MOMENTARY WORK RECOVERY: THE ROLE OF WITHIN-DAY WORK BREAKS

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ABSTRACT

Drawing from research on personal resources (e.g., Baumeister, Bratslavsky, Muraven, & Tice, 1998; Fredrickson, 1998) and the episodic nature of work (Beal, Weiss, Barros, & MacDermid, 2005), we examine research and theory relevant to the study of momentary recovery in the workplace. Specifically, we propose that the nature of within workday breaks influences the levels of psychological resources, which in turn influence various workplace outcomes. First, we discuss the momentary approach to studying workplace breaks and consequent resource levels. In doing so, we distinguish between two types of breaks, respites and chores; and we detail two types of psychological resources, regulatory and affective resources. Consequences of psychological resource levels on emotional exhaustion and performance are considered. We also explore possible moderators of the proposed relationships; we discuss job and individual characteristics, and motivation to perform. Finally, we conclude the chapter with a brief discussion on future research and possible applications of the momentary approach to work recovery in organizations.
INTRODUCTION

Employees today are experiencing escalating work demands; and levels of stress, exhaustion, and burnout are becoming increasingly problematic for employees and organizations alike (e.g., Elkin & Rosch, 1990; Fletcher, 1991; Van der Hek & Plomp, 1997). Understanding how employees recover from work therefore is commensurately important, and is directing a burgeoning area of research in organizational behavior and work psychology. One manifestation of this area is the study of employees’ breaks from work, including the role of work vacations (e.g., Fritz & Sonnentag, 2006; Westman & Eden, 1997), weekends (Fritz & Sonnentag, 2005), and end of day activities (e.g., Sonnentag, 2001; Sonnentag & Zijlstra, 2006) in relation to employees’ job performance, exhaustion, and well-being, among other outcomes. Yet, until recently (Trougakos, Beal, Green, & Weiss, 2008), the majority of work in this area has generally ignored the behavior of employees during their workdays. That is, the relationship between work recovery and employee use of within workday breaks has received little attention. This absence is surprising considering that people spend anywhere from a third to a half of their day at their place of work. During this time they are likely to have formally scheduled breaks such as lunch or coffee breaks, as well as various types of informal breaks such as time at the water cooler, a stroll around the office to socialize, or even taking an opportunity to sneak a quick peek at the newspaper.

This chapter examines how episodic within-day work breaks impact recovery. We will discuss the elements of momentary work recovery, focusing on the episodic within-person processes involved in recovery. In doing so, we first discuss an approach emphasizing the episodic nature of the workday. Second, we discuss different types of work breaks by reviewing the previous literature on break activities and recovery; moreover, we distinguish between two general types of break activities, respites and chores. Next, we touch on various theories of personal resources. By focusing on the ebb and flow of episodic psychological resources, we consider how the nature of break activities (respites versus chores) influences recovery either by restoring or depleting resources necessary to complete subsequent episodes of performance. Furthermore, we look at how momentary resource levels might impact important work-relevant outcomes, including task and affective performance, as well as stress-related outcomes such as emotional exhaustion. Finally, we discuss some potential moderators of the interrelations between breaks, momentary resource levels, and outcomes, and suggest implications.
of the momentary approach for studying breaks and recovery for future research.

THE EPISODIC PERSPECTIVE

To properly examine the components of within-workday recovery, we must first discuss the episodic perspective within which we frame our discussion and detail the importance of employing this perspective to study work recovery. Similar to Barker (1963) and Beal, Weiss, Barros, and MacDermid (2005), we view people’s daily lives as a stream of experience made up of discrete episodes that have a “coherent, thematic organization and are associated with specific people, occurrences, and goals. For example, individuals get up, have breakfast, go to work, have lunch, take a break, and otherwise engage in all manner of compartmentalized, coherent activities” (Beal et al., 2005, p. 1055). Drawing on Barker’s work, Beal and colleagues suggest that the continuous flow of daily work behavior can be divided into natural units. These units, referred to as “behavior episodes,” are natural units of work activity that have a recognizable thematic coherence. This perspective suggests that the construction of behavior episodes is organized around goals, personal strivings, or preferred states (Barker, 1963; Craik, 2000). Research has supported the notion that both actors and observers structure streams of behavior episodically, by and large agreeing on the breakpoints for these episodes (Dickman, 1963; Newtson, 1973; Newtson & Engquist, 1976).

Applying this framework to the study of work breaks and work recovery seems, in theory, to be a relatively natural extension of this paradigm. Though we must be cautious not to oversimplify daily patterns of human behavior, categorizing the nature of time people devote to their various daily activities does not need to account for how every moment is spent in order to provide useful insight into how these patterns of behavior impact work recovery. For example, a common sequence of daily episodes might include waking up, preparing for work, traveling to work, engaging in an initial work activity, taking a break from this activity, continuing work on the initial activity, taking a lunch break, changing to a new work activity, traveling back home, eating dinner, engaging in a leisure activity, and ultimately going to sleep in order to repeat a similar cycle the following workday. Although there can be many variations within each day and from one day to the next, working under the assumption that behavior can be “chunked” provides us some advantages in understanding work recovery.
First, an episodic perspective emphasizes variability within a person across different episodes. A great deal of recent research in social and organizational psychology has emphasized the utility of examining within-person changes both in important work outcomes as well as predictors that traditionally were conceived and studied as stable constructs (Fleeson, 2001, 2004; Miner & Hulin, 2006; Moskowitz, Brown, & Côté, 1997). There is no reason to believe that work recovery is a stable phenomenon, yet the dominant paradigm often leads to between-person (i.e., stable) comparisons of recovery. This is not to say that all recovery research is mired in the static view that some people are better “recoverers” than others; indeed there are many good examples of dynamic treatments of the topic (e.g., Fritz & Sonnentag, 2006; Westman & Eden, 1997). Nevertheless, our episodic framework focuses explicitly on within-person variability and suggests that there likely is meaningful change that occurs within a day across multiple episodes.

A second advantage of the episodic perspective is that by identifying the key characteristics of particular episodes, we can obtain an understanding of recovery that is rooted in what is likely the most fundamental level of analysis. That is, studies at more macro levels of analysis require participants to mentally aggregate across multiple instances of the events of interest. Even asking someone to describe the breaks, work activities, and accompanying states that occur over the course of a day necessitates some calculation across multiple instances of rest and work on the part of the participant. As our understanding of such processes is rather limited (cf. Fredrickson & Kahneman, 1993; Schreiber & Kahneman, 2000), it seems prudent to at least initially examine the process on an episode-by-episode basis. If such an analysis reveals that people simply compute averages of the various moments of their lives, then perhaps a more macro approach would be justified. If, however, the initial findings are any indication, then this seems unlikely (Fredrickson, 2000; Robinson & Clore, 2002). Given this state of affairs, our approach identifies the characteristics of each performance episode and the characteristics of antecedent and subsequent break episodes, devising a richer and more potent depiction of how resources are depleted and recovered throughout the day.

A third important aspect of utilizing an episodic approach to study work recovery is that we are able to capture the fleeting nature of the processes associated with work recovery and thus better understand its depths and limitations. At a basic level, this perspective allows us to consider the simple yet unknown issue of what form the time course of recovery and depletion takes. Is there a peak of recovered resources followed by a steep depletion,
or do breaks simply flatten out an otherwise slowly declining pattern of resources over the course of a day? Beyond the simple trajectories of resource levels, there are the additional questions of influence on subsequent states and behaviors to examine. For example, does a break from work have an influence only on the immediately subsequent performance episode, or does the effect persist and decay into later episodes? If so, which types of break activities result in the longest decays? Also, is there a tradeoff between the immediate level of resources restored and the duration of their benefit? That is, if one expends a great deal of restored resources immediately after taking a break, will the duration of recovery be attenuated? All of these questions are as of yet unanswered, but fit well within the purview of an episodic perspective of work recovery.

Several of these points also speak to another benefit of employing an episodic perspective to study work recovery: greater accuracy in measurement of the behaviors and phenomena of interest. When asked to recall what one did sometime in the past, a common response might be “I cannot remember what I ate for breakfast let alone what I did last week!” As time passes between an experience and the reporting of that experience, people’s recollections of the event incorporate less information from the actual episode and increasingly reflect stable attributes of the person (Robinson & Clore, 2002). For instance, if someone was asked what effect the coffee break they had last week had on their work recovery it is unlikely that they would remember the event let alone be able to accurately assess the efficacy of the break for subsequent experiences. By employing an episodic approach, we can capture something much closer to immediate experience, allowing a reduction of interfering memory biases.

As we stated earlier, our discussion of episodic work recovery is not intended to suggest that research on work recovery has not employed some elements of the episodic framework. In fact, it can be argued that research in the area of work recovery has employed a few aspects of the episodic perspective. For example, some research in this area has employed repeated measure within-person analysis, allowing for examination of behavioral patterns and comparisons of behaviors across time (Trougakos et al., 2008). Furthermore, whether focusing on vacation, weekend, end of day, or within workday breaks, prior research has examined how discrete periods of time in people’s lives influence recovery as well as other associated outcomes. What we suggest, however, is that more explicitly grounding research on recovery within an episodic experience framework, both methodologically as well as theoretically, will aid research in the area to develop a clearer picture of recovery processes and outcomes, especially those involved in
daily work recovery. With this in mind, the focus of our chapter is on the momentary processes and outcomes involved in daily work recovery, which we propose take place within the context of quotidian experience.

**WORK BREAKS**

Work breaks represent a period of time during which work-relevant tasks are not required or expected (Trougakos et al., 2008). Like others examining work recovery phenomena (e.g., Eden, 2001; Sonnentag, 2001; Sonnentag & Zijlstra, 2006), we suggest that taking a break from work is necessary for recovery. Moreover, in order for a break to result in recovery, people must utilize this time to engage in activities that reduce demands on personal resources and allow the opportunity for these resources to be recovered. As we pointed out in the introduction of this chapter, work recovery research has studied many different kinds of work breaks including vacations (e.g., Fritz & Sonnentag, 2006; Westman & Eden, 1997), weekends (Fritz & Sonnentag, 2005), end of workday (e.g., Sonnentag, 2001; Sonnentag & Zijlstra, 2006), as well as within workday breaks (Trougakos et al., 2008). Each of these lines of research has found support for the general premise that breaks do indeed relate to recovery (typically measured as levels of stress and well-being), with the general caveat being that breaks are used to engage in activities that are not taxing and are enjoyable. As such, it seems that the real key to recovery lies in the types of activities people engage in during their work breaks. We suggest that the nature of breaks will have consequences for the levels of resources throughout a workday. Before we discuss the nature of break activities in more detail (respites versus chores), let us first examine some of the most common types of breaks that have received attention in the work recovery literature so that we can better understand the context in which people engage in break activities.

**Vacations**

Research on the impact of vacations has generally supported the notion that taking a break from work aids in recovery (Fritz & Sonnentag, 2005; Westman & Eden, 1997; Westman & Etzion, 2001). For example, studies examining the effects of vacation on well-being found that vacation resulted in decreased stress levels (Eden, 1990) as well as in lower levels of burnout after vacation compared to before (Westman & Eden, 1997;
Westman & Etzion, 2001). Furthermore, the positive effects of vacation on well-being were determined by the activities employees engaged in during vacation, with relaxing and non-taxing activities being most likely to have a positive impact (Fritz & Sonnentag, 2006). In addition, research has indicated that vacation may reduce the effort employees need to exert in order to perform on return to work, providing that employees engaged in relaxing or non-taxing vacation activities (Fritz & Sonnentag, 2006). Furthermore, the general consensus of this research is that the positive effects of vacation are short lived and fade-out within days or weeks of returning to work (Fritz & Sonnentag, 2006).

Weekends and End-of-Day Breaks

Similar to vacation research, studies exploring the impact of weekends and end-of-day suggest that effective use of these times to relieve the burdens associated with work are vital for recovery. Although little research has specifically focused on the role of weekends in recovery, the work that does exist indicates that non-work demands and a lack of social activities during weekends resulted in greater burnout and lower well-being (e.g., Fritz & Sonnentag, 2005). At the day level, samples of the research indicate that feelings of recovery relate to work engagement and proactive behavior (Sonnentag, 2003), and engaging in recovery activities is positively related to well-being, whereas work-related activities are negatively related to well-being (Sonnentag, 2001; Sonnentag & Natter, 2004). Furthermore, engaging in unfavorable end-of-day activities resulted in employees reporting a higher need for recovery and greater fatigue (Sonnentag & Zijlstra, 2006). In summary, after-work-time and weekends generally serve to aid recovery and well-being, again assuming that these employees utilize these periods to engage in stimulating, restful activities, or low demand activities.

Within-Day Work Breaks

Relatively little organizational research has specifically focused on the study of within-day work breaks, especially in the context of work recovery. In a very general sense, the formal study of within-day work breaks in modern organizations dates back to Mayo (1933) and the Hawthorne Studies. This research was intended to examine how work was organized and how this in turn related to work strain and employee productivity, among other things.
Since then, the primary domain for exploring the role of within-day work breaks has been the ergonomics literature. Researchers in this area have explored the role of what they call micro-breaks as a means to alleviate musculoskeletal discomfort and strain associated with prolonged or repeated office-related tasks (e.g., Fisher, Andres, Airth, & Smith, 1993; Henning, Jacques, Kissel, Sullivan, & Alteras-Webb, 1997; McLean, Tingley, Scott, & Rickards, 2001; Tucker, 2003). This line of research has mostly examined (a) frequency of work breaks (Boucsein & Thum, 1997; Dababneh, Swanson, & Shell, 2001), (b) timing of work breaks (Boucsein & Thum, 1997; Henning, Kissel, & Maynard, 1994; Henning et al., 1997; McLean et al., 2001), and (c) length of work breaks (Lisper & Eriksson, 1980). Overall, these studies suggest that breaks can be effective in fighting fatigue effects and increasing productivity, but many unanswered questions still remain in this area such as understanding how the content of work breaks impact recovery as well as establishing the nature of the various underlying processes responsible for these effects (Tucker, 2003).

To our knowledge, only one published study in the area of work recovery has specifically focused on the role of within-day work breaks in the recovery process (Trougakos et al., 2008). Studying a group of service employees, this research found that the types of activities people engage in during their daily work breaks has implications for the emotions they report experiencing as well as performance of affective displays while interacting with customers. The results of this study reveal that the nature of activities employees engage in during breaks is important in the recovery process, with restful and enjoyable activities seemingly providing greater recovery.

An examination of the research for each of the different types of work breaks reveals a relatively clear commonality: it seems that to properly understand momentary work recovery, one must take into account the nature of the activities people engage in during their within-day work breaks. For each of the different types of work breaks studied, we can generally conclude that activities that removed or reduced demands, work related or otherwise, tended to result in more positive outcomes. On the other hand, activities that failed to curb these demands, tended to have negative consequences for employees. These conclusions make it clear that the recovery process hinges on the exact nature of the activities people partake in during breaks. This is especially likely to be the case for within workday breaks as employees are unlikely to have the opportunity to completely detach themselves from work for extended periods as is the case with breaks of longer duration such as weekends or vacations.
As we have already discussed, work breaks are a vital component of the recovery process. As one can imagine, there are many behaviors that might relieve the burdens associated with work and just as many that might not. We begin our discussion of break activities by broadly describing what types of activities and behaviors generally help foster recovery and what types of behaviors reduce or inhibit recovery. For the moment, we make the assumption that people have freedom of choice when selecting what activities to engage in during work breaks. As we already mentioned, we distinguish between two general types of activities people might engage in during work breaks: respites and chores. In the next sections, we will outline what we consider to be respites and chores, and how they aid or impede momentary work recovery processes.

Respites
We began this chapter with the simple notion that in order to recover from the negative effects of work, people need to have work breaks. However, as our discussion has made evident, simply taking a break may not be enough. What seems to be important is how people use their breaks. More specifically, it seems that in order to recover, people need to use their break time to engage in activities that stop the demands associated with work. That is, stopping one work task in favor of another, or in favor of a non-work-related task that is nevertheless burdensome, is unlikely to result in recovery. For recovery to be successful, “an individual’s well-being improves, and resources drawn upon during the strain process are restored” (Sonnentag & Natter, 2004, p. 368). Thus, in order to recover, people must use their breaks to engage in respite activities. We define respite activities as break activities that involve either low effort or preferred choice. These types of activities cease the depletion of personal resources necessary for effective work functioning and well-being, and provide people with personal resources that can aid effective work functioning and well-being.

Let us further examine the two specific characteristics that help define activities as respites: the amount of effort involved in the activity and the degree to which the activity was a preferred choice. Low effort activities aid recovery because they stop the continued depletion of resources by relieving the demand and strain associated with work and provide one with the opportunity to restore depleted resources. Examples of low effort respite activities might include relaxation, sitting quietly, and sleep. Preferred choice activities can also aid recovery by providing people with the
opportunity to recover and gain resources depleted during work, but these activities may function in a slightly different manner. These types of respite activities provide people with the opportunity to engage in activities they may find enjoyable, thus serving to energize them. When employees engage in activities they prefer compared to work-related activities or even non-preferred non-work activities, the need to regulate behavior is reduced, which leads to increase in positive feelings and higher subjective well-being (Fritz & Sonnentag, 2005; Miner, Glomb, & Hulin, 2005; Sonnentag & Zijlstra, 2006; Trougakos et al., 2008). Even activities that may be physically tiring, such as exercising, could serve as a respite if this is indeed the person’s preferred choice. A basic premise here is that people do not have to “make” or “force” themselves to engage in preferred choice activities, thus reducing regulatory burden. This notion, to be more fully detailed shortly, is supported by findings suggesting that personal resources can be depleted when people make a choice to engage in non-preferred activities (Moller, Deci, & Ryan, 2006). Also, as we will discuss later in this chapter, examples of preferred-choice respite activities may differ from person to person; however, generally speaking, these activities involve an interruption of non-preferred activities in favor of activities that an individual would rather do, such as spending time with friends, enjoying a game of some type, or reading an enjoyable book.

Chores
In contrast to respite activities, chore activities are those break activities that continue to draw on the resources utilized during work and thus do not allow employees to recover from the negative effect of work. These activities continue the depletion of personal resources necessary for effective work functioning and well-being, and they fail to provide people with opportunity to recover personal resources that can aid effective work functioning and well-being. Sonnentag (2001) has noted that activities representing either continuing to work (e.g., continuing to work with customers, or preparing for future work episodes) or engaging in other effortful tasks (e.g., running errands) generally require increased behavior regulation. Whether focused on work-relevant tasks or not, this effortful regulation results in resource depletion (Baumeister, Bratslavsky, Muraven, & Tice, 1998). In addition, chore activities typically are not preferred behaviors, and as a result interfere with people being able to engage in preferred activities. This can result in decreased positive feelings and increased negative feelings (Trougakos et al., 2008), which can reduce well-being and effective work functioning. Examples of chore activities might include switching one work task in
favor of another, running errands, having a disagreement with a friend, or doing household chores. Of course, as is the case with respite activities, we must note that certain activities may be chores for some people but not to others. For example, some people view cooking as a burdensome household chore, whereas others enjoy cooking and find it relaxing. In the work place, some people may consider a quick trip to a mall for some shopping during the lunch hour as a relaxing and reenergizing change of scenery, whereas others may experience it as a tiring chore that must be done. Regardless of what someone’s personal preferences are, the general goal for people seeking to recover from work is to avoid chores during breaks and try to use these opportunities to engage in respites. The purpose of doing so is to preserve and replenish personal resources.

PERSONAL RESOURCES

The central premise of this chapter revolves around the assumption that, by and large, work is effortful and thus depleting to individuals’ momentary levels of resources. We use the term work to refer to those tasks, both implicit and explicit, that employees must carry out in order to fulfill the requirements of their job. Work has the capacity to drain us both physically as well as mentally. Furthermore, certain non-work activities, such as doing household chores or running errands, are also likely to have a similar effect on us. Generally, resource depletion theories (e.g., Baumeister et al., 1998) emphasize that workers have a limited amount of “personal resources” that allow them to complete the variety of taxing activities they engage in throughout the day.

The concept of personal resources has been applied to many areas of organizational behavior and psychology. Of course, research on work recovery is usually based on the notion of limited personal resources. Some of these conceptualizations are particularly applicable to the study of work recovery including workload and work processes (Meijman & Mulder, 1998), stress (Hobfoll, 1998), affective states (Fredrickson, 1998), and behavior regulation (Muraven & Baumeister, 2000). Each of these limited resource perspectives has similarities as well as some differences. Moreover, the extent to which these different perspectives apply to and have been utilized in the study of work recovery also varies.

Two theories of work stress and work processes utilizing the concept of limited personal resources have been predominately featured in the work recovery literature. The first of these, Meijman and Mulder’s (1998)
effort-recovery model focuses on the depleting effect of employees’ efforts to manage their workloads. The general premise behind this theory is that when employees expend effort on work it results in load reactions, which deplete employees’ energy resources. Recovery occurs by temporarily removing the demands the employees face.

The second theory of limited personal resources typically featured in research on work recovery is Hobfoll’s (1989, 1998) conservation of resources theory. Conservation of resources theory considers the general relationship between stress and well-being. This theory suggests that people seek to possess and protect personal resources, which include object resources (e.g., money), condition resources (e.g., tenure), personal characteristics (e.g., skills), and energies (which tend to serve in the acquisition of the other resources). The main tenet of this theory is that resource loss impacts stress experiences because resource loss is more salient than is resource gain. Another important tenet of this theory is that individuals with more resources are less vulnerable to resource loss because the abundance of resources begets even more resources. Conversely, those with fewer resources are more vulnerable to resource loss. To break the resource loss cycle, an individual has to engage in a period of relaxation in order to regroup or achieve more resources (Hobfoll & Shirom, 2001).

Beyond the current domain of work recovery, the notion that affective states can serve as resources for people in work settings has been mentioned in various theories. One recent theory seems to have exhibited reasonable success in establishing this notion. Fredrickson’s (1998) broaden and build theory of positive emotion suggests that when people experience positive emotions, such as joy, interest, contentment, and love, their momentary action-thought repertoire is broadened. This then results in the building of personal resources, which results in numerous positive outcomes (Fredrickson, 2001). Because of the episodic nature of emotional experiences and states (Beal et al., 2005), this theory is especially relevant to the perspective we adopt in examining daily work recovery.

Another theory of particular pertinence to the current discussion is the concept of regulatory resource or “ego” depletion advanced by Muraven and Baumeister (2000). This theory suggests that people have a central and limited psychological resource that determines one’s ability to regulate behavior at any given moment. Each time we engage in some sort of self-control or self-regulatory behavior, this central resource is depleted, making future regulatory efforts increasingly difficult. Although relatively little is known about how these resources are recovered, researchers have recently
begun to explore the underlying mechanisms involved in this process (e.g., Gailliot et al., 2007; Tice, Baumeister, Shmueli, & Muraven, 2007). For example, recent laboratory research suggests that affective states seem to impact the recovery process (Tice et al., 2007) as does the consumption of nutrients like glucose (Gailliot et al., 2007). Moreover, a recent field study applying regulatory resource theory has found that low effort activities during work breaks improve job performance, whereas work-related activities and other effortful tasks do not (Trougakos et al., 2008).

As our discussion of these different perspectives of resource depletion indicates, the precise nature of these resources varies somewhat from theory to theory. However, a common feature is that engaging in effortful tasks (i.e., work or similar activities) is particularly draining of these resources. And though these theories provide much utility to the study of work recovery, not all of them capture the nuances of ongoing recovery processes as they unfold during workdays. In particular, though the first two theories make mention of some of the episodic demands employees face, they do not specifically discuss the nature of the momentary processes involved in recovery. Rather, these theories focus more on general levels of resources over longer time periods. For instance, in the effort-recovery model, the exact nature of resources is somewhat vague and as such it is not completely clear how we would conceptualize this in relation to momentary recovery processes. As for Hobfoll’s perspective, resources are relatively broadly conceptualized (e.g., status, money), and are unlikely to be attained during a coffee or lunch break, making it a more appropriate approach to utilize when examining resiliency and longer term recovery from work rather than momentary recovery within a workday.

Thus, although these theories are well suited for understanding factors that result in general stress levels, it is slightly more difficult to apply these theories to momentary work recovery. Since we are approaching work recovery from an episodic perspective, our focus is on momentary resource levels. As such, our discussion focuses on two theories of momentary psychological resources: Baumeister and colleagues’ (1998) theory of regulatory resources and Fredrickson’s (1998) perspective on affect as a personal resource. Our primary focus in this chapter is the nature and replenishment of momentary psychological resources depleted when people engage in work. Let us now consider these resources in more detail.
PERSONAL RESOURCES ASSOCIATED WITH MOMENTARY RECOVERY

Momentary Regulatory Resources

According to a limited resource model of behavior regulation, prolonged regulation of behavior depletes regulatory resources available for subsequent regulation and can be mentally and physically taxing (Baumeister et al., 1998; Muraven & Baumeister, 2000). Although research is supportive of the regulatory resource concept, the exact nature of these resources is somewhat unclear. Researchers have likened self-regulatory capacity to a psychological “muscle” (Muraven, Tice, & Baumeister, 1998). With extended periods of use, the regulatory “muscle” fatigues and functions less effectively, until eventually it begins to fail. To prevent regulatory failure, people must take a break from effortful regulation in order to replenish the resources needed for future behavior regulation (Muraven & Baumeister, 2000). This is exemplified when we consider how an employee might feel on a typical workday. Assuming reasonable rest the previous evening, the employee starts the day feeling energized and able to easily concentrate on and complete his or her routine work tasks. As the day progresses, the ability to concentrate and sustain effort on work tasks may start to diminish, the employee may be more prone to making mistakes, and it may take longer to complete work tasks. To combat this, organizations usually have work breaks, such as lunch breaks, structured into employees’ workdays.

Although there is uncertainty as to the nature of regulatory resources, it does seem that the nature of the breaks people take is important if replenishment is to occur. Researchers suggest that in order to recover depleted regulatory resources, it is necessary to avoid other forms of regulation (Beal et al., 2005; Hobfoll, 1998; Meijman & Mulder, 1998; Muraven & Baumeister, 2000). Baumeister et al. (1998) have emphasized that all acts of self-regulation utilize the same resource; thus, if replenishment is to occur, one must lessen the amount of regulation, no matter the particular task. For instance, ceasing one job task in favor of another is unlikely to restore depleted resources if behavior regulation continues in the new task.

In support of this notion, laboratory studies repeatedly find evidence that a wide range of activities result in subsequent decrements in one’s ability to regulate behavior. The shared factor across this wide array of tasks is that they all require regulation. Thus, it matters not whether one is squeezing a hand grip, regulating emotional expression, or completing an effortful
editing task, the result is that one’s ensuing attempts at regulation of any kind will suffer (e.g., Baumeister et al., 1998; Muraven et al., 1998). The primary mechanisms involved in studies of regulatory resource depletion are the extent to which someone is engaging in a behavior that one does not ideally wish to engage in, or on the other hand, actively inhibiting a dominant or preferred behavior. Therefore, momentary regulatory resource recovery can occur in two possible ways, either by stopping a task that depletes regulatory resources, or engaging in a preferred behavior.

When individuals engage in tasks that require focused attention (i.e., a task one does not ideally wish to engage in and/or one that requires high levels of attention and regulation in order to maintain focus), they must employ the use of self-control, which according to limited regulatory resource theory (Baumeister, Vohs, & Tice, 2007) is effortful and can deteriorate over time. Studies support the notion that acts of volition, such as self-regulation, function as a limited resource, which is impaired by prior exertion (e.g., Baumeister et al., 1998; Muraven et al., 1998). As such, one act of volition will have a negative impact on succeeding acts of volition. For example, it has been shown that when people regulate emotions and engage in subsequent tasks that require self-regulation, they perform with less persistence and more poorly when compared to people who have not had to use their regulatory capacity before performing the task (Baumeister et al., 1998; Muraven et al., 1998). Since self-regulation acts as a finite resource, the greater the level of self-regulation utilized, the greater the capacity is depleted, so those who must continually draw on this reserve deplete it to the point that self-regulation becomes more and more difficult. After a certain point of exertion, the capacity to continue to regulate at an optimal level declines and eventually it is theorized that complete regulation failure is inevitable. Therefore, when one stops all tasks that require focused attention, the burden placed on the self’s capacity to regulate is removed thus allowing recovery to occur. In other words, in order to stop the depletion of regulatory resources people must take a break, with the ultimate form of recovery occurring through sleep as the burden of regulation is completely removed and the body resets the regulatory system.

In contrast with the notion of preventing regulatory resource loss by refraining from engaging in certain behaviors, people may be able to conserve regulatory resources by taking part in certain behaviors. Experiencing work recovery is associated with and conceptualized as a positive outcome (Sonnentag & Zijlstra, 2006; Trougakos et al., 2008). This suggests that regulatory resource loss may also be prevented through the active engagement in preferred behaviors. A possible means for this to occur might...
therefore involve the extent to which someone is actively engaging in (as opposed to actively inhibiting) a dominant or preferred behavior (Higgins, 1997). That is, people can reduce or prevent resource loss by engaging in activities that they find enjoyable and have a very strong desire to engage in. The main premise behind this line of reasoning is that when people engage in behaviors they enjoy, they do not need to “force” themselves to partake in and focus on these activities. Rather, engaging in these behaviors is relatively easy from a regulatory perspective as they represent activities that people truly wish to do. In fact, it may be that people deplete resources by refraining from engaging in these preferred activities, and switching to preferred activities relieves regulatory burden (Baumeister, Heatherton, & Tice, 1994).

Evidence from empirical research supports the idea that choice can impact regulatory resource levels (Vohs et al., 2008), and preferred choice activities do seem, at the very least, to reduce regulatory burden compared to non-preferred choice activities (Moller et al., 2006). Supporting this line of reasoning, studies examining preferred choice and exercise reveal that engaging in a more preferred exercise resulted in lower perceived exertion, lower fatigue, and greater momentary well-being when compared to a non-preferred exercise condition (Parfitt & Gledhill, 2004). Moreover, research by Moller and colleagues (2006) demonstrated that in contrast with a forced choice situation, people who have choice of autonomy do not experience regulatory resource depletion. Therefore, just as stopping activities that involve engaging in the active inhibition of preferred behavior (i.e., self-regulation) should aid regulatory resource replenishment, break activities that involve the active engagement in preferred behavior seems to prevent regulatory resource loss and might allow for resource recovery.

To conclude our examination of regulatory resources, we must address two interesting questions this discussion raises. First, to what extent do within-day work breaks actually foster resource recovery or simply resource preservation? Resource replenishment is the restoration of the regulatory resources people need to regulate their behavior. Resource preservation, on the other hand, represents people’s attempts to either cease behaviors that deplete regulatory resources, or to engage in behaviors that are neutral with regard to regulatory resources, to preserve remaining resources for future use. From a conceptual standpoint, the difference between resource recovery and resource preservation is relatively simple, the first involves regaining lost resources, the second preventing further loss of resources. However, practically, disentangling these concepts has been far less clear. Theories of regulatory resources primarily address the notion of depletion, focusing on
what happens when depletion occurs and how depletion is stopped, not necessarily addressing the manner in which resources are recovered. This brings us to the second issue we must address, what exactly is being recovered when one is attempting to restore regulatory resources? Unfortunately, relatively little work exists that can definitively address either of these issues, although recent research addressing how resources might be recovered may provide at least partial answers to both questions.

In a novel study, Gailliot and colleagues (2007) have found support for the role of glucose in the operation of self-regulation. Research on brain physiology supports the notion that effortful brain functioning, such as that involved in self-regulation, can consume relatively large levels of glucose (Benton, 1990; Benton, Owens, & Parker, 1994). On the basis of this, Gailliot and colleagues proposed that people’s blood glucose levels should impact self-regulation.

In a series of experiments, they demonstrated that effortful self-regulation resulted in a decrease in blood glucose levels. That is, blood glucose levels were lower for people after they engaged in tasks that required high amounts of self-regulation when compared to people who did not engage in tasks that had a high regulatory demand, demonstrating that glucose can be depleted through self-regulation. Furthermore, decreases in blood glucose due to regulation on an initial high regulation task resulted in decreased regulatory capacity on a second task, supporting the notion that decreased glucose levels could impair subsequent regulation. Finally, they established a causal link between glucose and self-regulatory capacity by showing that decrements in regulatory capacity could be restored by consuming glucose. Although this research cannot conclude that glucose is the sole, or even the primary mechanism involved in regulatory resource recovery, the evidence to date seems to indicate that this is at least one avenue worthy of further exploration.

The research on glucose and self-regulation also provides further insight into whether or not work breaks replenish resources or prevent further depletion. As we have already suggested in this chapter, recovery may be dependent on what people do on their work breaks. On the basis of Gailliot and colleagues (2007) work, it would seem logical that if people eat something during their breaks this may help recover resources. However, Muraven and Baumeister (2000) suggest that regulatory strength is at its maximum after a period of rest, and if the rest is not sufficient, regulatory resources become depleted over time. In fact, sleep and rest seem to aid self-regulation independent of nutrient intake (Baumeister et al., 1994). Therefore, work breaks that allow people to rest should also aid recovery,
first by reducing or removing the regulatory burdens and second by allowing psychological systems to restore or reset. For simplicity sake, we take the point of view that when resources are depleted recovery is hindered. Therefore, we argue that whether one is merely stemming the tide of resource depletion, or actually recovering resources, either through calorie consumption or some other means, the act of taking a break from activities that deplete resources is central to the recovery process. Further, we leave the question about what specifically is being recovery in this process to future research.

**Momentary Affective Resources**

Although there are various types of affective experiences people can have (Watson, 1988; Watson, Wiese, Vaidya, & Tellegen, 1999; Weiss & Cropanzano, 1996), the ones which are typically characterized as the most episodic in nature, and thus most appropriate for the current discussion, are emotional experiences (Beal et al., 2005). Emotional experiences are conceptualized as short-lived punctuated affective states individuals experience in relation to specific events (Frijda, 1993) and often are classified as positive or negative (Shaver, Schwartz, Kirson, & O' Connor, 1987). This ephemeral nature of emotional experiences makes it most likely that these affective states will coincide with the momentary processes associated with within-day work breaks (Trougakos et al., 2008). Although the study of emotion in the workplace has garnered more attention recently, the role of emotions in the work recovery process has received relatively little attention (for an exception, see Trougakos et al., 2008). Despite this lack of research, there is considerable evidence to suggest a prominent role for emotions in the process of work recovery, especially at the within-day level.

Weiss and Cropanzano (1996) suggest that the affective states associated with events employees experience during their workday impacts subsequent work attitudes and behaviors. This notion has received increasing support in the organizational literature (e.g., Bono, Folds, Vinson, & Muros, 2007; Grandey, Tam, & Brauburger, 2002; Kelly & Barsade, 2001; Trougakos et al., 2008). At its most basic level, this framework suggests that when employees experience negative events they experience negative emotions, and when they experience positive events they experience positive emotions. For example, if an employee uses break time to joke around with friends this event is likely to result in the experience of positive emotions such as
happiness or joy, depending on how funny the jokes being told are! On the basis of this logic, we suggest that the activities employees engage in during work breaks will function as affective events, often resulting in employees experiencing discrete emotions, which we suggest employees can utilize as a resource to impact future work outcomes.

Although there are a handful of examples of researchers treating affective experiences as personal resources (e.g., Marks, 1977; Repetti, 1987; Rothbard, 2001) perhaps the most relevant theory supporting our conceptualization of how emotions can serve as a type of personal resource is illustrated by Fredrickson's (1998, 2001) broaden and build theory of positive emotion. Fredrickson's research describes the impact of positive emotion on people's behavior. Specifically, the broaden and build perspective states that “certain discrete positive emotions – including joy, interest, contentment, pride, and love – although phenomenologically distinct, all share the ability to broaden people’s momentary thought-action repertoires and build their enduring personal resources” (Fredrickson, 2001, p. 219). The primary tenet of this research is that positive emotions facilitate approach behavior, motivating people to engage in their environment and partake in activities. Therefore, when people experience positive emotions, these emotions can be utilized as a resource, helping direct attention and effort toward work-related tasks, as well as impacting attitudes and personal well-being.

Fredrickson’s broaden and build theory dovetails well with Weiss and Cropanzano’s affective events theory. Taken together, these perspectives indicate that break activities should have an impact on individuals’ emotional states such that enjoyable or restful activities should generally result in positive experiences and should therefore result in an increased experience of positive emotional states. On the other hand, engaging in demanding or non-enjoyable activities might result in less pleasant experiences and therefore lead to fewer positive emotional experiences. Therefore, the positive emotions people experience can be utilized akin to a resource during the time period immediately following the break.

Although limited research has been conducted on this specific relationship, some support for this notion has been found. Specifically, Trougakos et al. (2008) found that service employees who reported using breaks to partake in relaxing activities also reported greater levels of positive emotional experiences. Engaging in work-related activities during breaks was related to lower levels of positive emotional experiences. Moreover, positive emotions also seemed to aid employee performance in the episodes immediately following breaks. As such, the emotions people experience as a
result of their break activities function as affective resources that can impact their subsequent work and personal outcomes. Importantly, we are not arguing that a change in emotional state is equivalent to the recovery of regulatory resources. Rather, the generation of emotions is considered to be a separate, although possibly related, process which can provide an affective resource which employees can draw on during subsequent periods of work. For example, the sense of accomplishment employees feel after completing a workout during lunch may expand thought-action repertoires (Fredrickson, 2001); thus, carrying over to aid in the completion of a work project, or the happiness associated with hearing a coworker tell a funny joke may aid in the display of organizationally prescribed positive emotion to customers.

Physiological Resources

We would be remiss if we did not at least briefly touch on physiological resources in order to acknowledge the role these resources play in the recovery process. Physiological resources typically refer to the physical energy that an individual possesses at any given moment that can be directed toward work tasks. As such, we conceptualize physiological resources primarily in a biological sense. Simply put, people have a finite capacity to physically exert themselves, and at some point this capacity is depleted. Although different people have different physiological capacities, ultimately everyone has a limit, beyond which point they are physically unable to continue without physically replenishing themselves. In this case, recovery occurs by consuming food energy, resting, and sleeping. Eating, in particular, may be relevant in daily work settings where breaks often involve having lunch or getting a coffee or a snack. Of course, these types of activities are common to all people as we all must eat and sleep to maintain biological functioning, and people generally stop working before physiological resources are completely depleted, lest they suffer serious health consequences. Thus, although we acknowledge that physiological resources are an important factor in people’s on-going work recovery, a full discussion of the nature of the physiological resources involved in work recovery is beyond the scope of this chapter. We do note, however, that each of the resources we have discussed does not function completely independently. We already have discussed some evidence for this interdependence while detailing the role of glucose in regulatory resource replenishment. As such, let us briefly touch on the relationships between these different types of personal resources.
The Relationship between Momentary Personal Resources

Although we alluded to the relationship between the different personal resources occasionally throughout this chapter, we have generally considered each independently. Of course, disentangling these resources from one another is much easier to achieve in theory than in practice. In actuality, the relationship between these resources is likely rather complex and it is difficult to separate the role of each in the recovery process. It is reasonable to assume that each of these resources is interrelated, and likely often function in conjunction. Our earlier discussion of the research by Gailliot and colleagues (2007) regarding glucose and self-regulation is one example of just such an interrelation. Furthermore, the experience of positive emotions appears to impact regulatory resource levels (Tice et al., 2007). This research indicates that positive emotional experiences off-set regulatory resource depletion such that those people who are depleted and then experience positive emotion perform equally well on subsequent regulatory tasks as those who are not initially depleted (Tice et al., 2007). However, it is also noted that the mechanism involved in this process is somewhat unclear. It could be that positive emotions improve regulatory resources, or it simply could be that the activation associated with positive emotion provides the necessary resources to perform on subsequent tasks. Nevertheless, whether positive emotion replenishes regulatory resources or, simply serves to compensate for depleted regulatory resources, that these processes seem to overlap in some manner appears evident.

Furthermore, one can envision a situation in which people who have recovered their regulatory resources feel upbeat and positive. On the other hand, people who have depleted their regulatory resources may feel negatively. This could be exacerbated if negative feelings have to be regulated, as is the case in many work settings where positive emotional displays are the norm (Hochschild, 1983). Regulation of emotion can deplete regulatory resources (Baumeister et al., 1998), which in turn might lead to continued experiences of negative affect. In addition, having to engage in behavior that requires regulatory effort means that people are likely not engaging in preferred choice activities. This may result in negative affective experiences (Trougakos et al., 2008), dissatisfaction (Higgins, 1997), and decreased feelings of well-being (Parfitt & Gledhill, 2004). In contrast, engaging in activities that are people’s preferred choice could lead to positive emotional experiences, as people are likely to choose activities they find enjoyable. Similarly, because people try to maintain positive emotional states (Isen & Simmonds, 1978; Wegener & Petty, 1994),
they may be likely to pursue activities that aid regulatory resource recovery if these activities are responsible for the initial positive affective state. Thus, one can envision numerous variations of cycles of resource recovery or depletion.

To further complicate matters, not only might we expect complex relationships between the different types of personal resources, but there are a host of other variables that can influence the process of momentary resource recovery. Recall from our earlier discussion on work break activities, we made the assumption that people have freedom of choice when selecting activities. Of course, as was the case with the different personal resources, this is a rather simplistic view, as the real world is not easily constrained by such assumptions. Also recall, we mentioned that people’s perceptions of what might be considered a respite or a chore is likely to differ from person to person and that some activities may aid recovery more for some compared to others. Bearing these points in mind, we now consider some factors that might moderate the relationship between break activities and resource recovery.

MODERATORS OF THE BREAK ACTIVITY–RESOURCE LEVEL RELATIONSHIP

In this chapter, we have suggested that different break activities will have consequences for levels of personal resources. Specifically, respite activities lead to resource replenishment and thus to higher levels of resources, whereas chore activities lead to resource depletion and thus to lower levels of resources. However, this relationship has boundaries defined by different individual and situational characteristics. Employees differ in terms of their personal characteristics, non-work life, and the job context itself. These differences may play an important role in the way psychological resources are depleted and replenished in the workplace.

In the next sections, we discuss two categories of moderators of the relationship between break activities and levels of resources: job characteristics and personal characteristics. Two job characteristics that are likely to have a significant impact on personal resource levels and recovery processes are job demands and job control. Job demands should impact how much resources employees need to invest in work tasks, and job control should influence when and how employees recover their resources. As for personal characteristics, previous research on personality, cognitive appraisals, and
reactions to daily stressors has mostly examined Extraversion and Neuroticism (Grant & Langan-Fox, 2007; Lee-Baggley, Preece, & DeLougis, 2005). Given the literature focus on these two traits, our discussion on the moderating role of personality on the relationship between break activities and levels of resources will be constrained to Extraversion and Neuroticism.

**Job Demands**

Job demands refer to physical, psychological, social, and organizational features of the job that require sustained effort expenditure and thus it is associated with certain physiological and psychological costs (Bakker & Demerouti, 2006; Mauno, Kinnunen, & Ruokolainen, 2007). Frequently encountered job demands are heavy workload, time pressure, role ambiguity, and role conflict (Mauno et al., 2007; Sonnentag & Zijlstra, 2006). Previous research has shown that job demands tend to have detrimental effects on employee well-being (for reviews, see Kahn & Byosiere, 1992; Sonnentag & Frese, 2003). In addition, previous research has shown that job demands have direct effects on need for recovery – an emotional state in which individuals feel that they cannot continue with current demands and activities and thus they need a break (Sonnentag & Zijlstra, 2006). Supporting the notion that job demands could impact the relationship between breaks and resource levels, a study conducted by Sonnentag and Zijlstra (2006) revealed that as employees experienced higher job demands they also experienced higher need for recovery indicating that their resources were depleted.

When employees experience high job demands, they usually struggle to find enough “hours in a day” to manage and complete all of the required tasks. On the one hand, high job demands require more effort and investment of one’s resources into tasks, which consequently leads to higher resource expenditure (Hockey, 1996). On the other hand, the struggle for time usually leads to working during scheduled breaks or taking shorter breaks. Therefore, on average, employees experiencing high job demands are likely to engage in more chore activities (e.g., work activities, or running errands over lunch because they will have to work late) compared to employees experiencing low job demands. Consequently, this should lead to greater regulatory resource depletion and thus lower levels of resources. Also, high job demands, and especially high workload, is positively related to negative effects (e.g., Geurts, Kompier, Roxburgh, & Houtman, 2003;
Repetti, 1993; Rothbard, 2001), which suggests a decreased likelihood of experiencing positive emotions and greater depletion of resources as employees must work to conceal and repair negative affective states. Thus, the evidence presented from previous research on job demands and its effects on employees’ resource levels suggests that employees with high job demands may have chronically low levels of both regulatory as well as affective resources.

How do job demands impact the relationship between the break activity and resource levels? It seems that quick respites (e.g., a coffee break) for employees with high job demands may not be sufficient for recovery. People with high job demands are unlikely to experience the same degree of recovery when compared to those with low job demands as breaks are used less effectively and thoughts of work often might consume these individuals during off-work time (Sonnentag & Kruel, 2006), reducing the effectiveness of a break even when activities that would typically be recovering are engaged in. As a result, short breaks may not be sufficient to undo the effects of excessively high job demands. It seems that these employees would require a greater period of relief in order to allow for both physical and mental disassociation from work. As such, these employees may need an extended break such as a few days vacation in order to restore their resource levels.

**Job Control**

Job control refers to an employee’s opportunity to influence his or her job activities and make decisions about the job (Frese, 1989). Numerous previous studies have shown that job control is associated with beneficial outcomes such as higher well-being (e.g., Daniels & Guppy, 1994; Jackson, 1983; Karasek, 1979). Given that job control plays an important role for employee’s experience of the work place and consequent well-being, it is important to explore the role of job control in the processes of resource depletion and replenishment.

Job control may influence the relationship between break activities and levels of resources in at least two ways. First, job control implies that employees have discretion over when and for how long they can take breaks. When employees have high job control and they experience tiredness, they can switch to work on less demanding tasks or take a break (Jackson, Wall, Martin, & Davids, 1993). Furthermore, because employees with high job control have greater flexibility in determining how they structure their
workday, these individuals may have more options in choosing a preferred break activity. For example, an employee might want to attend a yoga class during the lunch break and unwind, but that activity may require a lunch break of an hour and fifteen minutes. An employee with high job control may have the flexibility to take an extended lunch, making the yoga class a viable option for recovery. The low job control employee, on the other hand, is unlikely to be able to extend his or her lunch break beyond the company scheduled one-hour time frame. On the basis of this discussion, employees with high job control are (a) more likely to take breaks when they really need them, and (b) more likely to engage in preferred choice activities, resulting in greater replenishment compared to employees with low job control.

This discussion rests on the notion that employees can effectively use discretionary breaks to replenish their resources. However, past research on micro-breaks has produced equivocal results. On the one hand, previous research showed that employees manage fatigue most effectively when they can adjust their break periods to coincide with their fatigue periods (Feyer & Williamson, 1995). The same findings have been observed with employees in computer-based work where rigid breaks (preplanned by the company) were associated with the disruption of work flow (Henning et al., 1994) and increased emotional strain (Boucsein & Thum, 1997). Thus, these findings suggest that employees with high control over scheduling their breaks would use breaks efficiently. However, on the other hand, some research suggests that employees without formally scheduled breaks may overwork themselves and fail to take a break when they need it (McLean et al., 2001). When breaks occur at the point at which the employees are overworked, the breaks may not function effectively in replenishing resources (McLean et al., 2001). Thus, these findings suggest that employees with high job control over scheduling their work breaks may not use the breaks efficiently.

The research on micro-breaks has mostly involved employees with highly repetitive and routine tasks (e.g., machine operators), and we suggest that job control may be more important for employees with less repetitive tasks (e.g., knowledge workers). Knowledge workers tend to be involved in several projects at the same time and have different agendas and different deadlines each day. They may benefit from flexible break scheduling for several reasons. First, it may be very difficult and counter-productive to set-up breaks at the exact same time every day when each day may require different scheduling of work tasks. For example, having a rigidly scheduled lunch break may preclude an employee from organizing an important business lunch with a client that may bring more business to a company.
Second, knowledge workers may occasionally need to work long hours to finish a project, and may not have the luxury of taking extended breaks during these times. Being forced to take a break when they have important deadlines may make employees facing these types of situations even more drained, tired, and upset. Thus, we suggest that job control in scheduling one’s daily breaks may be especially important to knowledge workers, although future research is needed to confirm if the potential impact, either positive or negative, of job control.

Second, employees with high job control may experience the same events differently from employees with low job control, and thus, the same break activity (e.g., working during the lunch break) may have different consequences for resource depletion. Specifically, employees with high job control may deplete fewer resources than employees with low job control while engaging in the same activity. Evidence for this notion comes from research on the ameliorative psychological effects of control (Glass, Reim, & Singer, 1971; Glass & Singer, 1973). In their study, Glass and Singer exposed participants to either controllable or uncontrollable noise. The participants who were exposed to controllable noise experienced lower levels of frustration and performed better at a postnoise task. There are a few reasons why control may reduce resource depletion and consequent job stress. One reason is that the mere belief in personal control determines reactions to stress and job demands (Averill, 1973; Miller & Norman, 1979). In Glass and Singer’s (1973) study, participants in the controllable noise condition were told that they could stop aversive noise at any time by pressing a button. However, nobody pressed the button, and thus they endured the same amount and intensity of the aversive noise as the participants in the uncontrollable noise condition. Still, participants in the controllable noise condition had lower levels of frustration and performed better at a postnoise task. Thus, it seems that the mere belief in control has a powerful ameliorative effect. On the basis of these findings, job control may also influence how draining certain activities are for employees, that is, the same activity (e.g., working during lunch time) may be more resource depleting for employees with low job control than for employees with high job control.

**Individual Differences**

As already noted in this chapter, individuals differ in the way they perceive, experience, and appraise situations. The same situation may be experienced
completely differently by two individuals. For example, consider having a lunch with members of one’s work group. Generally, this break activity could be classified as a respite, as long as it does not involve engaging in work-related tasks. Some individuals, however, may find this type of activity especially recovering. For example, highly extraverted individuals that enjoy being in the company of other people, may experience this lunch more so as a respite and experience greater replenishment of their resources compared to less extraverted people. However, some individuals, those who are more introverted, may perceive and experience this lunch as a chore, resulting in greater depletion of resources. Thus, individual differences play an important role in how different break activities are appraised, and consequently that appraisal may lead to different resource levels. Also, individuals differ in how much stress, as well as positive and negative effects they experience, which also has implications for resource levels. In this section, we explore the moderating role of personality in the recovery process by specifically discussing Extraversion and Neuroticism.

Extraversion refers to the degree to which people are enthusiastic, talkative, assertive, and energetic (McCrae & John, 1992). Previous research has found that individuals high on Extraversion compared to individuals low on Extraversion have a general positive appraisal tendency (Gallagher, 1990; Hemenover & Dienstbier, 1996); perceive that they have high and adequate coping abilities (Penley & Tomaka, 2002); experience more positive emotions and experience daily stressors as challenges (Gallagher, 1990). Extraversion may influence the relationship between break activities and resource levels in three ways. First, given that extraverts have positive appraisal tendencies, a chore break may not be experienced as highly draining. In support of this notion, a vast literature on the effects of extraversion on stress suggests that extraversion is negatively related to stress and positively related to well-being in the workplace (e.g., Goodwin & Engstrom, 2002; Grant & Langan-Fox, 2007; Judge, Heller, & Mount, 2002).

Second, extraverts may prefer more social types of respites such as a group lunch or a coffee break with work colleagues. These social types of respites may not only serve as a respite but also to secure social support during demanding times. In addition, extraverts are more likely to socialize with work colleagues in general, which expands their social network and the possibility to secure help from that network when needed. Furthermore, extraverts are more likely to explicitly seek support when they need it and moreover they know where to seek that help – they are more aware of existing resources in other employees and feel more comfortable to
approach them (Amirkhan, Risinger, & Swickert, 1995; Vollrath, Torgersen, & Alnæs, 1995; Watson & Hubbard, 1996). Thus, when extraverts engage in chore activities, these activities may be less depleting because they can turn to their social support network to help them during demanding times.

Third, previous research has shown that extraversion is related to positive emotions and affect (e.g., DeNeve & Cooper, 1998; Diener, Suh, Lucas, & Smith, 1999; Lucas & Fujita, 2000). Considering our conceptualization of emotions as a psychological resource, it follows that extraverts experience higher levels of affective resources in general. Moreover, as we suggested, affective resources are interrelated with other psychological resources, which suggests that extraverts may be able to fend off depletion of personal resources in general more effectively. This notion that individuals who have high level of resources attract even more resources is also consistent with broader theories applied to work recovery such as the conservation of resources theory (Hobfoll, 1998).

This discussion of extraversion suggests that individuals scoring low on Extraversion (introverts) may react differently than extraverts to some possible break activities. For example, introverts may not be able to recover their resources during a group lunch rather it may exhaust them even more. We suggest that introverts may need different types of breaks than extraverts in order to replenish their resources (e.g., reading a book during the lunch break). Also, because organizations are inherently social entities (Parsons, 1951), we suggest that replenishment may be more difficult for introverts in many organizational settings, especially those that require frequent social interaction (e.g., customer service or sales jobs). As such, introverts need to be especially cognizant of the types of break activities that aid their replenishment while at work in order to ensure that they can alleviate the potential strain that social situations pose for them. However, past research suggests that individuals chose and stay in occupations and organizations that suit their personalities (e.g., Johansson, 1970; Schaubroek, Ganster, & Jones, 1998). Thus, although introverts may have more difficulties recovering their resources than extroverts in organizational contexts in general, once in a position or organization that suits their personality they should be able to recover their resources, although to what extent when compared to extraverts is unclear.

Neuroticism refers to the degree to which people experience negative emotions such as anxiety, hostility, depression, vulnerability, and impulsiveness (McCrae & John, 1992). Previous research has found that individuals high on Neuroticism compared to individuals low on
Neuroticism have negative general appraisal tendency (Gallagher, 1990; Hemenover & Dienstbier, 1996), are more prone to experiences of stressful events and perceive daily stressor as unpleasant (Kling, Ryff, Love, & Essex, 2003), and have difficulties coping with daily stressors (Gunthert, Cohen, & Armeli, 1999). In addition, individuals high on Neuroticism experience higher levels of interpersonal conflicts (Bolger & Schilling, 1991; Gunthert et al., 1999).

Neuroticism may influence the relationship between break activities and resource levels in two ways. First, individuals high on Neuroticism may perceive more stressors and be less able to cope with them than individuals low on Neuroticism throughout a regular workday. These increased experiences of daily stressors will lead to faster depletion of resources. In addition, these stressors increase negative effects, which is also related to neuroticism (e.g., Gallagher, 1990; Gunthert et al., 1999). Furthermore, because it is typically inappropriate to openly display negative emotions in the workplace (Hochschild, 1983), more neurotic individuals are more likely to have to engage in effortful emotion regulation, which also depletes regulatory resources (Grandey, 2000; Gross, 1998). In general, individuals high on Neuroticism experience more stressful events in the workplace and outside of work, which consequently leads to more negative effects and lower level of resources. Therefore, in any given workday individuals high on Neuroticisms may have lower levels of psychological resources.

Another possibility is that individuals high on Neuroticism appraise and experience their break activities differently from individuals low on Neuroticism. For example, consider an employee high on Neuroticism that is having lunch with his or her work group, and the group leader does not talk much to that employee throughout the lunch. This employee is likely to perceive this encounter more negatively than neutral. The negative appraisal may lead to resource depletion instead of replenishment as neurotic individuals struggle with trying to regulate their thoughts and behaviors as well as the negative emotions associated with such an appraisal. Therefore, the same break activity may be appraised differently between individuals high and low on Neuroticism, resulting in differential effects on levels of psychological resources.

A concept inversely related to Neuroticism, called “toughness” (Dienstbier, 1989), may provide insight into why people high in Neuroticism, as well as others who lack this, seem to be predisposed to the negative effects of work stress. Dienstbier (1989) describes how some people approach potentially stressful situations as challenges, and do not fully experience the negative consequences associated with stress, including decreased production of
stress hormones. Dienstbier suggest that toughness allows people to endure trying situations by viewing them as challenges, which once conquered, result in positive feelings of accomplishment. Neurotic individuals seem to be especially lacking in this toughness and as a result, they are more likely to be negatively impacted by the demands of work.

Furthermore, Dienstbier suggests that toughness can be developed through repeated exposure to demanding situations, such as physical exercise. Over time, by approaching difficult situations as challenges, people develop toughness, allowing them to deal more effectively with similar situations in the future. In fact, the notion of toughness is consistent with Baumeister and colleagues' (e.g., Baumeister et al., 1994, 1998; Muraven et al., 1998) conceptualization of regulatory resources as a muscle that can be strengthened with repeated use. Although empirical research has yet to test the notion that regulatory resources function in this manner, it is highly suggestive of a potential individual difference that could also moderate the role of break activities in the recovery process. People higher in toughness, or its regulatory resource equivalent, might require shorter breaks, fewer breaks, or possibly different kinds of breaks, as the demands associated with work may not negatively impact these individuals to the same extent.

**CONSEQUENCES OF PERSONAL RESOURCE LEVELS**

Thus far we have focused on the antecedents of personal resource levels. However, personal resource levels can also have important consequences for various workplace outcomes. In this section, we will consider the consequences of resource levels on the following outcomes: stress and emotional exhaustion, task performance, affective performance, and organizational citizenship behaviors (OCBs). Of course this is not a comprehensive list of potential outcomes; however, this set of workplace outcomes is particularly sensitive to changes within a workday, in particular, changes in people’s resource levels. In general, we suggest that higher levels of personal resources would have positive consequences for an array of organizational and individual outcomes.

*Stress and Emotional Exhaustion*

Research on respites, stress, and well-being has recognized the role of resources and their depletion and replenishment in consequent stress
experiences (e.g., Sonnentag, 2001; Westman & Eden, 1997; Westman & Etzion, 1995). However, this line of research has never explicitly examined whether resource levels are mechanisms through which break activities (e.g., daily breaks, vacations) influence stress and well-being. This lack of empirical assessment and examination of levels of resources is partially due to measurement challenges. Thus, measuring an individual’s levels of psychological resources and directly examining the relation between levels of resources and stress should be a priority for future research. We seek to help guide future endeavors in this area by theorizing on the relation between level of resources in a workday and a specific form of stress – emotional exhaustion.

Although, there are various indicators of stress and strain used in the literature, such as psychological well-being, burnout, physiological health, and emotional exhaustion, for the purposes of this discussion, we concentrate on emotional exhaustion. We do so because in momentary, within-day processes, emotional exhaustion will be more influenced by daily fluctuations in resource levels than will be overall psychological well-being or a person’s overall health that develops over an extended period of time and remains stable. Emotional exhaustion is the core component of burnout (Maslach, 1982), and it refers to being emotionally exhausted by one’s work, which is accompanied by psychological and emotional drain and physical fatigue (Wright & Cropanzano, 1998, p. 486).

We suggest that low levels of resources will lead to high emotional exhaustion. One reason for this suggestion is that when resources get depleted individuals are less able to deal with stress. The recognition of the importance of resources in dealing with stress goes back to one of the most influential stress theories, the transactional theory of stress postulated by Lazarus and Folkman (1984). The transactional theory of stress suggests that personal and social resources play an important role in stress appraisal and consequent coping with stress. Lazarus and Folkman theorized that resources available to individuals determine their reaction to stress and their employed coping strategies. In other words, if resources are exhausted or lacking, individuals would perceive stressors as a threat, whereas if they have resources they would perceive them as a challenge. Experiencing stressors as a threat would lead to employment of maladaptive coping strategies, which has detrimental effects on health and well-being.

Furthermore, Lazarus and Folkman (1984) distinguished between two sets of coping strategies, problem- and emotion-focused strategies. The problem-focused strategies involve actively dealing with problems (e.g., defining problems, seeking solutions), whereas emotion-focused strategies
involve avoiding or distancing oneself from problems. Individuals with low levels of resources (especially regulatory) may be more likely to employ emotion-focused coping strategies because of their temporary inability to focus and solve problems. In turn, avoiding problems can lead to more problems and uncertainty, and consequently to the experience of emotional exhaustion. Furthermore, if affective resources are depleted, this would lead to the experience of negative effect. Negative effect has consequences for how situations and events are appraised. Specifically, negative effect leads to more negative interpretations of events (Hemenover & Dienstbier, 1996), which further leads to emotional exhaustion. Thus, levels of resources influence peoples’ appraisal and coping strategies, which in turn leads to emotional exhaustion.

One other way in which lower levels of resources lead to emotional exhaustion may lie in the relationship between resource levels and task performance. Specifically, when individuals experience low levels of resources their performance is likely to diminish and they may feel that they cannot accomplish everything they ought to, or would like to accomplish in a given workday. This inability may lead to feelings of frustration and diminished feelings of control over their situations, giving rise to negative emotions (Shechtman & Horowitz, 2006) and ultimately to emotional exhaustion. It should be noted that it is quite possible that the relationship may be the other way around, that is, when individuals experience emotional exhaustion, they are unable to focus on their tasks and thus their performance suffers. One of the few empirical studies that examined the relationship between emotional exhaustion and job performance has found a negative relation between the two (Wright & Cropanzano, 1998). However, it was not possible to establish causality in this study because all data were collected at the same point in time.

**Performance**

To understand the within-day nature of resource depletion of job performance, let us once again consider Beal and colleagues (2005) episodic performance model. This model suggests that a regular workday consists of *performance episodes*, which are defined as “behavioral segments that are thematically organized around organizationally relevant goals and objectives” (p. 1055). It is argued that the variation in performance across work episodes in a workday is influenced by regulating attention to the focal tasks in a given episode. As we have already detailed, this regulation of attention
results in regulatory resource depletion. Furthermore, they suggest that affective experiences can create additional cognitive demands on an individual, which in turn also depletes resources as people struggle to stay focused on the task at hand. As people’s resources are depleted, greater effort is required to maintain performance during a given episode. If this process continues, performance levels degrade and ultimately become unacceptable.

We extend this line of reasoning in suggesting that low levels of resources should have negative effects on multiple facets of job performance within a workday. Past research on ego depletion has found that even after one episode of self-regulation, performance on subsequent tasks suffers, presumably because regulatory resources were depleted during the previous task. For example, Baumeister and colleagues (1998) conducted a series of laboratory experiments in which they found that (a) when participants engaged in a task that required resisting eating chocolate and instead eating radishes, subsequent performance on a difficult puzzle task was impaired; (b) when participants gave a counter attitudinal speech, they were more likely to give up on a subsequent puzzle solving tasks; and (c) when participants engaged in self-regulatory activities, they became more passive on subsequent tasks requiring regulation. Therefore, Baumeister and colleagues demonstrated that regulatory resources are used for many different activities and their initial use impairs performance on subsequent tasks. This occurs even when subsequent tasks may not be related to the initial task, supporting the idea that all acts of regulation draw on a common resource of self-regulation. Taken together, regulatory resource theory and the episodic process model of performance, suggest that individuals’ levels of resources fluctuate within a workday, which in turn impact episodic job performance. When individuals experience low levels of resources, they have difficulties focusing attention on a task and in being more active in relation to the task (e.g., experience passivity). This is especially true if the previous job performance episode also involved more self-regulation. Furthermore, not only do we expect resource levels to impact task performance, but this process should function in a similar manner with regard to other types of job performance.

**Affective Performance**

In addition to performance of job tasks, many occupations require employees to engage in affective performance. Namely, the service sector
requires its employees to display organizationally desired emotions (Hochschild, 1983), most often happiness, and thus the expression of emotion has become a part of many such jobs (Wichroski, 1994). The consequences of displaying organizationally desired behaviors have been examined in the literature on emotional labor. Emotional labor can be defined as the effort and control needed to display organizationally desired emotions (Morris & Feldman, 1996). Furthermore, it has been suggested that maintaining appropriate emotional displays is taxing and requires adequate levels of personal resources (Grandey, 2000). Thus, similar to task performance, affective display performance is affected by personal resource levels, such that lower levels of resources leads to poor quality of affective display. Although empirical results are limited, resource replenishment does indeed seem to influence the quality of positive affective display (Trougakos et al., 2008).

Of course there are various factors that could influence the relationship between personal resource levels and performance of emotional displays. For example, emotional labor often involves using one of two emotion regulation strategies: (1) surface acting – changing external expression of emotion while the internal state is unchanged or (2) deep acting – changing the actual internal experience of emotion (Grandey, 2000; Hochschild, 1983). Previous research has found that surface acting is related to strain and emotional exhaustion, whereas deep acting is not related to strain (Grandey, 2003; Gross, 1998). One explanation in the literature for the effect of surface acting on strain is that surface acting involves displaying emotions that are not internalized and thus there is a conflict between genuinely felt emotions and displayed emotions, which leads to emotional dissonance (Morris & Feldman, 1996). The other explanation is that suppressing truly felt emotion, or maintaining emotion that is not truly felt requires effort and control, which in turn depletes one’s resources (Hochschild, 1983; Wharton, 1993). Indeed, research on resource depletion supports the notion that effortful regulation of emotion can deplete regulatory resources (Baumeister et al., 1998). Therefore, regulating emotion while engaging in affective performance should be related to resource depletion, and this can have consequences on job performance.

Organizational Citizenship Behaviors

The final type of job performance we discuss is OCBs. OCBs are defined as workplace behaviors that are discretionary, not explicitly required or
rewarded by an organization, and in aggregate they promote organizational effectiveness (Organ, 1988). Hence, the presence of OCBs enables employees and organizations to function more smoothly. On the basis of our previous discussion, low levels of resources should also lead to low exhibition of OCBs. To explain the relationship between the levels of resources and OCBs, it is useful to distinguish between two general categories of OCBs (1) behaviors directed at the organization directly (e.g., staying extra hours to finish or improve a report), and (2) behaviors directed at individuals (e.g., helping new employee to find his or her way around) (Organ & Konovsky, 1989; Williams & Anderson, 1991).

The mechanisms behind the relationship between people’s regulatory resources and OCBs directed at the organization (OCB-O) are similar to the mechanisms behind the relationship between psychological resources and task performance. The main distinction between task performance and OCB-Os is that task performance is an officially required and formally rewarded work activity, whereas OCB-Os are activities that go beyond the call of duty. However, the mechanisms for performing job tasks and OCB-Os are the same – an employee needs to invest certain amounts of energy, effort, and resources to perform them. When the level of regulatory resources is low, attention is decreased and passivity is increased, which leads to lower job performance. Furthermore, individuals seek to protect resources when there is a threat of resource loss (Hobfoll, 1998); and thus, we suggest that when regulatory resources are low, employees will be more likely to concentrate on job required tasks while abandoning performing any non-essential, non-rewarded activities such as OCB-Os.

The mechanisms behind the relationship between regulatory resources and OCBs directed at individuals (OCB-I) are generally similar to the mechanisms for OCB-Os. However, whether or not someone with depleted resources engages in OCB-I or not is likely to be influenced by a host of factors, including how well they know the person seeking help (motivation to help) as well as the complexity of the task. Presumably, the better an individual knows the person seeking help and the less complex the nature of the request is, thus requiring less effort, it is more likely that the employee will help the fellow coworker even under conditions of depleted resources. Overall, however, the message here is that employees are more likely to help when they have high levels of resources than when they have low levels of resources.

In addition to regulatory resources, affective resources might also play a role in the performance of OCB-I. There is much evidence to suggest that positive emotional affective experiences serve as a resource that can
facilitate OCBs. Previous research has found that positive mood fosters prosocial behaviors in various settings (e.g., George, 1991; George & Bettenhausen, 1990; Rosenhan, Salovey, & Hargis, 1981). One account for this relationship is that individuals who are experiencing positive emotional states perceive stimuli around them in a more positive light (e.g., Bower, 1981; Carson & Adams, 1980; Clark & Teasdale, 1985) and are more attracted to other people (e.g., Bell, 1978; Gouaux, 1971; Mehrabian & Russell, 1975). Thus, they will be more likely to help their fellow coworkers.

In addition, previous research suggests that individuals in a positive mood strive to prolong their mood state, and helping others can serve to achieve this goal (e.g., Isen, Shalker, Clark, & Karp, 1978). The notion of people trying to maintain positive emotional states ties to our discussion of preferred choice activities. We suggested previously that engaging in activities that individuals preferred would lead to more positive effect. By helping their coworkers they maintain their positive emotional states and thus build their personal resources. In turn, higher levels of personal resources lead to more helping behaviors. Thus, high levels of helping behaviors (OCB-I) may be the consequence of high resource levels, but helping behaviors may also act as a preferred activity that contributes to building more personal resources. In other words, there is likely a positive feedback loop between affective resources and helping behaviors in the workplace.

MOTIVATION AS A MODERATOR OF THE RELATIONSHIP BETWEEN RESOURCE LEVELS AND OUTCOMES

Thus far, we have considered how low levels of momentary psychological resources should lead to negative outcomes such as poor job performance and high levels of emotional exhaustion. We have also pointed out a few factors that could potentially influence some of the relationships we have discussed. However, there are numerous other factors that might impact these relationships. In particular, individuals’ behaviors are strongly influenced by their motivation (Bandura, 1986), and under some circumstances, motivation may be strong enough to counteract the effects of depleted resources.

A major thrust of motivation research in the workplace has been to examine factors that lead to greater job performance (e.g., Campbell &
Pritchard, 1976; Kanfer, 1992). Therefore, the focus of our discussion on motivation as a moderator will be on the relationship between resource levels and job performance. However, there are extensions that we can make about the impact of motivation on the relationship between resource levels and stress-related outcomes as well. Therefore, although we will focus on job performance, we will also briefly address the impact of motivation on stress.

Work Motivation

Work motivation can be defined as the extent to which people are willing to persist in achieving a certain goal (Locke & Latham, 2004). It has long been recognized that job performance does not only depend on one’s abilities and skills, but it also depends on one’s motivation to perform (Locke, 2000). Work motivation has been of interest to organizational scholars at least since the Hawthorne studies in the 1930s (e.g., Latham & Budworth, 2007), which spawned a correspondingly large literature on the subject. In the next sections, we describe how work motivation may also qualify the relationship between resource levels and job performance. The basic premise here is that daily job performance may remain relatively high despite low levels of resources because some individuals are motivated to continue performing at high levels.

Every job-related task aims to accomplish a certain goal, and the nature of those goals may have important consequences for the relationship between resource levels and job outcomes (e.g., performance and stress levels). According to goal-setting theory, higher (more difficult), more specific, and sophisticated goals lead to higher outcomes (Latham & Locke, 1991). Difficult and specific goals may be perceived as more challenging and important (e.g., Drach-Zahavy & Erez, 2002), and more challenging and important goals are usually associated with tangible rewards such as pay and intangible rewards such as satisfaction and pride associated with accomplishing a difficult and important goal. In turn, when employees are experiencing high levels of resource depletion, they may feel that continuing to work on those goals will be beneficial for them and thus they increase focus and effort in order to continue to work as effectively as possible. However, if employees perceive that the goals set are “not worthy” of their further effort and energy, performance may wane and eventually they may cease to work on the task altogether.
A study conducted by Muraven and Slessareva (2003) offers evidence that depleted employees may continue to work and perform when they perceive that their tasks and goals are important and beneficial. They examined whether motivation can offset negative consequences of resource depletion. In series of laboratory experiments, they found that (a) depleted participants who were working on a self-control task continued to work on the task when they believed that they could help others (important task) compared to depleted participants who did not believe that the task could help others (unimportant task); (b) also, depleted participants performed better when they believed that they would have personal benefits from the task when compared to depleted participants who did not believe they could benefit from the task. The authors offered an interesting plausible explanation for their findings: individuals are motivated to conserve their limited regulatory resources and as their resources become depleted, they are more likely to cease activities involving regulatory resources not because it is more difficult to exercise self-control, but because they want to preserve their resources. However, if they are strongly motivated to continue using their regulatory resources, that is, benefits are higher than associated costs of resource depletion, they will continue with activities that deplete regulatory resources.

In addition, having a clear direction and goals when resources are low also has implications for individuals’ levels of stress and well-being. Previous research has examined the influence of role ambiguity on stress. Role ambiguity refers to lack of clear goals and direction, which increases individual’s levels of stress (Posig & Kickul, 2003). Previous research has found that role ambiguity is positively related to stress and specifically to emotional burnout (e.g., Lee & Ashforth, 1996; Posig & Kickul, 2003). When individuals experience low levels of resources, clear goals and directions help them to know where they need to direct their remaining energy and how they can accomplish their goals, which will ultimately lead to less stress and emotional exhaustion. Also, when resources are depleted, it may be very difficult to prioritize existing goals and formulate new goals. Having clear goals allows individuals to perform predetermined tasks and thus maintain performance when resource levels are low. In other words, when resource levels are low, employees may perform well by working on predetermined and more mundane tasks (e.g., entering data into a spreadsheet) and avoiding more complex tasks that call for defining goals.

Goals also differ in terms of their origin; goals can be either internally (self) imposed or externally imposed (e.g., imposed by a manager). The concept of the origin of goals (self imposed versus externally imposed) can
be mapped onto the concept of autonomous and controlled motivation postulated in the self-determination theory of motivation (Gagné & Deci, 2005; Ryan & Deci, 2000). Autonomous motivation refers to acting volitionally and having a choice, whereas controlled motivation refers to lack of choice and a feeling of pressure to perform a task. Furthermore, intrinsic motivation may represent autonomous motivation – engaging in an activity because it is inherently interesting and enjoyable. Extrinsic motivation may represent controlled motivation – engaging in an activity because it leads to some tangible outcomes such as rewards or avoiding punishment (Ryan & Deci, 2000). When employees define their goals, they are more likely to be intrinsically motivated. Intrinsically motivated employees will perform better because they enjoy their work and enjoyment makes task completion easier. This enjoyment associated with pursuing an intrinsically interesting task is closely tied to a type of respite that we discussed earlier in this chapter – preferred choice activities. When employees engage in an activity they prefer they decrease the use of self-regulatory resources, which has consequences on job performance and well-being (Fritz & Sonnentag, 2005; Miner et al., 2005; Trougakos et al., 2008). In addition, because engaging in an intrinsically motivated task often results in experiencing enjoyment, a positive emotional experience, this can result in an increase in affective resources. Thus, engaging in work tasks which are intrinsically motivating can lead to two processes. First, less regulatory resources are consumed, and thus, less resource depletion is experienced. Second, it fosters more resource building, specifically building and replenishment of affective resources. In turn, the combination of greater regulatory resources and replenishment of affective resources may lead to higher performance levels and higher levels of well-being.

**CONCLUDING THOUGHTS**

Research in the area of work recovery has primarily focused on how people use their time outside of typical work hours. However, the average person probably spends anywhere from seven to ten hours on the job each workday. Considering the time people spend at work, within-day work breaks provide excellent opportunities for momentary recovery. Yet despite the ubiquitous nature of within-day work breaks, little research has systematically examined the role of these breaks in the recovery process. With this in mind, we focused on the role of within-day work breaks in people’s daily recovery in order to help develop a more comprehensive
picture of work recovery. It is important to note that in no way are we presuming to have covered all of the factors involved in momentary daily recovery. Rather, the aim of this chapter has been to serve as an initial discussion of this understudied area of work recovery, with the intention to review relevant prior findings and bring together some of the relevant theories with the hopes of stimulating future research in the area.

Specifically, the notion of limited personal resources has been central to the study of work recovery, yet prior conceptualization of resources have not adequately accounted for the processes involved in within-day recovery. We suggest that in order to better understand these processes, applying an episodic approach along with more micro-level theories of personal resources, in conjunction with the traditional recovery theories, should prove useful in advancing this area of study. Furthermore, future research in the area of work recovery would be well served to bear in mind that there are numerous individual differences and situational factors that might impact recovery. Exploring these variables is likely to result in an understanding that activities leading to work recovery are not a “one size fits all” proposition. Therefore, in order to maximize the prescriptive utility of this stream of research, a broader understanding of individual and contextual differences is necessary.

Finally, it is important to note that the effects of various types of work breaks, and the activities people engage in during these breaks, are unlikely completely independent phenomena, although research often treats them as such. That is, what we do before we go to work, during our within-day work breaks, and after work, are all likely to be interrelated in some manner. We have little doubt that people’s daily resource levels are impacted by the cumulative effects of all opportunities for recovery. It is therefore likely that a host of outcomes are similarly impacted. Understanding the intricacies of these relationships, both over the course of a single workday, as well as over greater periods of time, is an important step to develop a more comprehensive understanding of the processes and outcomes associated with work recovery.

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REFERENCES


