatigue (Rook & Zijlstra, 2006).

We expect that particularly employees high (versus low) in workaholism profit from the distracting function of social activities, again because otherwise they would continue to ruminate about work (cf. Snir & Zohar, 2008). Employees low in workaholism might also find other ways to detach from work during their leisure time and thereby increase their happiness, vigor, and level of recovery. On the basis of this overview, we formulated our final hypothesis:

Hypothesis 3: Daily social activities during the evening have a stronger positive relationship with (i) evening happiness, (ii) vigor before bedtime, and (iii) the state of being recovered before bedtime for employees high (versus low) in workaholism.

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Method

Procedure and participants

We recruited the participants in this study through word-of-mouth communication and banners on Dutch websites (e.g., www.intermediair.nl) that have employees as their target group. We collected the data via online questionnaires that could be filled out through a website that was specifically constructed for this study. The website gave some background information about the study, explained the research procedure, and offered participants the opportunity to get in touch with the researchers in case of questions. We first invited website visitors to fill in a background questionnaire with demographics and a questionnaire assessing workaholism. In the three weeks after that, we contacted participants through email on nine consecutive working days. The email included a link to a diary questionnaire (see succeeding texts) that could also be filled out online at the end of each of nine workdays, in the evening before going to bed.

To prevent dropout, we announced a lottery in which employees who participated *each* of the nine days could win an MP3 player. In total, 113 employees filled in the background questionnaire; 85 participants (75.2 percent) also filled in each of the nine diaries. These participants form the sample of this study. Participants were 48 male (56.5 percent) and 37 female (43.5 percent) employees. Their mean age was 38.4 years (standard deviation (SD) = 9.3). In total, 65 participants (76.6 percent) worked full-time. These numbers are highly similar to those that apply to the Dutch working population (59.5 percent men; mean age = 40.3 years; 73 percent works full-time; Central Bureau for Statistics, 2010). Most participants were highly educated and had completed university education (67 percent). In terms of job tenure, 17 individuals (20 percent) worked less than one year in their current job; 21 (24.7 percent) between one and five years; and 47 (55.3 percent) longer than five years.

Day reconstruction method

The DRM (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004) combines elements of experience sampling and time diaries and is designed specifically to facilitate accurate emotional recall. In the DRM version used in this study, we asked respondents to fill out the day reconstruction survey online at the end of each of nine workdays, in the evening before going to bed. We kindly requested respondents to indicate what they did during the the time after work by marking the begin and end time that they were busy with a specific activity. They could select the activities from a provided list while at the same time they reported their happiness during each activity. Importantly, when people report on their current feelings, the feelings themselves are accessible to introspection, allowing for more accurate reports on the basis of experiential information. Affective experiences are fleeting and thus not available to introspection once the feeling dissipated. Accordingly, the opportunity to assess emotion reports on the basis of experiential information is limited to methods of momentary data capture (Stone, Shiffman, Atienza, & Nebeling, 2007). Once the feeling dissipated, the affective experiences need to be reconstructed on the basis of other information. The DRM pertains to a specific *recent episode* so that people can draw on episodic memory, retrieving specific moments and details of the recent past. Such reports can often recover the actual experience with reasonable accuracy, as indicated by their convergence with concurrent mood reports used in experience sampling methods (e.g., Kahneman et al., 2004; Stone et al., 2007).

Measures

We measured *workaholism* using the Dutch version (Taris et al., 2005) of the compulsive tendencies (CT) subscale of the Work Addiction Risk Test (WART; Robinson, 1999). Taris et al. (2005) build a strong case for use of the CT subscale as adequately representative of workaholism. In their study, the overlap between the full 25-item WART

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and the CT subscale was high ($.89 < r < .93$, $ps < .001$). In addition, the patterns of correlations with other concepts (e.g., working overtime, work–family conflict, and exhaustion) were very similar. Thus, the full WART and its CT subscale appear to measure the same concept. The scale includes nine items, such as *I feel guilty when I am not working on something*, and *I put myself under pressure with self-imposed deadlines when I work* (1 = *never*, 4 = *always*). Cronbach's α in our study was .82 indicating sufficient reliability.

Daily activities during the evening. We asked participants to report the amount of time that they spent on the various activities after work during the same day, using the DRM (Kahneman et al., 2004). We asked participants to fill out the DRM just before going to sleep and to indicate per half hour the time they spent on various after-work activities on that specific day. A drop-down menu offered 27 possible activities to choose from, including cooking/preparing meals; practicing physically active sports after work (e.g., soccer, tennis, hockey, running, bicycling, dancing, fitness, swimming, golf); working at home and/or preparing the next working day; social after-work activities (e.g., spending time with friends, family, going out with friends, family, social interactions at the sport club) as social activities; and reading magazines, books, and newspapers. For this analysis, we focused on sports/exercise, work-related activities, and social activities. On average, people engaged for about 23 minutes per day in sports/exercise ($SD = 25$ minutes), about 36 minutes per day in work-related activities ($SD = 25$ minutes), and about 1 hour and 23 minutes in social activities ($SD = 1$ hour and 37 minutes).

We rated *evening happiness* using one item for each reported activity engaged in during off-job time using a 10-point scale with smiling faces ranging from 1 (*extremely unhappy*) through 5 (*neutral*) to 10 (*extremely happy*). A 1-item happiness scale is often used in happiness research (Lyubomirsky, King, & Diener, 2005). We calculated an overall evening happiness score, by multiplying the time participants spent on each activity times the happiness during each activity, divided by the total amount of time spent on activities during the evening.

We measured *momentary vigor* before bedtime using three items of the Shirom–Melamed vigor measure (Shirom, 2006). We slightly adjusted the items so that they referred to the specific moment. Example items are *Right now, I feel vital* and *Right now, I feel I have physical strength*. Items could be answered on a 5-point Likert scale ranging from 1 (*I do not agree at all*) to 5 (*I fully agree*). Cronbach's alpha varied between .85 and .91 depending on the day, indicating good reliabilities.

We assessed *momentary state of being recovered* before bedtime using three items: *Right now, I feel relaxed*, *Right now, I feel recovered*, and *Right now, I feel recovered from work* (1 = *totally disagree*, 5 = *totally agree*). Cronbach's alpha varied between .83 and .93 depending on the day, indicating good reliabilities. We conducted a series of confirmatory factor analyses with AMOS (Arbuckle, 2006) to examine whether momentary vigor and recovery before bedtime could be empirically distinguished. The results showed that a 2-factor model (χ^2 (8) = 18.99; $GFI = 0.94$, $IFI = 0.97$; $CFI = 0.97$; $NNFI = 0.95$; $RMR = 0.01$) fit significantly better to the data than a 1-factor model (χ^2 (9) = 38.86; $GFI = 0.88$, $IFI = 0.91$; $CFI = 0.91$; $NNFI = 0.89$; $RMR = 0.04$), $\Delta\chi^2$ (1) = 19.87; $p < .001$, confirming the independence of both constructs.

Strategy of analyses

Because our data set has a hierarchical structure with days nested in persons, we used hierarchical linear modeling for analyzing the data (Bryk & Raudenbush, 1992; Rasbash, Browne, Healy, Cameron, & Charlton, 2000). We centered the person-level variables workaholism, age, and educational level at the grand mean, and the within-person predictor variables (daily work-related, sports/exercise, and social activities) at the person mean. We included gender, age, contract type (part-time versus full-time), and educational level as control variables in all multi-level analyses. To be absolutely sure that our models are stable, we also ran the multi-level models with only the full-time employees included ($N = 65$). There were no significant changes in the results as regards the nature of the main and interaction effects as reported in the succeeding texts where we used the combined sample of full-time and part-time employees. These results are available from the first author upon request.

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Results

Descriptive statistics

Table 1 reports means, standard deviations, and correlations between the study variables. It should be noted that the correlations do not reveal all the possible relationships, because day-level measures have been summed to correlate them with trait-level variables (e.g., workaholism, gender, age). Therefore, we conducted additional descriptive analyses, to find out how employees high in workaholism spend their time during off-job time. The results indicate that individuals high in workaholism spent more time working during off-job time ($z = 3.25$, $p < .001$), and they are unhappy while engaging in work ($z = 2.53$, $p < .01$), also after controlling for gender, age, contract type, and educational level (Table 2).

Preliminary analyses

A 2-level model with days nested within persons resulted in a significant increase in model fit for evening happiness (Diff -2*log = 231.581, *df* 1; $p < .001$), momentary vigor before bedtime (Diff -2*log = 167.200, *df* 1; $p < .001$), and momentary recovery before bedtime (Diff -2*log = 28.238, *df* 1; $p < .001$) over a 1-level model, validating the use of multi-level analysis. For evening happiness, 40.1 percent of the variance was between persons and 59.9 percent was within persons. For momentary vigor, 33.6 percent of the variance was between persons and 66.4 percent was within persons. For momentary recovery, 11.7 percent was between persons and 88.3 percent was within persons.

Tables 3, 4, and 5 show findings from hierarchical linear modeling for evening happiness, momentary vigor, and momentary recovery, respectively. We started with a null model that included the intercept as the only predictor. In Model 1, we entered control variables at the between-person level (age, gender, educational level, and organizational tenure). In Model 2, we included workaholism as a predictor variable on the between-person level. In Model 3, we entered the evening time spent on work-related activities, exercise/sport, and social activities as predictor variables on the within-person (day) level. Finally, in Model 4, we included three interaction terms: Workaholism × Time spent on work-related activities, Workaholism × Time spent on exercise/sport, and Workaholism × Time spent on social activities. We examined fixed effects (as we did not expect different slopes between individuals) and tested the improvement of each model over the previous one by computing the differences of the respective log-likelihood statistic -2*log and submitting this difference to a χ^2 test.

Of the control variables in Model 1, educational level related significantly and positively to evening happiness and momentary vigor before bedtime. The higher employees' educational level, the higher their evening happiness and momentary vigor. Results further showed that workaholism—entered in Model 2—related significantly and negatively to evening happiness but not to momentary vigor or momentary recovery. Thus, the higher participants scored on workaholism, the lower their evening happiness. However, this main effect of workaholism on evening happiness disappeared in Model 3.

In Model 3, we included evening time spent on work-related activities, sport/exercise, and social activities. Results showed that the more time employees spent on working in the evening, the lower their evening happiness and the lower their vigor before bedtime. This being said, time spent on work during the evening had no direct effect on momentary recovery before sleep. The more time employees spent on sports/exercise in the evening, the higher their evening happiness, momentary vigor, and momentary recovery before going to sleep. Also, the more time employees spent on social activities, the higher their evening happiness and momentary vigor at bedtime. However, social activities did not relate to momentary recovery at bedtime.

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Table 1. Means, standard deviations, and correlations between study variables.

	Variable	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11	12
1	Age	38.42	9.30												
2	Gender (male)	1.44	0.50	−0.25											
3	Educational level	4.87	1.21	0.09	−0.12										
4	Organizational tenure	4.29	1.67	0.56	−0.21	−0.12									
5	Type of contract (full-time)	0.76	0.43	0.05	−0.35	−0.01	0.20								
6	Workaholism	2.31	0.52	−0.07	−0.09	−0.05	−0.03	0.12			−0.05	0.09	−0.04	−0.09	−0.22
7	Time spent on work-related activities	0:33	0:25	0.16	0.03	0.06	0.10	0.21	0.31			0.01	0.19	0.16	0.16
8	Time spent on exercise/sport	1:08	0:37	−0.34	0.18	0.19	−0.18	−0.07	−0.16	−0.05			0.06	−0.03	0.22
9	Time spent on social activities	1:23	1:37	0.11	0.02	0.05	0.13	0.09	−0.09	0.20	0.09			0.38	0.44
10	Momentary vigor before bedtime	3.39	0.77	0.20	−0.16	0.27	0.09	0.11	−0.09	−0.02	0.15	0.12			0.19
11	Momentary recovery before bedtime	3.13	1.43	−0.12	−0.01	0.15	−0.12	0.05	0.01	−0.17	0.27	−0.03	0.56		
12	Evening happiness	6.70	0.89	0.14	−0.11	0.27	0.03	0.00	−0.28	−0.26	0.13	0.22	0.60	0.32	

Note: Correlations below the diagonal are person-level correlations ($N = 85$) with correlations $r \geq |.22|$ being significant at $p < .05$ and $r \geq |.27|$ being significant at $p < .01$. Correlations above the diagonal are within-person correlations ($N = 765$) with correlations $r \geq |.07|$ being significant at $p < .05$ and $r \geq |.09|$ being significant at $p < .01$. All activities reported refer to activities pursued during leisure time (after office hours). We displayed means and standard deviations (*SD*) concerning time spent on off-job activities in an hour:minute format.

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Table 2. Multi-level models predicting time spent working in the evening and happiness during work in the evening.

	Time spent working in the evening				Happiness during work in the evening			
	Estimate	*SE*	*t*		Estimate	*SE*	*t*	
Constant	0.308	0.040	7.700	***	6.702	0.240	27.925	***
Age	0.007	0.004	1.750		0.025	0.019	1.316	
Gender (male)	0.117	0.065	1.800		−0.318	0.377	−0.844	
Educational level	0.020	0.025	0.800		0.086	0.134	0.642	
Organizational tenure	0.000	0.022	0.000		−0.161	0.115	−1.400	
Type of contract (full-time)	0.162	0.074	2.189	*	0.306	0.472	0.648	
Workaholism	0.182	0.056	3.250	***	−0.675	0.267	−2.528	**
−2*log (lh)		657.068				284.990		
Df		6				6		
Between-person variance	0.058	0.011			0.140	0.141		
Within-person variance	0.114	0.006			1.134	0.195		

Note: SE, standard error. $^{*}p < .05$; $^{**}p < .01$; $^{***}p < .001$.

Testing Hypothesis 1

Model 4 includes the three interaction terms of workaholism and evening time spent on social activities, sports/exercise, and work-related activities (Tables 3–5). Hypothesis 1 predicted that daily work-related activities during the evening have a stronger negative relationship with (i) evening happiness, (ii) momentary vigor before bedtime, and (iii) momentary recovery before bedtime for employees high (versus low) in workaholism. Model 4 indeed reveals significant interactions between workaholism and hours spent on work-related activities after work for evening happiness, momentary vigor, and momentary recovery. To examine the pattern of the interactions in more detail, we ran simple slope tests (Aiken & West, 1991; Preacher, Curran, & Bauer, 2006). Figure 1 shows that respondents who scored high on workaholism (one standard deviation above the mean; $\gamma = -1.39$; standard error (SE) = 0.36; $z = -3.86$, $p < .001$) as well as those who scored low on workaholism (one standard deviation below the mean; $\gamma = -1.98$; $SE = 0.54$; $z = -3.70$, $p < .001$) were unhappier in the evening when spending more evening time on work-related activities. However, the effects are more pronounced for employees high (versus low) in workaholism ($\gamma = -0.567$; $SE = 0.175$; $z = -3.240$, $p < .001$).

Figure 2 indicates that both employees high (one standard deviation above the mean; $\gamma = -1.11$, $SE = 0.48$; $z = -2.32$; $p < .05$) and low in workaholism (one standard deviation below the mean; $\gamma = -0.73$; $SE = 0.37$; $z = -1.99$, $p < .05$) felt less vigorous before bedtime when spending more evening time on work-related activities. Again, the effects are stronger for those high (versus low) on workaholism ($\gamma = -0.378$; $SE = 0.137$; $z = 2.759$, $p < .01$).

Figure 3 shows that employees who scored low on workaholism (one standard deviation below the mean; $\gamma = 2.90$, $SE = 1.12$; $z = 2.59$, $p < .05$) and those who scored high on workaholism (one standard deviation above the mean; $\gamma = 2.99$; $SE = 0.77$; $z = 3.87$, $p < .01$) felt less recovered before bedtime when spending more evening time on work-related activities. However, the relationship is again stronger for those high (versus low) on workaholism ($\gamma = -0.603$, $SE = 0.272$; $z = -2.217$, $p < .05$). In sum, employees who scored high on workaholism felt less happy, less vigorous, and are less recovered before bedtime when spending evening time on work-related activities compared with employees who scored low on workaholism, which supports the first hypothesis.

Testing Hypothesis 2

The second hypothesis stated that daily physical activities (sports/exercise) during the evening have a stronger positive relationship with (i) evening happiness, (ii) momentary vigor before bedtime, and (iii) momentary recovery before bedtime for employees high (versus low) in workaholism. Indeed, Model 4 showed that the interaction effect

Table 3. Multi-level estimates predicting evening happiness.

	Model 1				Model 2				Model 3				Model 4			
	Estimate	*SE*	*t*		Estimate	*SE*	*t*		Estimate	*SE*	*t*		Estimate	*SE*	*t*	
Constant	6.804	0.053	128.377	***	6.818	0.052	131.12	***	6.818	0.050	136.360	***	6.817	0.049	139.122	***
Age	0.008	0.005	1.600		0.007	0.005	1.400		0.006	0.005	1.200		0.006	0.005	1.200	
Gender (male)	−0.045	0.086	−0.523		−0.074	0.084	−0.881		−0.078	0.081	−0.963		−0.065	0.080	−0.813	
Educational level	0.132	0.032	4.125	***	0.126	0.032	3.938	***	0.125	0.030	4.167	***	0.129	0.030	4.300	***
Organizational tenure	−0.007	0.029	−0.241		−0.012	0.028	−0.429		−0.012	0.027	−0.444		−0.008	0.027	−0.296	
Type of contract (full-time)	0.003	0.098	0.031		0.059	0.097	0.608		0.058	0.093	0.624		0.069	0.092	0.750	
Workaholism					−0.368	0.073	−5.041	***	−0.365	0.071	−5.141	***	−0.369	0.070	−5.271	***
Work-related activities									−0.457	0.104	−4.394	***	−0.387	0.104	−3.721	***
Exercise/sport									0.271	0.068	3.985	***	0.346	0.070	4.943	***
Social activities									0.614	0.118	5.203	***	0.592	0.116	5.103	***
Workaholism × Work related													−0.567	0.175	−3.240	***
Workaholism × Exercise/sport													0.581	0.155	3.748	***
Workaholism × Social													−0.043	0.238	−0.181	
−2*log (lh)	1980.578				1955.863				1896.010				1873.238			
Diff−2*log	23.654	***			24.715	***			59.853	***			22.772	***		
Df	*5*				*1*				*3*				*3*			
Between-person variance	0.344	0.064	9%		0.325	0.062	14%		0.325	0.057	14%		0.313	0.055	17%	
Within-person variance	0.562	0.057	0%		0.550	0.055	2%		0.494	0.050	12%		0.473	0.048	16%	

Note: Model 1 was compared with a null model with the intercept as the only predictor ($\gamma = 6.784$; standard error (SE) = 0.039; $t = 173.949$; −2*log = 2004.232; Level 2 variance = 0.377; $SE = 0.066$; Level 1 variance = 0.563; $SE = 0.057$). All activities reported refer to activities pursued during leisure time (after office hours). Evening happiness = (Happiness Time spent on activity)/total evening time spent on activities. *$p < .05$; **$p < .01$; ***$p < .001$.

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Table 4. Multi-level models predicting momentary vigor before bedtime.

	Model 1			Model 2			Model 3			Model 4		
	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*	Estimate	*SE*	*t*
Constant	3.419	0.070	48.843***	3.419	0.070	48.843***	3.419	0.070	48.843***	3.419	0.070	48.843***
Age	0.008	0.007	1.143	0.008	0.007	1.143	0.008	0.007	1.143	0.008	0.007	1.143
Gender (male)	−0.067	0.113	−0.593	−0.074	0.113	−0.655	−0.074	0.113	−0.655	−0.074	0.113	−0.655
Educational level	0.102	0.043	2.372**	0.100	0.043	2.326*	0.100	0.043	2.326*	0.100	0.043	2.326*
Organizational tenure	0.000	0.038	0.000	−0.001	0.038	−0.026	−0.001	0.038	−0.026	−0.001	0.038	−0.026
Type of contract (full-time)	0.096	0.130	0.738	0.106	0.130	0.815	0.160	0.130	1.231	0.106	0.130	0.815
Workaholism				−0.081	0.098	−0.827	−0.081	0.098	−0.827	−0.081	0.098	−0.827
Work-related activities							−0.244	0.077	−3.169***	−0.204	0.078	−2.615**
Exercise/sport							0.255	0.047	5.426***	0.252	0.048	5.250***
Social activities							0.156	0.037	4.216***	0.150	0.037	4.054***
Workaholism × Work related										−0.378	0.137	−2.759**
Workaholism × Exercise/sport										0.006	0.104	0.058
Workaholism × Social										0.029	0.079	0.367
−2*log (lh)	1601.706			1601.016			1550.379				1541.964	
Diff−2*log	10.589			0.690			50.637	***		8.415	*	
Df	5			1			3			3		
Between-person variance	0.172	0.033	14%	0.172	0.033	14%	0.172	0.033	14%	0.172	0.033	14%
Within-person variance	0.398	0.022	0%	0.398	0.022	0%	0.370	0.020	7%	0.365	0.020	8%

Note: Model 1 was compared with a null model with the intercept as the only predictor ($\gamma = 3.419$; standard error (SE) = 0.070; $t = 62.722$; −2*log = 1612.295; Level 2 variance = 0.201; $SE = 0.038$; Level 1 variance = 0.398; $SE = 0.022$). All activities reported refer to activities pursued during leisure time (after office hours). **$p < .01$; ***$p < .001$.

Table 5. Multi-level models predicting momentary recovery before bedtime.

	Model 1				Model 2				Model 3				Model 4			
	Estimate	*SE*	*t*		Estimate	*SE*	*t*		Estimate	*SE*	*t*		Estimate	*SE*	*t*	
Constant	3.134	0.098	31.980	***	3.134	0.098	31.980	***	3.143	0.096	32.740	***	3.163	0.009	351.444	***
Age	−0.008	0.010	−0.800		−0.008	0.010	−0.800		−0.004	0.009	−0.444		−0.004	0.009	−0.444	
Gender (male)	−0.002	0.157	−0.013		−0.002	0.158	−0.013		−0.023	0.155	−0.148		−0.028	0.145	−0.193	
Educational level	0.088	0.060	1.467		0.088	0.060	1.467		0.070	0.059	1.186		0.062	0.056	1.107	
Organizational tenure	−0.019	0.053	−0.358		−0.019	0.053	−0.358		−0.024	0.052	−0.462		−0.026	0.049	−0.531	
Type of contract (full-time)	0.103	0.180	0.572		0.103	0.181	0.569		0.105	0.177	0.593		0.061	0.166	0.367	
Workaholism					0.003	0.136	0.022		0.032	0.134	0.239		0.049	0.126	0.389	
Work-related activities									−0.307	0.168	−1.827		−0.248	0.171	−1.450	
Exercise/sport									0.352	0.097	3.629	***	0.446	0.099	4.505	***
Social activities									0.130	0.080	1.625		0.113	0.080	1.413	
Workaholism × Work related													−0.626	0.300	−2.087	*
Workaholism × Exercise/sport													0.799	0.210	3.805	**
Workaholism × Social													−0.059	0.174	−0.339	
−2*log (lh)		2687.474				2687.473				2669.553				2655.497		
Diff−2*log		4.159				0.001				17.920	***			14.056	*	
Df		*5*				*1*				*3*				*3*		
Between-person variance	0.219	0.065	8%		0.218	0.065	9%		0.218	0.062	9%		0.157	0.055	34%	
Within-person variance	1.811	0.098	0%		1.811	0.098	0%		1.773	0.096	2%		1.765	0.096	3%	

Note: Model 1 was compared with a null model with the intercept as the only predictor ($\gamma = 3.133$; standard error (*SE*) = 0.07; $t = 44.757$; −2*log = 2691.634; Level 2 variance = 0.239; *SE* = 0.068; Level 1 variance = 1.811; *SE* = 0.098). All activities reported refer to activities pursued during leisure time (after office hours). $^{**}p < .01$; $^{***}p < .001$.

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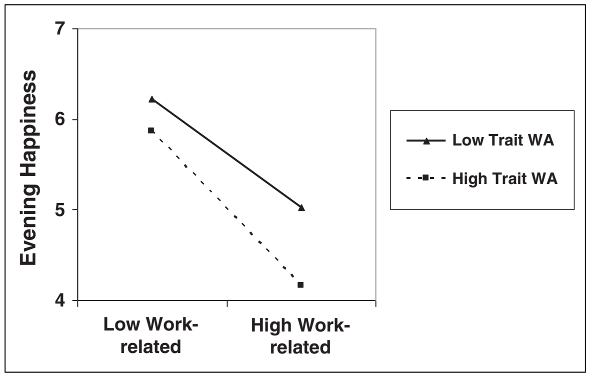

Figure 1. Interaction effect of daily off-job time spent on work-related activities and workaholism (WA) on evening happiness. “Low” = 1 standard deviation below the mean. “High” = 1 standard deviation above the mean

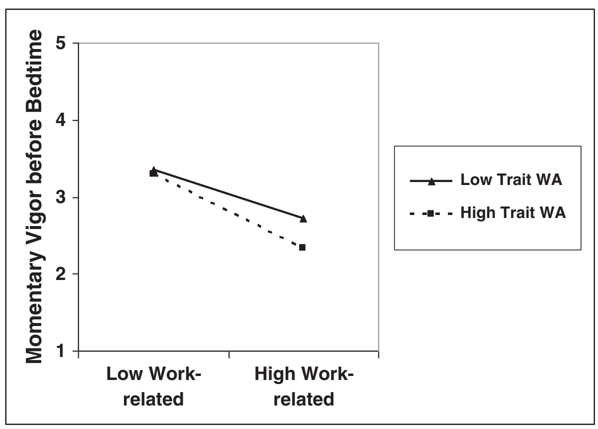

Figure 2. Interaction effect of daily off-job time spent on work-related activities and workaholism (WA) on momentary vigor before bedtime. “Low” = 1 standard deviation below the mean. “High” = 1 standard deviation above the mean

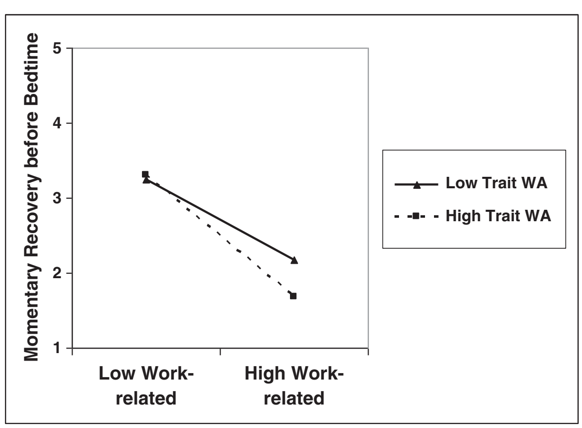

Figure 3. Interaction effect of daily off-job time spent on work-related activities and workaholism (WA) on momentary recovery before bedtime. “Low” = 1 standard deviation below the mean. “High” = 1 standard deviation above the mean

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between workaholism and daily exercise/sport during the evening is significant for evening happiness and momentary recovery before bedtime but not for momentary vigor before bedtime. In order to get more insight in the nature of the interaction effects, Figure 4 shows the interaction plot for evening happiness and Figure 5 for momentary recovery.

Again, we ran simple slope tests to examine the pattern of the interaction in more detail (Aiken & West, 1991; Preacher et al., 2006). Figure 4 shows that respondents both high (one standard deviation above the mean; $\gamma = 1.38$; $SE = 0.29$; $z = 4.75$, $p < .001$) and low on workaholism (one standard deviation below the mean; $\gamma = 1.996$; $SE = 0.45$; $z = 4.427$; $p < .001$) become happier when spending more time on daily exercise/sport in the evening. However, this positive relationship is more pronounced for employees who scored high (versus low) on workaholism ($\gamma = 0.581$; $SE = 0.155$; $z = 3.748$, $p < .001$).

Similarly, Figure 5 shows that both employees scoring high on workaholism (one standard deviation above the mean; $\gamma = 2.6408$; $SE = 1.3398$, $z = 1.9711$, $p < .05$) and those scoring low on workaholism (one standard deviation below the mean; $\gamma = 1.8204$; $SE = 0.8824$; $z = 2.063$, $p < .05$) felt more recovered before bedtime when spending more evening time doing exercise/sport. However, this positive effect is stronger for employees high (versus low) in workaholism ($\gamma = 0.506$; $SE = 0.228$; $z = 2.219$, $p < .05$). In conclusion, the more time employees spent on

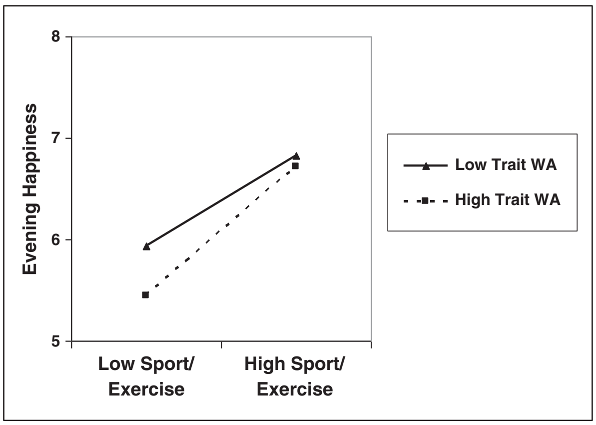

Figure 4. Interaction effect of daily off-job time spent on sport/exercise and workaholism (WA) on evening happiness. “Low” = 1 standard deviation below the mean. “High” = 1 standard deviation above the mean

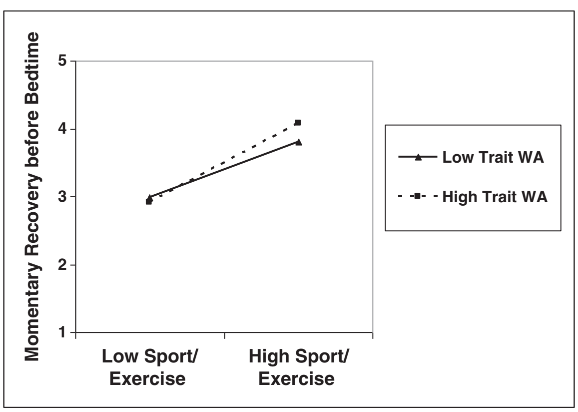

Figure 5. Interaction effect of daily off-job time spent on sport/exercise and workaholism (WA) on momentary recovery before bedtime. “Low” = 1 standard deviation below the mean. “High” = 1 standard deviation above the mean

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sport/exercise during the evening, the happier and the more recovered they felt before bedtime. In addition, the positive effects of sports/exercise on evening happiness and momentary recovery before bedtime were stronger for employees who scored high on workaholism compared with those who scored low on workaholism, which confirms our second hypothesis for happiness and recovery, but not for vigor.

Testing Hypothesis 3

The third hypothesis stated that daily social activities during the evening have a stronger positive relationship with (i) evening happiness, (ii) momentary vigor, and (iii) momentary recovery for employees high (versus low) in workaholism. The results in Tables 3–5 reveal that there were no significant cross-level interactions for workaholism and daily time spent on social activities on the three outcome variables. Thus, workaholism did not moderate the relationships between spending time on social activities during the evening and evening happiness, momentary vigor before bedtime, and momentary recovery before bedtime. Thus, Hypothesis 3 was rejected.

Discussion

The central aim of this study was to examine whether the impact of three non-work time activities (i.e., daily time devoted to work-related activities, social activities, and physical exercise after office hours) on well-being differs between employees scoring high versus low on workaholism. Using the DRM (Kahneman et al., 2004), our study confirms that two types of activities pursued during leisure time play a slightly stronger role for employees high in workaholism than for their counterparts low on this characteristic. Although there is an overall negative association between daily time spent on work-related activities during the evening and well-being at bedtime and an overall positive association between daily time spent on exercise and sport during the evening and well-being, these associations are stronger for employees who have a relatively strong tendency to work excessively hard. This pattern of findings suggests that for workaholics, it seems to matter more what they do in their leisure time than for non-workaholics. Compared with employees low in workaholism, positive states in employees high in workaholism increase more when they spend time on sport and exercise than when they spend time on work-related activities. However, they did not seem to profit more from spending time on social activities, as social activities after work was beneficial for evening happiness for all employees.

In order to explain these interactions, it is important to consider the characteristics of workaholics. Workaholics work to meet stringent standards and because of unpleasant withdrawal symptoms (or anxiety) when away from work. In contrast, non-workaholics may work in the evening because they like to work and because they enjoy spending time on specific work tasks. Thus, compared with employees high on workaholism, those low on workaholism may see work during evening hours as a more positive experience. As a consequence, they may benefit from this positive experience and be less badly affected by working after office hours (cf. Sonnentag & Zijlstra, 2006). Indeed, one study has indicated that highly engaged employees—who are highly dedicated to their work—are more likely to work overtime (Beckers et al., 2007). Engaged workers differ from workaholics in that they experience more positive feelings (Schaufeli, Taris, & Bakker, 2008), recover better from their work-related efforts (Sonnentag, 2003), and perform more efficiently when at work (Gorgievski, Bakker, & Schaufeli, 2010).

Moreover, workaholics are known to invest too much time and effort in their work (Andreassen et al., 2007). Therefore, their energy levels tend to be more depleted at the end of the working day than non-workaholics' energy levels. Thus, they start working during the evening in a state in which their energy levels are already depleted. As a consequence, working in the evening requires higher effort investment (Hockey, 1997), which will accelerate the fatigue or energy depletion process. For this reason, time spent on work-related activities is more detrimental for evening happiness, and momentary vigor and recovery before bedtime for those high on workaholism than their counterparts low on workaholism. These findings are in line with the effort-recovery model (Meijman & Mulder, 1998).

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We also found that the association between daily time spent on sport and exercise after office hours, and evening happiness and momentary recovery before bedtime is stronger in workaholics than in non-workaholics. Thus, workaholics seem to benefit more from spending non-work time on sport and exercise. It might be that workaholics particularly need this detachment aspect of sport and exercise because otherwise they would continue to ruminate about work (cf. Snir & Zohar, 2008). Non-workaholics may be better able to find other ways to detach from work during leisure time and thereby sustain their happiness and energy.

We found in this study that daily social activities during the evening make individuals feel more happy and vigorous before bedtime but not necessarily more recovered. Moreover, this effect was independent from the level of workaholism. We found social activities to be beneficial for evening happiness because they fulfill the psychological need for belonging (Baumeister & Leary, 1995; Deci & Ryan, 1985), which is universal to humans. However, daily social activities after work were unrelated to the level of vigor or recovery, perhaps because these represent physical states while social activities might fulfill more psychological needs. A possible reason why we failed to find a stronger positive relationship between social activities and well-being for those high on workaholism is that this study like earlier research neglected the content of the social interaction. As individuals can talk about work-related issues even when they meet friends during off-work time, it might be that workaholics used the time spent on social activities to ruminate and speak further about their work with their friends, thus undermining the favorable effect of social activities. It might also be that persons high on workaholism see social activities as an undesired distraction from their work. Consequently, they may have some resentment about the social activities, which in turn undermines the potentially beneficial effects of these activities. Additional analyses indeed confirmed that workaholism was negatively associated with happiness during social activities in the evening ($z = -2.64$, $p < .01$), while controlling for age, gender, educational level, and type of contract.

Overall, our findings show that employees high on workaholism can feel happy in the evening and vigorous and recovered at bedtime when they spend time on the "right" off-job activities, on a daily basis. Sport and exercise as prominent recovery activities work particularly well for workaholics. These findings are consistent with those of Sonnentag, Mojza, Binnewies, and Scholl (2008), who found that psychological detachment from work is particularly important for employees who are highly engrossed in their work. Our findings seem to indicate that also those high on workaholism are able to recover in mental terms; they rather tend to spend their leisure time on the "wrong" activities.

Next to the hypothesized interactions, results showed that workaholism had a negative main effect on evening happiness. This is consistent with previous research showing that workaholics report lower levels of happiness with life as a whole (Schaufeli et al., 2009). Workaholism had no main effects on momentary vigor and recovery before bedtime, whereas daily physical activities in the evening were positively related to evening happiness, momentary vigor, and momentary recovery before bedtime. These results agree with Snir and Zohar's (2008) finding that workaholism is unrelated to physical discomfort during the weekend. Moreover, the results are consistent with findings in the literature on leisure and recovery showing that physical activity is beneficial for recovery and well-being (Sonnentag, 2001; Sonnentag & Bayer, 2005).

Strengths and weaknesses

This study has some particular strengths and weaknesses. A strength of the study is the use of the DRM. The DRM has the advantage of minimizing recall biases. Results obtained from the DRM are remarkably similar to results obtained with the experience-sampling method, which uses real-time reports of people's actions and emotions (Kahneman et al., 2004). This suggests that we accurately monitored the activities employees engaged in during the evening and their momentary happiness. Nevertheless, although the DRM minimizes biases through recalling, one limitation of our study is that it is based on self-report data, raising concerns about common-method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). We reduced the problems associated with common-method bias by collecting data with two different instruments (questionnaire and DRM), using person-centered scores in the analyses, and including control variables such as gender, age, and educational level. Future research

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should include data from multiple sources, and if feasible include physiological indicators of recovery. Another limitation of this study is that we focused specifically on activities with potential for recovery during off-job time, although research has indicated that recovery may occur during working time as well (Trougakos, Beal, Green, & Weiss, 2008). For example, Fritz, Lam, and Spreitzer (2011) examined how employees replenish and sustain their energy during working time. They found that particularly strategies related to learning, to the meaning of one's work, and to positive workplace relationships were strongly related to employees' energy. It would be interesting to examine the recovery potential of recovery activities during the working day in future DRM studies.

Implications for practice and for future research

One clear implication for practice is that organizations should encourage employees and in particular workaholics to spend leisure time on sport and exercise and not on work. Employees should be advised to separate their work life from their non-work life. One threat to a successful segmentation between work and non-work life is the use of modern communication devices (e.g., smartphones, small portable computers with email access; Boswell & Olson-Buchanon, 2007) that make it difficult to switch off mentally and physically from one's job during after-work hours. Interventions may address explicit organizational policies and implicit norms of unlimited availability to help employees finding a healthy work–life balance.

Our study focused on evening happiness, momentary vigor, and momentary recovery before bedtime. It would be really interesting to include measures of psychological detachment and physiological recovery in future research to examine more precisely why sports and exercise work particularly well as recovery strategies for workaholics. Future studies may also examine the differences between workaholics and engaged employees. Engaged employees seem well able to recover from their work-related effort, although they also have a tendency to work overtime. Which psychological processes can account for the differences between both groups? Finally, the DRM may be particularly useful to examine behavioral pathways to recovery in future research. According to Demerouti et al. (2009), the recovering potential of activities people pursue after work depends on the degree to which these activities draw on the same resources used during the workday. Basically, working overtime should not contribute to recovery, as it will deplete the same energetic resources as those used during the workday. Conversely, active leisure-time activities draw on different resources, meaning that engaging in such activities should enhance recovery from work.

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