Burnout and Daily Recovery: A Day Reconstruction Study

Wido G. M. Oerlemans
Erasmus University Rotterdam

Arnold B. Bakker
Erasmus University Rotterdam and Lingnan University

What can employees who are at risk of burnout do in their off-job time to recover adequately from their work? Extending the effort-recovery theory, we hypothesize that the continuation of work during off-job time results in lower daily recovery, whereas engagement in ‘nonwork’ activities (low-effort, social, and physical activities) results in higher daily recovery for employees who are at risk of burnout versus employees with low levels of burnout. A day reconstruction method was used to assess daily time spent on off-job activities after work, and daily recovery levels (i.e., physical vigor, cognitive liveliness, and recovery). In total, 287 employees filled in a general questionnaire to assess general levels of burnout. Thereafter, participants were asked to reconstruct their off-job time use and state recovery levels during 2 workweeks, resulting in a total of 2,122 workdays. Results of multilevel modeling supported all hypotheses, except the hypothesis regarding off-job time spent on physical activities. The findings contribute to the literature by showing that employees who are at risk of burnout should stop working and start spending time on nonwork activities to adequately recover from work on a daily basis.

Keywords: burnout, day reconstruction method, effort-recovery, recovery, vigor

Research has shown that individuals need to adequately recover from their work-related efforts on a daily basis as it prevents further exhaustion and enables them to reload for the next working day (Meijman & Mulder, 1998; Sonnentag, 2003). Adequate recovery may depend on both the types of activities employees pursue in their off-job time (Demerouti, Bakker, Geurts, & Taris, 2009; Rook & Zijlstra, 2006; Sonnentag, 2001, 2003), as well as more general well-being characteristics (e.g., Bakker, Demerouti, Oerlemans, & Sonnentag, 2013). In this study, we focus on employees who are still at work, but experience relatively high levels of burnout (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001). More specifically, these employees suffer from relatively high levels of exhaustion and are disengaged in their job. We will examine what employees high or low in burnout do in their off-job time to recover from their work, and how this affects their daily recovery.

The present study aims to contribute to the literature in the following ways. First, the majority of studies on burnout have mainly examined between-person differences in burnout and its consequences, for instance in terms of health problems (e.g., Ahola, Vääränen, Koskinen, Kouvonén, & Shirom, 2010; Toppinen-Tanner, Ahola, Koskinen, & Vääränen, 2009). By combining a diary design with the Day Reconstruction Method (Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004), we can more precisely examine how individuals spend their time on off-job activities, and how such activities either facilitate or hinder daily recovery from work on a within-person, day-to-day level. General questionnaires often suffer from social desirability and are dependent on people’s memories that are often inaccurate, especially when examining daily behavioral and well-being measures. Collecting such measures on a daily basis is preferred, as it minimizes the filter of memory and social desirability (Kahneman et al., 2004).

Second, the majority of studies on daily recovery have investigated how daily off-job activities may either hinder or facilitate daily recovery. However, similar off-job activities may have a differential effect on how individuals recover from their work, depending on more general characteristics such as the level of burnout. By combining a general questionnaire to measure individual burnout with a Day Reconstruction Method (DRM) to measure daily time spent on off-job activities and recovery outcomes, we are able to examine which categories of daily off-job activities foster higher or lower daily levels of recovery and vigor, depending on an individual’s level of burnout. Consistent with previous research on daily recovery (e.g., Bakker et al., 2013; Sonnentag, 2001), we included daily levels of physical vigor and cognitive liveliness during off-job time, and daily recovery at bedtime to assess daily recovery of employees on workdays.

Theoretical Background

Burnout is an indicator of long-term well-being—it indicates whether employees experience high levels of exhaustion and disengagement toward the job (Demerouti, Mostert, & Bakker, 2010; Maslach, Schaufeli, & Leiter, 2001). Burnout varies between persons, because individuals who have high levels of...
neuroticism and who are exposed to an unfavorable work environment are more likely to burn out in their work than those who are emotionally stable and who work in a favorable work environment (Maslach et al., 2001). Although levels of burnout may fluctuate within a person over time, we do not expect those within-person fluctuations to occur on a daily basis. It is generally understood that burnout results from an unfavorable work environment characterized by high job demands and low job resources. One of the premises of the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti et al., 2001) is that long-term exposure to job demands (e.g., work overload, emotional demands) will exhaust employees’ cognitive and physical resources, which in the long run may lead to the depletion of energy (i.e., exhaustion) and health problems including musculoskeletal disorders (Ahola, 2007), and cardiovascular diseases (Toppinen-Tanner et al., 2009).

Despite the strong focus in occupational health models on the relationships between job demands, job resources, and burnout, relatively little attention has been paid to daily psychological and physiological processes that—over time—may explain why employee well-being gradually turns into ill-being, and eventually into burnout. One notable exception is Meijman and Mulder’s (1998) effort-recovery (ER) theory. Accordingly, employees have to invest effort to achieve work-related goals. This work-related effort produces physical and physiological costs that are associated with working. These reactions are usually short-lived and reversible: they should disappear after a respite from work. However, under certain circumstances, the recovery process may be insufficient or inadequate, and short-term work-related load reactions (e.g., fatigue) as a consequence of work-related efforts may turn into long-term chronic health problems such as prolonged fatigue, chronic tension, and sleep deprivation (Åkerstedt, 2006; Härmä, 2006). For example, the continuation of work during off-job time is often described as an activity that is detrimental for daily well-being. The continued exposure to job demands results in a further depletion of physical and cognitive resources, resulting in lower daily well-being. Diary studies have indeed confirmed that work-related activities during off-job time negatively affect daily recovery, although the reported effects are small (Bakker et al., 2013; Sonnentag, 2001; Sonnentag & Natter, 2004; Sonnentag & Zijlstra, 2006).

In contrast, ‘nonwork’ or ‘leisure’ activities—comprising low-effort, social, and physical activities (Rook & Zijlstra, 2006; Sonnentag, 2001)—could contribute to adequate daily recovery by either replenishing used physical and cognitive resources, or acquiring new resources (for a detailed review, see Demerouti et al., 2009). For example, low-effort activities (e.g., resting, doing nothing, or watching TV) require little to no effort on behalf of the individual and therefore pose no additional demands on psychological systems (Sonnentag, 2001; Sonnentag & Natter, 2004). These activities may have a recovery function because they do not occupy physical or cognitive resources that are normally required to accomplish work related tasks, which allow psychobiological systems to return to their prestressor state (Meijman & Mulder, 1998). Social activities, for instance going out with friends, and talking to family in person or on the phone, may lead to the acquisition of social resources because these activities open up channels for social support. Also, social activities are likely to draw on different personal resources than those required to accomplish work-related tasks, and social activities offer opportunities to relax and detach from work (Sonnentag, 2001, 2012). Physical activities, such as sports or physical exercise, may contribute to daily recovery through physiological mechanisms. Exercise increases the level of endorphins, cause a higher body temperature, or lead to enhanced secretion of noradrenalin, serotonin, and dopamine, all of which have antidepressant effects (Cox, 2002; Grossman et al., 1984). Also, exercise leads to positive psychological reactions such as the opportunity to psychologically detach from work, an increased sense of belonging (when exercising in a group), as well as increased feelings of competence and bodily attractiveness (e.g., Feuerhahn, Sonnentag, & Woll, 2014).

However, one important limitation of ER theory is that within-person, daily processes of work and recovery are examined without considering whether general well-being characteristics on a between-person level would moderate such within-person processes. This is important, as it could explain why similar activity types that are executed in off-job time are found to hold different relationships with daily recovery (e.g., Demerouti et al., 2009) across diary studies. For example, daily time spent on low effort was sometimes found to be beneficial (Sonnentag, 2001), and sometimes not related (Sonnentag & Natter, 2004; Rook & Zijlstra, 2006) to daily recovery. Also, social activities were found to sometimes relate negatively (Sonnentag & Natter, 2004), not (Sonnentag & Bayer, 2005), or positively (Sonnentag & Zijlstra, 2006) to daily recovery outcomes. We are aware of only one study that has examined whether between-person differences in general well-being (i.e., workaholism; a general tendency to work compulsively and excessively) between employees would moderate within-person processes of time spent on activity types during off-job time and daily recovery. Bakker and colleagues (Bakker et al., 2013) showed that the continuation of work during off-job time led to a decline in daily recovery, whereas engaging in daily physical activities during off-job time led to higher daily recovery levels for employees high (vs. low) on workaholism.

### Burnout and Daily Recovery

The present study extends and builds on the body of literature on burnout and recovery by examining whether specific patterns of time spent on off-job activities can help employees who are at risk of burnout to adequately recover from their work-related efforts on a daily basis. Burnout was operationalized by its two core dimensions: Exhaustion and disengagement from work (Demerouti et al., 2010). Exhaustion refers to a combination of affective, physical, and cognitive aspects of exhaustion, whereas disengagement from work refers to a general lack of interest in the job. Daily recovery on workdays was assessed by state levels of physical vigor and cognitive liveliness (Shirom, 2004) during off-job time—as these two concepts indicate whether physical and cognitive resources are being restored in off-job time. Physical vigor refers to an affective state where individuals feel full of pep and experience physical strength, whereas cognitive liveliness refers to feeling alert, being creative, and thinking rapidly. We also included self-reported daily recovery before going to sleep to directly assess the degree to which employees felt recovered at bedtime during workdays.

Burnout is likely to moderate within-person processes of time spent on off-job activities and daily recovery in some important
ways. For example, work-related activities require high effort investment on behalf of employees (Robert & Hockey, 1997). However, employees who are at risk of burnout have already lost most of their physical and cognitive resources to deal with high job demands (Bakker & Demerouti, 2007). As a consequence, employees who are high in burnout have to invest additional physical and cognitive resources that were already used up at work when continuing their work during off-job time. In contrast, employees low in burnout are less exhausted and more dedicated which likely helps them to cope with demanding work-related activities in off-job time (Demerouti, 2012; Ten Brummelhuis & Bakker, 2012). For example, a survey study among almost 4,000 Swedish health care workers showed that individuals who are chronically exhausted continue to work in their off-job time, but also report higher sickness absence as compared to a nonexhausted group (Peterson, Demerouti, Bergström, Asberg, & Nygren, 2008). It therefore appears that individuals who are high in burnout continue their work during off-job time, leading to ill well-being. One possible explanation may be that employees high in burnout continue to work during off-job time to compensate for performance failures during regular work hours (e.g., Van der Linden, Keijsers, Eling, & Van Schaikj, 2005). However, such compensatory efforts may result in further losses of physical and cognitive resources which are already low (Demerouti, Le Blanc, Bakker, Schaufeli, & Hox, 2009). Based on the above reasoning, we hypothesize the following:

Hypothesis 1: Time spent on work-related activities during off-job time has a stronger negative relationship with (a) state physical strength, (b) state cognitive liveliness, and (c) the state of feeling recovered for employees high (vs. low) in burnout.

Next, ‘nonwork’ activities such as low-effort, social, and physical activities either put no further demands on the individual, or draw on resources that are different as compared with the cognitive and physical resources required at work (Sonrentag, 2001, 2003). As such, nonwork activities during off-job time allow for the restoration of personal (e.g., physical, social, and cognitive resources) that were lost during the workday. In the present study, we argue that the restoration of daily personal resources becomes more important in the face of a more enduring loss of personal resources, as the case with individuals who score relatively high (vs. low) in burnout. For instance, employees high in burnout suffer from long-term affective, physical, and cognitive exhaustion. As such, they are in a higher need to recover from their work-related efforts as compared with individuals who are low in burnout (Kant et al., 2003; Sonnenschein, Sorbi, Van Dooren, Schaufeli, & Maas, 2007). This also reflects resources theories, which state that a restoration of resources becomes more crucial for well-being in the face of enduring resource loss (Bakker & Demerouti, 2007; Hobfoll, 2002, 2011).

For instance, individuals who are high in burnout are likely to benefit more from low-effort activities in terms of daily recovery as such activities can restore physical and cognitive resources that were lost during the work day, whereas such activities may be less beneficial in terms of recovery for individuals who are low in burnout. Also, employees who are high (vs. low) in burnout generally experience a lack of social support from supervisors and colleagues as compared with individuals who are relatively low in burnout (Schaufeli & Buunk, 2003). As a consequence, they feel a sense of cynicism, irritability, and helplessness toward their work environment, and have less meaningful social interactions with others at work. Under such conditions, social contact (social resources) outside of the work environment with friends or family may help individuals who are at risk of burnout to feel physically and cognitively more alive. In contrast, employees who are low in burnout already have more social interactions at work and may be less dependent on meaningful social interactions outside work in order to adequately recover from their workday. Finally, physical activities such as sports and exercise are known to have an antidepressant effect (e.g., Cox, 2002), and relate to increased positive affect as such activities provide opportunities to psychologically detach from work, and increase feelings of competence and bodily attractiveness (e.g., Feuerhahn et al., 2014). We expect employees who are at risk of burnout (vs. those who are low on burnout) to benefit more from physical activities, as they allow for a restoration of physical, cognitive, and affective resources. A 6-year follow-up study among a large sample of individuals showed that job burnout led to a much higher increase in depression when individuals did not engage in physical activity, as compared with individuals who did engage in physical activities (Toker & Biron, 2012). Based on the above reasoning, we hypothesize the following:

Hypothesis 2: Time spent on nonwork activities—that is, low-effort, social, and physical activities—during off-job time is more positively associated with (a) state physical strength, (b) state cognitive liveliness, and (c) the state of feeling recovered for employees high (vs. low) in burnout.

Method

Participants and Procedure

Employees were recruited to participate in this study via a university website in The Netherlands and via social media (e.g., Twitter, Facebook, LinkedIn). First, participants were asked to fill in a background survey which included questions on age, gender, educational level, employment details (e.g., average weekly work days and work hours), and the general level of burnout. Thereafter, participants were asked to keep a personal diary on daily off-job activities and daily recovery on workdays during two weeks. Participants could create a unique name and password which granted them access to their personal diary. E-mails were sent every morning with a link to the personal diary for two consecutive workweeks. The diary contained two methods of self-report. First, participants were asked to ‘reconstruct’ the time they spent on their off-job activities during the previous day, by using a Day Reconstruction Method (DRM; Kahneman et al., 2004). In particular, participants indicated in chronological order their time spent on off-job activities of the previous day by filling out the time at which an activity began and ended, as well as the type of activity. Second, participants answered questions about their recovery state during the previous day (i.e., state physical vigor, state cognitive liveliness, and state recovery). Note that participants were asked to answer questions regarding yesterday’s off-job activities and state recovery after waking up the next morning, which may be prob-
lethargic in terms of recall bias. However, a DRM facilitates access to encoded momentary experiences that are stored into our memory when one episode ends and another episode starts (Kurby & Zacks, 2008). The recall cues generated by a DRM (e.g., When did you perform the activity? How much time did you spend on the activity? What type of activity?) help respondents to reexperience their previous day (Kahneman et al., 2004), as well as their states of well-being at that time. Note that a DRM methodology produces similar results as compared with experience sampling methods (Dockray et al., 2010).

The online quantitative diary was programmed such that participants could fill out the diary only once per day. Upon completion, the date was automatically stored in the database.

A total of 287 participants filled in the DRM diary with an average of seven workdays (M = 7.39; SD = 3.79), reporting a total of 2,122 workdays. The mean age of the participants in the study sample was 44 years (SD = 12.35), and 82% was female. The Dutch educational system has secondary and tertiary education levels. As for the tertiary education level, 39.4% of the participants in the sample held a higher professional degree (HBO), 24% held a university degree (WO), and 13.2% held a lower professional degree (MBO). As for the secondary educational level, 15% finished higher secondary education (HAVO/VWO), 7.7% finished lower secondary education (MAVO/VMBO), and 0.7% stated to have no educational degree whatsoever. The participants worked in a wide range of occupational sectors: 24.0% of the participants worked in the health industry; 13.2% in the government; 12.5% in the educational sector; 11.5% in the financial sector; 4.5% in the cultural sector; 4.2% in retail; 1.7% in transportation; 1.7% in the hospitality or catering industry, and 16.7% reported to work in other types of sectors (10.1% did not respond to the question). The participants reported to work on average for 29.98 hours (SD = 10.64), and 4.22 workdays (SD = 1.16) per week.

As compared with the Dutch working population (CBS, 2012), the average weekly hours worked in the study sample was somewhat lower (30 hours vs. 34 hours). Also, participants were higher educated in the study sample as compared to the Dutch population (e.g., 24% vs. 11%), and the percentage of females was higher (82% vs. 47%).

**Measures**

**Burnout.** We measured *burnout* with the OLDenburg Burnout Inventory (OLBI; Demerouti et al., 2010). The OLBI includes two dimensions: *exhaustion* and *disengagement from work*. Item examples of exhaustion are: *After my work, I regularly feel worn out and weary,* and *After my work, I regularly feel totally fit for my leisure activities* (reversed). Items for disengagement include: *I frequently talk about my work in a negative way,* and *I get more and more engaged in my work* (reversed). Response categories ranged from 1 (totally disagree) to 4 (totally agree). Cronbach’s alpha was .86 for exhaustion, .89 for disengagement, and .91 when combining both scales into one burnout measure. The overall burnout measure was used in the analyses as an indicator of burnout.

**Daily activities during off-job time.** Participants reconstructed in chronological order their time spent on various types of off-job activities from the time they returned home from work until going to sleep that day by using a DRM (Kahneman et al., 2004). In particular, respondents were asked to reflect on their off-job time of the previous day by indicating the time they spent on specific off-job activities during that day. A drop-down menu offered many off-job activities to choose from. Following earlier diary studies on recovery (e.g., Sonnentag, 2001), we distinguished between work-related, low-effort, physical, and social activities in the analyses. Work-related activities after work included working at home, and/or preparing for the next working day; physical activities after work included playing soccer, tennis, hockey, running, bicycling, dancing, fitness, swimming, golf; social afterwork activities included spending time with friends or family, going out with friends or family, and social interactions with others away from home (e.g., at another person’s home, or at a club); and low-effort activities after work included relaxing on the couch, watching TV, doing nothing, and resting. On average, participants spent 35 minutes of their off-job time on work-related activities, 21 minutes on low-effort activities, 22 minutes on physical activities, and 2 hours and 31 minutes on social activities.

**State physical vigor.** We measured *state physical vigor* with three items from the Shirom–Melamed vigor measure (Shirom, 2004). The items were adapted to refer to *yesterday during my off-job time*, and included the following items: I felt vigorous, I felt I had physical strength, and I felt energetic. Items were answered on a 7-point Likert scale ranging from 1 (don’t agree at all), to 7 (totally agree). Cronbach’s alpha for physical vigor varied between .95 and .97 depending on the day, indicating good reliabilities.

**State cognitive liveliness.** We measured *state cognitive liveliness* with three items from the Shirom–Melamed vigor measure (Shirom, 2004). Items were adapted to refer to *yesterday during my off-job time* and included the following: I felt I could think rapidly, I felt I was able to be creative, and I felt I was able to contribute to new ideas. Items were answered on a 7-point Likert scale ranging from 1 (don’t agree at all), to 7 (totally agree). Cronbach’s alpha for cognitive liveliness varied between .85 and .91 depending on the day.

**State recovery.** This was assessed with three items from a recovery measure of Sonnentag (2003). The items were slightly adapted to refer to *yesterday before going to sleep* and included the following: I felt recovered, I felt rested, and I felt I had enough time to recover from my workday. Items were answered on a 7-point Likert scale ranging from 1 (don’t agree at all), to 7 (totally agree). Cronbach’s alpha varied between .89 and .92.

**Control variables.** In our analyses we controlled for a number of additional variables (gender, age, educational level, average weekly work hours, and day of the week). For instance, demographics such as gender, age, socioeconomic indicators, and variations in work hours have been found to relate to fatigue and disturbed sleep (Åkerstedt, Fredlund, Gillberg, & Jansson, 2002). Moreover, we controlled for day of the week as behavioral patterns as well as its consequences for daily well-being may fluctuate substantially between workdays (Beekers et al., 2008).

**Strategy of Analysis**

Because our data has a hierarchical structure with days nested in persons, we used hierarchical linear modeling for analyzing the data. As the substantive focus of interest is on cross-level moder-
ation effects of general burnout levels (a between person variable) on time spent on off-job activities (within person variables) and daily recovery (i.e., state vigor, state cognitive liveliness, and state recovery), burnout was centered on the grand mean, and the variables for time spent on all of the activity types were centered on the person mean (also called Centering Within Cluster). Centering Within Cluster (CWC) of level 1 variables is preferred instead of grand mean centering when examining cross-level interactions that involve a pair of Level 1 variables (Enders & Tofghi, 2007). Moreover, as state levels of recovery may also depend on other variables than time spent on off-job activities and general levels of burnout, we controlled for a number of additional variables (age, gender, educational level, average weekly work hours, and day of the week). Also, we corrected for lagged effects of daily recovery in order to analyze variations in the daily recovery beyond the baseline recovery levels of the day before. Note that 1,538 workdays (out of a total of 2,122 workdays) with lagged state recovery levels of the day before were included in our multilevel analyses.

In a first model, we included main effects of both between-person and within-person variables. In a second, nested model, we tested the hypotheses by calculating each of the interaction effects for time spent on off-job activities and burnout on the three state recovery outcomes. Additionally, we analyzed the nature of significant interaction effects by performing simple slopes analyses as proposed by Preacher, Curran, and Bauer (2006) where participants with one standard deviation above the mean on burnout were considered ‘high’ in burnout and those who scored one standard deviation below the mean were considered to be ‘low’ in burnout. The improvement of each multilevel model over the previous one was computed by the difference of the respective log-likelihood statistic $-2 \log$ and submitting this difference to a chi squared ($\chi^2$) test.

Results

Preliminary Analyses

Table 1 reports means, standard deviations, and correlations of the study variables. Before testing the hypotheses, we first performed a multilevel confirmatory factor analysis (MLCFA) using the Mplus 6.12 program (Muthén & Muthén, 1998–2006) to evaluate whether a three-factor structure for the three recovery outcomes—state physical vigor, state cognitive liveliness, and state recovery—would fit the data. The proposed 3-factor solution yielded excellent fit indices ($\chi^2 = 351.23, p < .001; \text{CFI} = .98; \text{TLI} = .97; \text{RMSEA} = .06; \text{RMR within-person level} = .03; \text{RMR between-person level} = .04$). Moreover, fit indices for the proposed three-factor solution fitted significantly better to the data as compared with a one-factor ($\chi^2$-difference = 4659.25, $p < .001$; CFI = .72; TLI = .63; RMSEA = .21; RMR-within = .14, RMR-between = .17), or the best fitting two factor solution where items for physical vigor and cognitive liveliness were loaded on a “vigor” factor, and recovery items loading on a “recovery” factor ($\chi^2$-difference = 1778.58, $p < .001$; CFI = .88; TLI = .84; RMSEA = .14; RMR-within = .06, RMR-between = .05). Thus, state physical vigor, state cognitive liveliness, and state recovery were treated as separate outcomes of daily recovery in the subsequent analyses. In addition, we calculated the intercept-only multilevel (null) models to assess whether a relevant amount of variation for the three state well-being outcomes is on the within person (day) level. This turned out to be the case. The analyses showed that 69% of the variance for state physical vigor, 67% of the variance for state cognitive liveliness, and 64% of the variance for state recovery was on the within person level, showing the need to perform multilevel analyses.

Main Effects of the Study Variables on Daily Recovery Outcomes

Table 2 shows the results of multilevel analyses predicting state physical vigor and state cognitive liveliness during off-job time. Table 3 shows results of multilevel analyses predicting state recovery at bedtime. At the between person level, Model 1 showed that burnout related negatively to state physical vigor, $t = -6.29, p < .001$, state cognitive liveliness, $t = -6.98, p < .001$, and state recovery, $t = -6.54, p < .001$. The between person control variables (i.e., age, gender, educational level, and average weekly work hours) did not relate to any of the three daily recovery outcomes.

### Table 1: Means, Standard Deviations, and Correlations Between Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Age</td>
<td>44.04</td>
<td>12.35</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2. Gender (0 = male, 1 = female)</td>
<td>81.5%</td>
<td>-0.05</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3. Educational level</td>
<td>5.27</td>
<td>1.64</td>
<td>-0.06</td>
<td>-0.05</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4. Work hours (week)</td>
<td>30.45</td>
<td>10.03</td>
<td>-0.09</td>
<td>-0.22</td>
<td>0.15</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>5. Burnout</td>
<td>2.38</td>
<td>0.55</td>
<td>-0.15</td>
<td>-0.01</td>
<td>-0.04</td>
<td>-0.01</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>6. Work-related activities</td>
<td>0.35</td>
<td>3.34</td>
<td>-0.04</td>
<td>-0.18</td>
<td>0.07</td>
<td>0.29</td>
<td>-0.01</td>
<td>—</td>
<td>-0.09</td>
<td>-0.09</td>
<td>0.14</td>
<td>0.03</td>
<td>0.05</td>
<td>-0.03</td>
</tr>
<tr>
<td>7. Social activities</td>
<td>2.31</td>
<td>5.03</td>
<td>-0.13</td>
<td>0.07</td>
<td>-0.04</td>
<td>0.01</td>
<td>-0.05</td>
<td>0.01</td>
<td>0.12</td>
<td>0.07</td>
<td>0.27</td>
<td>0.14</td>
<td>0.08</td>
<td>—</td>
</tr>
<tr>
<td>8. Physical activities</td>
<td>0.22</td>
<td>0.57</td>
<td>-0.02</td>
<td>0.03</td>
<td>0.10</td>
<td>-0.03</td>
<td>-0.07</td>
<td>-0.16</td>
<td>0.10</td>
<td>—</td>
<td>—</td>
<td>0.04</td>
<td>0.20</td>
<td>0.13</td>
</tr>
<tr>
<td>9. Low-effort activities</td>
<td>0.21</td>
<td>1.00</td>
<td>-0.11</td>
<td>0.01</td>
<td>0.14</td>
<td>0.16</td>
<td>-0.17</td>
<td>0.15</td>
<td>0.13</td>
<td>0.05</td>
<td>—</td>
<td>0.08</td>
<td>0.07</td>
<td>0.04</td>
</tr>
<tr>
<td>10. Physical vigor</td>
<td>4.82</td>
<td>1.18</td>
<td>0.19</td>
<td>0.04</td>
<td>0.07</td>
<td>0.05</td>
<td>0.04</td>
<td>0.06</td>
<td>0.16</td>
<td>0.17</td>
<td>0.25</td>
<td>—</td>
<td>0.79</td>
<td>0.56</td>
</tr>
<tr>
<td>11. Cognitive liveliness</td>
<td>4.73</td>
<td>1.14</td>
<td>0.20</td>
<td>-0.01</td>
<td>0.11</td>
<td>0.03</td>
<td>-0.43</td>
<td>-0.06</td>
<td>0.14</td>
<td>0.15</td>
<td>0.25</td>
<td>0.82</td>
<td>—</td>
<td>0.55</td>
</tr>
<tr>
<td>12. Recovery from work</td>
<td>4.47</td>
<td>1.08</td>
<td>0.17</td>
<td>-0.02</td>
<td>0.11</td>
<td>0.02</td>
<td>-0.43</td>
<td>-0.02</td>
<td>0.09</td>
<td>0.08</td>
<td>0.20</td>
<td>0.64</td>
<td>0.56</td>
<td>—</td>
</tr>
</tbody>
</table>

Note. Correlations below the diagonal are person-level correlations ($n = 287$) with correlations $r \geq [.13]$ being significant at $p < .05$ and $r \geq [.16]$ being significant at $p < .01$. Correlations above the diagonal are within-person correlations ($n = 2,122$) with correlations $r \geq [.05]$ being significant at $p < .05$ and $r \geq [.07]$ being significant at $p < .01$. All activities reported refer to activities pursued after office hours. We display means and standard deviations (SD) concerning time spent on off-job activities in an hour:minute format.
At the within person level, results in Tables 2 and 3, Model 1, indicated that lagged effects of state recovery had a positive effect on (next day’s) state recovery levels (lagged effect state physical vigor, $t = 2.81, p < .01$; lagged effect state cognitive liveliness; $t = 4.44, p < .001$; lagged effect state recovery, $t = 3.85, p < .001$). Day of the week was not significantly related to any of the state recovery outcomes. Also, off-job time spent on work-related activities held no significant relationship with the three state recovery outcomes. However, off-job time spent on social activities (state physical vigor, $t = 4.00, p < .001$; state cognitive liveliness; $t = 4.63, p < .001$; state recovery, $t = 2.88, p < .01$), off-job time spent on physical activities (state physical vigor, $t = 4.08, p < .001$; state cognitive liveliness, $t = 4.11, p < .001$; state recovery, $t = 1.97, p < .05$), and off-job time spent on low-effort activities (state physical vigor, $t = 4.45, p < .001$; state cognitive liveliness, $t = 3.89, p < .001$; state recovery, $t = 4.81, p < .01$) related positively to the three state recovery outcomes.

### Testing the Hypotheses

In a second, nested model, we tested all of the hypotheses by including cross-level interaction terms for burnout and daily off-job time spent on activities (See Tables 2 and 3, Model 2). Hypothesis 1 predicted that time spent on work-related activities during off-job time would have a stronger negative relationship with (a) state physical strength, (b) state cognitive liveliness, and (c) the state of feeling recovered for employees high (vs. low) in burnout. Results indeed showed significant and negative cross-level interaction effects of burnout and daily off-job time spent on work-related activities on state physical vigor, $t = -2.00, p < .05$, state cognitive liveliness, $t = -2.79, p < .01$, and state recovery, $t = -2.44, p < .01$, after controlling for lagged effects. We used simple slope tests as proposed by Preacher et al. (2006) to interpret the nature of these cross-level interaction effects. These tests indicated that for employees who were low in burnout (one standard deviation below the mean), off-job time spent working had no significant effect on state physical vigor ($z = -0.85, p = .40$), state cognitive liveliness ($z = -0.72, p = .47$), and state recovery ($z = -0.85, p = .39$). However, for employees who were high in burnout (one standard deviation above the mean), off-job time spent working related negatively to state physical vigor ($z = -2.09, p < .05$), state cognitive liveliness ($z = -2.44, p < .05$), and state recovery ($z = -2.23, p < .05$), which confirmed hypothesis 1. As an example, Figure 1 shows the interaction effect between burnout and off-job time spent working for state recovery at bedtime. Very similar figures were found for state physical vigor and state cognitive liveliness and are available on request from the first author.

Hypothesis 2 predicted that off-job time spent on nonwork activities—that is, low-effort, social, and physical activities—would be more positively associated with (a) state physical strength, (b) state cognitive liveliness, and (c) the state of feeling recovered for employees high (vs. low) in low-effort activities, burnout moderated the relationships between off-
Table 3
Multi-Level Models Predicting State Recovery From Work

<table>
<thead>
<tr>
<th>Variable</th>
<th>State Recovery From Work</th>
<th>State Recovery From Work</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Est</td>
<td>SE</td>
</tr>
<tr>
<td>Estimate</td>
<td>4.38</td>
<td>0.27</td>
</tr>
<tr>
<td>Level 2 variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Gender</td>
<td>0.10</td>
<td>0.17</td>
</tr>
<tr>
<td>Educational level</td>
<td>0.00</td>
<td>0.04</td>
</tr>
<tr>
<td>Average weekly workhours</td>
<td>0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Burnout (BO)</td>
<td>-0.84</td>
<td>0.13</td>
</tr>
<tr>
<td>Level 1 variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lagged effect</td>
<td>0.10</td>
<td>0.03</td>
</tr>
<tr>
<td>Weekday</td>
<td>0.03</td>
<td>0.02</td>
</tr>
<tr>
<td>Time spent on work-related activities</td>
<td>-0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>Time spent low-effort activities</td>
<td>0.13</td>
<td>0.03</td>
</tr>
<tr>
<td>Time spent on social activities</td>
<td>0.02</td>
<td>0.01</td>
</tr>
<tr>
<td>Time spent on physical activities</td>
<td>0.07</td>
<td>0.04</td>
</tr>
<tr>
<td>Interaction terms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BO × Work-related activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BO × Low-effort activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BO × Social activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BO × Physical activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diff-2log (lh)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>df</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2 variance (person)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1 variance (day)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Est = estimate; SE = standard error; Sig = significance; BO = burnout. The difference in –2 log in Model 1 for State Recovery From Work is compared with the intercept-only model. n = 287 persons, 1,538 days.

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

Job time spent on low-effort activities and state physical vigor, t = 3.63, p < .001 and state cognitive liveliness, t = 3.63, p < .001, but not state recovery, t = 1.72, p = .09. Specifically, simple slope analyses (for an example, see Figure 2) revealed that for employees low in burnout, off-job time spent on low-effort activities was not significantly related to state physical vigor (z = 1.62, p = .11) and state cognitive liveliness (z = 1.45, p = .14). However, for employees high in burnout, off-job time spent on low-effort activities related positively to state physical vigor (z = 3.39, p < .001), and state cognitive liveliness (z = 3.23, p < .001). Thus, for low-effort activities, hypothesis 2 was confirmed for two out of three state recovery outcomes.

For social activities, burnout significantly moderated the relationship between off-job time spent on social activities and state vigor, t = 2.18, p < .05, state cognitive liveliness, t = 2.67, p < .01, and state recovery, t = 3.80, p < .001. Simple slope analyses revealed that for both employees low and high in burnout, daily socializing during off-job time related positively to state physical vigor (low: z = 2.09, p < .05; high: z = 4.65, p < .001), state cognitive liveliness (low: z = 3.30, p < .001; high: z = 3.65, p < .001).

Figure 1. Interaction effect of burnout and off-job time spent on work-related activities for state recovery at bedtime.

Figure 2. Interaction effect of burnout and time spent on low-effort activities for state cognitive liveliness during off-job time.
interaction effect of burnout and off-job time spent on social activities and subsequent recovery may change substantially, depending on more general well-being characteristics such as job activities and recovery, which makes them better equipped to deal with demanding situations (e.g., work-related tasks) as compared with individuals who are high in burnout and do not have such personal resources at their disposal. Moreover, employees who have high in burnout are generally disengaged from their work, whereas employees who are low in burnout are more dedicated. As a consequence, for the burnout group, work-related efforts during off-job time are likely to be experienced as something that has to be done rather than something that might be interesting or challenging. Consistent with this idea, Beckers et al. (2008) showed that the effect of overwork on fatigue is only significant when overwork is performed involuntarily.

The above findings stress that the continuation of work-related activities in off-job time is only harmful for daily recovery for employees with a high (vs. low) level of burnout. Although this may seem obvious, it is important to note that highly exhausted employees appear to perform more overtime work as compared with non—burned-out employees (Peterson et al., 2008), which emphasizes the importance to convey this message.

**Discussion**

This study is, to the best of our knowledge, the first to examine whether employees who are at risk of burnout react differently to time spent on activities during off-job time in terms of their daily recovery (i.e., state physical vigor, state cognitive liveliness, and state recovery) as compared with individuals with low burnout levels. The findings suggest that it is important for employees who are at risk of burnout to stop spending time on work-related activities during off-job time, and start spending more time on low-effort activities in order to adequately recover from work on a daily basis. Below, we discuss the theoretical and practical implications of our findings in more detail.

**Burnout and Work-Related Activities**

Our findings confirm that employees who are at risk of burnout experience a decline in their daily recovery (i.e., in terms of physical vigor, cognitive liveliness, and recovery) on days when they spend more off-job time on work-related activities, whereas employees with a low burnout level do not. To understand this interaction effect, it is important to consider the enduring characteristics of burned-out employees. Employees who are high (vs. low) in burnout have suffered a loss in enduring physical and cognitive resources: they feel chronically exhausted and disengaged from their work (Demerouti et al., 2010). On workdays where employees continue their work during off-job time, they presumably have to invest additional physical and cognitive resources to deal with demanding work-related tasks. However, individuals who are high in burnout have mostly depleted their affective, physical, and cognitive resources and are not well equipped to deal with additional work-related efforts, resulting in poor daily recovery.

In contrast, employees who are low in burnout have a higher level of vigor (Demerouti et al., 2010), and are therefore better equipped to deal with demanding work-related activities in their off-job time, so that their daily recovery level is not adversely affected when they continue to work in their off-job time. These findings are more in line with assumptions from resources theories (e.g., Hobfoll, 2002, 2011; Ten Brummelhuis & Bakker, 2012). For example, those low in burnout are in the possession of more personal energetic resources (e.g., physical and cognitive resources), which makes them better equipped to deal with demanding situations (e.g., work-related tasks) as compared with individuals who are high in burnout and do not have such personal resources at their disposal. Moreover, employees who are high in burnout are generally disengaged from their work, whereas employees who are low in burnout are more dedicated. As a consequence, for the burnout group, work-related efforts during off-job time are likely to be experienced as something that has to be done rather than something that might be interesting or challenging. Consistent with this idea, Beckers et al. (2008) showed that the effect of overwork on fatigue is only significant when overwork is performed involuntarily.

The above findings stress that the continuation of work-related activities in off-job time is only harmful for daily recovery for employees with a high (vs. low) level of burnout. Although this may seem obvious, it is important to note that highly exhausted employees appear to perform more overtime work as compared with non—burned-out employees (Peterson et al., 2008), which emphasizes the importance to convey this message.

**Burnout and Low-Effort Activities**

Results confirmed that for employees who are at risk (vs. not at risk) of burnout, spending time on low-effort activities relates to higher daily recovery (i.e., higher levels of physical vigor and cognitive liveliness, but not recovery). These interaction effects are in accordance with ER theory (Meijman & Mulder, 1998), and may be explained as follows. Low-effort activities (e.g., relaxing
on the couch, resting, doing nothing) require little to no effort on behalf of the individual, and provide an opportunity to momentarily restore physical and cognitive resources. For employees who are high in burnout, then, low-effort activities pursued during off-job time provide a much-needed opportunity to restore physical and cognitive resources that are almost drained, resulting in higher physical vigor and cognitive liveliness. In contrast, employees who are low in burnout have a higher general level of physical and cognitive vigor. For them, the restoration of physical and cognitive resources may not be required, which is in line with the finding that time spent on low-effort activities are not significantly related to daily recovery among individuals who are low in burnout. It might be that for individuals who are low in burnout, low-effort activities such as relaxing on the couch or doing nothing may reflect boredom or apathy in leisure time (Iso-Ahola, 1997; Demerouti et al., 2009). The findings on low-effort activities are also in line with assumptions from resource theories, which suggest that the restoration of resources becomes more crucial for well-being in the face of enduring resource loss (Bakker & Demerouti, 2007; Hobfoll, 2002, 2011). It is important to note that general levels of burnout did not moderate the relationship between time spent on low-effort activities and daily recovery at bedtime. Thus, the findings indicate that individuals who are at risk of burnout benefit primarily from low-effort activities in terms of the restoration of momentary physical and cognitive resources in off-job time, but not recovery at bedtime. It may be the case that recovery at bedtime is better predicted by other indicators, such as the degree to which low-effort activities are enjoyed (e.g., Van Hooff, Geurts, Beckers, & Kompier, 2011; Oerlemans, Bakker, & Demerouti, 2014).

Burnout and Social Activities

As hypothesized, results show that individuals who are at risk of burnout (vs. those who score low in burnout) recover better on days when they spend more off-job time on social activities. One explanation for this finding is that those who are at risk of burnout have developed a rather cynical attitude toward their work, and have distanced themselves from clients, colleagues, or superiors at work. As a consequence, individuals who are high (vs. low) in burnout may be less likely to have meaningful social interactions with others in the workplace. Indeed, between-person studies confirm that burnout relates negatively to social support at work (e.g., Schaufeli & Buunk, 2003). Under such circumstances, social activities pursued outside work provide welcome opportunities for highly burned-out individuals to engage in meaningful conversations with others (friends or family). Social activities during off-job time such as a night out with friends, visiting family, or talking on the phone with meaningful others fulfill important psychological needs and can be invigorating (e.g., Ryan & Deci, 2008). Also, social activities can provide individuals who are high in burnout and suffer from chronic job stress with a much-needed opportunity to detach from their stressful work environment and relax (Ten Brummelhuis & Bakker, 2012).

In contrast, employees who are low in burnout are more engaged in their work, and experience more meaningful social interactions in the workplace (e.g., Bakker, Schaufeli, Leiter, & Taris, 2008). Then, social interactions outside work may be less crucial for their daily well-being. Note that individuals who are low in burnout also experience higher recovery levels on days when they spend more time on social activities, but the effect is less strong as compared with individuals who are at risk of burnout.

Burnout and Physical Activities

Results indicate that time spent on physical activities has a positive effect on all daily recovery outcomes (i.e., physical vigor, cognitive liveliness, and recovery) for all employees, regardless of differences in the level of burnout. We hypothesized that for employees high (vs. low) on burnout, physical activities would be more positively associated with state well-being. One explanation for the nonsignificant interaction effects may be that physical activities are related to physiological mechanisms that have equal positive effects for all individuals, independent from their enduring level of burnout (e.g., increased level of endorphins, higher body temperature, and enhanced secretion of noradrenaline, serotonin, and dopamine; Cox, 2002; Grossman et al., 1984). Another explanation may be that positive and negative elements cancel each other out, and produce a similar gain in physical vigor, cognitive liveliness, and recovery at bedtime for individuals who are high (vs. low) in burnout. For example, individuals who are at risk of burnout are highly exhausted. Physical activities are able to enhance vigor and mood, but may also produce physical fatigue (e.g., Sonnentag, 2001; Sonnentag & Natter, 2004). Then, engaging in physical activities may lead to higher physical fatigue for individuals who are high (vs. low) in burnout, which may cancel out positive effects of other aspects of physical activities on physical vigor, cognitive liveliness, and recovery at bedtime. Unfortunately, physical fatigue was not included in the present study. Future studies could examine whether physical fatigue indeed masks the otherwise beneficial effects of physical activities on state well-being for employees who are high in burnout.

Strengths and Weaknesses

This study has some particular strengths and weaknesses. A strength of the study is the use of a general questionnaire to measure job burnout, and daily methods (the DRM, and daily questionnaires) to measure time spent on off-job activities and daily recovery. The DRM and daily questionnaires have the advantage of minimizing recall bias. Results obtained from the DRM are highly similar to results obtained with experience sampling methods, which uses real-time reports of people’s actions and emotions (Dockray et al., 2010; Kahneman et al., 2004). Still, participants were asked to reflect on their off-job activities and state recovery of the day before (yesterday), and therefore we cannot exclude the possibility that some recall bias is involved.

Using different research methods also limits concerns about common-method variance, as is the case when using only one questionnaire (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). To further limit problems associated with common-method bias, we used person-centered scores in the analyses and corrected for lagged effects of state recovery outcomes. This way of analyzing allowed us to study intraindividual changes in daily recovery, beyond the individual’s baseline and beyond the effects of previous day recovery.

The study sample did not match the Dutch working population well in terms of gender and educational level. The percent-
age of females was higher (82% vs. 47%) and employees were higher educated (24% vs. 11%) in the sample as compared with the Dutch population. We therefore included control variables for age, gender, educational level, and average weekly work hours on the between-person level in all the analyses. Please note that these control variables held no significant associations with the daily recovery outcomes studied. Moreover, this study, as well as diary studies in general, are mostly concerned with studying within-person changes in state well-being over time as compared to studying differences on a between-person level. Still, future research may want to include a sample of participants that is representative of the labor force in a particular region or country.

Another limitation is that we focused specifically on activities pursued during off-job time and general levels of burnout as predictors of daily recovery. However, changes in recovery may also occur during work time (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 positively related to employees’ energy. It would be interesting to examine the recovery potential of recovery activities during the working day in future DRM studies—in addition to the recovery potential of off-job activities.

Implications for Practice

Organizations could take a person-centered approach, where burnout levels of individual workers are periodically monitored. Organizations may then take actions for those employees who are relatively high in burnout to discontinue their work outside regular work hours. In fact, large organizations such as BMW, Volkswagen, and Goldman-Sachs have recently communicated to their employees to discontinue their work outside regular work hours.

Also, employers may support opportunities for nonwork activities that fit the employees’ interests (sport-facilities, socio-cultural events, etc.). Furthermore, organizations could start a vitality program aimed at keeping all employees fit and healthy. For example, a vitality program may include opportunities for employees to receive feedback on indicators of their general well-being (e.g., levels of burnout, engagement, workaholism, or happiness at work). Depending on differences in general well-being, vitality programs could be aimed at informing employees about the kind of off-job activities that contribute to their personal recovery. Moreover, employees themselves can be taught to keep a daily diary, based on the Day Reconstruction Methodology, where they become more aware of the kind of activities that contribute most to their personal daily recovery. For example, online tools have been recently developed that are helpful in reconstructing one’s day in terms of activities and social interactions from waking up until bedtime. Moreover, online apps are now available where employees can answer questions and receive personalized feedback on their smartphone regarding their momentary levels of work-engagement, as well as important job demands and resources (Oerlemans & Bakker, 2013). Finally, as argued by Noblet and LaMontagne (2006), organizations could also change policies and implicit norms concerning unlimited availability and help employees to find a healthy work–life balance.

References


Members of Underrepresented Groups: Reviewers for Journal Manuscripts Wanted

If you are interested in reviewing manuscripts for APA journals, the APA Publications and Communications Board would like to invite your participation. Manuscript reviewers are vital to the publications process. As a reviewer, you would gain valuable experience in publishing. The P&C Board is particularly interested in encouraging members of underrepresented groups to participate more in this process.

If you are interested in reviewing manuscripts, please write APA Journals at Reviewers@apa.org. Please note the following important points:

• To be selected as a reviewer, you must have published articles in peer-reviewed journals. The experience of publishing provides a reviewer with the basis for preparing a thorough, objective review.

• To be selected, it is critical to be a regular reader of the five to six empirical journals that are most central to the area or journal for which you would like to review. Current knowledge of recently published research provides a reviewer with the knowledge base to evaluate a new submission within the context of existing research.

• To select the appropriate reviewers for each manuscript, the editor needs detailed information. Please include with your letter your vita. In the letter, please identify which APA journal(s) you are interested in, and describe your area of expertise. Be as specific as possible. For example, “social psychology” is not sufficient—you would need to specify “social cognition” or “attitude change” as well.

• Reviewing a manuscript takes time (1–4 hours per manuscript reviewed). If you are selected to review a manuscript, be prepared to invest the necessary time to evaluate the manuscript thoroughly.

APA now has an online video course that provides guidance in reviewing manuscripts. To learn more about the course and to access the video, visit http://www.apa.org/pubs/authors/review-manuscript-ce-video.aspx.