Why do people (not) take breaks?

An investigation of individuals' reasons for taking and for not taking breaks at work

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

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Abstract

Employees sometimes need breaks to deal with the demands of their jobs. Indeed, studies show that breaks allow employees to stay energized and maintain high levels of performance throughout the day. However, few studies have investigated employees' reasons for taking a break. Further, almost no research has examined employees' reasons for *not* taking a break, even though employees sometimes refrain from taking a break despite wanting or needing a break. I address this gap by identifying psychological processes underlying break-taking. In Study 1, I conducted a qualitative survey in which employees reported their reasons for taking and for not taking a break. This allowed me to identify break antecedents that may not have been considered previously, but that can nonetheless influence whether or not a person will take a break. In Study 2, I developed and validated measures of the antecedents found in Study 1 across two samples. In Study 3, I conducted a daily diary study to investigate the manner in which these antecedents combine with employees' micro-break climate and conscientiousness to predict break frequency over five workdays. The results indicate that employees may *want* a break due to the negative experiences (fatigue, negative affect, and performance concerns) they encounter as a result of high workloads, but that characteristics of employees' goals (expedience concerns) and of the broader work setting (micro-break climate) may deter employees from *actually taking* a break. Altogether, this dissertation challenges the implicit assumption within the literature that individuals' break-taking behaviors are primarily driven by fatigue.

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Introduction

Employees often deal with tremendous demands on the job, such as high workloads, stringent deadlines, and long hours. Meeting these demands requires a great deal of effort and energy, yet prolonged effort and energy expenditure without rest can result in decreased well-being and performance (Demerouti et al., 2009; Geurts & Sonnentag, 2006). To prevent such negative outcomes, employees can take *breaks*, which are periods during the workday when individuals are not engaging in work activities. Numerous studies indicate that breaks can allow employees to feel refreshed and energized throughout the workday (e.g., Hunter & Wu, 2016; Sianoja et al., 2018; Zacher et al., 2014). Further, breaks have been positively associated with work engagement (Bosch et al., 2018; Kühnel et al., 2017) and task performance (Kim et al., 2018; Wendsche et al., 2016). Thus, taking breaks can allow employees to maintain high levels of performance and well-being over time. However, little attention has been paid to the factors that prompt or discourage employees from taking a break in the first place. That is, why do employees take breaks? Perhaps more importantly, why do employees not take breaks despite wanting or needing to do so?

Answering these questions is essential, because although breaks may be most beneficial when taken *as needed* (Feyer & Williamson, 1995; Tucker, 2003), evidence suggests employees do not always take a break when they need to do so. For instance, polls indicate that one third of employees regularly choose to work instead of taking a break during lunch time (Right Management, 2011). Likewise, there is experimental evidence to suggest that individuals sometimes refrain from taking a break despite experiencing high levels of fatigue (McLean et al., 2001). Moreover, according to some studies, the breaks employees do take may be too short to allow them to feel refreshed (Bennett et al., 2020; Henning et al., 1989). Thus, it appears that

employees sometimes choose not to take a break despite needing a break, which in turn may lead to negative outcomes such as workplace accidents (Tucker et al., 2003). To prevent such pitfalls it is necessary to thoroughly understand the psychological processes that underlie break-taking.

In this dissertation, I briefly review the break literature and present three studies designed to unpack the processes that underlie break-taking. In Study 1, I asked working adults to answer open-ended questions about their reasons for taking a break, as well as their reasons for *not* taking a break. This allowed me to identify important but previously overlooked antecedents of breaks. That is, past theorizing and research have generally assumed that individuals primarily take breaks in response to fatigue (e.g., Fritz et al., 2011; Zacher et al., 2014), yet there are likely several other reasons for employees to take a break aside from fatigue. Next, based on the results of Study 1 and on previous theorizing, I developed hypotheses to predict break-taking during the workday. Namely, I drew upon stress-related theories (Hobfoll, 1989; Meijman & Mulder, 1998) and theories of self-regulation (e.g., Carver & Scheier, 1998; Vancouver et al., 2010) to argue that employees may *want* to take a break upon experiencing various negative work experiences, but may ultimately *not* take a break due to characteristics of their tasks or their work environment. In Study 2, I developed and validated measures aimed at assessing the break antecedents identified in Study 1 across two independent employee samples. Finally, in Study 3 I tested my hypotheses in a large sample of full-time employees who completed two surveys per day over five consecutive workdays.

This dissertation makes several contributions to the break literature. Even though breaks can allow employees to maintain high levels of performance and well-being throughout the day, little research has investigated employees' reasons for taking a break. More so, employees' reasons for *not* taking a break despite wanting or needing to do so remain unclear. By clarifying

the processes that underlie employees' discretionary break-taking behaviors, this research may inform potential interventions that will encourage employees to take breaks *as needed*. Additionally, this research qualifies previous assumptions made within the literature by demonstrating that employees may take breaks not only in response to fatigue, but also in response to other experiences such as negative affect, performance concerns, and employees' desire to detach from work. Further, this paper highlights the utility of self-regulation theories in explaining how individuals respond to work stressors. Specifically, even when individuals intend to take a break, the presence of competing goals, such as work tasks, may compel employees to *not* take a break.

Breaks in the Workplace

What is a Break?

Although a great deal of research has been conducted on breaks, there appears to be no fully agreed-upon definition of "breaks" within the literature. For example, some authors defined breaks as periods within the workday when individuals shift their attention away from their work tasks (Bosch & Sonnentag, 2019), thus implying that a break occurs when individuals intentionally direct their attention away from work. Other researchers defined breaks as periods within the day in which individuals are not expected nor required to engage in work activities (Hunter & Wu, 2016; Trougakos et al., 2014; Trougakos & Hideg, 2009). Based on the latter definition, whether or not something is a break depends on the expectations and rules set by organizations as opposed to employees' actual behaviors. Additionally, breaks have also been defined as "energy management strategies that are not directly related to doing work" (Zacher et al., 2014, p. 288), which implies that whether or not something is a break primarily depends on

employees' intentions. In sum, there are several definitions of breaks within the literature, and these definitions are not entirely compatible with one another.

Nonetheless, there are two important commonalities among the definitions above. First, breaks are defined as specifically encompassing periods *within* a workday, meaning that periods falling outside a person's workday (e.g., weekends and vacations) are not considered "breaks." Second, the definitions above converge upon the idea that employees are typically not engaging in work-related activities during a break. Accordingly, in this research I define breaks as periods within the workday in which an employee is not engaging in work activities. This working definition is compatible with the definitions noted above, and thus, provides an adequate starting point for reviewing the research conducted on breaks to date.

Are Breaks Beneficial? Outcomes of Breaks for Well-Being and Performance

Numerous studies have examined the effects of breaks on employees' physical well-being, psychological well-being, and performance. With regards to physical well-being, several studies indicate that adding breaks to employees' work schedule can reduce the accumulation of physical discomfort over a workday (Dababneh et al., 2001; Galinsky et al., 2000; Henning et al., 1997; McLean et al., 2001). For example, Galinsky et al. found in a sample of data entry employees that musculoskeletal discomfort and eyestrain tended to increase over the workday. Yet, this increase was slower when four 5-minute breaks were added to participants' work schedule, compared to when no breaks were added. Similarly, in a sample of meat-processing employees, Dababneh et al. found that participants tended to experience decreased leg discomfort when four 9-minute breaks were added to their regular work schedule. Thus, breaks may help employees maintain adequate levels of physical well-being at work.

Breaks have also been linked to psychological well-being. To begin, breaks allow employees to manage fatigue and to stay energized during the day (Bennett et al., 2020; Hunter & Wu, 2016; Sianoja et al., 2018; Zacher et al., 2014). For example, in Zacher et al.'s study, the more employees engaged in break activities (e.g., surfing the web, sending personal text messages) at a given time during the day, the less fatigue and the more vitality they tended to report one hour later. Studies have also linked breaks to work engagement (Bosch et al., 2018; Kühnel et al., 2017). For instance, Kühnel et al. found that employees tended to report higher levels of work engagement at the end of the workday when they had taken a short break during the afternoon, relative to when they had not taken a short afternoon break. Further, findings by Kim et al. (2017) suggest breaks may help alleviate the experience of negative emotions on the job. Specifically, these authors found a positive within-person relationship between work demands and negative affect, yet this relationship was attenuated when participants engaged in high as opposed to low levels of break activities. Thus, breaks may be beneficial for both physiological and psychological well-being.

Research has also investigated the effects of breaks on employee performance. On the one hand, breaks may enhance performance by allowing employees to recover the energy they need to perform well on the job (Hunter & Wu, 2016; Kim et al., 2018). On the other hand, there is a potential concern that taking breaks may result in poorer performance, as time spent on a break is time not spent on work tasks. To date, the empirical evidence suggests that breaks have beneficial as opposed to detrimental effects on performance. Indeed, a recent meta-analysis highlights a positive relationship between breaks and task performance (Wendsche et al., 2016). Moreover, Kim et al. found that employees tended to exhibit higher levels of objective task performance (i.e., sales) during days in which they frequently engaged in break activities,

compared to days in which they engaged in fewer break activities. Beyond productivity, breaks have been linked to reduced accident risk (Horne & Reyner, 1999; Tucker et al., 2003). In sum, the well-being benefits associated to breaks appear to come at little or no cost to performance.

What Makes for a Good Break?

Moreover, the effects of taking a break on well-being and performance may also depend on employees' behaviors during the break. For instance, studies indicate that stretching (Henning et al., 1997) and consuming caffeinated beverages (Kim et al., 2017) can help employees feel refreshed and alert following a break. Likewise, the use of short naps and caffeine during a break have been shown to alleviate feelings of sleepiness at work, relative to other activities such as exercise (Horne & Reyner, 1999). Studies examining broad types of behaviors as opposed to specific behaviors have yielded similar results. For instance, in a study of cheerleading instructors, Trougakos et al. (2008) found that participants tended to experience more positive emotions and fewer negative emotions when engaging in "respite" activities (e.g., socializing) during breaks, whereas "chores" (e.g., running errands) were often followed by negative emotions. Likewise, Kim et al. found that the more frequently individuals engaged in relaxing, nutrition-intake, and social activities during breaks, the less negative emotions they experienced at the end of the workday. As such, individuals tend to experience breaks as being more replenishing when they engage in relaxing, social, and low-effort activities during the break, as opposed to chores and other effortful activities.

The benefits of breaks may also depend on employees' experiences during breaks. For instance, in a daily diary study, Bosch et al. (2018) found that the more relaxation, relatedness, and control employees experienced during their lunch break, the less fatigue they reported following the break. Studies have also investigated the role of psychological detachment during

breaks, where detachment refers to the feeling of being psychologically away from the work situation (Etzion et al., 1998; Sonnentag & Fritz, 2007). In particular, these studies generally indicate that the more detachment employees experience during a break, the less fatigue, the less strain, and the more attention they report experiencing after the break (Bennett et al., 2020; Sianoja et al., 2018). In addition, the experience of autonomy (or "control") appears to be another important factor in determining how recovered employees feel following a break. Indeed, the more "in control" individuals feel during a break, the more focused, motivated, and energized they tend to feel after the break (Bosch et al., 2018; Hunter & Wu, 2016; Trougakos et al., 2014). Taken together, a "good" break appears to be a break in which employees feel relaxed, connected to others, detached from their work, and in control of their actions.

In summary, a large body of research indicates that breaks have numerous benefits for employee well-being and performance, and that these benefits partly depend on employees' behaviors and experiences during breaks. However, for this wealth of evidence to be useful, it is important for employees to be able and willing to take breaks as *needed*. Yet, even though employees often have some discretion in deciding how they spend their time on the job, there may be situations in which employees refrain from taking breaks even when needing a break. As mentioned previously, many employees continue working instead of taking a break during lunch time (Right Management, 2011), and laboratory studies show that individuals may refrain from taking a break despite high levels of fatigue (McLean et al., 2001). To address this problem, it is necessary to unpack the psychological processes that influence employees' discretionary break-taking behaviors. That is, why do employees take breaks? Why do employees *not* take breaks despite wanting or needing to do so? Unfortunately, very little research has investigated employees' reasons for taking and for not taking a break. This paucity of research may partly be

due to the assumption within the literature that individuals primarily take breaks in response to fatigue (Fritz et al., 2011; Zacher et al., 2014). However, emerging research suggest employees may also take breaks for reasons other than fatigue.

Antecedents of Break-Taking

With regards to the antecedents of employees' discretionary breaks, Blasche et al. (2017) identified rest-break intentions as a predictor of break frequency within a sample of full-time employees. However, that study did not explain how individuals form these rest-break intentions, and as such, did little to clarify the psychological processes that underlie break-taking. A doctoral dissertation by Niu (2016) provided some insight into these processes by identifying *micro-break climate* as an antecedent of breaks. Micro-break climate refers to a set of shared perceptions regarding the extent to which coworkers and supervisors value breaks, management provides resources for breaks, and employees believe they can take breaks when needed. Niu found that employees reporting a strong (i.e., high) micro-break climate tended to take breaks more frequently on average during the workday, relative to employees reporting a weak (i.e., low) micro-break climate. Critically, this means that characteristics of the work environment may influence the number of breaks an employee will take. Yet, because a person's work environment is unlikely to exhibit a great deal of *day-to-day* variation, micro-break climate can partly explain why some employees take more breaks than others, but cannot fully explain the reasons an employee may take breaks more frequently on some days relative to other days.

More recently, a day-reconstruction study by Bosch and Sonnentag (2019) provided initial insights into these reasons. Specifically, these authors proposed that task aversiveness and satisfaction with task performance were distal predictors of breaks, and proposed that these distal predictors would influence employees' decision to take (or not take) a break via their effects on

more proximal predictors, namely need for recovery and desire for self-reward. Throughout the study, participants completed one electronic survey at the end of each day, over 5 consecutive workdays. In each survey, participants summarized their workday by listing the *performance episodes* in which they engaged during the day (e.g., a conference call with a colleague). Next, the electronic survey software randomly selected one of the episodes listed, and asked participants to recall that episode in detail. After doing so, participants completed measures of the predictors (e.g., task aversiveness) with reference to that episode, and then indicated whether or not they took a break during that episode. Briefly, task aversiveness and desire for self-reward emerged as significant predictors of break-taking, which suggests that one reason employees take breaks during the day is to reward themselves following the completion of aversive tasks.

However, one limitation of that study is that it did not investigate individuals' reasons for deciding *not* to take a break. In general, employees' reasons for not taking a break have received almost no research attention, yet there are indirect pieces of evidence within the literature as to what some of these reasons may be. First, Dababneh et al. (2001) speculated that individuals may not always *want* to take breaks frequently because breaks can result in interruptions; this leads to the possibility that employees may refrain from taking a break to avoid causing an interruption while completing a work task. Second, in a qualitative study by Bennett et al. (2020), some employees reported taking breaks that were shorter than desired because a long break would have put undue pressure upon their coworkers. This leads to the possibility that employees may forego a break due to concerns about their coworkers. However, these two studies were not designed to understand individuals' reasons for not taking a break, and thus should only be taken as preliminary evidence. In this research, I address this limitation by directly investigating employees' reasons for not taking a break.

Theoretical Orientation

One challenge in understanding the antecedents of break-taking is that there is no theory specifically designed to explain how individuals' experiences within a workday influence their break-taking behaviors during that same day. Thus, to provide a basic conceptual base from which to address these questions, I draw upon theoretical frameworks that are commonly used to explain a wide range of work behaviors. First, I draw upon some of the dominant theories used within the occupational health psychology literature, namely the conservation of resources theory (COR; Hobfoll, 1989) and the effort-recovery model (E-R; Meijman & Mulder, 1998). These theories describe and explain how job stressors influence employees' behaviors, and as such, can be useful for explaining why individuals may take breaks during the workday. Second, I draw upon control theories of self-regulation (Carver & Scheier, 1998; Vancouver et al., 2010), which provide a detailed account of the manner in which individuals strive towards multiple goals. The pursuit of multiple goals is relevant to break-taking because taking a break involves allocating finite time towards one goal (e.g., alleviating fatigue) instead of another goal (e.g., making progress towards work goals). Third, I briefly consider the role of the work context and personality in shaping employees' break-taking behaviors during the workday.

The basic premise of the COR theory is that individuals are motivated to achieve resource gains and to avoid resource loss (Hobfoll, 1989). Although the term "resource" is often broadly defined (Halbesleben et al., 2014), within the break literature it is often used to refer to the subjective experience of feeling energized (Bosch & Sonnentag, 2019; Hunter & Wu, 2016; Quinn et al., 2012). Accordingly, the experience of fatigue can be seen as a form of resource loss, which in turn is considered undesirable. Critically, the E-R model (Meijman & Mulder, 1998) complements the COR framework by explaining how individuals may respond to this

perceived loss of resource. The E-R model proposed that exerting effort on the job results in an accumulation of strain over time. Strain can refer to physiological (e.g., increased blood pressure) and psychological (e.g., fatigue, negative emotions) symptoms that occur as a result of work (Demerouti et al., 2009; Geurts & Sonnentag, 2006). Further, the E-R model argues that *recovery*, the process through which strain is reversed, can only occur when individuals are no longer exposed to work demands. Thus, upon experiencing fatigue employees may be motivated to engage in activities that will allow them to reduce fatigue. Given that breaks are periods within the workday in which individuals are not engaging in work activities, employees may take breaks to recover from job demands. In sum, a general prediction that can be derived from the COR theory and the E-R model is that individuals take breaks to alleviate the fatigue experienced due to high job demands (e.g., high workload).

Unfortunately, the COR theory and the E-R model provide little insight into employees' reasons for *not* taking a break. Yet, identifying these reasons is essential for fully understanding the psychological processes that underlie break-taking. To this end, I consider control theories of self-regulation (e.g., Carver & Scheier, 1998; Vancouver et al., 2010) as useful frameworks for understanding individuals' reasons for not taking breaks during the day. One critical feature of control theories is that they provide a detailed account of the process through which individuals strive towards multiple goals over time. In particular, research has identified incentives (Schmidt & DeShon, 2007), deadlines (Ballard et al., 2018), goal salience (Northcraft et al., 2011), and goal frame (Ballard et al., 2016; Schmidt & DeShon, 2007) as important factors for determining which goal a person will prioritize while striving towards multiple goals. Importantly, in many work settings employees may strive towards the goal of maintaining high levels of energy, but may simultaneously strive towards the goal of meeting work objectives. Thus, whether or not an

employee will take a break at a given moment may depend not only on how fatigued they feel, but also on the characteristics of the work goals to be met. Consequently, one general prediction that can be derived from control theories is that individuals may forego a break during the workday when the motivational pull associated with their work goals is especially high.

Above and beyond employees' experiences during the workday, which can vary day-to-day, I argue that break-taking can also be influenced by relatively stable aspects of employees' work environment and personality. With regards to the work environment, I expect *micro-break climate* to influence the extent to which individuals take breaks as needed. This is based on Niu's (2016) finding that between-person variation in break-taking can be partly explained by employees' micro-break climate. Accordingly, I expect the extent to which employees take breaks *as needed* to vary as a function of micro-break climate, such that individuals may be less likely to take breaks when they want or need to do so if they are working within a weak as opposed to a strong micro-break climate. With respect to personality, I expect conscientiousness to influence the extent to which individuals take breaks as needed. In particular, individuals high in conscientiousness tend to be achievement oriented and self-disciplined (Barrick & Mount, 2005; Costa & McCrae, 1995; Viswesvaran & Ones, 2000), but also tend to exhibit workaholism and rigid adherence to rules (Mount et al., 2008; Samuel et al., 2012). Consequently, I argue that relative to their less conscientious counterparts, highly conscientious employees may be more likely to refrain from taking a break, even when needing a break.

In sum, based on the theoretical frameworks above, it is possible to derive a few general propositions regarding break-taking. For one, the COR theory and the E-R model would suggest that employees may take breaks to alleviate the feelings of fatigue that result from high job demands. Yet, theories of self-regulation would suggest that that even when employees

experience a great deal of fatigue, they may still forego breaks to prioritize their work goals. In addition to the work goals employees must meet within the day, I expect employees to be less likely to take breaks as needed if they are working in a context in which breaks are frowned upon, and if they are highly conscientious. However, it is important to note that neither the COR theory, the E-R model, nor self-regulatory theories were designed to explain break-taking. As such, there may be antecedents of breaks unaccounted for by these frameworks, but that nonetheless play critical roles in determining whether or not a person will take a break. To address this gap, I sought to identify a wide range of break antecedents via a qualitative study (Study 1). Specifically, in that study employees responded to open-ended questions regarding their reasons for taking a break, as well as their reasons for not taking a break. Next, I developed and validated measures aimed at assessing these antecedents across two independent samples (Study 2). Finally, I tested my hypotheses using a daily diary study (Study 3). Doing so allowed me to determine whether individuals' experiences during the day (i.e., break antecedents) can account for day-to-day variation in break-taking.

Study 1

Method

Participants

I recruited individuals residing in the United States from Amazon Mechanical Turk (MTurk) to participate in a 20-minute study about breaks in the workplace. Prior to the study, individuals completed a prescreen questionnaire to determine their eligibility. Individuals were eligible if they worked 30 or more hours per week and reported taking at least one break per workday on average. In total, 110 individuals met these criteria and participated in the study. I excluded participants who did not answer any of the study's open-ended questions (N = 3),

which resulted in a final sample of 107 participants. The final sample was 54.2% male, 78.5% Caucasian, and had a mean age of 34.0 (*SD* = 11.1) years. Participants worked in various sectors, including customer service (27.1%), information technology (17.8%), and research and development (8.4%). On average, participants worked 41.4 hours per week (*SD* = 6.1), and had been employed at their current job for 6 years (*SD* = 5.1). Participants received $2.00 US for completing the study.

Procedure

At the beginning of the study, participants were provided with a brief overview of the study. To ensure a common understanding of "breaks," participants were told that breaks referred to "periods of time during the workday in which an employee is engaging in activities that are not related to the job." Participants were also shown a list of typical break activities (Fritz et al., 2011), such as "reading something for fun," "chatting with coworkers," and "looking at social media." Then, participants were asked to recall one instance over the past week in which they decided to take a break during the workday. Importantly, because the focus of this research was primarily on employees' discretionary breaks, participants were told to focus on situations in which they made the conscious decision to take a break, as opposed to situations in which participants were forced to take a break (e.g., by a supervisor) or in which they were formally expected to take a break (e.g., formally-mandated lunch breaks). After recalling that instance, participants described why they took a break via an open-ended textbox. Next, participants were asked to recall one instance over the past week in which they considered taking a break, but ultimately did not take a break. After recalling the instance, participants described why they *considered* taking a break and why they did *not* take a break. Note that for all three

questions, participants were allowed to list multiple motives. Finally, participants answered demographic questions.

Content Analysis

Using established content analysis guidelines (Smith, 2000), I developed coding schemes for individuals' reasons for taking a break, and for individuals' reasons for *not* taking a break. I henceforth refer to these two sets of motives as *positive* antecedents and *negative* antecedents respectively.[1] To develop the coding schemes, I read all participants' responses to identify underlying themes. Another doctoral student in industrial and organizational psychology also read all the responses to minimize the likelihood of any underlying theme going unnoticed. This process was guided by prior literature on breaks and recovery, as well as inductively derived response patterns in the dataset. Upon reading the responses, we developed concrete definitions and examples for each theme.

Next, two research assistants independently coded participants' responses by noting whether each theme listed in the coding scheme was present or absent within each response. Specifically, coders used the positive antecedents coding scheme to code participants' responses to the first two open-ended questions: (1) why participants took a break and (2) why participants considered taking a break. Next, coders used the negative antecedents coding scheme to code responses to the final open-ended question: (3) why participants did not take a break. Participants could endorse multiple antecedents (e.g., taking a break due to fatigue *and* hunger) in their response to each question. Additionally, whenever a participant mentioned the same antecedent multiple times (e.g., taking a break due fatigue *and* exhaustion), coders indicated the presence of

[1] I originally developed three coding schemes: motives for *taking* a break, motives for *considering* a break (despite not taking a break), and motives for *not taking* a break. Because the emergent themes from the first two coding schemes were nearly identical, I combined the two schemes into one single "positive antecedents" coding scheme.

the antecedent only once. To ensure reliability, I calculated inter-rater agreement for each theme via Cohen's kappa (κ). The final coding schemes demonstrated acceptable reliability (mean $\kappa = .72$) based on recommended criteria (e.g., Fleiss, 1981; Landis & Koch, 1977). Disagreements among coders were resolved through discussion between the coders and myself, and the final resolved codes were used for descriptive analyses.

Results

Positive and Negative Antecedents of Break-Taking

With regard to the *positive* break antecedents (i.e., reasons for taking a break), seven major themes emerged: (1) fatigue, (2) physiological needs, (3) affect regulation, (4) desire to detach, (5) non-work preoccupations, (6) desire to socialize, and (7) performance concerns. With regard to the *negative* break antecedents (i.e., reasons for *not* taking a break), seven major themes emerged: (1) workload, (2) impression management, (3) concern for coworkers, (4) sudden change in the work situation, (5) expedience, and (6) momentum, (7) the supervisor. Definitions and examples for the positive and negative antecedents are also included in Tables 1 and 2, respectively. I also describe each antecedent in detail below.

Positive Break Antecedents

Results for the positive break antecedents are summarized in Table 3. The most frequently reported positive antecedent was *fatigue* (45% of participants). That is, most participants mentioned taking a break due to feeling tired, fatigued, or exhausted. The second most frequently reported antecedent was *physiological needs* (30%), such as needing or wanting to eat food, consume a caffeinated beverage, or using the restroom. The third most frequently reported antecedent was *performance concerns* (28%). Specifically, participants who endorsed this antecedent primarily reported taking a break due to perceived decrements in performance

prior to the break, or due to a desire to maintain high levels of performance throughout the day. For example, one participant mentioned needing a break "to be a more productive worker," whereas another "thought [their] work would benefit from a break." The fourth most commonly reported antecedent was *affect regulation* (21%). Several individuals reported taking a break due to *negative* emotions, such as frustration or annoyance. The fifth most cited antecedent was *desire to detach* (18%), meaning some participants experienced a desire to get away from the work task, the work environment, or individuals in the workplace setting (e.g., coworkers, clients). For instance, some participants mentioned "wanting a change in scenery," "[not wanting] to deal with customers," or wanting to "get out of the office away from my computer." *Desire to socialize* (e.g., "I wanted to talk to my coworker") and *non-work preoccupations* (e.g., "I needed to fix my car, so I took a break to go and fix it") also emerged as positive antecedents, and were mentioned by 6% and 5% of participants respectively.

Table 3 also summarizes participants' responses when reporting their reasons for *considering* taking a break within a situation in which they did *not* take a break. Within this situation, the most frequently reported positive antecedents were fatigue (41%), physiological needs (26%), affect regulation (22%), performance concerns (16%), and desire to detach (9%). Importantly, the antecedents participants reported for *actually* taking a break did not substantially differ from those reported for *considering*–but not taking—a break.

Negative Break Antecedents

As shown in Table 4, the most frequently mentioned negative break antecedent was *workload* (33%). Several participants mentioned not taking a break due to high demands or lack of time. The second most commonly reported antecedent was a desire to maintain psychological *momentum* (27%). Specifically, several participants abstained from taking a break because doing

so would have disrupted their train of thought or workflow (e.g., "I needed to finish the code I was writing, not lose my momentum"), or would resulted in an interruption (e.g., "[I] was working hard and in the moment and did not want to interrupt my work.") The third most reported antecedent was *expedience* (25%). In particular, many participants mentioned not taking a break because they wanted to complete their assigned work promptly or within a certain deadline (e.g., "I really wanted to finish before the end of the day and if I took a break I probably would not have"). Other negative antecedents included a *sudden change in the work situation* (e.g., "A client called as I was getting ready to go to lunch so I had to take the call"), the *supervisor* (e.g., "As I grabbed my keys I hear my boss yell over. He calls me in his office and has me going over multiple projects"), *impression management* concerns (e.g., "coworkers can fire me"), and *concerns for coworkers* (e.g., "I was needed. I couldn't and wouldn't leave my staff when they needed me"). These antecedents were reported by 10%, 8%, 6%, and 6% of participants respectively.

Discussion

Reasons for Taking a Break

One purpose of Study 1 was to identify employees' reasons for taking a break. Based on stress-related theories (Hobfoll, 1989; Meijman & Mulder, 1998) and previous assumptions made within the literature (Fritz et al., 2011; Zacher et al., 2014), I expected fatigue to emerge as a key reason for taking a break. This expectation was largely supported, yet Study 1 highlighted several other reasons for taking a break. One such reason was the experience of negative emotions such as frustration. This is consistent with the results of Bosch and Sonnentag's (2019) study, which suggest that individuals may be particularly willing to take breaks when completing aversive tasks. Furthermore, the notion of individuals taking breaks due to negative emotions

seems plausible when considering previous research within the broader occupational health psychology literature. Past studies have linked job demands to negative emotions (Bowling et al., 2015; Ilies et al., 2010), and suggest that breaks can help alleviate the experience of negative emotions that may arise as a result of job demands (Kim et al., 2017). Thus, to the extent that individuals are aware taking a break can help alleviate negative emotions, it is reasonable to expect individuals to take a break in response to negative affect.

Another key implication of this study is that employees may decide whether or not to take a break based on their current performance. Indeed, numerous participants said they took a break because they believed they were not performing as well as they wanted to, or because they believed that a break would help them maintain high levels of performance over time. Thus, whereas numerous studies indicate that breaks can benefit employees' performance (e.g., Wendsche et al., 2016), Study 1 highlights the possibility that employees are also aware of the benefits of breaks for performance, and that they purposely use breaks to manage their performance. As such, employees' break-taking behaviors may be driven not only by concerns regarding their own well-being—as may be the case when taking a break due to fatigue or negative affect—but also due to a desire to maximize their performance on the job.

Additionally, many employees within Study 1 reported taking a break to get away—or *detach*—from the work situation. This finding is noteworthy because it potentially identifies a gap within the broader occupational health literature. Specifically, there is a considerable amount of research on individuals' sense of *actually* being away from the work situation (i.e., psychological detachment; see Sonnentag & Fritz, 2015, for a review), but little attention has been paid to individuals' *desire* to get away from the work situation. Yet, participants' responses within Study 1 suggests that this desire likely has important implications for understanding how

employees experience and ultimately respond to job stressors (e.g. by taking a break). Accordingly, it may be important to understand why an employee may want to detach from work in the first place. Because detaching from work can allow employees to reduce fatigue (Bennett et al., 2018), alleviate negative emotions (Meier et al., 2016; Sonnentag et al., 2008), and improve performance (Binnewies et al., 2010), a possibility I consider moving forward is that fatigue, negative emotions, and performance concerns may lead individuals to *want* to detach from work and thus take a break.

Reasons for Not Taking a Break

Study 1 also identified several reasons for *not* taking a break. Based upon theories of self-regulation (Carver & Scheier, 1998; Vancouver et al., 2010), I expected some of these reasons to be related to employees' work tasks and obligations. The results of Study 1 broadly supported this expectation and point to several specific work-related reasons for not taking a break, including expedience, momentum-related concerns, concerns about one's coworkers, and workload. Notably, the findings of Study 1 also corroborated some of the indirect evidence gathered within previous studies. For one, the emergence of momentum concerns as a negative break antecedent is consistent with Dababneh et al.'s (2001) study, which pointed to the interruptions associated with breaks as a reason employees may prefer a work schedule that includes fewer as opposed to more breaks. Additionally, the emergence of concern for coworkers as a negative antecedent is consistent with (Bennett et al., 2020) study, in which employees reported taking breaks that were shorter than desired because they did not want to put undue pressure on their coworkers. In sum, Study 1 generally supports the idea that despite wanting to take a break, some characteristics of an employees' work task or work situation may lead this employee to *not* take a break.

The emergence of workload as a negative break antecedent is consistent with theories of self-regulation, but is also at odds with predictions that would be made based on theories of stress. On the one hand, when pursuing multiple goals individuals typically prioritize the goal that is furthest from being met (Schmidt & DeShon, 2007). Thus, when facing unusually high workloads, employees' may be inclined to prioritize the completion of work tasks over non-work goals (e.g., recovery, well-being) to a greater extent than they would otherwise, leading to fewer breaks taken downstream. However, a case can also be made that workload should result in more as opposed to fewer breaks being taken. High workloads can lead to employees to experience a great deal of strain (e.g., fatigue), which can only be reversed when employees are no longer exposed to job demands (Meijman & Mulder, 1998), such as during a break. Some participants' statements within Study 1 provide support for this idea. Specifically, although workload was often mentioned as a reason for not taking a break, several individuals also mentioned experiencing high workloads when describing a situation in which they *did* take a break. Thus, a possibility I consider in the remainder of this paper is that the relationship between workload and break-taking may be paradoxical: workload may lead a person to *want* a break, but may simultaneously deter this person from *taking* a break.

Another implication of Study 1 is that beyond factors directly relevant to their work tasks, aspects of the general work environment can also deter employees from taking a break. In particular, the emergence of impression management concerns as a frequently mentioned reason for *not* taking a break largely corroborates Niu's (2016) findings, which suggest that employees' break-taking behaviors may partly depend on the extent to which breaks are encouraged as opposed to discouraged within their organization. Finally, in some instances individuals were prevented from taking a break due to factors outside of their control. For example, some

employees reported being unable to take a because of their supervisor, or due to a sudden change in the work situation that prevented them from taking a break. Altogether, these findings suggest that to fully understand the psychological processes that underlie break-taking, it is also important to consider the characteristics of employees' broader work environment.

Limitations & Strengths

The use of a qualitative design in Study 1 allowed me to identify numerous break antecedents, yet this approach has important limitations. First, Study 1 does not provide much insight into how the different break antecedents relate to each other, nor the manner in which these antecedents may interact to predict employees' actual break-taking behaviors. However, understanding the interrelationships among these antecedents is critical for understanding the psychological processes which underlie break-taking. I address this limitation in the remainder of this dissertation by developing a theoretically-derived model to explain the role of each antecedent in predicting individuals' discretionary break-taking behaviors. Second, Study 1's results are reliant on individuals' ability to accurately remember and describe previous situations encountered at work, yet individuals' recollections of autobiographical events are sometimes inaccurate (Shiffman et al., 1997). I address this limitation in Study 3 via a daily diary design, which involves multiple observations of individuals' experiences and behaviors over time. As such, Study 3 will allow me to determine whether the antecedents mentioned in Study 1 can predict daily fluctuations in individuals' break-taking.

Remainder of the Dissertation

In previous parts of this dissertation, I outlined a few broad theoretical frameworks to explain some of the processes that underlie employees' discretionary break-taking behaviors. In particular, I noted that the COR theory (Hobfoll, 1989), the E-R model (Meijman & Mulder,

1998), and theories of self-regulation (Carver & Scheier, 1998; Vancouver et al., 2010) can provide some initial insights into the various factors that can influence employees' break-taking behaviors, such as fatigue and characteristics of the work tasks to be accomplished. However, because these frameworks were not designed to predict break-taking, they are unlikely to capture the full range of employees' reasons for taking or for not taking a break. To identify these reasons, I employed an exploratory and qualitative approach in Study 1. Doing so allowed me to gather evidence to support the use of these theoretical frameworks while identifying specific antecedents that were not explicitly considered within previous theory and research. Based on the frameworks above and the findings of Study 1, I developed a theoretical model to predict break-taking. The goals of this model are to explain (1) how different break antecedents relate to each another, (2) how these antecedents interact with one another to predict break-taking over the course of a workday, and (3) how these antecedents interact with the work context and employees' personality to predict break-taking. However, given the large number of positive and negative antecedents found in Study 1, it would not be feasible to develop hypotheses to explain the role of every single antecedent. Instead, I developed hypotheses around a subset of these antecedents.

Although I found seven positive antecedents in Study 1—(1) fatigue, (2) negative affect, (3) performance concerns, (4) desire to detach, (5) physiological needs, (6) desire to socialize, and (7) non-work preoccupations—I decided to focus on four of these antecedents moving forward to ensure that the scope of this research would remain manageable. Given my specific interest in understanding the psychological processes that influence break-taking, I decided not to investigate *physiological needs* moving forward. Next, I decided to prioritize the four most frequently mentioned antecedents moving forward. This means that in the remainder of this

research I will specifically focus on the following positive break antecedents: (1) *fatigue*, (2) *negative affect*, (3) *performance concerns*, and (4) *desire to detach*. This also means that *desire to socialize* and *non-work preoccupations* were not considered moving forward.

Likewise, even though I found seven negative antecedents in Study 1— (1) workload, (2) expedience, (3) momentum concerns, (4) concern for coworkers, (5) impression management concerns, (6) the supervisor, and (7) sudden change in the work situation—I decided to focus on four negative antecedents moving forward. To this end, I prioritized factors that may shape an individual's decision to take or not to take a break at any given moment. As such, I decided to omit *sudden changes in the work situation*, as these changes often involve individuals being unable to take a break as opposed to choosing not to take a break. In addition, I also decided to omit *the supervisor* and *impression management concerns*, which are more representative of environmental factors that influence employees' *general* break-taking behaviors as opposed to employees' momentary break-taking decisions. Nonetheless, I expect these environmental factors to be at least partly captured by micro-break climate, which I investigate in Study 3 as a contextual predictor of break-taking. Thus, in the remainder of this research I will specifically focus on the following negative break antecedents: (1) *workload*, (2) *expedience*, (3) *momentum concerns*, and (4) *concern for coworkers.*

Hypothesis Development

Overview of the Model

Briefly, I propose that employees may want to take breaks during the day in response to the negative experiences that occur due to high workloads, but that competing demands, as well as the work climate and personality, can explain why employees sometimes choose *not* to take breaks. These predictions are summarized in Figure 1. More precisely, I predict that within days

in which workload is high, individuals will experience increased levels of fatigue, negative affect, and performance concerns, especially following days in which employees experience poor quality sleep. Next, I propose that fatigue, negative affect, and performance concerns will be positively related to employees' desire to detach, which in turn will be a proximal predictor of engaging in behaviors to get away from the work situation, namely, taking a break.

However, I argue that individuals' desire to detach from work will not *always* result in increased actual break-taking behaviors. Rather, based upon theories of self-regulation (Carver & Scheier, 1998; Vancouver et al., 2010) and the findings of Study 1, I propose that the effects of desire to detach on break-taking will be attenuated when employees seek to expedite their work, want to maintain their momentum, and feel concern for their coworkers. Likewise, even though I expect workload to be positively related to individuals' desire to detach via fatigue, negative affect, and performance concerns, I propose that above and beyond these effects, workload will attenuate the relationship between desire to detach and break-taking. Finally, in this research I argue that relatively stable contextual and personal factors will also moderate the relationship between desire to detach and break-taking. More precisely, I expect the relationship between desire to detach and break-taking to be attenuated among individuals whose work climate is not conducive to taking breaks (i.e., low micro-break climate) and among individuals high in conscientiousness. I elaborate upon these predictions below.

The Role of Workload

Based upon prior theorizing and the findings of Study 1, two conflicting predictions can be made regarding the relationship between workload and break-taking. On the one hand, this relationship may be negative because the more work employees need to accomplish, the more time employees need to dedicate to their job tasks, resulting in less time available to take breaks.

On the other hand, the relationship between workload and break-taking may also be positive. Specifically, high workloads can lead to aversive experiences such as fatigue or negative emotions (Bowling et al., 2015; Ilies et al., 2010), which may lead a person to *want*, and ultimately take, a break. Critically, the results of Study 1 do not allow me to rule out any of these differing predictions. Although several participants mentioned workload as a reason for not taking a break within the study, some participants also noted experiencing high workloads when recalling an instance in which they *did* take a break. For example, one participant "felt overwhelmed with how much work there was" to accomplish prior to taking a break, whereas another said they had been "working hard all day" and thus felt "entitled to a break." Thus, high workloads may not always deter employees from taking a break.

In this paper, I argue that the relationship between workload and break-taking may be paradoxical. More precisely, I propose that workload can lead an employee to *want* to take a break, but that workload can also deter this same employee from *actually taking* a break. As such, I expect workload to be positively related to numerous positive break antecedents, such as fatigue, negative affect, performance concerns, which I expect will influence break-taking downstream by influencing individuals' desire to detach. However, beyond these effects, I expect workload to moderate the relationship between individuals' desire to detach and break-taking, such that employees will be less likely to act upon their desire to detach by taking a break when workload is high. I summarize these predictions in more detail below.

Workload as a Predictor of Fatigue, Negative Affect, and Performance Concerns

First, I expect workload to be positively related to fatigue, negative affect, and performance concerns. That is, when workload is high, individuals need to mobilize a great deal of resources (e.g., attention, energy) to accomplish the work (Hockey, 1997). Yet, as noted by

the E-R model (Meijman & Mulder, 1998), prolonged effort expenditure can lead individuals to experience strain, where strain broadly refers to the adverse physiological and psychological symptoms that occur as a result of work (Demerouti et al., 2009; Geurts & Sonnentag, 2006). To date, these propositions have received considerable empirical support. To begin, meta-analytic evidence has linked workload to both fatigue and negative emotional experiences (Bowling et al., 2015). Likewise, daily diary studies indicate that individuals tend to experience more fatigue (Sanz-Vergel et al., 2010; Sonnentag et al., 2010) and more negative emotions (Ilies et al., 2010; Kim et al., 2017) on days when workload is high as opposed to low. Similarly, with regards to performance concerns, high workloads have been linked with decreases in employees self-reported performance (Fritz & Sonnentag, 2006). This suggests that employees may come to believe they are performing more poorly at work when facing a high workload, compared to when workload is low. In line with these findings, I expect daily fluctuations in workload to be positively related to day-to-day variance in fatigue, negative affect, and performance concerns.

> H1: Workload will be positively related to (a) fatigue, (b) negative affect, and (c) performance concerns.

Next, I predict that sleep quality will moderate the effects of workload on fatigue, negative affect and performance concerns. One important prediction made within theoretical models pertaining to work stress (Demerouti et al., 2001; Hobfoll, 1989) is that the effects of stressors (e.g., workload) on strain (e.g., fatigue, negative affect) are attenuated when resources are high, but exacerbated when resources are low (Bakker et al., 2005; de Jonge & Dormann, 2006; Kühnel et al., 2018; Xanthopoulou et al., 2007). Consistent with previous research on breaks, I use the term "resource" to refer to individuals' subjective experience of feeling energized (e.g., Bosch & Sonnentag, 2019; Hunter & Wu, 2016). One important predictor of how energized individuals feel at the beginning of the workday is sleep quality (Barnes, 2012;

Christian & Ellis, 2011; Lanaj et al., 2014; Sonnentag et al., 2008). Thus, I expect the effects of workload on fatigue, negative affect, and performance concerns to be stronger on days following poor quality sleep, relative to days following high quality sleep.

> H2: Sleep quality will moderate the relationships between (a) workload and fatigue, (b) workload and negative affect, and (c) workload and performance concerns, such that these relationships will be stronger on days when sleep quality is low as opposed to high.

Desire to Detach as a Proximal Predictor of Break-Taking

Next, I predict that employees' fatigue, negative affect, and performance concerns during the workday will be positively related to their desire to detach from work. This prediction is based on some of the propositions made by the COR theory (Hobfoll, 1989) and the E-R model (Meijman & Mulder, 1998). For one, recall that a key proposition of the COR theory is that individuals seek to gain resources and to avoid losing resources. The term "resource" is often broadly defined, yet past research suggests that employees may perceive the experience of fatigue and negative emotions as a loss of resource (Hunter & Wu, 2016; Kim et al., 2017; Quinn et al., 2012). Likewise, as I argue in more detail below, I propose that employees may also interpret perceived decrements in their own performance (i.e., performance concerns) as a sign that their resources are low. Notably, the E-R model postulates that resource recovery only occurs when individuals are no longer exposed to job demands, for example, during vacations, evenings after the workday, or breaks. Accordingly, I predict that employees' experience of fatigue, negative affect, and performance concerns during the workday will be positively related to their desire to detach from work.

Although several studies have investigated employees' *experience* of being psychologically detached from work (Sonnentag & Fritz, 2015), little is known about employees' *desire* to detach. Nonetheless, there is evidence to support the idea that individuals may want to

detach from work when they experience fatigue, negative affect, and concerns regarding their own performance. With regards to fatigue, laboratory experiments show that fatigue can lead to decreased persistence on a variety of laboratory tasks (Hockey & Earle, 2006; Muraven et al., 1998). These findings suggest that when upon experiencing fatigue while completing work tasks, individuals may want to withdraw instead of continuing to work. Also, field studies indicate that there is a positive relationship between employees' feelings of exhaustion and their intentions to leave their job altogether (Knudsen et al., 2009; Lee & Ashforth, 1996). Consistent with this evidence, I predict that a person may experience a greater desire to detach on days in which fatigue is high, compared to days in which fatigue is low.

H3a: Fatigue will be positively related to desire to detach.

I also expect negative affect to be positively related to individuals' desire to detach from work. As noted above, within a typical workday, one source of negative emotions for individual employees may include high workloads. Upon experiencing negative emotions, individuals tend to engage in behaviors that allow them to alleviate their experience of these emotions (Berkowitz, 1989; Berkowitz & Harmon-Jones, 2004; Folkman & Lazarus, 1980), such as escaping or getting away from the source of the negative emotions. As such, upon experiencing negative affect at work, individuals may want to temporarily detach from work. Indeed, some of the responses from participants in Study 1 provide preliminary support for this argument. For example, one participant in Study 1 mentioned feeling frustrated and annoyed due to having to complete a lot of paperwork, whereas another participant expressed "needing a short break" due to experiencing negative affect on the job. Accordingly, upon experiencing negative emotions at work an employee may want to detach from the work situation.

H3b: Negative affect will be positively related to desire to detach.

Similarly, I also expect a positive relationship between performance concerns and desire to detach. Note that consistent with participants' responses in Study 1, I use the term performance concerns to refer to employees' experience of not performing as well on the job as they would like. In particular, when experiencing performance concerns, individuals may perceive that they lack the resources necessary (e.g., time, energy) to successfully carry out their tasks, and as such, may seek to recuperate these resources by temporarily withdrawing from work. Indeed, one participant in Study 1 mentioned wanting to take a break because doing so would help them "reset and refocus," whereas another mentioned needing "a break to mentally and physically recuperate so [they] could continue working." Moreover, some evidence from the broader self-regulation literature also suggests that individuals sometimes withdraw efforts towards a goal when their actual performance is well below their desired level of performance (e.g., Carver & Scheier, 1998; Lord et al., 2010). In sum, when individuals experience a great deal of performance concerns, they may be less willing to continue their work tasks and may instead wish to recuperate resources by detaching from work.

H3c: Performance concerns will be positively related to desire to detach.

Wanting vs. Taking a Break

Downstream, I expect desire to detach to emerge as a proximal predictor of break-taking. That is, I argue that a *desire* to detach from work is most likely to be pursued via *behaviors* that allow individuals to actually get away from the work situation, such as taking a break. This argument is consistent with previous theorizing and research on the theory of planned behavior (Ajzen, 1991), which points to individuals' intention to engage in a given behavior as a proximal predictor of engaging in that same behavior (Armitage & Conner, 2001). Furthermore, the link between intention and behavior has also been found within the break literature, as Blasche et al.

(2017) identified rest-break intentions as a proximal predictor of rest-break frequency. As such, I expect a positive relationship between desire to detach and break-taking. Specifically, consistent with previous studies (Blasche et al., 2017; Hunter & Wu, 2016; Niu, 2016), I operationalize break-taking as the number of breaks employees take during the day, or *break frequency*.

H4: Desire to detach will be positively related break frequency.

Nevertheless, individuals' desires and behavioral intentions may not always lead to actual behavior. Indeed, meta-analytic evidence suggests that the relationship between intention and behavior is imperfect (Ouellette & Wood, 1998). Likewise, Blasche et al. (2017) found a positive and statistically significant relationship between rest-break intentions and rest-break frequency, yet the magnitude of this relationship was modest. Thus, there is reason to believe that a person may experience a heightened desire to detach from work at any given moment, but still choose to continue working instead of taking a break. I argue that theories and models of self-regulation, as well as the findings of Study 1, can help explain why this may be the case.

As noted previously, employees often pursue multiple and sometimes competing goals. Some of these goals may involve maintaining high levels of energy, regulating and coping with negative emotions, and producing high quality work. Taking a break can help employees meet these goals by helping employees feel refreshed (Hunter & Wu, 2016; Zacher et al., 2014), alleviate negative emotions (Kim et al., 2017), and maintain high level of performance over time (Wendsche et al., 2016). However, employees' goals may also include completing a great deal of work within limited time. Because time spent on a break is time that is not spent completing work tasks, it is not always possible for employees' to complete their work on time while also maintaining optimal levels of energy, affect, and performance. Thus, employees must sometimes prioritize some goals at the expense of other goals. Indeed, research within the self-regulation

literature has identified numerous factors that can influence which goal an individual will prioritize when pursuing multiple goals (e.g., Ballard et al., 2016, 2018; Northcraft et al., 2011; Schmidt & DeShon, 2007). I argue that these factors may account for some of the reasons employees mentioned for not taking a break in Study 1.

In this research, I argue that workload is one such factor. In particular, I previously proposed that workload would be positively related to desire to detach via its effects on fatigue, negative affect, and performance concerns. However, above and beyond these effects I argue that workload may also moderate the relationship between desire to detach and break-taking. Within Study 1, several participants mentioned not taking a break due to high workloads. This finding is consistent with studies on multiple-goal regulation which show that individuals typically prioritize goals for which more progress (i.e., more work) needs to be made (Neal et al., 2017; Schmidt & DeShon, 2007; Vancouver et al., 2010). Thus, when workload is low employees may not feel the need to invest a great deal of time on their work tasks, and may therefore be likely to take breaks whenever they want or need to do so. In contrast, when workload is high, employees may believe that a great deal of time needs to be directed towards their work tasks for these tasks to be completed successfully, and consequently, may choose to take fewer breaks than they want or need. Thus, even when employees' desire to detach from work is high, employees may refrain from taking breaks during the day when workload is high.

> H5a: The relationship between desire to detach and break frequency will be moderated by *workload*, such that the relationship will be weaker on days when workload is high as opposed to low.

Likewise, the finding that individuals may refrain from taking a break due to wanting to get their work done as rapidly as possible or "before the end of the day" is analogous to other findings within multiple-goal regulation research. In particular, a recent study by Ballard et al.

(2018) indicate that individuals tend to prioritize goals that have the shortest deadlines, even when accounting for the amount progress needed to meet each goal. Likewise, individuals often prefer completing their tasks rapidly because doing so allows for more time to be spent on subsequent tasks and activities (Phan & Beck, 2020). Thus, even when employees want to detach from work, they may nonetheless choose not to take breaks when there is a specific and stringent deadline to meet, or when employees want to leave work for the day as soon as possible.

> H5b: The within-person relationship between desire to detach and break frequency will be moderated by *expedience concerns*, such that the relationship will be weaker when expedience concerns are high as opposed to low.

In Study 1, participants also mentioned not taking a break because they wanted to maintain their momentum or minimize interruptions at work. Additionally, many of these individuals also reported feeling focused and engrossed in their work task when they were deciding whether to take a break or not. Previous theory and research within the self-regulation literature can partly explain how an individual's momentum-related concerns may lead this individual *not* to take a break despite wanting to detach. For one, research conducted on flow suggest that when individuals feel highly engrossed in a given activity, they may continue engaging in that activity despite experiencing discomfort or fatigue (Nakamura & Csikszentmihalyi, 2009). Likewise, some evidence indicates that thoughts regarding alternative goals may be suppressed during the pursuit of a focal goal (Shah et al., 2002). Thus, when individuals are highly focused on a work task, they may disregard negative experiences such as fatigue or negative emotions to complete the task. Additionally, individuals tend to find interruptions unpleasant and disruptive (Jett & George, 2003; Leroy et al., 2020), which may partly explain why individuals may sometimes refrain from taking a break (i.e., an interruption)

despite wanting to detach from work. Altogether, employees' momentum concerns may prevent them from taking a break, even when desire to detach is high.

> H5c: The relationship between desire to detach and break frequency will be moderated by *momentum concerns*, such that the relationship will be weaker on days when momentum concerns are high as opposed to low.

Individuals' concerns for coworkers may also partly explain why an employee may choose not to take a break despite wanting or needing to do so. Some participants in Study 1 said they did not take a break because they felt needed by their coworkers or because they believed taking a break would result in their coworkers being overwhelmed. Notably, some of these participants reported feeling a sense of obligation or responsibility towards their coworkers. One participant mentioned feeling responsible for their teammates, whereas another participant expressed that "it is very important to always be an example." The notion of refraining from taking a break due to feelings of obligations towards other employees is consistent with previous research within the self-regulation literature, which show that individuals often attach a great deal of importance to goals they perceive as responsibilities or obligations (Higgins, 1997). For example, recent research demonstrates that individuals tend to prioritize goals that are framed as "obligations" or "losses" over goals that are framed as "opportunities" or "gains" (Ballard et al., 2016; Beck et al., 2017; Shah et al., 2002). Similarly, participants' responses in Study 1 suggest that some employees may view it as an obligation to help coworkers in times of need. Thus, when individuals feel needed by their coworkers, they may continue working instead of taking a break despite wanting to detach from work. In contrast, when individuals do not feel particularly needed by their coworkers, they may be more likely to act in accordance to their desire to detach from work by taking a break.

H5d: The relationship between desire to detach and break frequency will be moderated by *concern for coworkers*, such that the relationship will be weaker when concern for coworkers is high as opposed to low.

Contextual Obstacles to Taking a Break

Beyond characteristics of employees' daily tasks, which can vary from day to day, I propose that relatively stable aspects of the work context will moderate the relationship between desire to detach and break-taking. One such aspect may be micro-break climate (Niu, 2016). Whereas employees within a strong micro-break climate are typically permitted and encouraged to take breaks as frequently as needed, employees within a weak micro-break climate are often subjected to strict norms and rules on the number of breaks they can take. For this reason, I argue that relative to a strong micro-break climate, a weak micro-break climate may limit the extent to which employees can adjust their daily break-taking behaviors in response to daily fluctuations in their desire to detach from work. That is, within contexts in which micro-break climate is weak, I expect the strong rules and norms regarding breaks to deter employees from taking frequent breaks on the job, even on days when desire to detach is high. In contrast, because individuals within a strong micro-break climate have a great deal of discretion over their breaks, I expect individuals within such contexts to be relatively responsive to their perceived need to take breaks by taking breaks more frequently on days when desire to detach is high. In sum, I propose that micro-break climate will moderate the relationship between desire to detach and break frequency, such that the relationship will be weaker among individuals within a weak micro-break climate, relative to individuals within a strong micro-break climate.

H5e: The relationship between desire to detach and break frequency will be moderated by *micro-break climate*, such that the relationship will be weaker among individuals within a low as opposed to a high micro-break climate.

Individual-level Obstacles to Taking a Break

Finally, I propose that the extent to which individuals take breaks as needed during the day also depends on aspects of their personality, specifically conscientiousness. Notably, taking a break involves temporarily reducing effort towards work goals, yet individuals high in conscientiousness are often inclined to exert high levels of effort towards their goals. Compared to individuals low in conscientiousness, individuals high in conscientiousness tend to be achievement oriented, dependable, persistent, and self-disciplined (Barrick & Mount, 2005; Costa & McCrae, 1995; Viswesvaran & Ones, 2000). In addition, very high levels of conscientiousness have been associated with workaholism and to rigid adherence to rules and standards (Mount et al., 2008; Samuel et al., 2012). Therefore, compared to their less conscientious counterparts, highly conscientious individuals may be especially willing to invest extra effort and time to make progress on their work goals, and as such, may be more likely to refrain from taking a break despite experiencing a strong desire to detach from work. In other words, I expect individuals low in conscientiousness may take more breaks on days in which their desire to detach is high. In contrast, individuals high on conscientiousness may be relatively unwilling to take breaks frequently, regardless of how strongly they want to detach from work.

> H5f: The relationship between desire to detach and break frequency will be moderated by *conscientiousness*, such that the relationship will be weaker among individuals high as opposed to low in conscientiousness.

Altogether, the previous hypotheses imply the presence of moderated serial indirect effects. Specifically, at the within-person level, I predict that workload will influence individuals' desire to detach via fatigue, negative affect, and performance concerns, and that desire to detach will in turn influence individuals' break frequency. Yet, I expect these indirect

effects to be stronger when sleep quality, workload, expedience concerns, momentum concerns, and concern for coworkers are low as opposed to high.

> H6a-H6e: The positive serial indirect effect of workload on break frequency via *fatigue* and desire to detach will be moderated by (a) *sleep quality*, (b) *workload*, (c) *expedience concerns*, (d) *momentum concerns*, and (e) *concern for coworkers*, such that the serial indirect effect will be weaker when these variables are high as opposed to low.

> H7a-H7e: The positive serial indirect effect of workload on break frequency via *negative affect* and desire to detach will be moderated by (a) *sleep quality*, (b) *workload*, (c) *expedience concerns*, (d) *momentum concerns*, and (e) *concern for coworkers*, such that the serial indirect effect will be weaker when these variables are high as opposed to low.

> H8a-H8e: The positive serial indirect effect of workload on break frequency via *performance concerns* and desire to detach will be moderated by (a) *sleep quality*, (b) *workload*, (c) *expedience concerns*, (d) *momentum concerns*, and (e) *concern for coworkers*, such that the serial indirect effect will be weaker when these variables are high as opposed to low.

Finally, I also expect these *within-person* indirect effects to be moderated by individual differences, such that these indirect effects will be stronger among individuals within a strong as opposed to a weak micro-break climate, and among individuals who are low as opposed to high in conscientiousness. The model is depicted in Figure 1.

> H6f-H6g: The positive serial indirect effect of workload on break frequency via *fatigue* and desire to detach will be moderated by (f) *micro-break climate* and (g) *conscientiousness*, such that the serial indirect effect will be weaker among individuals within a weak as opposed to a strong micro-break climate, and weaker among individuals high as opposed to low in conscientiousness.

> H7f-H7g: The positive serial indirect effect of workload on break frequency via *negative affect* and desire to detach will be moderated by (f) *micro-break climate* and (g) *conscientiousness*, such that the serial indirect effect will be weaker among individuals within a weak as opposed to a strong micro-break climate, and weaker among individuals high as opposed to low in conscientiousness.

> H8f-H8g: The positive serial indirect effect of workload on break frequency via *performance concerns* and desire to detach will be moderated by (f) *micro-break climate* and (g) *conscientiousness*, such that the serial indirect effect will be weaker among individuals within a weak as opposed to a strong micro-break climate, and weaker among individuals high as opposed to low in conscientiousness.

Exploratory Investigation: Downstream Effects of Break-Taking

In addition to testing the focal hypotheses above, I also sought to investigate the downstream effects of breaks on employees' well-being and performance. I do not develop hypotheses regarding these downstream effects because they are beyond the scope of this research. Nonetheless, I expect to replicate some of the previous findings within the literature linking break-taking to increased well-being (Galinsky et al., 2000; Henning et al., 1997; Hunter & Wu, 2016; Zacher et al., 2014) and performance (Kim et al., 2018; Wendsche et al., 2016). Consistent with previous studies within the occupational health psychology literature (Park et al., 2014; Sonnentag & Fritz, 2015), I assessed emotional exhaustion and physical symptoms as indicators of well-being. Next, I assessed cognitive failures, shortcut behaviors, and safety behaviors as different facets of performance. A cognitive failure is a "cognitively based error that occurs during the performance of a task that the person is normally successful in executing." (Martin, 1983, p. 97, in Wallace & Chen, 2005, p. 616). Shortcut behaviors refer to "the use of methods of means for completing a task that require less time than typical or standard procedures" (Beck et al., 2017, p. 422). Safety behaviors refer to actions carried out to maintain safety and to foster an environment that supports safety (Neal & Griffin, 2006). I specifically examine these three indicators of performance because they have been shown to be hindered when employees experience strains such as exhaustion (Halbesleben, 2010; Tucker et al., 2003).

Study 2

In Study 1, I found numerous positive and negative break antecedents and outlined a theoretical model to explain how they relate to each other to predict break-taking. However, to my knowledge, several of these antecedents do not have validated measures associated with them. Thus, in Study 2 I created and validated psychological measures of these antecedents using

two separate samples of full-time employees: *Sample A* and *Sample B*[2]. First, I created an initial set of items intended to assess each of the eight break antecedents identified in Study 1, and administered these items to Sample A. I then conducted exploratory factor analyses (EFAs) on participants' responses to examine the factor structure of these items. Following the EFAs, I revised the measures by removing items with poor psychometric properties (e.g., low factor loadings, high cross-loadings), and administered the revised measures to Sample B. Next, I performed confirmatory factor analyses (CFAs) on the Sample B responses to confirm the items' factor structure.

Method

Participants

Prior to the study, I recruited individuals from MTurk residing in the United States to complete a prescreen survey ($N_{\text{Sample A}} = 500$; $N_{\text{Sample B}} = 1000$) for which individuals received \$0.25. This was done using TurkPrime (Litman et al., 2017). All participants were unique, meaning that no individual was included in both Samples A and B. Likewise, none of the individuals who participated in Study 1 were included in Study 2. As in Study 1, only individuals who worked 30 or more hours per week and reported taking at least one break per workday on average were eligible for the study ($N_{\text{Sample A}} = 404$; $N_{\text{Sample B}} = 764$). Additionally, only participants who completed all surveys and who correctly answered all attention checks were retained for analyses. The final sample was 225 for Sample A and 388 for Sample B.

[2] Study 2 was conducted primarily for scale development purposes, but was also part of a larger data collection effort in which participants completed three surveys over one workday. Importantly, only one of these surveys directly pertains to the development of the break antecedent measures. The other two surveys were conducted for exploratory purposes, but are not described here for brevity. A full description of all surveys conducted in Study 2, as well as the exploratory analyses, are presented in Appendix A.

Demographically, participants were very similar across both Samples A and B. Sample A was 57.1% male, 80.1% Caucasian, had a mean age of 37.5 (*SD* = 10.4) years, and worked 42.6 hours per week (*SD* = 7.1) on average. Likewise, Sample B was 50.5% male, 77.5% Caucasian, had a mean age of 37.4 (*SD* = 9.7) years, and worked 42.3 hours per week (*SD* = 6.2) on average. The occupational background of participants was also similar across studies. Participants in Sample A primarily worked in customer service (22.5%), information technology (15.6%), sales (13.9%), and research and development (13.0%), whereas participants in Sample B primarily worked in customer service (25.3%), information technology (16.8%), accounting/finance (11.9%), and sales (9.5%).

Procedure

During the prescreen, participants answered demographic questions (e.g., age, gender, ethnicity). Study 2 was conducted one day after the prescreen. Specifically, participants received an email invitation at 11:00am EST (Eastern Standard Time) to complete a survey which included the positive (i.e., fatigue, negative affect, performance concerns, and desire to detach) and negative break antecedent (i.e., workload, expedience concerns, momentum concerns, and concern for coworkers) measures. Participants were given three hours (i.e., until 2:00pm EST) to complete the survey. Participants received $0.50 for completing the survey.

Measures

Positive break antecedents. I measured the positive break antecedents using items created for this research. This was done following recommended scale development guidelines (Hinkin, 1998), and items were written based on the statements participants made in Study 1. When answering items, participants were asked to think about their experiences, feelings, and behaviors on the job from the beginning of their workday up until now (i.e., when completing the

questionnaire). I assessed fatigue (e.g., "tired,") and negative affect (e.g., "frustrated") via six items each; for these items, participants indicated the extent to which they currently felt the state described in each item on a 5-point scale (1 = *not at all*, 5 = *extremely*). I assessed performance concerns via six items (e.g., "my performance is starting to suffer") and desire to detach via five items (e.g., "I want some time away from my work"); participants responded these items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). All the items are listed in Table 5.

Negative break antecedents. As done for the positive antecedents, I measured the negative break antecedents using items created for this research. One exception to this was workload, which was measured using five items (e.g., "I have too much work to do") from Janssen (2001). When answering items, participants were asked to think about their experiences, feelings, and behaviors from the beginning of their workday up until now. I assessed *concern for coworkers* using four items (e.g., "my coworkers need my help"), *expedience concerns* using three items (e.g., "I want to complete all my work and get it over with"), and *momentum concerns* using three items (e.g., "I rarely stop when I am in the middle of a task"). Participants responded to items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). All the items are listed in Table 5.

Results

Descriptive Statistics

Means, standard deviations, intercorrelations, and internal consistency reliabilities for Samples A and B are shown in Table 6.

Exploratory Factor Analyses (Sample A)

I conducted EFAs to assess the factor structure of the break antecedent items administered on Sample A. Given that these items were designed to measure 4 positive and 4

negative break antecedents, I expected the factor analyses to yield an 8-factor solution. As expected, the results of a principal components analysis conducted suggested that 8 factors were present. In addition, a principal components analysis using oblimin rotation with all 44 break antecedent items revealed that most items loaded onto their intended constructs. However, some items had high cross-loadings or did not strongly load onto their intended constructs. Therefore, based on recommendations by Hair et al. (2006), I only retained items if they loaded .60 or higher on their intended factor, and if their loading on the intended factor was at least .20 higher than their loading on any other factor. This resulted in the removal of 8 items (see Table 5).

Next, I removed 3 additional items due to concerns regarding their wording. First, I removed two performance concerns items because they referred to mistakes specifically ("I am making more mistakes than usual") and to concentration ("I am finding it harder than usual to concentrate"), whereas the other items referred to performance in a broader sense. Second, one concern for coworkers item ("I don't want to leave my coworkers hanging") was removed because it contained a colloquialism (i.e., to leave someone "hanging"), which may be difficult for non-native English speakers to interpret. Altogether, 11 items in total out of 44 were removed, leaving 33 items remaining for use in subsequent studies. However, note that upon the removal of these 11 items, the factor loading of one momentum concerns item ("When I am working, I do my best to avoid interruptions") fell to .57, which was slightly below the .60 threshold. However, I retained this item because I believed that a 3-item measure would provide more coverage of the momentum concerns construct than a 2-item measure. Item loadings for the final factor solution are included in Table 7.

Altogether, these EFAs provide initial evidence for the validity of the measures created to capture the 8 break antecedents identified in Study 1. As expected, the items tended to fall into 8

factors. Further, with few exceptions, all the items fell into and strongly loaded onto their respective factors. It is also worth noting that the break antecedent measures exhibited adequate to high internal consistency reliabilities (Cronbach's αs = .80-.96). As such, I administered the revised break antecedent items on Sample B to confirm the factor structure found in Sample A.

Confirmatory Factor Analyses (Sample B)

I conducted CFAs on the final set of 33 break antecedent items administered on Sample B. I tested the fit of an 8-factor measurement model in which items assessing each of the 8 break antecedents identified in Study 1—fatigue, negative affect, performance concerns, desire to detach, workload, expedience concerns, momentum concerns, and concern for coworkers—were set to load onto their respective factors. I also tested the proposed measurement model against four plausible alternative models. First, I tested a 1-factor model in which all items were set to load onto the same factor. Second, I tested a 2-factor model in which items assessing all four positive break antecedents items were set to load onto one factor and in which items assessing all four negative antecedents items were set to load onto another factor. Third, I tested a 5-factor model in which items assessing the four positive antecedents were set to load onto their intended factors, while items measuring all four negative antecedents were set to load onto the same factor. Finally, I tested another 5-factor model in which items assessing the four negative antecedents were set to load onto their intended factors, while items measuring all four positive break antecedents were set to load the same factor.

The proposed measurement model fit the data well based on conventional criteria (CFI = .946, TLI = .939, RMSEA = .054, SRMR = .054), and fit the data better than the alternative models, all of which fit the data poorly (CFI ≤ .731, TLI ≤ .707, RMSEA ≥ .117, SRMR ≥ .104). Fit indices for all models tested are summarized in Table 8. In sum, the results of the CFAs

conducted on Sample B corroborate the factor structure found within Sample A, and suggest that these 8 positive and negative break antecedents are distinct from one another.

Discussion

The goal of Study 2 was to create and validate psychological measures of the positive and negative break antecedents identified in Study 1. As expected, EFAs performed on Sample A revealed an 8-factor solution, and indicated that most items loaded strongly onto their respective factors. Moreover, the CFAs performed on the revised set of items administered to Sample B provided additional evidence to suggest that the break antecedent items captured their intended construct. Finally, the antecedent measures exhibited satisfactory internal consistency reliabilities across both samples. Altogether, Study 2 provides support for the validity of the break antecedent measures created as part of this research.

Study 3

Method

Participants

Prior to the study, I prescreened 1000 individuals residing in the US from MTurk. None of the individuals who participated in Studies 1 and 2 were included in the prescreen. Because participants were to complete surveys at specific times within each day, it was important to ensure that participants resided within the same time zone. Thus, the prescreen was only visible to individuals residing in US states within the Eastern Time Zone. To be eligible for the study, (1) individuals needed to work 30 or more hours per week, (2) take at least one break per workday on average, (3) primarily work during standard business hours (e.g., 9am to 5pm), and (4) indicate they would be working on all five of the weekdays of the week in which the study was conducted. These criteria were met by 337 individuals, 328 of which consented to

participate in the study. Among these 328 individuals, only those who had completed both daily surveys on at least one of the five workdays of the study were included in the analyses (N = 287). The final sample was 54.9% male, 77.1% Caucasian, had a mean age of 38.1 (SD = 10.56) years, and worked 41.8 hours per week (SD = 5.77) on average. Participants worked in various sectors, including information technology (19.2%), customer service (17.1%), sales (13.1%), and accounting/finance (12.2%).

Procedure

Prescreen Questionnaire. The procedure is summarized in Figure 2. Prior to the study, individuals completed a prescreen questionnaire for which they were remunerated $0.25 US. During the *prescreen* participants responded to demographic questions, indicated the number of breaks they took on average during a workday, and responded to the micro-break climate and conscientiousness measures. Next, individuals deemed ineligible for the study were immediately redirected to the end of the study and were compensated for their time, whereas individuals deemed eligible for the study were provided with a brief overview of the study. Eligible individuals were told they would be asked to complete two brief surveys per day over the next 5 weekdays as part of the study. The overview also included information about the study's compensation structure, which is described in more detail below. Then, individuals were asked to read and sign a consent form for the focal study. Participants were contacted on the following Monday to begin completing the daily surveys.

Daily Surveys. During the focal study, participants completed two brief surveys per workday over five consecutive workdays. During each workday, participants received an email invitation at 11:00am EST to complete the *midday* survey, and received another email invitation at 5:00pm EST to complete the *evening* survey. Participants were given 3 hours to complete each

survey. In the midday survey, participants completed the sleep quality measure with reference to the *previous* night, as well as measures of the positive and negative break antecedents. In the evening survey, participants indicated the number of breaks they had taken within the last four hours of their workday (i.e., break frequency). Additionally, participants were also asked to respond to the emotional exhaustion, physical symptoms, cognitive failures, shortcut behaviors, and safety behaviors measures.

Compensation. Participants received a base pay of $0.50 for each survey completed, meaning they could earn up to up to $5.00 ($0.50 per survey x 10 surveys) in *base pay*. To incentivize survey completion, participants also received a bonus pay of $1.00 for each day in which they had completed *both* the midday and the evening surveys, meaning they could earn up to $5.00 US ($1.00 daily bonus x 5 days) in bonuses. Thus, as part of the study participants could earn up to $10.00 US in total ($5.00 base pay + $5.00 bonus).

Measures

Focal Variables.

Micro-break climate. I measured micro-break climate using Niu's (2016) 21-item measure. Niu's measure assesses four facets of micro-break climate: *coworker norms* (e.g., "I often see my coworkers take micro-breaks in the workplace"), *supervisor norms* ("My supervisor encourages me to take micro-breaks when I need to"), *management support* (e.g., "Micro-breaks are frowned upon in my organization"), and *work-break autonomy* (e.g., "I totally have no authority for micro-breaks"). Given the focus of this research on the effects of micro-break climate as a whole, I created an overall index of micro-break climate instead of examining the

effects of each separate facet[3]. Participants responded to items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

Conscientiousness. I measured conscientiousness using 10 items from the International Personality Item Pool (Goldberg et al., 2006). A sample item was "I make plans and stick to them" (1 = *strongly disagree*, 5 = *strongly agree*).

Sleep Quality. I assessed sleep quality the following item from the Pittsburgh Sleep Quality Index (Buysse et al., 1989): "How would you evaluate last night's sleep?" (1 = *Very poor*, 5 = *Excellent*). This item has been previously used in daily diary studies assessing sleep quality (Kühnel et al., 2017; Sonnentag et al., 2008) and has been shown to correlate with objective measures of sleep quality used in sleep laboratories (Akerstedt et al., 1994).

Break Antecedents. I assessed both the positive and negative break antecedents using the final break antecedent measures created in Study 2.

Break Frequency. I assessed break frequency via the following item: "Within the last four hours of your workday, how many breaks did you take?" This was done to assess relationships between participants' experiences earlier in the workday and the number of breaks taken later that day.

Auxiliary Variables.

Emotional Exhaustion. I measured emotional exhaustion using 7 items from the Oldenburg Burnout Inventory (Demerouti et al., 2010), which I slightly reworded for use in a daily diary study. Items included "I feel emotionally drained" and "After work, I feel worn out

[3] Specifically, I created four item parcels where each parcel represents the mean of the items assessing coworkers norms, supervisor norms, management support, and work-break autonomy. CFAs indicated that a one-factor model in which these four parcels loaded onto the same factor provided the best fit to the data, relative to (1) a one-factor model in which all items were loaded onto the same factor, (2) a four-factor model in which items assessing each facet were loaded onto their respective factors, and (3) a hierarchical model in which the four factors loaded onto one higher-order factor. Importantly, neither of the latter three models provided acceptable fit to the data.

and weary." Participants responded to items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

***Physical Symptoms*.** I measured physical symptoms using Spector & Jex's (1998) 18-item measure. Participants responded to each item by indicating whether they experienced the symptom described within each item during the day. Items included "headache," "backache," and "eyestrain." Participants responded to items on a 2-point scale (1 = *yes*, 0 = *no*).

***Safety Behaviors*.** I measured safety behaviors using Neal & Griffin's (2006) six-item scale, which I adapted for use in a daily diary study. Items included "I used the correct safety procedures for carrying out my job" and "I ensured the highest levels of safety when I carried out my job." Participants responded on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

***Shortcut Behaviors*.** I measured SCBs using Jonason & O'Connor's (2017) eight-item scale, which I adapted for use in a daily diary study. Items included "I cut corners at work" and "I skipped tasks to save time at work." Participants responded on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

Cognitive Failures. I measured cognitive failures using Wallace & Chen's (2005) 15-item workplace cognitive failure scale, which I adapted for use in a daily diary study. Items included "Failed to recall work procedures" and "Daydreamed when I ought to be listening to somebody," Participants responded to items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

Analysis Plan

Given that observations were nested within individuals (i.e., daily observations nested within persons), I tested my H1 through H5 using multilevel modeling (Raudenbush & Bryk, 2002). Within-person predictors were centered around each person's mean to remove between-

person variance (Hofmann & Gavin, 1998). Between-person predictors (i.e., micro-break climate and conscientiousness) were grand-mean centered to facilitate interpretation of these predictors' main effects. All R^2 values reported refer to the proportion of within-person variance accounted for by the model. Note that due to my interest in testing indirect effects, all regressions were conducted by controlling for prior variables in the model.

I tested H1 and H2 by regressing fatigue, negative affect, and performance concerns on workload as well as the workload × sleep quality interaction. I tested H3 by regressing fatigue, negative affect, and performance concerns on desire to detach, and tested H4 by regressing desire to detach on break frequency. Then, I tested H5 by adding the effects of workload, expedience concerns, momentum concerns, concern for coworkers, micro-break climate, and conscientiousness into the model, as well as the proposed interactions of these variables with desire to detach. All interactions were entered simultaneously. Next, I performed the exploratory analyses by regressing emotional exhaustion, physical symptoms, safety behaviors, shortcut behaviors, and cognitive failures on break frequency.

The indirect effects proposed in H6 through H8 were tested via the distribution of the product method (MacKinnon et al., 2004, 2007). For each indirect effect, I generated a normal distribution (N = 10,000) of the individual pathways comprising the indirect effect (e.g., workload → fatigue and fatigue → desire to detach), using the regression coefficient and the standard error associated with each pathway. Next, I computed the product of these distributions to generate a distribution of the indirect effect, where the lower bound and upper bound of the 95% confidence interval respectively correspond to the 2.5th and the 97.5 percentile of the distribution. One advantage of this method is that it accounts for the fact that indirect effect

distributions tend to be asymmetrical (MacKinnon et al., 2002). Indirect effects were considered significant if the 95% confidence interval excluded zero.

Results

Descriptive Statistics

Means, standard deviations, intercorrelations, internal consistency reliabilities, and intra-class correlations (ICC) for Study 3 are shown in Table 9. Notably, the ICC(1) values for the positive and negative break antecedent measures ranged between .42 and .69, the ICC(1) of sleep quality was .31, and the ICC(1) of break frequency was .61. These values indicate that a substantial proportion of the variance of break antecedents, sleep quality, and break frequency are within-person, thus justifying the use of multilevel modeling for hypothesis testing.

Measurement Invariance Tests

Given the relative novelty of the 8 break antecedent measures used in this research, I conducted a series of confirmatory factor analyses (CFA) to test whether the break antecedent measures fit the data, and whether these measures were invariant *over time* (i.e., participants understood and responded to the same items in the same manner across all five days). To test for measurement invariance, I conducted a series of CFAs using recommended guidelines (Kline, 2015; Vandenberg & Lance, 2000). This process involved testing a series of models with increasing numbers of constraints, and examining the extent to which the addition of these constraints influence the extent to which the model fits the data. A measure can be considered invariant if the increasingly stringent constraints result in negligible changes in model fit. Fit indices for each model tested, as well as model comparisons, are summarized in Table 10.

First, I tested for *configural invariance* by specifying an eight-factor model in which the items associated with each positive and negative break antecedent would load into its respective

factor. This model provided good fit to the data based on conventional criteria. Next, I tested for *metric invariance*, *scalar invariance*, and *invariant uniqueness* by constraining the factor loadings, the intercepts, and the residual variance for like items to be the same across measurement periods, respectively. Then, I tested for *invariant factor variances*, *invariant factor covariances*, and *invariant factor means* by constraining each like factor's variance, covariance, and mean to be equal across measurement periods, respectively.

Next, I compared the relative fit of each model using ΔCFI, ΔRMSEA, and ΔSRMR. I used these indices to assess relative model fit instead of $\Delta\chi^2$ because $\Delta\chi^2$ tends to be overly sensitive to sample size (Cheung & Rensvold, 2002; Meade et al., 2008). Although cutoff recommendations for these indices vary (Kline, 2016), simulations studies by Chen (2007) suggest that ΔCFI values ≤ .005, ΔRMSEA values ≤ .010, and ΔSRMR values ≤ .025 are adequate cutoffs for assessing invariance when the groups are small (e.g., ≤ 300) and unequal. As shown in Table 10, ΔCFI ranged from < .001 to .005, ΔRMSEA ranged from -.001 to .001, and ΔSRMR ranged from <.001 to .011, all of which are below the recommended cutoff values. Thus, these results suggest that the model fit was not substantially affected by the presence of increasingly stringent constraints on the model, and as such, provide support for measurement invariance.

Hypothesis Tests

Hypothesis 1. Workload was positively related to fatigue (γ = .49, *SE* = .04, $p < .001$), negative affect (γ = .30, *SE* = .03, $p < .001$), and performance concerns (γ = .47, *SE* = .04, $p < .001$), meaning H1a, H1b, and H1c were supported.

Hypothesis 2. As shown in Table 11, sleep quality moderated the within-person effects of workload on fatigue (γ = -.10, *SE* = .04, $p = .021$), negative affect (γ = -.10, *SE* = .04, *p*

= .008), and performance concerns (γ = -.13, *SE* = .05, *p* = .009). These interactions are plotted in Figures 3, 4, and 5 respectively. Critically, in support of H2a through H2c, examinations of the simple slopes indicate that the positive relationships between workload and fatigue, between workload and negative affect, and between workload and performance concerns were stronger within days following poor quality sleep, relative to days following high quality sleep.

Hypothesis 3. Results for H3 are presented in Table 12. Fatigue (γ = .14, *SE* = .04, *p* < .001), negative affect (γ = .13, *SE* = .04, *p* = .002), and performance concerns (γ = .16, *SE* = .03, *p* < .001) were positively related to participants' desire to detach. Thus, H3 was fully supported.

Hypothesis 4. Results for H4 are presented in Table 13. The relationship between desire to detach (γ = .10, *SE* = .06, *p* = .078) and break frequency did not reach the conventional threshold for statistical significance. However, it is important to note that H4 is a directional hypothesis, and that one-tailed tests are considered acceptable for testing directional hypotheses (Cho & Abe, 2013). The results indicate that the direction of the relationship was consistent with H4, and that this relationship would be considered significant using a one-tailed test. Thus, the results provide support for H4. Nevertheless, the main effect of desire to detach on break frequency should be interpreted with caution, as I hypothesized that desire to detach would *interact* with other variables to predict break frequency in H5.

Hypothesis 5. Results for H5 are presented in Table 13. In H5, I expected the within-person relationship between desire to detach and break frequency to be moderated by (a) workload, (b) expedience concerns, (c) momentum concerns, and (d) concern for coworkers, such that the relationship would be weaker on days in which employees experience high as opposed to low levels of workload, expedience concerns, momentum concerns, and concern for

coworkers. In addition, I expected (e) micro-break climate and (f) conscientiousness to act as cross-level moderators of the within-person relationship between desire to detach and break frequency. That is, I expected this relationship would be attenuated among individuals employed in a context in which micro-break climate is weak as opposed to strong, as well as among individuals high as opposed to low in conscientiousness.

The hypothesized desire to detach × workload (γ = .11, *SE* = .11, *p* = .315), desire to detach × momentum concerns (γ = .04, *SE* = .13, *p* = .730), desire to detach × concern for coworkers (γ = .03, *SE* = .10, *p* = .783), and desire to detach × conscientiousness (γ = -.04, *SE* = .08, *p* = .626) interactions were non-significant. Thus, I did not find support for H5a, H5c, H5d, and H5f. Nevertheless, that there was a negative main effect of conscientiousness on break frequency (γ = -.60, *SE* = .30, *p* = .042), such that the more conscientious individuals were, the less frequently they took breaks during the day in general (See Table 13).

The desire to detach × expedience concerns (γ = -.17, *SE* = .10, *p* = .069) interaction hypothesized in H5b did not reach the conventional threshold of statistical significance (see Table 13). However, because H5b was a directional hypothesis and that the interaction would be considered significant using a one-tailed test, I probed the interaction to investigate its pattern. This interaction is plotted in Figure 6. Consistent with H5b, examination of the simple slopes indicate that the relationship between desire to detach and break frequency was weaker on days when participants reported low expedience concerns (γ = .00, *SE* = .08, *p* = .964), relative to days when participants reported high expedience concerns (γ = .18, *SE* = .08, *p* = .024). As such, the results provide support for H5b. Finally, there was a significant desire to detach × micro-break climate (γ = .20, *SE* = .08, *p* = .014) interaction on break frequency. This interaction is plotted in Figure 7. Examination of the simple slopes indicated that the relationship between desire to

detach and micro-break climate was weaker among individuals reporting a weak micro-break climate (γ = -.03, *SE* = .09, *p* = .676), relative to individuals reporting a strong micro-break climate (γ = .22, *SE* = .09, *p* = .010). Thus, H5e was supported.

Hypothesis 6. H6 stated that there would be a serial indirect effect of workload on break frequency via *fatigue* and desire to detach, and that this relationship would be moderated by (a) sleep quality, (b) workload, (c) expedience concerns, (d) momentum concerns, (e) concern for coworkers, (f) micro-break climate, and (g) conscientiousness. Given that workload, momentum concerns, concern for coworkers, and conscientiousness did not moderate the relationship between desire to detach and break frequency, H6b, H6d, H6e, and H6g were not supported. However, in line with H6a, H6c, and H6f, the serial indirect effect of workload on break frequency via fatigue and desire to detach was weaker when *sleep quality* and *expedience concerns* were high as opposed to low, and was weaker among individuals within a weak as opposed to a strong *micro-break climate* (see Table 14).

Hypothesis 7. H7 stated that there would be a serial indirect effect of workload on break frequency via *negative affect* and desire to detach, and that this relationship would be moderated by (a) sleep quality, (b) workload, (c) expedience concerns, (d) momentum concerns, (e) concern for coworkers, (f) micro-break climate, and (g) conscientiousness. As in H6, the lack of a moderation effect of workload, momentum concerns, concern for coworkers, and conscientiousness on the relationship between desire to detach and break frequency precludes support for H7b, H7d, H7e, and H7g. However, in line with H7a, H7c, and H7f, the serial indirect effect of break frequency via negative affect and desire to detach was weaker when sleep quality and expedience concerns were high as opposed to low, and was weaker among individuals within a weak as opposed to a strong micro-break climate (see Table 14).

Hypothesis 8. H8 stated that there would be a serial indirect effect of workload on break frequency via *performance concerns* and desire to detach, and that this relationship would be moderated by (a) sleep quality, (b) workload, (c) expedience concerns, (d) momentum concerns, (e) concern for coworkers, (f) micro-break climate, and (g) conscientiousness. As in H6 and H7, the lack of a moderation effect of workload, momentum concerns, concern for coworkers, and conscientiousness on the relationship between desire to detach and break frequency precludes support for H8b, H8d, H8e, and H8g. However, in line with H8a, H8c, and H8f, the serial indirect effect of break frequency via performance concerns and desire to detach was weaker when sleep quality and expedience concerns were low as opposed to high, and was weaker among individuals within a weak as opposed to a strong micro-break climate (see Table 14).

Exploratory Analyses

For exploratory purposes, I also investigated the relationship between break frequency and numerous purported downstream outcomes of break-taking. Namely, in this study I examined whether break frequency would be significantly related to (1) emotional exhaustion, (2) physical symptoms, (3) safety behaviors, (4) shortcut behaviors, and (5) cognitive failures, after accounting for causally prior variables. Results of these exploratory analyses are summarized in Table 15. Break frequency was not significantly related to either emotional exhaustion ($\gamma = .02$, $SE = .02$, $p = .381$) nor to physical symptoms ($\gamma = .00$, $SE = .00$, $p = .526$). Unexpectedly, break frequency was negatively related to safety behaviors ($\gamma = -.03$, $SE = .01$, $p = .018$). In addition, break frequency was positively related to both cognitive failures ($\gamma = .02$, $SE = .01$, $p = .021$) and shortcut behaviors ($\gamma = .06$, $SE = .02$, $p < .001$). I discuss the implications of these results in more detail below.

Discussion

The goal of Study 3 was to examine whether the break antecedents identified in Study 1 can predict employees' actual break-taking behaviors. In line with the findings of Study 1 and theories of stress (Hobfoll, 1989; Meijman & Mulder, 1998), Study 3 suggests that individuals take breaks during the day in response to the negative experiences encountered as a result of high workloads, fatigue, negative affect, performance concerns, and desire to detach. However, support for the predictions derived from models of self-regulation (Carver & Scheier, 1998; Vancouver et al., 2010) was mixed, as only expedience concerns moderated the relationship between desire to detach and break frequency. Finally, the results regarding micro-break climate also corroborate some of the statements participants made in Study 1, as they indicate that aspects of the broader work environment may also deter employees from taking breaks when wanting or needing to do so. I discuss these findings' implications in the general discussion.

Unexpectedly, break frequency was not significantly related to any of the well-being indicators. One explanation for this may be the lack of data collected regarding participants' behaviors and experiences during their breaks. As summarized in the literature review, these behaviors and experiences may play an important role in determining whether or not employees feel rested following a break. Indeed, taking a break can result in *increased* well-being when an employee feels autonomous and primarily engages in relaxing activities the break (Bosch et al., 2018; Hunter & Wu, 2016; Kim et al., 2017), but may result in *decreased* well-being when this employee experiences low autonomy and primarily completes chores during the break (Trougakos et al., 2008, 2014). In other words, the non-significant relationships between break frequency and the well-being indicators may be due to offsetting effects caused by variation in employees' experiences and behaviors during breaks. However, it was not possible for me to test

this possibility, as I did not measure individuals' within-break behaviors and experiences in Study 3. Doing so would have been beyond the scope of the research and would have added a great deal of complexity to the study's design. Nonetheless, it may be worthwhile for future research to test this possibility.

The negative relationships between break frequency and the performance indicators were also unexpected, as they seemingly contradict previous findings within the literature. This inconsistency may be attributable to the manner in which I measured break frequency and the performance indicators. More precisely, throughout the study I measured break frequency and the performance indicators at the same time (i.e., during the evening surveys), which makes it difficult to determine the direction of the relationships between break frequency and these outcomes. Although taking more breaks may have resulted in decreased performance, it is also possible that individuals took more breaks *because* they had experienced decreased performance. I believe the latter possibility is likely for at least two reasons. First, several well-controlled studies have demonstrated that breaks can improve performance (for a meta-analysis, see Wendsche et al., 2016). Specifically, these studies include laboratory studies in which the frequency, timing, and duration of individuals' breaks were experimentally controlled, and in which each person's performance was measured objectively both before and after each break (e.g., Galinsky et al., 2000; Henning et al., 1997). As such, the evidence linking breaks to improved performance is considerably stronger than the evidence suggesting breaks can decrease performance. Second, the possibility that decreased performance resulted in an increase in break frequency is entirely consistent with my theorizing vis-à-vis performance concerns. That is, employees may exhibit and notice decrements in their performance over the day, which may in

turn in lead these employees to take breaks. Therefore, it would be premature to conclude based on the results of Study 3 that high break frequencies can be detrimental for performance.

General Discussion

A great deal of research shows that breaks can help employees maintain high levels of energy and performance at work (e.g., Henning et al., 1997; Wendsche et al., 2016; Zacher et al., 2014). Moreover, studies have identified some of the specific behaviors and experiences that help employees make the most out of their breaks (e.g., Bosch et al., 2018; Kim et al., 2017; Trougakos et al., 2014). However, employees' reasons for *taking* a discretionary break at work have received little research attention (for exceptions, see Blasche et al., 2017; Bosch & Sonnentag, 2019; Niu, 2016). Perhaps more importantly, employees' reasons for *not* taking a break have remained largely unexplored. This is problematic because employees sometimes refrain from taking a break despite wanting or needing a break (McLean et al., 2001; Right Management, 2011). Preventing such pitfalls necessitates a thorough understanding of the processes underlying employees' break-taking behaviors. To this end, I conducted studies in which I identified numerous positive and negative break antecedents (Study 1), developed and validated measures of these antecedents (Study 2), and investigated the manner in which these antecedents combine with employees' work climate and personality to predict break frequency (Study 3). Altogether, these studies highlight the importance of employees' daily experiences, the work context, and personality in predicting break-taking.

Theoretical Implications and Future Directions

Why do People Take Breaks?

Although there is an implicit assumption within the break literature that individuals primarily take breaks in response to fatigue, this research highlights several other reasons for

taking a break. Breaks have previously been described as energy management strategies (Fritz et al., 2011; Zacher et al., 2014), and several studies have focused on relationships between break-taking and fatigue (Bennett et al., 2020; Hunter & Wu, 2016; Sianoja et al., 2018). Yet, the findings of Study 1 qualify this assumption by demonstrating that employees may take breaks not only to manage fatigue, but *also* to alleviate negative emotions or to address perceived decrements in their own performance. Further, in Study 3 both negative affect and performance concerns independently emerged as predictors of break frequency, above and beyond fatigue. As such, theory and research pertaining to fatigue—though essential—may not sufficiently account for the full range of employees' reasons for taking breaks. Given the broad scope of this research, I used broad theoretical perspectives as a starting point to unpack the psychological processes that underlie break-taking. That said, a more comprehensive understanding of these processes may require researchers to consider theory and research that specifically pertain to the manner in which individuals regulate their emotions (e.g., Beal et al., 2005) and their performance (e.g., Lord et al., 2010; Neal et al., 2017) on the job.

Another implication of this research is that desire to detach from work can shape individuals' responses to job stressors. In particular, desire to detach was a frequently mentioned reason for taking a break in Study 1, and was a predictor of break frequency in Study 3. Although these findings are primarily relevant to breaks, they suggest that a consideration of individuals' desire to detach may help address gaps within the broader psychological detachment literature. For instance, numerous studies point to a positive relationship between detachment and well-being, such that the fewer job-related thoughts individuals hold during off-job time, the better their well-being (Sonnentag & Fritz, 2015). However, these findings are contradicted by other studies which suggest that holding positive work-related thoughts during off-job time (i.e.,

less detachment) can result in increased well-being (Fritz & Sonnentag, 2005, 2006). A possible explanation for this contradiction is that well-being may not be driven by individuals' *actual* levels of detachment, but rather, by the *match* between individuals' desired and actual levels of detachment. For example, upon experiencing an exhausting day at work, an individual may want to detach from work and thus experience increased well-being by detaching during off-job time. In contrast, upon experiencing a pleasant and energizing day at work, an individual may not want to detach from work and may therefore not benefit from detaching during off job time. In other words, it is possible that detachment only enhances well-being when individuals *want* to detach from work. However, future research will be needed to test this possibility.

Why do people not take breaks?

The Study 3 findings regarding workload provide novel insights into the manner in which individuals balance their work goals against non-work goals (e.g., maintaining energy). Earlier in this dissertation, I presented two conflicting predictions regarding the effects of workload on break-taking. Based on models of self-regulation (e.g., Carver & Scheier, 1998; Vancouver et al., 2010), workload may result in fewer breaks because accomplishing more work requires individuals to invest more of their finite time towards work tasks as opposed to breaks. However, based on theories of stress (Hobfoll, 1989; Meijman & Mulder, 1998), workload may also exert an indirect positive effect on break-taking by leading to the aversive experiences (e.g., fatigue, negative emotions) employees may want to alleviate by taking breaks (Bowling et al., 2015; Ilies et al., 2010). To reconcile these different perspectives, I proposed that that the relationship between workload and break-taking would be paradoxical, such that high workloads would lead employees to *want* breaks while also deterring these employees from *actually taking* breaks. The results of Study 3 supported the predictions derived from theories of stress, but did not support

the predictions derived from theories of self-regulation. Thus, high workloads may prompt employees to take breaks as opposed to acting as a deterrent.

That being said, other aspects of employees' work goals may deter break-taking. In particular, the findings regarding expedience concerns suggest that individuals may refrain from taking a break when wanting or needing to complete their work *rapidly*. These findings are in line with the growing body of theory and research within the self-regulation literature on goal progress *velocity* (Johnson et al., 2013), where velocity refers to individuals' perceived rate of progress towards their goals (Carver & Scheier, 1998). Briefly, slow progress can lead to negative emotions and feelings of doubt vis-à-vis goal success (Beck et al., 2017; Phan & Beck, 2020) even after accounting for workload (Chang et al., 2009; Elicker et al., 2009). Moreover, in response to slow progress individuals may engage in behaviors aimed at increasing velocity, such as increasing effort (Huang & Zhang, 2011) or taking shortcuts (Nishioka et al., 2020; Phan et al., 2019). Similarly, the results of Study 3 suggest that individuals may take fewer breaks than they want or need when they feel compelled to accomplish their work rapidly and promptly. More broadly, these findings indicate that to understand individuals' break-taking behaviors, it is important to consider not only *how much* work a person needs to accomplish, but *how rapidly* this work needs to be accomplished. Accordingly, incorporating past theory and research from the velocity literature may be a promising avenue towards unpacking the processes that underlie break-taking, and more generally, understanding how employees deal with the job demands.

The Work Context

This dissertation also highlights the importance of considering the combined effects of employees' daily experiences and the work context on break-taking. For the most part, studies within the break literature have adopted a within-person approach whereby individuals' daily

experiences and behaviors are assessed repeatedly over multiple days (e.g., Bosch & Sonnentag, 2019; Hunter & Wu, 2016; Kim et al., 2017; Kühnel et al., 2017; Trougakos et al., 2014). This approach has yielded a great deal of insights regarding the effects of breaks on employee well-being, as well as the specific experiences and behaviors that are most conducive to recovery during breaks. However, the extent to which these within-person relationships are influenced by relatively stable contextual factors has received less attention. The moderating effects of micro-break climate found in Study 3 suggest that this may be an important oversight. Indeed, these findings indicate that individuals may act on their desire to detach by taking more breaks in general, *except* within work contexts in which breaks are frowned upon. Therefore, a thorough understanding break-taking will likely require researchers to investigate within-person processes alongside the contextual factors that may moderate these processes.

For instance, a careful consideration of contextual factors may help explain some of the Study 3's unexpected results. Contrary to expectations, neither momentum concerns nor concern for coworkers moderated the relationship between desire to detach and break frequency. It is possible that these moderating effects only operate in contexts characterized by high levels of interdependence. Compared to employees within an independent context, employees within an interdependent context may be more likely to work alongside other workers on tasks and projects that require a great deal of collaboration and communication. As a result, these individuals may be more likely to encounter situations in which their momentum is disrupted (e.g., interruptions, disruptions), or in which their coworkers are in need of support. Therefore, employees' momentum concerns or concerns about their coworkers may play a more important role in influencing whether or not they will take breaks when wanting to detach within an interdependent context as opposed to an independent context. In sum, I raise the possibility of a

three-way interaction in which the moderating effects of expedience concerns and concern for coworkers on the relationship between desire to detach and break frequency only occur among employees within contexts in which interdependence is high as opposed to low. However, it is not possible for me to test of this possibility because I did not measure interdependence in Study 3. Nonetheless, I encourage future research to test this possibility and to explore how other contextual factors may also influence break-taking.

Personality

This research also highlights the role of personality in shaping break-taking. Although conscientiousness did not moderate the relationship between desire to detach and break frequency as hypothesized, there was a significant main effect of conscientiousness on break frequency, such that highly conscientious individuals tended to take fewer breaks *in general* relative to their less conscientious counterparts. These results are consistent with the theoretical arguments I presented above, whereby highly conscientious individuals may be less inclined to take breaks due to their propensity to exhibit high levels of achievement orientation, workaholism, and rigid rule adherence (Barrick & Mount, 2005; Mount et al., 2008; Samuel et al., 2012; Viswesvaran & Ones, 2000). Thus, even though my specific hypotheses regarding conscientiousness were not supported, the Study 3 data suggest that conscientiousness may influence individuals' break-taking behaviors. However, the precise manner in which conscientiousness influences break-taking may be more complex than I had initially anticipated.

In particular, compared to individuals with relatively low conscientiousness, I expected the relationship between desire to detach and break frequency to be weaker among moderately conscientious individuals, and weaker still among highly conscientiousness individuals. However, relationships involving conscientiousness sometimes follow a reverse-U pattern rather

than a linear pattern. For example, within recent studies conscientiousness was curvilinearly related to performance (Carter et al., 2014; Le et al., 2011) and well-being (Carter et al., 2016), such that the highest levels of performance and well-being were observed among *moderately* conscientious individuals rather than highly conscientious individuals. The moderating effects of conscientiousness on the relationship between desire to detach and break frequency may also be curvilinear. Specifically, desire to detach may be a stronger predictor of break-taking among moderately conscientious individuals, relative to individuals with low *or* high conscientiousness. Individuals with low conscientiousness may not be inclined to strive for achievement or to follow their organization's rules, and as such, may consistently take as many breaks as possible. At the other extreme, highly conscientious individuals tend to exhibit high and even excessive levels of achievement striving and rule compliance, and thus, may consistently take as few breaks as possible. In contrast, *moderately* conscientious individuals may be less likely to exhibit such extreme tendencies, meaning that day-to-day fluctuations in their experiences at work may be a relatively strong predictor of their break-taking behaviors. In sum, it is possible that the relationship between desire to detach and break frequency is strongest among moderately conscientious individuals, rather than individuals at either end of the conscientiousness spectrum.

However, the design of this study precludes a fair test of such a possibility for at least two reasons. First, the possibility I invoke involves a three-way cross-level interaction (i.e., desire to detach × conscientiousness × conscientiousness), which are very difficult to detect. Indeed, even with large samples, the power to detect two-way cross-level interactions is often low (Mathieu et al., 2012), let alone three-way cross-level interactions. More importantly, based on simulation studies (Roberts et al., 2000), a proper test of the curvilinear effects of conscientiousness would have required a large number of items (≥15) and a very large number of participants (≥750).

Such a large sample would not have been feasible for the daily diary design used in Study 3, which itself includes a relatively large number of individuals compared to other daily diary studies within the break literature (e.g., Bosch et al., 2018; Hunter & Wu, 2016; Kim et al., 2018). Instead, testing the curvilinear moderation effects of conscientiousness on the relationship between desire to detach and break frequency likely necessitates a stand-alone program of research. For example, such a program of research may include a large cross-sectional study to conduct a preliminary test of the moderation effect, along with laboratory studies in which desire to detach is manipulated, conscientiousness is measured, and break-taking is unobtrusively observed within the context of a work simulation.

Finally, it is important to note that I used a broad unidimensional measure of conscientiousness in this research. This was done because my hypotheses pertained to the effects of conscientiousness as a whole as opposed to specific facets of conscientiousness. However, conscientiousness is a very broad construct which consists of many specific facets. Critically, some facets may be stronger predictors of behavior relative to other facets. For example, meta-analytic evidence suggests that the achievement striving, dutifulness, and self-discipline facets of conscientiousness are stronger predictors of overall job performance relative to the competence, deliberation, and order facets (Judge et al., 2013). Likewise, it is possible that individuals' break-taking behaviors are best predicted by a handful of conscientiousness facets as opposed to conscientiousness as a whole. Therefore, I recommend future studies to investigate the extent to which different facets of conscientiousness can predict break-taking.

Practical Implications

In addition to the theoretical implications above, the results of this dissertation can also be applied to maximize employees' well-being without sacrificing productivity. To begin, it is

important to acknowledge that managers may be reluctant to encourage subordinates to take breaks (Askew et al., 2014; Lim, 2002), because the amount of time employees spend on breaks is time that is not spent on work tasks. Nevertheless, as noted in the literature review, several field and laboratory studies indicate that taking breaks is critical for employees to stay engaged, maintain their energy, and perform well on the job (Bosch & Sonnentag, 2019; Galinsky et al., 2000; Henning et al., 1997; Hunter & Wu, 2016; Kim et al., 2018; Wendsche et al., 2016; Zacher et al., 2014). As such, although taking breaks may result in employees spending less time working than they would in the absence of these breaks, allowing and encouraging employees to take breaks *as needed* may be necessary to maximize employee well-being and performance. Study 3 indicates that fostering a strong micro-break climate can help ensure employees take breaks as needed. Niu's (2016) paper suggests organizations can strengthen their micro-break climate by relaxing some of their regulations around breaks, such as strict limits on the timing, frequency, or duration of the breaks employees can take. Likewise, supervisors may also encourage subordinates to take breaks as needed.

Alternatively, organizations may promote employee well-being via interventions that will reduce the number of breaks employees *need* in the first place. For example, this dissertation's findings highlight that employees may need to take a break when experiencing a great deal of negative emotions on the job. One important implication is that break-taking can be influenced by work conditions, processes, and events that, though seemingly unrelated to breaks, can lead employees to experience negative emotions. Thus, organizations can potentially reduce employees' need to take breaks by addressing these factors. For instance, organizations may remove some of the hindrances and hassles that employees find unpleasant and frustrating (e.g., needless paperwork, bureaucratic red tape), replacing obsolete tools and equipment, and reducing

employees' physical discomfort on the job via ergonomic workspaces. Similarly, it may be useful to address broader organizational issues that can result in negative emotions, such as workplace harassment (Bowling & Beehr, 2006). In sum, improving employees' overall *experience* at work may lead employees to need fewer breaks.

Another practical implication of this research is that employees may require fewer breaks when they are *well-rested*. In Study 3, I found that workload had weaker effects on employees' fatigue, negative emotions, and performance concerns following days in which they experienced high sleep quality as opposed to low sleep quality. This is consistent with the wealth of research that highlights sleep as an important activity for recuperating the resources employees need for work (Christian & Ellis, 2011; Lanaj et al., 2014; Sonnentag et al., 2008). Thus, another avenue for addressing the conditions that lead employees to need a break may be to establish policies that promote employees' rest during off-job time. For example, organizations may offer brief training sessions to ensure employees know how to maintain an adequate sleep hygiene (Barnes, 2011). Organizations can also foster a well-rested workforce by ensuring that workers can leave the work at work, as employees tend to recover better when they psychologically detach from work during off-job time (Bennett et al., 2018; Sonnentag et al., 2008; Sonnentag & Fritz, 2015). To do so, organizations may discourage the use of work-related emails and calls outside work hours unless they are necessary.

Strengths and Limitations

One important strength of this dissertation is its use of different methodologies for investigating the antecedents of break-taking. The exploratory approach used in Study 1 allowed me to identify a wide variety of break antecedents, but provided little insight into the manner in which these antecedents relate to each other to predict break-taking. I addressed this limitation in

Study 3 by formulating specific theoretically-derived hypotheses which I tested using a daily diary design. This design allowed me to examine the combined influence of individuals' day-to-day experiences (i.e., break antecedents and sleep quality), contextual factors, (i.e., micro-break climate), and personality (i.e., conscientiousness) on break-taking *over time*. This represents a key advantage over a cross-sectional survey, which would not have clarified how individuals' break-taking behaviors vary day-to-day. Moreover, in Study 3 I separated the measurement of the break antecedents and break frequency across each workday, such that participants reported on the antecedents in the middle of the day, and reported their break frequency at the end of the day. The separation of measurement over time reduces the influence of common method variance on relationships (Podsakoff et al., 2003), and as such, provides confidence into the notion than an employee's experiences during the day can *predict* the number of breaks taken later that same day. Furthermore, the use of large sample of full-time employees from a wide variety of job sectors provides confidence in the generalizability of the results obtained.

However, the implications of this research need to be considered alongside its limitations. A notable limitation of Study 3 is the use of a single-item measure of break frequency. Single-item measures can be problematic because their reliability cannot be estimated and because psychological constructs are often too broad to be fully captured by one item. Nevertheless, it is important to note that break frequency is a relatively narrow and concrete behavior, and that single-item measures are considered appropriate for measuring narrow and concrete constructs (Bergkvist & Rossiter, 2007; Rossiter, 2002; Sackett & Larson, 1990). Thus, I argue that measuring break frequency using a single-item measure was appropriate.

Next, even though Study 3 addresses many of Study 1's limitations, it does not allow for strong causal influences regarding the relationships observed. The theoretical model I proposed

suggests that workload leads to fatigue, negative affect, and performance concerns, which in turn lead to desire to detach. However, the data collected in this research do not allow me to rule out the possibility of reverse causality. That is, it remains possible that fatigue, negative affect, and performance concerns instead cause individuals to perceive high workloads. Likewise, it is also possible that increases in desire to detach led employees to perceive increased fatigue, negative affect, and performance concerns. Fully addressing these concerns would require experimental studies in which each individual break antecedent is experimentally manipulated. Given the large number of antecedents identified in this research, such an endeavor would require a very large number of studies, and as such, may not be feasible for any one single program of research.

However, findings from previous studies can partially address some of these concerns. For one, experimental evidence shows that increased workload can lead individuals to experience fatigue and negative emotions (e.g., Hockey & Earle, 2006), and to doubt their odds of successfully meeting their goals (e.g., Garland, 1984; Locke et al., 1984). These studies provide some support for the notion that workload may influence fatigue, negative emotions, and performance concerns. Additionally, though no previous study to my knowledge has examined relationships involving individuals' desire to detach specifically, previous experiments have investigated the factors that influence individuals' persistence on laboratory tasks. Such studies are relevant because persistence involves continuing to work on a task, whereas desire to detach involves wanting to get away from (vs. continuing to work on) job-related tasks. Notably, these studies demonstrate that individuals may exhibit less persistence when they experience fatigue (Muraven et al., 1998), feel negative emotions (Fishbach & Labroo, 2007), and doubt that they can meet their goals (Carver & Scheier, 1982; Seo et al., 2010). As such, there is some evidence, albeit indirect, to suggest that fatigue, negative affect, and performance concerns may lead a

person to want to detach from work. In sum, although Study 3 cannot demonstrate that the relationships among the different break antecedents are causal, findings from previous experiments are consistent with the causal relationships depicted in my proposed model.

Another limitation of Study 3 regarding causality is that the data do not allow me to conclude that desire to detach *causes* individuals to take more breaks. However, the daily dairy design used in Study 3 partially addresses this concern by meeting some of the necessary conditions for inferring causality. First, person-mean centering allowed me to remove between-person variation in break-taking, and thus allowed me to account for unmeasured person-level confounds that may otherwise have influenced the results (Hofmann & Gavin, 1998; Raudenbush & Bryk, 2002). Second, as noted above, across all five days of the study I measured the break antecedents separately from break frequency. This allows me to claim that the break antecedents *precede* break-taking behaviors, which is another necessary condition for causality. In summary, even though Study 3 does allow me to conclusively infer that increased desire to detach can lead to increased break-taking, it does address some of the potential concerns vis-à-vis causality by accounting for potential confounds and establishing temporal precedence.

Finally, it is important to bear in mind that this dissertation primarily addresses the antecedents of employees' discretionary break-taking behaviors. As such, this research was focused on employees' who take breaks *other* than those breaks formally scheduled by their employer, and omits individuals who have little to no discretion over their work schedule. This focus was deliberate because my goal was to unpack the processes that influence individuals' break-taking decisions. Meeting this goal necessitated a focus on individuals who have some control over how they spend their time at work. This is an important limitation because many employees may not have the freedom to decide whether and when they will take breaks during

the day. For instance, whereas university professors often have considerable freedom over their work schedule, elementary and high school teachers must typically work at very specific times, and may be unable to take breaks whenever they want or need to do so. Likewise, a recent journalistic investigation revealed that many Amazon warehouse workers urinate in bottles at work to avoid facing discipline for wasting time (Bloodworth, 2018), thus highlighting the lack of freedom that many employees experience with regards to breaks. Thus, although the current research emphasizes the role of employees' own decisions in break-taking, it is important to acknowledge that within several occupations and organizations, employees' break-taking behaviors are often determined by formal rules and policies. Therefore, a full understanding of break-taking will likely require researchers not only to consider the factors that shape employees' individual decisions, but also the broader external factors that can prevent employees from taking breaks as needed.

Conclusion

Employees often face high demands on the job, such as high workloads, stringent deadlines, and long work hours. One way to deal with these demands is to take breaks during the day. Considerable research has demonstrated the benefits of breaks for employee well-being and performance, and has investigated how employees can make the most out of their breaks. However, until now the *antecedents* of break-taking have remained largely unexplored. The current research addresses this gap by identifying some of the reasons employees take breaks, as well as some of employees' reasons for *not* taking a break despite wanting or needing a break. Across three studies, I found that employees' negative experiences on the job may prompt employees to *want* a break, but that concerns vis-à-vis expedience and aspects of the work climate can deter employees from actually taking a break. By shedding light into some of the

psychological processes that underlie employees' break-taking behaviors, this research provides an initial empirical base for interventions aimed at encouraging employees to take breaks *as needed*. Downstream, ensuring employees take breaks as needed is likely to be beneficial for both organizations and workers, as breaks can help employees stay refreshed and energized on the job without compromising performance.

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Table 1

Positive Break Antecedents (Study 1)

Antecedent	Definition	Examples
Fatigue	Participant indicated taking a break due to fatigue	• "I decided to take a break because I was mentally tired [...]"
Physiological Needs	Participant indicated taking a break due to a desire or need to (1) move, stretch, or otherwise engage in physical activity, (2) consume food or non-caffeinated beverage, (3) to consume coffee or any other caffeinated beverage/food (e.g., tea, Red Bull, etc.), (4) to smoke, or (5) to use the restroom	• "I needed to move and I needed some fresh air." • "I wanted to get something to eat" • "I wanted to get coffee" • "I really wanted a cigarette." • "I had to go to the restroom"
Affect Regulation	Participant indicated taking a break (1) due to negative emotions or to reduce negative emotions (e.g., boredom, anxiety, frustration), or (2) due to positive emotions or to increase/maintain positive emotions	• "I was getting rather frustrated." • "I wanted a little enjoyment." • "I wanted to reflect on the positive meeting I just left."
Desire to Detach	Participant indicated taking a break to get away from the work task/environment/situation or individuals in the workplace setting (e.g., coworkers, clients)	• "To [...] get out of the office away from my computer" • "Step away and gather myself."
Non-work preoccupations	Participant reported taking a break due to a desire or need to engage in a non-work activity (e.g., leisure, hobbies, chores, etc.)	• "wanted to play on phone / wanted a snack" • "[...] to go and fix my car"
Desire to Socialize	Participants reported taking a break to engage in social interaction with other individuals	• "[...] so I could spend some time talking to my friend." • "I wanted to talk to my coworker"
Performance Concerns	Participant reported taking a break due to (1) perceived decrements in performance prior to the break, a desire to maintain some level of performance over the course of the day, or due to other concerns regarding his/her task performance, (2) due to making good progress towards his/her tasks, or (3) due to having little or no work to do	• "I just needed to a a few minutes away from the computer screen and all of the addition and calculations that go into putting together a competitive job bid. These numbers have to be accurate or we could lose out on the job."
Other	Responses that do not fit any of the above categories were coded as "other"	
Uncodable	This code was used by coders when participants (1) wrote an answer that was incomprehensible, (2) did not provide a response, or (3) reported being forced to take a break, or (4) reported taking a break because breaks are formally scheduled	• "My colleagues convincing to me, My health talk to me , My Boy Friend is also said to me .l [sic]" • "no"

Table 2

Negative Break Antecedents (Study 1)

Antecedent	Definition	Examples
Workload	Participant indicated not taking a break because of a high amount of workload or due to a lack of resources (e.g., time)	• "I had too much work to do and felt I couldn't swing it. I wanted to complete my tasks first."
Supervisor	Participant indicated not taking a break because of his/her supervisor	• "As I grabbed my keys I hear my boss yell over. He calls me in his office and has me going over multiple projects essentially wanted the low down on my week."
Impression Management	Participant indicated not taking a break to look good, or to avoid looking bad, in front of his/her supervisors or other employees	• "i [sic] need to be more productive and coworkers can fire me"
Concern for Coworkers	Participant indicated not taking a break out of concern for his/her coworkers, or reported feeling needed by his/her coworkers	• "I didn't end up taking a break because I felt like my responsibilities to my teammates were more important than my own personal
Sudden change in the work situation	Participant indicated not taking a break because of an unexpected change in his or her perceived work situation	• "Because the quiet office I was working in suddenly became busy." • "I [...] realized I forgot to email my coworker about a project that needed to be submitted by the end of the day. I decided not to take a break so that I could finish my work and leave on time."
Expedience	Participant indicated not taking a break to reduce the amount of work needing to be done in the future, or indicated not taking a break to minimize the total amount of time spent on the job (e.g., to go home early)	• "I wanted to have an easy day the day after. So I decided not to take a break, because it was going to be worth it." • "because i would have had to stay late and I didn't want to do that"
Momentum	Participant indicated not taking a break to avoid "losing momentum," losing his/her train of thought, or disrupting his/her workflow, or mentioned making good progress towards his/her work tasks	• "I thought it would be best for me to finish up my analysis before taking my break, lest I take a break and then lose my train of thought and come back confused about what I had been previously doing"
Other	Responses that do not fit any of the above categories were coded as "other"	
Uncodable	This code was used by coders when participants (1) wrote an answer that was incomprehensible, (2) did not provide a response, or (3) provided a irrelevant response	

Table 3
Results: Positive Break Antecedents (Study 1)

Antecedent	% of Participants	
	Participants TOOK a break	Participants DID NOT take a break
Fatigue	45%	41%
Physiological Needs	30%	26%
Performance Concerns	28%	16%
Affect Regulation	21%	22%
Desire to Detach	18%	9%
Non-work preoccupations	5%	7%
Desire to Socialize	6%	6%
Other	9%	0%
Uncodable	0%	11%

N = 107 participants. Because participants could endorse multiple motives, the percentages do not add to 100%.

Table 4
Results: Negative Break Antecedents (Study 1)

Antecedents	% of Participants
Workload	33%
Expedience	25%
Momentum	27%
Sudden change in the work situation	10%
Supervisor	8%
Impression Management	6%
Concern for Coworkers	6%
Other	10%

N = 107 participants. Because participants were allowed to endorse multiple motives, the percentages do not add to 100%.

Table 5

Positive and Negative Break Antecedent Items

Positive Break Antecedent Items	Negative Break Antecedent Items
Fatigue	**Workload**
Tired	I have too much work to do
Exhausted	I have to work extra hard to finish a task
Drained	I can do my work comfortably (R)
Fatigued	I have to deal with a backlog at work
Sluggish	I have problems with the workload
Worn out	
Negative Affect	**Momentum Concerns**
Angry	When I get started on a task, I want to complete it before doing anything else*
Stressed out*	I seldom leave a task unfinished*
Frustrated	When I am working, I do my best to avoid interruptions
Anxious*	I rarely stop working when I am in the middle of a task
Upset	When I am engrossed in my work, I keep working no matter what
Annoyed	When I am making good progress at work, I try to avoid interruptions*
Performance Concerns	**Expedience Concerns**
I am making more mistakes than usual*	I want to get all my work done before the end of the day*
I am not being productive	I don't want to stay at work any later than I need to*
My performance is starting to suffer	I want to finish my work as soon as possible
I am struggling with my work	I want to complete all my work and get it over with
I am not performing as well as usual	I want to finish my work quickly so I don’t have to worry about it later
I am finding it harder than usual to concentrate*	
Desire to Detach	**Concern for Coworkers**
I want a change in scenery	I feel needed by my coworkers
I am sick of dealing with people at my job (e.g., customers, coworkers)*	My coworkers need my help
I want some time for myself	I don't want to leave my coworkers hanging*
I want to get out of the office for a moment	My coworkers would be overwhelmed without me around
I want some time away from my work	My coworkers need my support

* Item was removed following exploratory factor analyses and was not included in the final measures.

Table 6

Correlation Matrix (Study 2)

	Sample A		*Sample B*		*Correlations*									
	Mean	*SD*	*Mean*	*SD*	1	2	3	4	5	6	7	8	9	10
1. Age	37.64	10.45	37.38	9.74		.17***	-.18***	-.10*	-.14**	-.12*	.01	-.04	.02	.05
2. Gender	.44	.50	.49	.50	.20**		.07	-.03	.03	.13*	.06	.04	-.05	.09
3. Fatigue	1.94	.99	1.99	.97	-.27***	-.01		.55***	.51***	.43***	.40***	.18***	-.14**	-.09
4. Negative Affect	1.59	.77	1.47	.68	-.16*	.06	.58***		.41***	.30***	.43***	.12*	-.06	.02
5. Performance Concerns	1.84	.83	1.97	.88	-.14*	-.01	.58***	.47***		.38***	.34***	.06	-.32***	-.11*
6. Desire to Detach	3.10	1.06	3.38	1.04	-.08	.10	.49***	.48***	.46***		.35***	.28***	-.16**	.00
7. Workload	2.41	.94	2.46	.95	-.09	-.05	.46***	.42***	.32***	.46***		.13*	-.07	.22***
8. Expedience Concerns	4.17	.62	3.97	.84	-.08	.07	.08	.03	-.12	.18*	-.05		.18***	.17**
9. Momentum Concerns	3.94	.61	3.69	.84	.06	.04	-.19**	-.20**	-.41***	-.20**	-.15*	.39***		.09
10. Concern for Coworkers	3.56	.83	3.30	1.03	-.08	.07	.01	.01	-.12	-.04	.16*	.06	.28***	
Cronbach's α (Sample A)					—	—	.96	.92	.91	.90	.90	.86	.80	.89
Cronbach's α (Sample B)					—	—	.96	.90	.88	.89	.88	.90	.80	.92

Note: N = 225 (Sample A). N = 388 (Sample B). * $p < .05$. ** $p < .01$. *** $p < .001$. Gender is as coded 0 for male and 1 for female. Correlations for Sample A and Sample B are displayed below and above the diagonal, respectively.

Table 7

Factor Solution for Retained Items (Study 2, Sample A)

Items	Fatigue	Negative Affect	Performance Concerns	Desire to Detach	Workload	Concern for Coworkers	Expedience Concerns	Momentum Concerns
Tired	.84	-.02	.02	.12	-.03	.03	.00	.01
Exhausted	.92	.09	-.03	-.03	-.03	.02	-.07	.05
Drained	.90	.03	.00	-.02	.07	-.02	.01	-.04
Fatigued	.94	-.02	-.03	.00	.00	-.01	-.02	.00
Sluggish	.77	-.06	.10	.07	-.01	-.04	.12	-.04
Worn out	.85	.01	.07	-.02	.03	.03	.01	-.01
Angry	.00	.84	-.05	.02	-.01	.01	.03	-.03
Frustrated	.05	.77	-.01	.07	.03	.03	.02	-.09
Upset	.02	.86	.06	-.07	.05	.00	-.06	.09
Annoyed	.02	.82	.05	.07	-.03	.00	.04	-.01
I am not being productive	.00	.04	.73	.06	-.12	-.06	-.02	-.05
My performance is starting to suffer	.00	.02	.90	-.02	.01	.03	.04	-.04
I am struggling with my work	.04	.05	.81	-.05	.14	-.05	-.01	.05
I am not performing as well as usual	.04	-.04	.85	.06	.00	.04	-.05	.00
I want a change in scenery	-.04	.10	.11	.67	-.05	-.07	-.01	.03
I want some time for myself	.05	.00	.06	.70	.06	.04	.10	-.05
I want to get out of the office for a moment	.02	.00	-.02	.88	.06	-.02	-.03	.00
I want some time away from my work.	.04	.01	-.03	.93	.00	.01	.01	.00
I have too much work to do	.02	-.12	-.03	.06	.83	.11	-.01	-.03
I have to work extra hard to finish a task	.05	.04	.07	.03	.69	.09	.00	.00
I can do my work comfortably (R)	.09	.06	-.02	-.05	.70	-.16	.00	.01
I have to deal with a backlog at work	-.05	.10	.01	.02	.75	.08	-.07	-.01
I have problems with the workload	.01	.08	.07	.05	.80	-.10	.04	-.02
I feel needed by my coworkers	.04	.00	-.03	-.08	-.06	.82	.00	-.03
My coworkers need my help	-.07	.00	.03	.05	-.02	.97	-.01	.02
My coworkers would be overwhelmed without me around	.07	.06	-.06	.02	.22	.62	.09	.02
My coworkers need my support	.06	.01	-.02	-.05	.03	.81	-.01	.03
I want to finish my work as soon as possible	-.04	-.04	.01	.06	.04	.05	.80	.10
I want to complete all my work and get it over with	.04	.04	-.02	-.01	.02	-.04	.83	-.01
I want to finish my work quickly so I don't have to worry about it later	-.01	.01	-.01	-.03	-.08	.00	.82	-.03
When I am working, I do my best to avoid interruptions	-.05	-.03	-.18	.00	.13	.01	.13	.57
I rarely stop working when I am in the middle of a task	-.02	.01	.01	.04	-.04	.01	-.05	.89
When I am engrossed in my work, I keep working no matter what	.06	-.07	.01	-.09	-.06	.02	.14	.67

Note: N = 225. (R) denotes a reverse-coded item.

Table 8

Confirmatory Factor Analyses Results (Study 2, Sample B)

	χ^2	df	$\Delta\chi^2$	Δdf	*p*	*RMSEA*	*SRMR*	*CFI*	*TLI*
Proposed 8-factor model	986.74	467	—	—	—	.054	.054	.946	.939
5 factors: all negative antecedents combined into one factor	3261.35	485	2274.60	18	<.001	.121	.132	.711	.685
5 factors: all positive antecedents combined into one factor	3068.52	485	2081.78	18	<.001	.117	.104	.731	.707
2 factors: negative antecedents into one factor, positive antecedents into one factor	5284.08	494	4297.33	27	<.001	.158	.155	.501	.466
1 factor: all items combined into one factor	6109.41	495	5122.67	28	<.001	.171	.158	.415	.376

Note: $N = 388$. Model comparison statistics ($\Delta\chi^2$ and Δdf) are in reference to the proposed 8-factor model, in which items assessing each break antecedent (i.e., fatigue, negative affect, performance concerns, desire to detach, workload, expedience concerns, momentum concerns, and concern for coworkers) were set to load onto their intended factors.

Table 9

Correlation Matrix (Study 3)

Variables	*Correlations*																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Conscientiousness	(.87)																
2. Micro-break climate	.22***	(.85)															
3. Sleep Quality	.15*	.07	—	-.51***	-.20***	-.37***	-.32***	-.20***	-.15***	.07*	.00	-.08**	-.11***	.05	-.11***	-.24***	-.19***
4. Fatigue	-.31***	-.11	-.40***	(.97)	.44***	.60***	.43***	.37***	.22***	-.16***	-.05	.03	.20***	-.04	.18***	.36***	.32***
5. Negative Affect	-.29***	-.13*	-.20**	.49***	(.90)	.38***	.31***	.33***	.14***	-.11***	.00	.00	.17***	-.06*	.16***	.24***	.18***
6. Performance Concerns	-.42***	-.04	-.24***	.65***	.49***	(.93)	.42***	.36***	.20***	-.22***	-.11***	.01	.26***	-.05	.16***	.33***	.25***
7. Desire to Detach	-.24***	-.10	-.26***	.46***	.35***	.52***	(.93)	.34***	.27***	-.11***	.00	.06	.18***	-.07*	.16***	.34***	.24***
8. Workload	-.22***	-.19*	-.22***	.42***	.41***	.41***	.43***	(.88)	.26***	-.08*	.13***	.03	.19***	-.05	.16***	.32***	.21***
9. Expedience Concerns	.03	.10	-.18**	.25***	.18**	.14*	.31***	.23***	(.91)	.01	.21**	.07	.11***	-.07*	.03	.20***	.09**
10. Momentum Concerns	.46***	.07	.19**	-.21***	-.04	-.27***	-.18**	-.08	.06	(.85)	.15*	-.06	-.12***	.06*	-.09**	-.10***	-.04
11. Concern for Coworkers	.15*	.01	.12	-.09	-.03	-.12*	-.04	.23***	.05	.16***	(.90)	.03	-.03	.07*	-.06	.00	-.03
12. Break Frequency	-.34***	-.04	.14*	.24***	.30***	.30***	.09	.11	-.07	-.05	-.05	—	.15***	-.08*	.09**	.05	-.01
13. Shortcut Behaviors	-.51***	-.14*	-.13*	.40***	.34***	.46***	.33***	.40***	.12	-.24***	-.01	.35***	(.93)	-.14***	.36***	.27***	.26***
14. Safety Behaviors	.31***	.24***	.19**	-.06	-.15	-.17**	-.14	-.18**	.11	.14*	.07	-.05	-.29***	(.87)	-.02	-.12***	-.07*
15. Cognitive Failures	-.41***	-.11	.02	.38***	.46***	.42***	.20**	.37***	.01	-.11	.04	.49***	.63***	-.20**	(.94)	.19***	.21***
16. Emotional Exhaustion	-.26***	-.14*	-.37***	.44***	.39***	.40***	.44***	.52***	.24***	-.16*	.06	.05	.41***	-.20**	.34***	(.78)	.37***
17. Physical Symptoms	-.29***	-.15*	-.24***	.46***	.52***	.35***	.35***	.39***	.16*	-.08	.06	.34***	.42***	-.16*	.52***	.48***	(.85)
Mean	4.05	3.72	3.41	1.97	1.53	2.09	3.28	2.53	3.89	3.71	3.32	1.98	2.21	3.83	1.57	2.80	.11
$SD_{Between}$	.62	.63	.74	.87	.68	.80	.95	.88	.77	.76	.85	1.63	.85	.69	.68	.76	.11
SD_{Within}	—	—	.73	.69	.46	.70	.64	.50	.51	.42	.50	1.00	.45	.35	.26	.64	.07
ICC(1)	—	—	.31	.47	.56	.42	.59	.67	.59	.69	.66	.61	.70	.73	.82	.44	.62

Note: n = 1435 daily observations nested within *N* = 287 individuals. Between-person correlations are shown below the diagonal, and within-person correlations are shown above the diagonal. * $p < .05$. ** $p < .01$. *** $p < .001$. Internal consistency reliabilities (Cronbach's α) are displayed on the diagonal. For measures that were assessed multiple times, the mean Cronbach's α across all 5 days was used.

Table 10

Measurement Invariance Tests (Study 3)

Model Tested	χ^2	*df*	CFI	TLI	RMSEA	SRMR	comparison model	$\Delta\chi^2$	Δdf	ΔCFI	ΔRMSEA	ΔSRMR
1. Configural Invariance	4421.24	2335	.945	.938	.058	.051	—	—	—	—	—	—
2. Metric Invariance	4543.27	2435	.945	.940	.057	.053	1	122.04	2435	.001	.001	.003
3. Scalar Invariance	4637.09	2535	.945	.943	.056	.054	2	93.82	2535	.000	.001	.000
4. Invariant Uniquenesses	4949.11	2667	.940	.941	.057	.055	3	312.02***	2667	.005	-.001	.001
5. Invariant Factor Variances	4997.13	2699	.940	.941	.057	.066	4	48.01*	2699	.000	.000	.011
6. Invariant Factor Covariances	5092.56	2811	.940	.944	.056	.071	5	95.43	2811	.000	.001	.005
7. Invariant Factor Means	5127.68	2843	.940	.944	.055	.073	6	35.13	2843	.000	.000	.002

Note: Ns = 260-268. * $p < .05$. *** $p < .001$. CFI = Comparative fit index. TLI = Tucker-Lewis index. RMSEA = root mean square error of approximation. SRMR = Standardized root mean square residual.

Table 11

Multilevel Regression Results Predicting Fatigue, Negative Affect, and Performance Concerns (Study 3)

Independent Variable	DV = Fatigue				DV = Negative Affect				DV = Performance Concerns			
	γ	*SE*	*t*	*p*	*γ*	*SE*	*t*	*p*	*γ*	*SE*	*t*	*p*
Intercept	1.97	.05	40.48	<.001	1.53	.04	40.78	<.001	2.09	.05	45.79	<.001
Workload	.27	.03	8.57	<.001	.24	.03	8.88	<.001	.31	.04	8.22	<.001
Sleep Quality	-.59	.02	-26.76	<.001	-.16	.02	-8.30	<.001	-.43	.03	-16.66	<.001
Workload × Sleep Quality	-.10	.04	-2.32	.021	-.10	.04	-2.67	.008	-.13	.05	-2.61	.009
R^2				.49				.17				.31

Note: n = 1435 daily observations nested within *N* = 287 individuals.

Table 12

Multilevel Regression Results Predicting Desire to Detach (Study 3)

Independent Variable	DV = Desire to Detach			
	γ	*SE*	*t*	*p*
Intercept	3.27	.05	60.42	<.001
Workload	.21	.04	5.66	<.001
Sleep Quality	-.09	.03	-2.82	.005
Workload × Sleep Quality	.01	.05	.20	.840
Fatigue	.14	.04	3.49	<.001
Negative Affect	.13	.04	3.03	.002
Performance Concerns	.16	.03	5.03	<.001
R^2				.26

Note: n = 1435 daily observations nested within *N* = 287 individuals.

Table 13
Multilevel Regression Results Predicting Break Frequency (Study 3)

Independent Variable	DV = Break Frequency											
	γ	*SE*	*t*	*p*	*γ*	*SE*	*t*	*p*	*γ*	*SE*	*t*	*p*
Intercept	1.91	.08	23.05	<.001	1.92	.08	24.14	<.001	1.92	.08	23.80	<.001
Workload	.02	.07	.33	.742	.00	.07	.07	.947	.00	.07	.05	.960
Sleep Quality	-.06	.06	-.97	.334	-.05	.06	-.81	.419	-.05	.06	-.77	.439
Workload × Sleep Quality	-.16	.08	-1.91	.056	-.16	.08	-1.99	.047	-.15	.09	-1.64	.102
Fatigue	-.01	.07	-.11	.912	-.01	.07	-.08	.933	.00	.07	.05	.961
Negative Affect	-.06	.08	-.74	.457	-.06	.08	-.80	.421	-.06	.08	-.76	.446
Performance Concerns	-.05	.06	-.85	.394	-.06	.06	-.97	.331	-.06	.06	-.92	.355
Desire to Detach	.10	.06	1.76	.078	.09	.06	1.51	.131	.09	.06	1.55	.122
Expedience					.08	.06	1.26	.209	.06	.06	.98	.328
Momentum Concerns					-.12	.08	-1.54	.122	-.11	.08	-1.41	.158
Concern for Coworkers					.04	.07	.67	.500	.06	.07	.89	.376
Micro-Break Climate					.12	.13	.89	.371	.11	.13	.81	.418
Conscientiousness					-.74	.14	-5.40	<.001	-.60	.30	-2.03	.042
Desire to Detach × Workload									.11	.11	1.00	.315
Desire to Detach × Expedience									-.17	.10	-1.82	.069
Desire to Detach × Momentum Concerns									.04	.13	.35	.730
Desire to Detach × Concern for Coworkers									.03	.10	.28	.783
Desire to Detach × Micro-Break Climate									.20	.08	2.46	.014
Desire to Detach × Conscientiousness									-.04	.08	-.49	.626
R^2	.19				.19				.20			
ΔR^2					.00				.01			

Note: n = 1435 daily observations nested within *N* = 287 individuals. Micro-break climate and conscientiousness were measured at the between-person level.

Table 14

Moderated Serial Indirect Effect Results (Study 3)

	Stage 1		Stage 2		Stage 3		Mediation		
	Workload → Fatigue		Fatigue → Detach		Detach → Breaks		IE	LB	UB
Low SQ, Low Expedience	.35	.04	.14	.04	.18	.08	.008*	.001	.020
Low SQ, High Expedience	.35	.04	.14	.04	.00	.08	.000	-.008	.008
High SQ, Low Expedience	.20	.05	.14	.04	.18	.08	.005*	.000	.013
High SQ, High Expedience	.20	.05	.14	.04	.00	.08	.000	-.005	.005
Low SQ, Low MBC	.35	.04	.14	.04	-.03	.09	-.001	-.012	.008
Low SQ, High MBC	.35	.04	.14	.04	.22	.09	.009*	.001	.023
High SQ, Low MBC	.20	.05	.14	.04	-.03	.09	-.001	-.007	.005
High SQ, High MBC	.20	.05	.14	.04	.22	.09	.005*	.000	.014

	Stage 1		Stage 2		Stage 3		Mediation		
	Workload → NA		NA → Detach		Detach → Breaks		IE	LB	UB
Low SQ, Low Expedience	.31	.04	.13	.04	.18	.08	.007*	.001	.017
Low SQ, High Expedience	.31	.04	.13	.04	.00	.08	.000	-.007	.007
High SQ, Low Expedience	.17	.05	.13	.04	.18	.08	.004†	.000	.011
High SQ, High Expedience	.17	.05	.13	.04	.00	.08	.000	-.004	.004
Low SQ, Low MBC	.31	.04	.13	.04	-.03	.09	-.001	-.009	.006
Low SQ, High MBC	.31	.04	.13	.04	.22	.09	.007*	.001	.019
High SQ, Low MBC	.17	.05	.13	.04	-.03	.09	-.001	-.005	.004
High SQ, High MBC	.17	.05	.13	.04	.22	.09	.004*	.000	.012

	Stage 1		Stage 2		Stage 3		Mediation		
	Workload → Perf		Perf → Detach		Detach → Breaks		IE	LB	UB
Low SQ, Low Expedience	.41	.04	.16	.03	.18	.08	.011*	.001	.025
Low SQ, High Expedience	.41	.04	.16	.03	.00	.08	.000	-.011	.011
High SQ, Low Expedience	.22	.05	.16	.03	.18	.08	.006*	.001	.014
High SQ, High Expedience	.22	.05	.16	.03	.00	.08	.000	-.006	.006
Low SQ, Low MBC	.41	.04	.16	.03	-.03	.09	-.002	-.014	.010
Low SQ, High MBC	.41	.04	.16	.03	.22	.09	.013*	.001	.028
High SQ, Low MBC	.22	.05	.16	.03	-.03	.09	-.001	-.008	.006
High SQ, High MBC	.22	.05	.16	.03	.22	.09	.007*	.001	.016

Note: n = 1435 daily observations nested within N = 287 individuals. SQ = Sleep quality. Expedience = Expedience Concerns. MBC = Micro-break climate. Detach = Desire to detach. Breaks = Break Frequency. NA = Negative affect. Perf = Performance concerns. Lower bound (LB) and upper bound (UB) of the indirect effect (IE) are based on the 95% confidence interval. Micro-break climate was measured at the between-person level. † $p < .10$. * $p < .05$.

Table 15

Exploratory Analyses using Multilevel Modeling (Study 3)

Independent Variable	DV = Emotional Exhaustion				DV = Physical Symptoms				DV = Safety Behaviors				DV = Shortcut Behaviors				DV = Cognitive Failures			
	γ	*SE*	*t*	*p*	*γ*	*SE*	*t*	*p*	*γ*	*SE*	*t*	*p*	*γ*	*SE*	*t*	*p*	*γ*	*SE*	*t*	*p*
Intercept	2.79	.04	64.11	<.001	.11	.01	17.20	<.001	3.82	.04	97.14	<.001	2.23	.04	51.80	<.001	1.55	.03	44.59	<.001
Workload	.20	.04	4.54	<.001	.01	.00	2.65	.008	-.02	.03	-.80	.425	.06	.03	1.94	.053	.05	.02	2.68	.007
Sleep Quality	-.06	.04	-1.53	.125	-.02	.00	-4.05	<.001	.02	.02	.70	.482	.03	.03	.98	.326	.01	.02	.68	.497
Workload × Sleep Quality	-.07	.06	-1.29	.197	.00	.01	.60	.551	-.01	.04	-.15	.882	.04	.04	.82	.413	.00	.03	-.13	.895
Fatigue	.12	.04	2.64	.008	.01	.00	2.13	.033	.03	.03	1.22	.224	.02	.03	.61	.543	.03	.02	1.56	.119
Negative Affect	.05	.05	1.12	.264	.00	.01	.38	.704	-.04	.03	-1.30	.193	.05	.04	1.26	.206	.04	.02	2.10	.036
Performance Concerns	.06	.04	1.49	.137	.00	.00	.46	.649	.00	.02	.09	.926	.11	.03	3.69	<.001	.01	.02	.55	.581
Desire to Detach	.15	.04	4.04	<.001	.01	.00	2.09	.037	-.02	.02	-.79	.432	.05	.03	1.65	.098	.02	.02	1.44	.150
Expedience	.06	.04	1.62	.105	.00	.00	-.40	.686	-.04	.02	-1.48	.140	.02	.03	.79	.427	-.02	.02	-1.15	.252
Momentum Concerns	-.02	.04	-.56	.579	.00	.00	-.88	.381	.05	.02	2.21	.027	-.01	.03	-.37	.712	-.03	.02	-1.60	.109
Concern for Coworkers	-.03	.05	-.52	.604	.01	.01	1.06	.288	.03	.03	.97	.330	-.06	.04	-1.69	.090	-.02	.02	-.88	.377
Micro-Break Climate	-.11	.07	-1.52	.128	-.01	.01	-1.43	.152	.22	.06	3.40	.001	-.03	.07	-.42	.675	-.01	.06	-.21	.834
Conscientiousness	-.32	.07	-4.30	<.001	-.05	.01	-4.45	<.001	.29	.07	4.36	<.001	-.74	.07	-9.96	<.001	-.46	.06	-7.76	<.001
Desire to Detach × Workload	.01	.06	.19	.848	.01	.01	.89	.375	.08	.04	1.88	.060	.10	.05	1.93	.053	-.09	.03	-2.99	.003
Desire to Detach × Expedience	.10	.06	1.77	.076	.00	.01	.59	.553	-.05	.04	-1.46	.145	.00	.04	.11	.914	.04	.03	1.34	.180
Desire to Detach × Momentum Concerns	.00	.08	.05	.964	-.01	.01	-1.58	.113	.07	.05	1.38	.168	-.03	.06	-.49	.627	-.03	.03	-1.00	.315
Desire to Detach × Concern for Coworkers	-.02	.06	-.40	.690	.00	.01	.25	.804	.03	.04	.90	.369	.00	.04	-.01	.989	.01	.03	.48	.631
Desire to Detach × Micro-Break Climate	.08	.05	1.59	.113	.00	.01	-.68	.499	.00	.03	-.10	.922	.05	.04	1.33	.185	.01	.02	.31	.757
Desire to Detach × Conscientiousness	.06	.06	1.03	.303	.01	.01	1.14	.254	.00	.03	-.11	.915	-.09	.04	-2.08	.037	.00	.02	-.18	.858
Break Frequency	.02	.02	.88	.381	.00	.00	-.63	.526	-.03	.01	-2.36	.018	.06	.02	3.97	<.001	.02	.01	2.31	.021

Note: n = 1435 daily observations nested within *N* = 287 individuals. Micro-break climate and conscientiousness were measured at the between-person level.

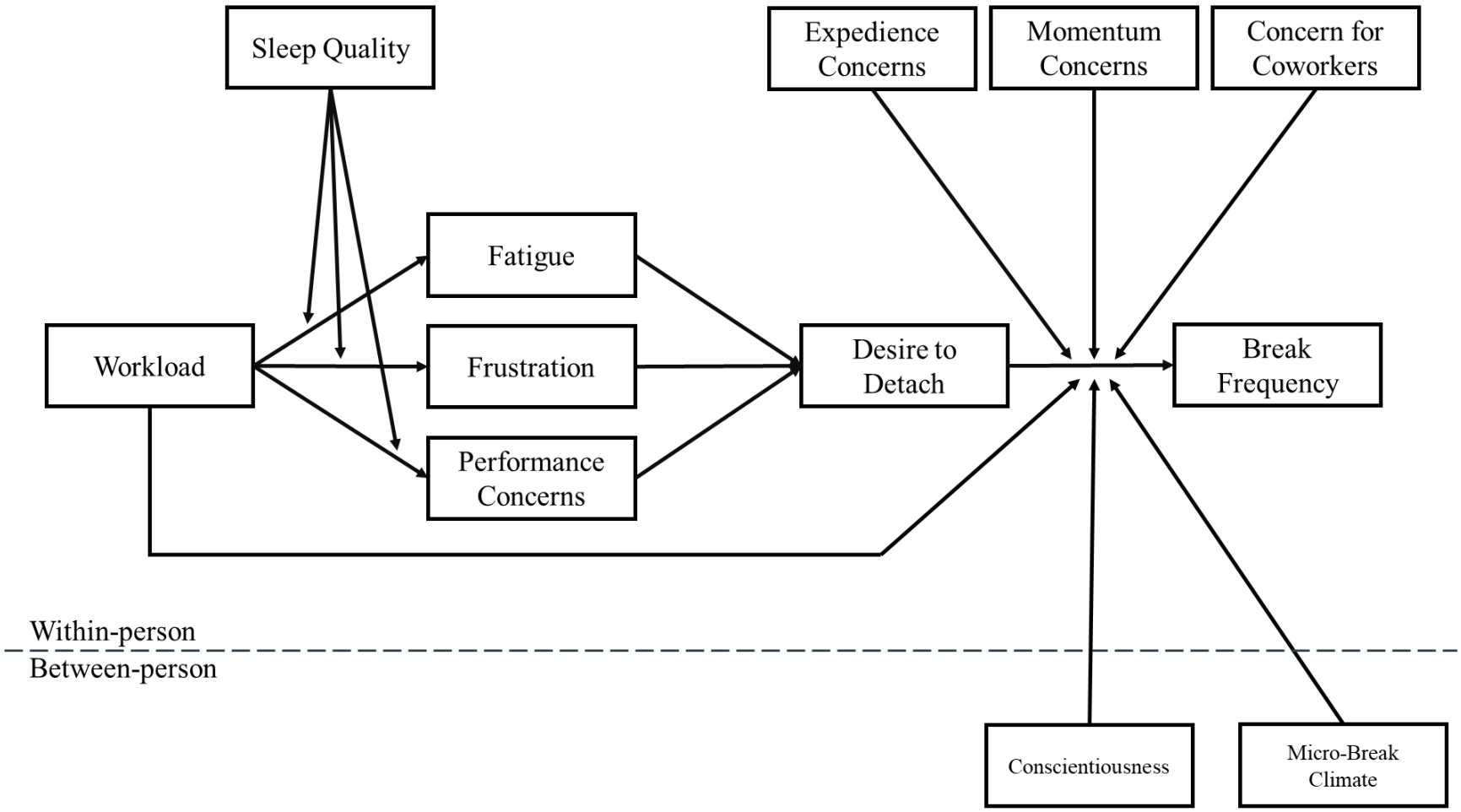


Figure 1. Proposed model

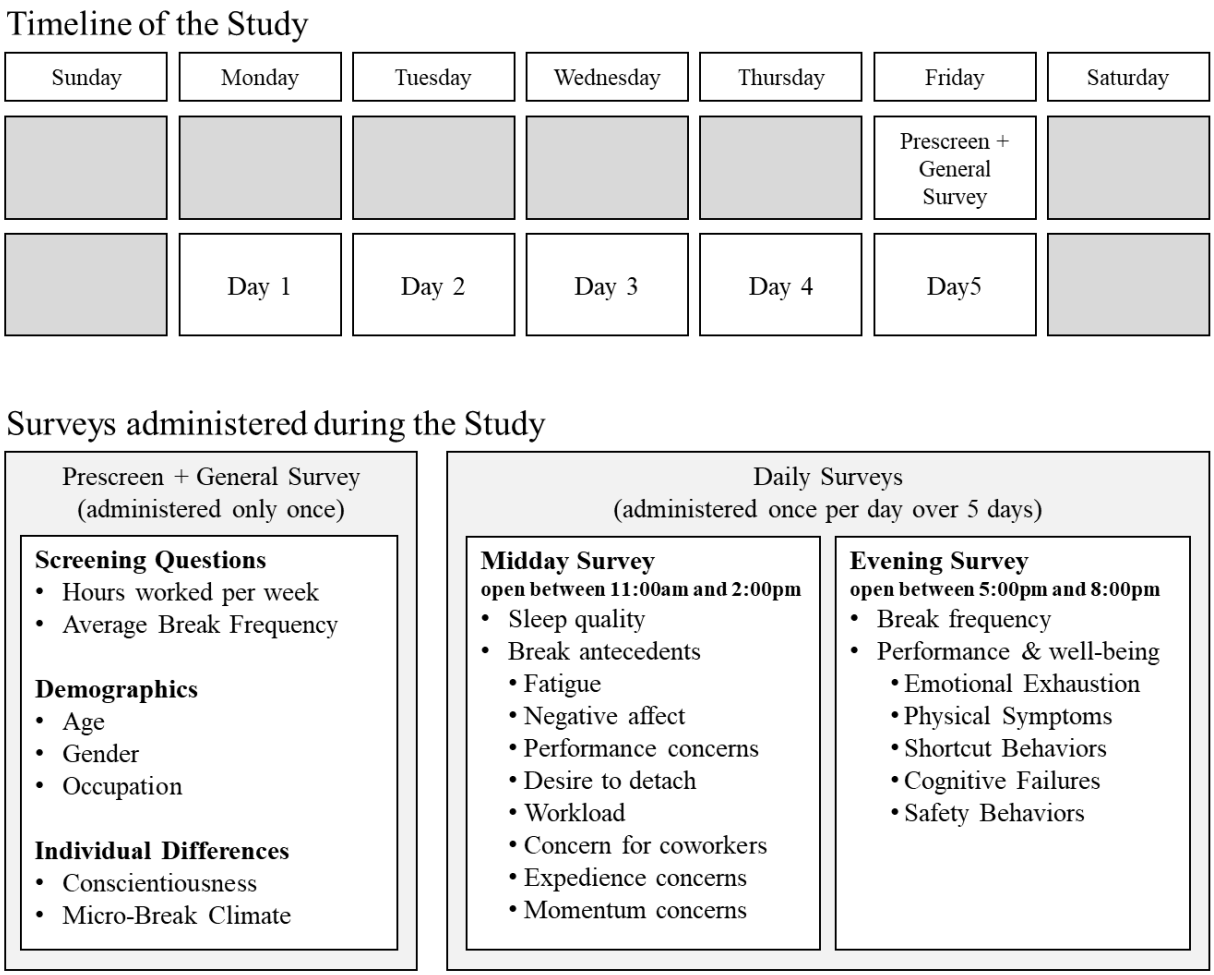


Figure 2. Procedure used in Study 3.

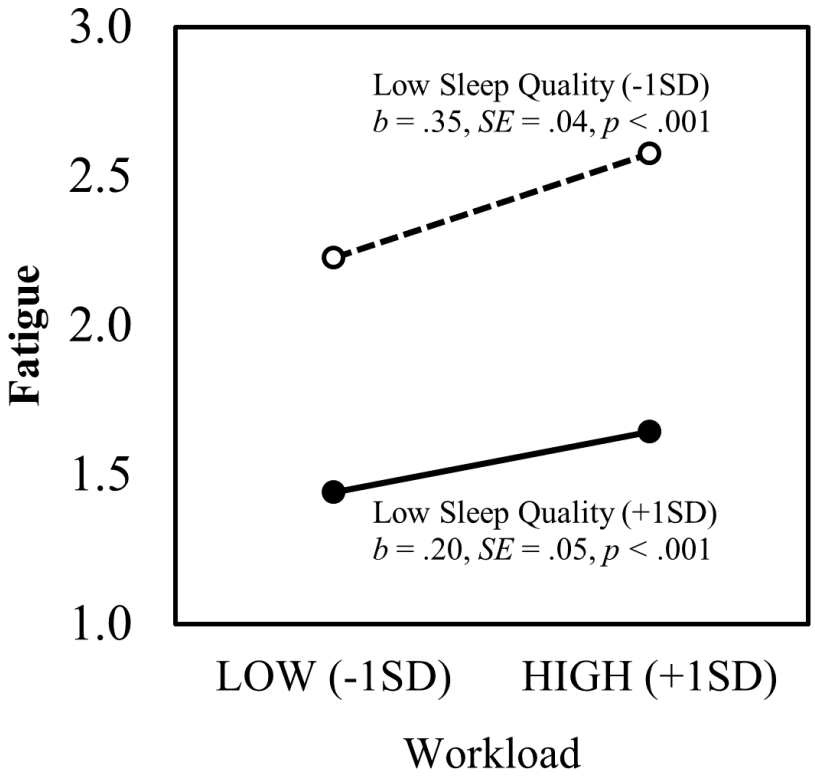


Figure 3. The interaction between workload and sleep quality predicting fatigue (Study 3).

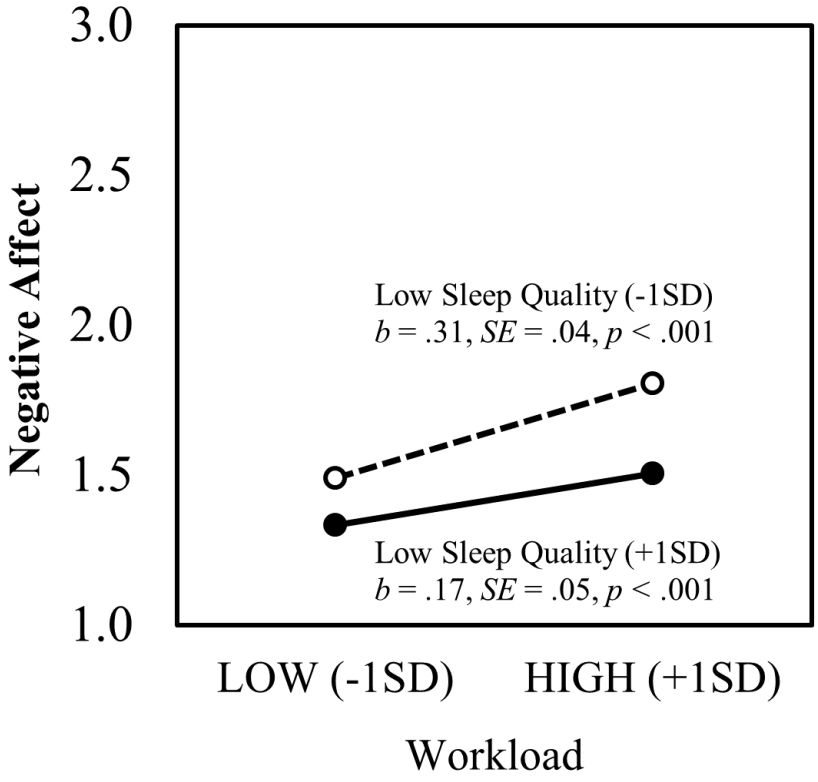


Figure 4. The interaction between workload and sleep quality predicting negative affect (Study 3).

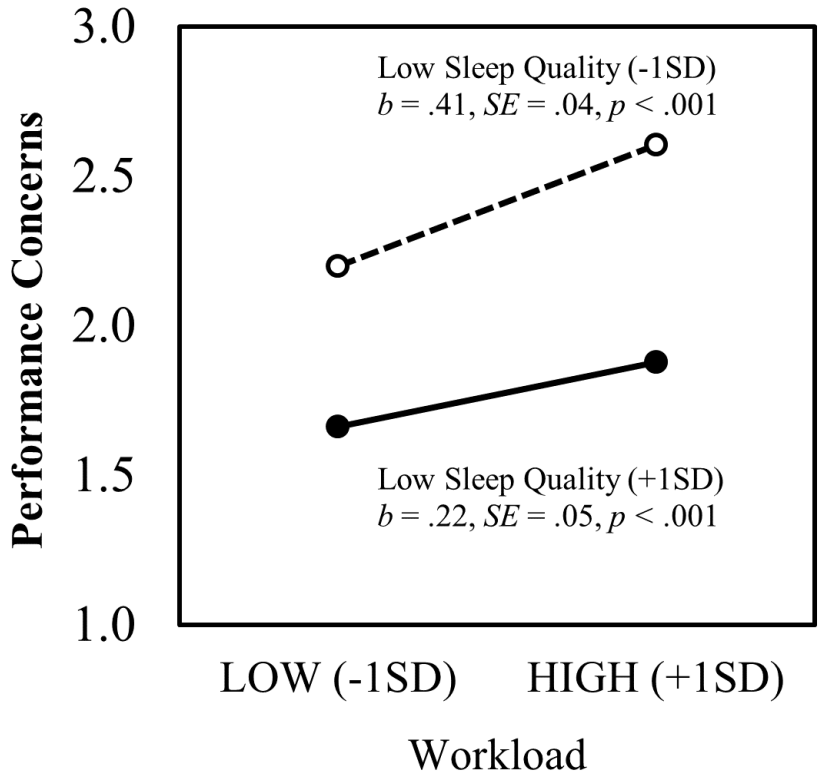


Figure 5. The interaction between workload and sleep quality predicting performance concerns (Study 3).

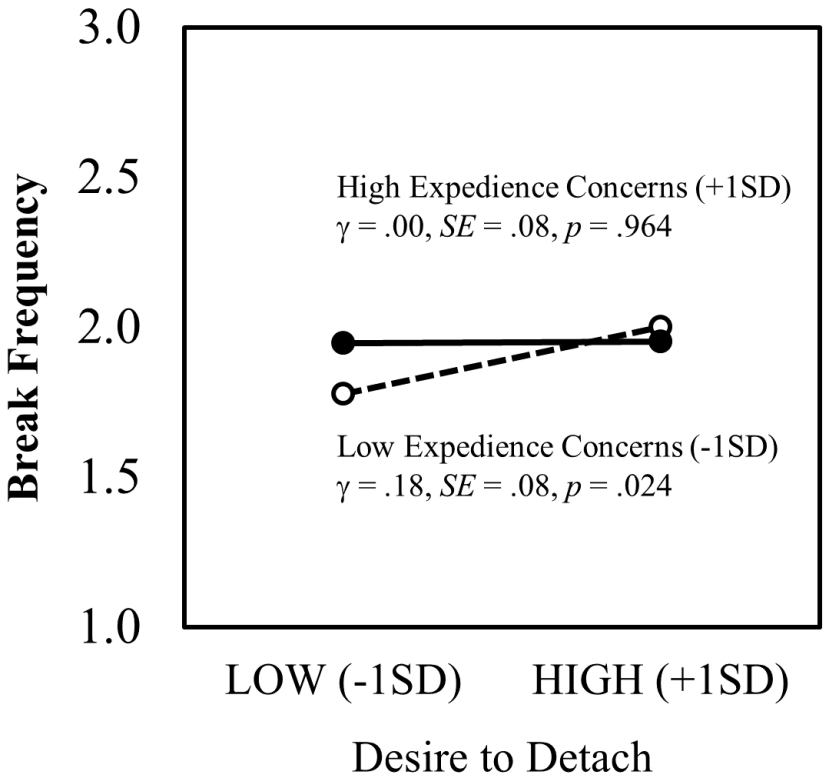


Figure 6. The interaction between desire to detach and expedience concerns predicting break frequency (Study 3).

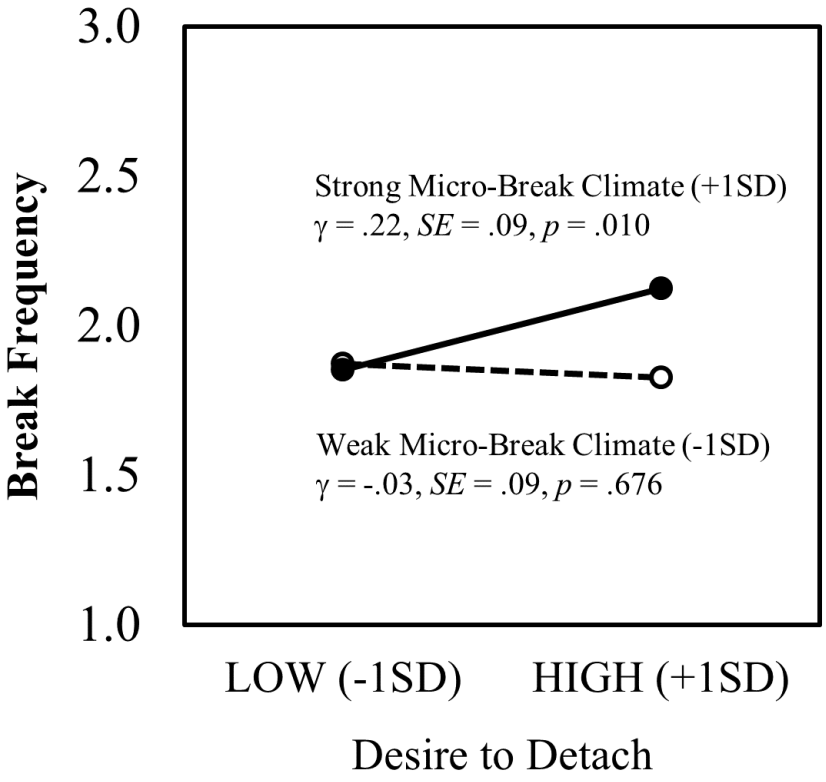


Figure 7. The interaction between desire to detach and micro-break climate predicting break frequency (Study 3).

Appendix A: Full description of Study 2 and exploratory analyses

A secondary goal of Study 2 was to conduct a preliminary test of the hypotheses. Thus, in addition to administering measures of the break antecedents, I also measured participants' micro-break climate, conscientiousness, sleep quality, and break frequency. These constructs were measured via three separate surveys over one workday. The use of multiple surveys allowed me to reduce the inflating effects of common method variance on relationships (Podsakoff et al., 2003), and to determine whether the break antecedents measured earlier during the day can predict break frequency later that same day. Below I provide a more detailed summary of the procedure used in Study 2, present a summary of the analyses I conducted to test the hypotheses, and provide a brief discussion of the results obtained.

Method

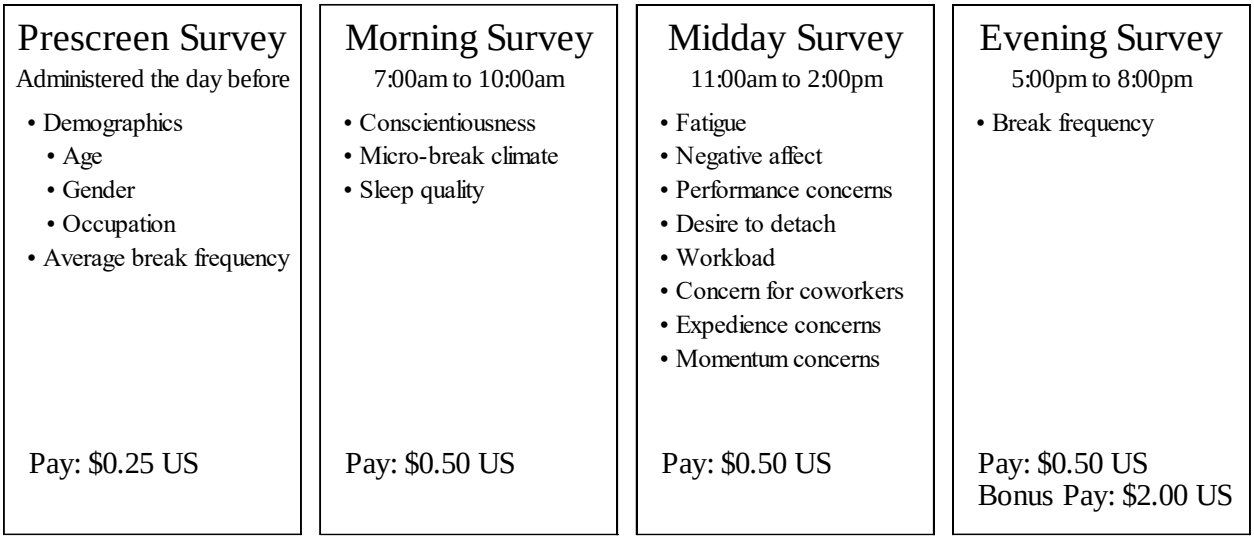
Participants

Participants were recruited from MTurk. Eligible individuals worked 30 or more hours per week and reported taking at least one break per workday on average. Only participants who completed all three surveys and who correctly answered all attention checks were retained for analyses. The final sample was 225 for Sample A and 388 for Sample B.

Procedure

The procedure is illustrated below. During the prescreen, individuals indicated the number of breaks they took on average during a workday, as well as demographic questions (e.g., age, gender, ethnicity). Because participants would be asked to complete surveys at specific hours during one workday, it was important to ensure that all participants resided primarily within the same time zone. Thus, the prescreen was made visible only to individuals

residing in US States which primarily use the Eastern Time Zone[4]. Immediately following the prescreen, individuals eligible for the focal study were provided with an overview of the study. Participants were told that they would complete three surveys at specific times over one workday: a *morning* survey, a *midday* survey, and an *evening* survey. The morning survey consisted of the micro-break climate, conscientiousness, and sleep quality measures. The midday survey consisted of the break antecedent measures. In the evening survey participants reported their break frequency over the last 4 hours of their workday. Participants received $0.50 for completing each survey, and participants completing *all* three surveys received a $2.00 bonus.



Measures

Micro-break climate. I measured micro-break climate using Niu's (2016) 21-item measure (1 = *strongly disagree*, 5 = *strongly agree*).

[4] TurkPrime only allows researchers to filter participants based on broad geographical regions (e.g., "Northeast", "East North Central") as opposed to time zones specifically. Thus, some of the individuals recruited resided in states in the Central Time Zone (e.g., Illinois, Wisconsin) instead of the Eastern Time Zone. It was not possible to identify those individuals because I did not collect individual time zone data. Nonetheless, I do not believe that the inclusion of these individuals had any meaningful influence on the results given the small difference in time (i.e., 1 hour) between the Eastern and the Central Time Zone, as well as the fact that participants were provided with a wide time window (3 hours) to complete the survey.

Conscientiousness. I measured conscientiousness using 10 items from the International Personality Item Pool (Goldberg et al., 2006). A sample item was "I make plans and stick to them" (1 = *strongly disagree*, 5 = *strongly agree*).

Sleep Quality. I assessed sleep quality the following item from the Pittsburgh Sleep Quality Index (Buysse et al., 1989): "How would you evaluate last night's sleep?" (1 = *Very poor*, 5 = *Excellent*).

Positive break antecedents. I measured the positive break antecedents using items created for this research. These items are listed in Table 5. This was done following recommended scale development guidelines (Hinkin, 1998), and items were written based on the statements participants made in Study 1. When answering items, participants were asked to think about their experiences, feelings, and behaviors on the job from the beginning of their workday up until now (i.e., when completing the questionnaire). I assessed fatigue and negative affect via six items each; for these items, participants indicated the extent to which they currently felt the state described in each item on a 5-point scale (1 = *not at all*, 5 = *extremely*). I assessed performance concerns via six items and desire to detach via five items; participants responded these items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*).

Negative break antecedents. As done for the positive antecedents, I measured the negative antecedents using items created for this research. One exception to this was workload, which was measured using five items from Janssen (2001). When answering items, participants were asked to think about their experiences, feelings, and behaviors from the beginning of their workday up until now. I assessed *concern for coworkers* using four items, *expedience concerns* using three items, and *momentum concerns* using three items. Participants responded to items on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). All the items are listed in Table 5.

Break frequency. We assessed break frequency via the following item: "Within the last four hours of your workday, how many breaks did you take?" This was done to assess relationships between participants' experiences earlier in the workday and the number of breaks taken later that day.

Average break frequency. I assessed average break frequency during the prescreen via the following item: "In a typical workday, how many breaks do you take on average?"

Results

Descriptive Statistics

Means, standard deviations, intercorrelations, and internal consistency reliabilities for Samples A and B are shown in Table 6.

Measurement Invariance Tests

Before conducting preliminary hypotheses tests, I sought to combine both Sample A and Sample B to increase statistical power. Only those items completed by participants across both samples were considered in the analyses. However, prior to combining the data it was necessary to ensure that participants interpreted and answered these items in the same manner across samples. In other words, it was important to demonstrate the break antecedent items' *measurement invariance*. I tested for measurement invariance using recommended guidelines (Kline, 2015; Vandenberg & Lance, 2000).

Fit indices for each model tested, as well as model comparisons, are summarized below. To begin, I specified a 10-factor measurement model in which items corresponding to the 4 positive antecedents, the 4 negative antecedents, conscientiousness, and micro-break climate as separate factors. Note that given the large number of micro-break climate items (i.e., 21), I created item parcels representing the four facets of micro-break climate as opposed to including

all individual items in the model. Next, I tested for *configural invariance* by testing whether the items loaded onto their intended factors across both samples; this model provided acceptable fit to the data based on conventional criteria. I then tested for *metric invariance*, *scalar invariance*, and *invariant uniqueness* by constraining the factor loadings, the intercepts, and the residual variance for like items to be the same across studies, respectively. Finally, I tested for *invariant factor variances, invariant factor covariances*, and *invariant factor means* by constraining each like latent factor's variance, covariance, and mean to be equal across studies, respectively.

Model Tested	χ^2	*df*	CFI	RMSEA	SRMR	comparison model	$\Delta\chi^2$	Δdf	ΔCFI	ΔRMSEA	ΔSRMR
1. Configural Invariance	3891.646	1978	.903	.057	.057	—	—	—	—	—	—
2. Metric Invariance	3935.601	2015	.902	.056	.058	1	43.955	37	.000	.000	.001
3. Scalar Invariance	3970.817	2052	.903	.056	.058	2	35.216	37	.000	.001	.000
4. Invariant Uniquenesses	4048.376	2099	.901	.056	.059	3	77.559**	47	.002	.000	.000
5. Invariant Factor Variances	4071.469	2109	.900	.056	.064	4	23.093	10	.001	.000	.005
6. Invariant Factor Covariances	4132.249	2154	.900	.055	.066	5	60.780	45	.001	.000	.002
7. Invariant Factor Means	4152.721	2164	.899	.055	.066	6	20.472*	10	.001	.000	.001

I compared the relative fit of each model using ΔCFI, ΔRMSEA, and ΔSRMR. I used these indices to assess relative model fit instead of $\Delta\chi^2$ because $\Delta\chi^2$ tends to be overly sensitive to sample size (Cheung & Rensvold, 2002; Meade et al., 2008). Although cutoff recommendations for these indices vary (Kline, 2016), simulations studies by Chen (2007) suggest that ΔCFI values ≤ .005, ΔRMSEA values ≤ .010, and ΔSRMR values ≤ .025 are adequate cutoffs for assessing invariance for small and unequal groups (e.g., ≤ 300). As shown above, ΔCFI were ≤ .002, ΔRMSEA were ≤ .001, and ΔSRMR were from ≤ .005. Taken together, these analyses provide support for measurement invariance, and as such, suggest that the decision to combine both samples for preliminary hypotheses tests is appropriate.

Preliminary Hypothesis Tests

H1. Workload was positively related to fatigue (b = .41, SE = .04, p < .001, R^2 = .17), negative affect (b = .30, SE = .03, p < .001, R^2 = .18), and performance concerns (b = .28, SE = .03, p < .001, R^2 = .11), meaning H1a, H1b, and H1c were supported.

H2. Results for H2 are shown below. Contrary to H2a and H2c, the workload × sleep quality interaction on fatigue and on performance concerns were non-significant. Next, the workload × sleep quality interaction on negative affect proposed in H2b was under the conventional threshold of significance. Examination of the simple slopes suggest that the positive relationships between workload and negative affect were stronger among participants reporting poor quality sleep (b = .33, SE = .04, p < .001) as opposed to high quality sleep (b = .23, SE = .04, p < .001) the previous night. This pattern is consistent with H2b, however this interaction should be interpreted with caution given that the interaction was non-significant. In sum, H2 was largely unsupported.

	Fatigue				Frustration				Performance Concerns			
Predictors	*b*	*SE*	*t*	*p*	*b*	*SE*	*t*	*p*	*b*	*SE*	*t*	*p*
Intercept	1.98	.03	56.88	<.001	1.50	.03	56.44	<.001	1.92	.03	58.73	<.001
Workload	.35	.03	9.98	<.001	.28	.03	10.51	<.001	.24	.03	7.28	<.001
Sleep Quality	-.29	.04	-8.33	<.001	-.11	.03	-4.07	<.001	-.22	.03	-6.74	<.001
Workload x Sleep Quality	.04	.04	1.05	.293	-.05	.03	-1.96	.051	.01	.03	.17	.866
R^2	.26				.20				.17			

H3. Results for H3 are shown below. Consistent with H3a and H3c, fatigue and performance concerns were positively related to desire to detach. Yet, contrary to H3b negative affect was not significantly related to desire to detach. Thus, H3 was partially supported.

	Desire to Detach							
Predictors	*b*	*SE*	*t*	*p*	*b*	*SE*	*t*	*p*
Intercept	3.28	.04	90.53	<.001	3.28	.04	88.36	<.001
Workload	.21	.04	5.17	<.001	.21	.04	5.16	<.001
Sleep Quality					-.02	.04	-.49	.624
Workload x Sleep Quality					.02	.04	.62	.535
Fatigue	.24	.05	4.86	<.001	.23	.05	4.52	<.001
Frustration	.06	.05	1.23	.219	.06	.05	1.29	.196
Performance Concerns	.21	.04	4.81	<.001	.21	.04	4.67	<.001
R^2	.27				.28			

H4 & H5. Results for H4 and H5 are shown below. Contrary to H4, desire to detach was not significantly related to break frequency. In H5 I expected the relationship between desire to detach and break frequency to be weaker when workload, expedience concerns, momentum concerns, and concern for coworkers are high as opposed to low. I also I expected the relationship between desire to detach and break frequency to be attenuated among individuals within a weak as opposed to a strong micro-break climate, as well as among individuals high as opposed to low in conscientiousness. However, neither workload, expedience concerns, expedience concerns, momentum concerns, concern for coworkers, micro-break climate, nor desire to detach × conscientiousness significantly moderated the relationship between desire to detach and break frequency. Thus, H5 was unsupported.

	Break Frequency											
Predictors	*b*	*SE*	*t*	*p*	*b*	*SE*	*t*	*p*	*b*	*SE*	*t*	*p*
Intercept	1.94	.06	32.19	<.001	.51	.03	14.97	<.001	1.96	.06	30.31	<.001
Average Break Frequency	.96	.06	15.91	<.001	.51	.03	14.97	<.001	.89	.06	14.71	<.001
Workload	-.13	.07	-1.90	.058	-.05	.04	-1.31	.171	-.10	.07	-1.29	.197
Sleep Quality	.11	.06	1.67	.095	.06	.04	1.71	.107	.11	.06	1.68	.093
Workload x Sleep Quality	.11	.06	1.71	.087	.05	.03	1.40	.157	.04	.06	.64	.520
Fatigue	-.08	.08	-.98	.327	-.03	.05	-.62	.480	-.04	.08	-.46	.644
Frustration	.15	.08	1.97	.049	.08	.04	1.95	.052	.18	.08	2.30	.022
Performance Concerns	.17	.07	2.35	.019	.06	.04	1.46	.139	.10	.08	1.31	.191
Desire to Detach	-.03	.07	-.44	.660	-.01	.04	-.13	.948	-.06	.08	-.77	.442
Expedience Concerns					-.05	.04	-1.40	.168	-.09	.06	-1.42	.157
Momentum Concerns					-.04	.04	-.96	.323	-.08	.07	-1.10	.271
Concern for Coworkers					-.01	.04	-.30	.699	-.02	.06	-.36	.720
Micro-Break Climate					.07	.04	1.90	.044	.11	.07	1.63	.104
Conscientiousness					-.02	.04	-.52	.613	-.01	.07	-.19	.849
Desire to Detach x Workload									-.06	.07	-.85	.397
Desire to Detach x Expedience									-.01	.05	-.10	.918
Desire to Detach x Momentum									.08	.07	1.16	.247
Desire to Detach x Concern for Coworkers									-.10	.06	-1.73	.084
Desire to Detach x Micro-Break									.09	.07	1.36	.173
Desire to Detach x Conscientiousness									.03	.07	.46	.644
R^2	.32				.32				.33			
ΔR^2					.00				.01			

H6. Given the lack of support for H4 and H5, I did not test serial indirect effects of workload on break frequency, nor did I test any of the hypothesized moderated serial indirect effects. Nonetheless, most of the hypotheses pertaining to the indirect effects of workload on desire to detach (i.e., H1 and H3) were supported. Thus, I tested the indirect effects of workload on desire to detach via (1) fatigue, (2) negative affect, and (3) performance concerns. The indirect effects of workload on desire to detach via fatigue (IE = .09, 95% CI [.053, .140]) and desire to detach (IE = .07, 95% CI [.037, .098]) were significant, yet the indirect effect of workload on desire to detach via negative affect was non-significant (IE = .02, 95% CI [-.011, .054]).

Discussion

In addition to creating and validating psychological measures of the positive and negative break antecedents identified in Study 1, in Study 2 I sought to conduct a preliminary test of the hypotheses. The hypotheses received mixed support. In line with expectations, workload was

positively related not only to fatigue, but also to negative affect and performance concerns. In turn, fatigue and performance concerns were related to desire to detach, though negative affect was not related to desire to detach downstream. However, contrary to expectations, sleep quality did not moderate the effects of workload. More importantly, desire to detach was not significantly related to break frequency downstream, and none of the proposed interactions involving desire to detach and the negative break antecedents were significant.

In retrospect, the design of Study 2 may not have been appropriate for testing the hypotheses. In particular, the lack of preliminary support for the hypotheses regarding desire to detach may be attributable to the cross-sectional data collected in Study 2. An important limitation of cross-sectional data is that they limit the inferences that can be made about processes that unfold *over time*. This limitation may be especially problematic for understanding the relationship between desire to detach and break frequency, as well as the proposed boundary conditions of this relationship. On the one hand, I hypothesized that individuals' desire to detach may lead them to take breaks, meaning I expected a positive relationship between desire to detach and break frequency. However, it is also important to consider that under some circumstances this relationship may be negative. That is, taking breaks may reduce a person's subsequent desire to detach from work because breaks can help employees recover from the stress that leads them to want to detach in the first place. Although I attempted to mitigate this limitation by measuring participants' desire to detach prior to measuring their break frequency, the use of cross-sectional data may be inadequate for capturing the relationship between individuals' desire to detach from work and break-taking. I argue that this important limitation precludes firm conclusions about whether or not the results of Study 2 are supportive of the

proposed model. Nonetheless, the diary design used in Study 3 addresses this limitation by allowing for the measurement of experiences and behaviors over time.

Appendix B: Conscientiousness and micro-break climate items used in Study 3

Conscientiousness (1 = Strongly disagree, 5 = Strongly agree)

1. I am always prepared.
2. I pay attention to details.
3. I get chores done right away.
4. I carry out my plans.
5. I make plans and stick to them.
6. I waste my time. (R)
7. I find it difficult to get down to work. (R)
8. I do just enough work to get by. (R)
9. I don't see things through. (R)
10. I shirk my duties. (R)

Micro-break climate (1 = Strongly disagree, 5 = Strongly agree)

1. My colleagues and I are aware that micro-breaks are encouraged in my organization.
2. Micro-breaks are frowned upon in my organization. (R)
3. My organization does not encourage employees to take micro-breaks. (R)
4. My organization offers a lot of resources (e.g., food, drink, comfortable office layout, external website access) for employees to take micro-breaks.
5. The resources provided by my organization for micro-breaks are very limited and not accessible. (R)
6. My supervisor encourages me to take micro-breaks when I need to.
7. I often chat with my supervisor on non-work related topics.
8. My supervisor considers it important to take micro-breaks at work.
9. My supervisor expects me to take micro-breaks when I need to.
10. My supervisor would not be unhappy with me for my micro-breaks.
11. My coworkers often take micro-breaks when they need to.
12. My coworkers often take micro-breaks with me.
13. My coworkers often chat with me on non-work related topics.
14. I often see my coworkers take micro-breaks in the workplace.
15. I think my coworkers and I are the same in terms of our rights to take micro-breaks.
16. I can take micro-breaks just like what my coworkers do.
17. When I want to take a micro-break in the workplace, I can do so.
18. Taking micro-breaks when necessary is beneficial for my job performance.
19. I can balance between my time on working and taking micro-breaks.
20. My job is designed in a way that taking micro-breaks will hurt my performance. (R)
21. I totally have no authority for micro-breaks. (R)

(R) denotes a reverse-coded item.

Appendix C: Performance indicator items used in Study 3

Shortcut Behaviors (1 = Strongly Disagree, 5 = Strongly Agree)

1. I cut corners at work.
2. I tried to minimize the effort expended when doing work.
3. I skipped tasks to save time at work.
4. I did not do every little part of my work.
5. I was more concerned with the finished product than all the little steps.
6. I was more concerned with getting something done than getting it right at work.
7. I used short-cuts at work to get ahead.
8. Efficiency was more important than accuracy at work.

Safety Behaviors (1 = Strongly Disagree, 5 = Strongly Agree)

1. I used all the necessary safety equipment to do my job.
2. I used the correct safety procedures for carrying out my job.
3. I ensured the highest levels of safety when I carried out my job.
4. I promoted the safety program within the organization.
5. I put in extra effort to improve the safety of the workplace.
6. I voluntarily carried out tasks or activities that help to improve workplace safety.

Cognitive Failures (1 = Strongly Disagree, 5 = Strongly Agree)

1. Could not remember whether I have or have not turned off work equipment.
2. Failed to recall work procedures.
3. Could not remember work-related phone numbers.
4. Could not remember what materials were required to complete a particular task.
5. Forgot where I have put something I use in my job (e.g. tools).
6. Failed to notice postings or notices on the facilities bulletin board(s) or e-mail system.
7. Did not fully listen to instruction.
8. Daydreamed when I ought to be listening to somebody.
9. Did not focus my full attention on work activities.
10. Was easily distracted by co-workers.
11. Accidentally dropped objects or things.
12. Threw away something I meant to keep (e.g. memos, tools).
13. Said things to others that I did not mean to say.
14. Unintentionally pressed control switches on machines.
15. Accidentally started or stopped the wrong machine.

Appendix D: Well-being indicator items used in Study 3

Emotional Exhaustion (1 = Strongly Disagree, 5 = Strongly Agree)

1. I will need more time than usual to relax and feel better.
2. I feel emotionally drained.
3. I have enough energy left for my leisure activities.
4. I feel worn out and weary.
5. I feel energized.

Physical symptoms (0 = no, 1 = yes)

1. An upset stomach or nausea
2. A backache
3. Trouble sleeping
4. A skin rash
5. Shortness of breath
6. Chest pain
7. Headache
8. Fever
9. Acid indigestion or heartburn
10. Eye strain
11. Diarrhea
12. Stomach cramps (Not menstrual)
13. Constipation
14. Heart pounding when not exercising
15. An infection
16. Loss of appetite
17. Dizziness
18. Tiredness or fatigue