



‘I’m tired’: Differential effects of physical and emotional fatigue on workload management strategies

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ABSTRACT

This article integrates self-efficacy theory with decision latitude theory to generate a typology of workload management strategies used by knowledge workers working under conditions of high job demands. We then propose that physical and emotional fatigue should differentially influence usage of these workload management strategies based on anticipated differences in their effects on self-efficacy. We discuss theoretical and practical implications of our model with regards to knowledge workers who often face ongoing challenging job demands.

KEYWORDS

burnout ■ emotional exhaustion ■ fatigue ■ job demands ■ measuring workload management strategies ■ self-efficacy ■ workload management strategies

In response to ongoing global competitive pressures, organizations have implemented horizontal management structures such as work teams (Uhl-Bien & Graen, 1998), emphasized delegation and empowerment (Spreitzer, 1996), and generally expect knowledge workers to ‘do more with less’ (Cappelli, 1997; Van Dyne & Ellis, 2004). Some of these changes have been associated with positive outcomes for employees, such as high job satisfaction, work commitment, and job performance (Kirkman & Rosen, 1999; Siebert et al., 2004). However, a key result of these trends is increased demands on knowledge workers (Hambrick et al., 2005; Van Yperen &

Hagedoorn, 2003) which often result in physical and emotional fatigue at work.

These trends have important implications for contemporary organizations because narrative (Harrison & Horne, 2000a) and quantitative (Pilcher & Huffcutt, 1996) reviews show physical fatigue has a negative influence on performance. Data similarly suggest a negative influence of emotional fatigue on performance (Cropanzano et al., 2003; Wright & Cropanzano, 1998). In order to understand these negative influences of physical and emotional fatigue on performance, researchers must understand the influence of fatigue on more proximal behavior such as how knowledge workers manage their workloads.

Yet, researchers and managers currently have no theory to guide their understanding of how physical and emotional fatigue influence strategies that professionals use to accomplish their work when they feel overloaded. This is an important gap in the literature because a clearer delineation of the effects of fatigue on more proximal outcomes, such as workload management strategies, should provide insights for how knowledge workers respond to feeling overloaded. It also should suggest practical interventions that managers can use in managing these processes.

Accordingly, the main purpose of this article is to develop a conceptual model that explicates ways that physical fatigue and emotional fatigue differentially influence workload management strategies of knowledge workers. Although many scholars acknowledge increased work demands faced by employees (Pfeffer, 1994; Rousseau, 1997) and the resulting fatigue experienced by employees (Pilcher & Huffcutt, 1996; Wright & Cropanzano, 1998), the theoretical literature on fatigue is compartmentalized because physical and emotional fatigue have generally been considered in two separate literatures. As a result, we lack an integrated model that differentiates effects of physical and emotional fatigue in work settings.

In this article, we suggest that fatigue (feeling tired) should have special relevance to knowledge workers. Knowledge workers are a key to competitive advantage in many organizations because they develop ideas for new strategies, products, and services (Lewis, 2004). Much of their work is cognitive and difficult to observe. In addition, since knowledge workers typically manage their work with little direct supervision (e.g. Uhl-Bien & Graen, 1998), it is important to enhance our understanding of how different types of fatigue might influence workload management strategies of these employees.

As noted by several researchers (e.g. Huey & Wickens, 1993; Reid & Nygren, 1988; Sperandio, 1978), employees typically do not stop working when they feel overloaded. Rather, they adopt workload management

strategies as behavioral coping mechanisms that allow them to take short cuts. Directly relevant to this idea of overload and short cuts, Hambrick and colleagues (2005) described a variety of behaviors executives use to reduce the mental demands of doing their work when they feel overloaded. These strategies include utilizing familiar responses, shifting demands to others, imitating others, and pursuing risky options. This is consistent with Fiske and Taylor's (1991) view of people as motivated tacticians who choose from multiple possible strategies based on goals, motives, and needs. In our theory building, we build on Hambrick and colleagues' work and propose that physical and emotional fatigue should have systematically different effects on workload management strategies.

Our goal is to enhance understanding of how fatigue might influence the ways knowledge workers respond when they feel overloaded. We do this through four main steps. First, we build from Hambrick and colleagues (2005) to propose four specific workload management strategies that we expect knowledge workers to use when they feel overloaded and experience time scarcity. Second, we theorize that these workload management strategies should be a joint function of self-efficacy and decision latitude. Thus, we propose a typology that integrates ideas from self-efficacy theory (Bandura, 1997) with perceived decision latitude (Karasek, 1979). Third, we discuss fatigue and the similarities and differences in physical fatigue and emotional fatigue, including propositions on how they should be related to self-efficacy. In this section, we introduce the Sleep, Activity, Fatigue, and Task Effectiveness (SAFTE) model of physical fatigue (Hursh et al., 2004) and suggest that parallel processes of depletion should lead to physical fatigue and emotional fatigue. Fourth, we propose that physical and emotional fatigue should have differential effects on workload management strategies based on anticipated differences in their effects on self-efficacy, and we advance specific propositions that can be tested in future research. We hope that our initial model provides a conceptual foundation for future empirical studies of knowledge worker workload management strategies and we also hope that future research will expand on our model by relaxing our simplifying assumptions.

Workload management strategies of knowledge workers

Bell (1973) defined knowledge work as activity that is open-ended, creative, highly demanding, and difficult to standardize or fully plan out in advance. Nevertheless, planning and plan modification are critical for knowledge workers who often must manage heavy and changing job demands. For

example, Blount and Janicik (2001) described situations where members of organizations face changing deadlines, such that employees must take short cuts to get the work done in less time than originally planned. In other situations, knowledge workers underestimate the amount of time required to complete a particular aspect of a complex project or encounter unexpected challenges and then must take short cuts in other aspects of their work (Labianca et al., 2005). Dynamic situations also cause employees to take short cuts in existing projects to accommodate new projects and changing priorities. In addition, research shows that downsizing, reorganizations, flattened hierarchies, and threats of layoffs increase employees' job insecurity and sense of time famine, causing them to feel they must do more with less (Brockner et al. 1986; Cappelli, 1997; Perlow, 1999; Rousseau, 1997).

When situations are dynamic, as described in the preceding paragraph, effective employees need to change their behavior and use different strategies, defined as adaptations that serve or appear to serve important functions in achieving success (Merriam-Webster, 1999). Applied specifically to professionals, Blount and Janicik (2001) argue that knowledge workers use various strategies to cope with increases in job demands and time scarcity. In addition, research shows that individuals use a variety of strategies for making decisions and performing their work, and they tend to modify the strategies they use in response to perceived workload (Huey & Wickens, 1993; Payne, 1982; Reid & Nygren, 1988). Building on this research and the idea of feeling overloaded, we define workload management strategies as short cuts that employees use to manage high levels of workload when feeling overloaded.

Considering the open-ended nature of work performed by knowledge workers (Bell, 1973), a wide variety of workload management strategies is potentially relevant to them when they feel overloaded. Drawing on prior work of Hambrick and colleagues (2005), however, we suggest that four specific workload management strategies seem especially important and relevant to knowledge workers. Thus, we extend Hambrick and colleagues' (2005) conceptual work on strategies executives use when faced with high levels of job demands and apply it specifically to knowledge workers.

The first workload management strategy we consider is *utilizing familiar responses*. Hambrick and colleagues (2005: 478) noted that executives facing high job demands 'will be drawn toward what has worked for them before, what they find familiar, and what fits their cognitive schema'. They illustrated this by describing people's tendencies to rely on habitual responses characteristic of their functional background – especially when under pressure, such as when experiencing time scarcity. Applied to knowledge workers, this could include a marketing manager assigned to a cross-functional project team who under pressure insists that the best short cuts

involve changes to marketing plans. In this example, the marketing manager is trying to rely on a personal area of expertise where it will be possible to apply familiar routines to the situation rather than seeking to develop new skills or approaches. We suggest this requires relatively low levels of cognitive effort because the marketing manager can apply well-learned knowledge and solutions that have worked previously.

The second workload management strategy we consider is *increasing demands on others* (Hambrick et al., 2005). When executives experience ongoing high job demands, they can take short cuts and reduce their sense of time scarcity by delegating tasks to subordinates. Since knowledge workers may or may not have subordinates, we conceptualize this workload management strategy more broadly and focus on increasing demands on others. For knowledge workers, this could include a financial analyst who feels overloaded from working 10-hour days for two weeks on a new business plan and asks peers for help. It also could include delegating work to subordinates.

The third strategy is *imitating others* (Hambrick et al., 2005). When confronted with ongoing high job demands, executives also have the option of observing what other people have done in similar situations and utilizing these short cuts as their own response. Hambrick and colleagues differentiated imitating others and utilizing familiar responses based on the source of the response (others versus self) as the key difference. For knowledge workers, this could include a manufacturing engineer who experiences time scarcity and adopts strategies previously used by peers to implement new processes.

The fourth workload management strategy we consider is *pursuing risky options* (Hambrick et al., 2005). This includes more extreme behaviors such as taking short cuts by adopting a novel and untested approach in new areas. This could include creative attempts to transform procedures even when they have unknown consequences. It also could include adopting strategies based on truncated risk analyses. For example, Hambrick and colleagues (2005) described an executive's acquisition of yet another firm in an unrelated market as an extreme and risky response. Applied to knowledge workers, this could include a purchasing agent who under pressure adopts a novel approach for soliciting bids on a project without detailed analysis of past practices and existing relationships.

Self-efficacy, decision latitude and workload management strategies

In this section, we build on the conceptual differences in these four workload management strategies and we suggest that each can be described in terms

of the joint effects of self-efficacy and decision latitude. Thus, we suggest that knowledge workers consider their specific capabilities relative to a particular task as well as their authority within the job context in deciding what workload management strategy to use at a specific point in time. Accordingly, we combine Bandura's (1997) work on self-efficacy with Karasek's (1979) work on job demands and decision latitude. This should enrich the conceptualization of workload management strategies by going beyond a descriptive list, such as delineated by Hambrick and colleagues (2005), and instead providing a conceptually based framework that facilitates consideration of workload management strategies based on similarities and differences in specific strategies. Later, we use this logic to introduce a typology of workload management strategies that provides an organizing framework that should help researchers develop a more refined understanding of how workload management strategies relate to situational and individual characteristics.

Self-efficacy (Bandura, 1997: 2) is defined as 'beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments'. Such beliefs are a subjective assessment of one's own capabilities (Bandura, 1997). Emphasizing task specific self-efficacy, Bandura (1997) noted that a high sense of efficacy in one activity domain is not necessarily accompanied by high self-efficacy in other realms. In this manuscript, we focus specifically on self-efficacy of knowledge workers in doing their jobs. This focus on task specific self-efficacy is consistent with Bandura's (1997) theoretical framing and with research examining task specific self-efficacy in the context of high job demands (Schaubroeck & Merritt, 1997). As Bandura (1997) noted, people act on their beliefs about what they can do, and these beliefs influence their outcome expectancies. Consistent with expectancy theory (Vroom, 1964), we contend that knowledge workers will use workload management strategies with the most favorable expected outcomes. These expectancies, in conjunction with beliefs about decision latitude, should influence the workload management strategies used by knowledge workers.

A large amount of research has demonstrated that self-efficacy is a powerful predictor of behavior for many tasks and in many situations (see Stajkovic & Luthans, 1998). Bandura (1997), however, noted that other factors can affect the relationship between self-efficacy and behavior and recommended research that examines moderators of the efficacy-behavior relationship. Schaubroeck and Merritt's (1997) research is one example of this type of theorizing. Building on Schaubroeck and Merritt, we draw on Karasek's work on job demands and decision latitude to theorize that the joint influence of self-efficacy and decision latitude should have important

implications for workload management strategies used by knowledge workers experiencing high levels of job demands.

Karasek (1979) proposed that high job demands result in high levels of activation. Whether activation is positive or negative depends on beliefs about decision latitude. When individuals feel job demands are high and decision latitude is low, they should experience strain. In contrast, experiencing high job demands and high decision latitude should produce a positive sense of activation. Research demonstrates high demands and low decision latitude are associated with health problems, while high demands and high decision latitude are associated with positive coping behaviors (Van Yperen & Hagedoorn, 2003). Moving beyond the traditional focus of this research (stress and strain), we consider effects on workload management strategies of knowledge workers.

Perceived decision latitude (also known as job control) is an important construct in the context of job demands (Karasek, 1979). Shen and Cho (2005) defined perceived decision latitude as the range of options individuals feel they have as they strive to perform their jobs. Thus, perceived decision latitude represents an individual's appraisal of the objective situation. Hambrick and colleagues (2005) acknowledge various levels of perceived decision latitude in their consideration of managerial behaviors under high job demands. Specifically, they focus on the latitude to shift workload to other people (e.g. task delegation) and engaging in novel responses or imitating others. We similarly utilize this focused depiction of decision latitude. Extending Hambrick and Finkelstein's (1987) point that executives vary substantially in their perceptions of decision latitude, we suggest that knowledge workers should also have varying perceptions of decision latitude. Knowledge workers who believe they have high decision latitude should feel they have many options. They should have a sense of autonomy and authority to choose among these options. In contrast, knowledge workers who believe they have low decision latitude should feel they have few options. With few options, they should experience limited autonomy and limited authority.

Having defined and described self-efficacy and decision latitude, we note that the two concepts are similar because they both represent personal beliefs. They differ, however, in the target of the belief. Decision latitude is individual beliefs based on personal appraisal of the objective situation – what options are within my authority here in this situation to accomplish my job. In contrast, self-efficacy is individual beliefs about personal capabilities to execute a given course of action – do I have the capability to perform my job duties here in this situation? The two constructs also differ in stability. Decision latitude is the overall breadth of options a knowledge

worker views as viable in his/her work role. Thus, it is a relatively stable assessment of authority. Indeed, the majority of the antecedents of decision latitude (e.g. industry structure, firm size, organizational culture, employee cognitive complexity, and locus of control) noted by Hambrick and Finkelstein (1987) are stable over time. In contrast, Bandura (1997) defined self-efficacy as a malleable construct and empirical research demonstrates changes in self-efficacy over time (Yeo & Neal, 2006). Thus, we intentionally contrast the dynamic nature of self-efficacy with the relatively more stable nature of decision latitude. These differences in decision latitude and self-efficacy become important later in the article when we discuss fatigue and workload management strategies.

Since we are developing an initial conceptual model of workload management strategies and need to limit the scope of our theorizing, we start with three simplifying assumptions. First, for purposes of this theory building, we assume that self-efficacy and decision latitude are separate and independent constructs. This assumption is consistent with the approach taken by Schaubroeck and Merritt (1997) who used the two constructs as independent predictors. Second, we assume that physical fatigue and emotional fatigue are separate and independent constructs. To date, research has yet to focus specifically on the relationship between physical and emotional fatigue. However, as we note in a later section, these two types of fatigue have different antecedents, which is consistent with treating them as independent constructs. Third, we assume that the combinations of self-efficacy and decision latitude produce a tendency for employees to emphasize one of the four workload management strategies in our framework more than the others. Thus, our predictions focus on the workload management strategy that should be emphasized the most in each of the four cells represented by the combined conditions of self-efficacy and decision latitude.

As indicated in the introduction, this article focuses on knowledge workers in situations of ongoing high job demands. Thus, we hold job demands constant and assume perceived time scarcity as a boundary condition of our theorizing. We conceptualize perceptions of self-efficacy and decision latitude as varying from low to high in a continuous manner. To clarify our arguments, however, we focus on the extremes of these continua and refer to conditions of low versus high self-efficacy and low versus high decision latitude. This produces four conditions: low self-efficacy and low decision latitude; low self-efficacy and high decision latitude; high self-efficacy and low decision latitude; and high self-efficacy and high decision latitude. In the following section, we argue that each of these four conditions should influence employee use of the four workload management strategies

we described above (utilizing familiar responses, imitating others, shifting demands to others, and pursuing risky options). To examine these relationships, we draw from self-efficacy theory and job control theory (Bandura, 1997; Karasek, 1979; Schaubroeck & Merritt, 1997) and note previous empirical research that is consistent with these expectations. We begin by considering low self-efficacy and low decision latitude.

Low self-efficacy and low perceived decision latitude

When individuals experience low self-efficacy (the personal sense of limited capabilities) and low decision latitude (the situational sense of few options), they believe they do not have the capabilities to do their work at a particular point in time and they also believe the situation allows them few options for accomplishing their work. For example, an inexperienced junior accountant who is still learning the job and who is working on several new audits must follow a large number of procedures that limit perceived decision latitude. Thus, this accountant most likely has low self-efficacy and low perceived decision latitude.

Of the workload management strategies identified by Hambrick and colleagues (2005), we anticipate that *utilizing familiar responses* will have the most favorable outcome expectancies to this accountant and other knowledge workers who feel overloaded and are low in self-efficacy and low in perceived decision latitude. Since familiar response short cuts have been previously implemented, past experience provides evidence of capability, even for those with low self-efficacy. In contrast, employees should have higher uncertainty about responses they have not previously implemented. Thus, those with low self-efficacy should be more likely to believe that they can successfully implement a response they have already implemented in the past than a new response which they have never tried. Likewise, prior use provides evidence that this workload management strategy is within the knowledge worker's perceived decision latitude, even for those who are feeling constrained. Although using familiar responses could often include following standard operating procedures, it is possible that knowledge workers with low self-efficacy would view the full set of standard operating procedures as beyond their capabilities, leading them to rely on a smaller set of familiar responses. Overall, familiar responses should be the most comfortable of the workload management strategies for these employees. Thus, we suggest that knowledge workers with this combination of beliefs about self-efficacy and decision latitude should avoid new or risky options and instead should take the 'safer' approach of relying on previously used, familiar short cuts for which they have favorable outcome expectancies.

Using familiar responses should allow them to bypass additional cognitive processing and reduce their overall sense of overload.

Thus, we suggest that knowledge workers who do not feel capable of doing their work and also feel they generally have limited decision latitude should utilize familiar response short cuts as their preferred workload management strategy when they feel overloaded. This is consistent with Korman's (1976) contention that highly structured work environments inhibit creative work. It is also consistent with field research of Ohly et al. (2006) which demonstrated low creativity and innovation for those with low self-efficacy and low decision latitude. In sum, we suggest that knowledge workers who feel overloaded and believe they lack the capability to do the work but believe they have limited options should see the workload management strategy of utilizing familiar responses as having the most favorable outcome expectancy.

Proposition 1: Knowledge workers who are low in self-efficacy and low in perceived decision latitude should be more likely to 'utilize familiar responses' as a workload management strategy than to engage in other workload management strategies.

Low self-efficacy and high perceived decision latitude

When knowledge workers experience low self-efficacy but feel they have high decision latitude, they believe that the job allows them the authority to use a broad range of options to accomplish their work. Their current circumstances, however, cause them to feel they lack the capability to do the work at this point in time. For example, a chemist recently promoted to the new role of project manager would not have a sense of mastery for the best way to complete paperwork required by central administration.

Of the workload management strategies identified by Hambrick and colleagues (2005), we suggest that *increasing demands on others* should have the most favorable outcome expectancies for knowledge workers who feel overloaded and are low in self-efficacy and high perceived decision latitude. When knowledge workers feel they have the authority to use a broad range of options, this will often include delegating work and asking others to help with the work. At the same time, individuals who are low in self-efficacy often believe that others have better capabilities than they have for accomplishing a given task. Combining these arguments, we suggest that when knowledge workers feel their job allows them a broad range of options but the current circumstances cause them to lack confidence in their own capabilities, they should use their authority to increase demands on others

whom they deem more capable. This could include formal delegation, requests for assistance, or informal reallocation of workload. To the degree that there are capable co-workers available, increasing demands on others should allow them to reduce their sense of overload by involving others in their work and shifting some of their cognitive processing requirements to other individuals. Thus, we propose that knowledge workers who feel they are currently not capable of doing the work and who also feel they generally have high decision latitude should utilize increasing demands on others as their preferred workload management strategy.

Previous research and theory support this prediction. For example, Huey and Wickens (1993) argued that people often ask others for assistance as a strategy for coping with excessive task demands. Barnes and colleagues (2008) provide an empirical example and demonstrated that individuals passed work on to others when their own workload became unbearable. This seems especially relevant to those with high decision latitude and low self-efficacy because this allows them to reduce their sense of overload. Thus, we propose that for knowledge workers who feel overloaded and believe they lack the capability to do their work but have a broad range of authority to get their work done, the workload management strategy of increasing demands on others should have the most favorable outcome expectancy.

Proposition 2: Knowledge workers low in self-efficacy and high in perceived decision latitude should be more likely to ‘increase demands on others’ as a workload management strategy than to engage in other workload management strategies.

High self-efficacy and low perceived decision latitude

The third combination is high self-efficacy and low decision latitude. This occurs when knowledge workers believe they have the capability to do their work, but simultaneously believe they lack the authority to implement a broad range of responses. For example, an advertising account manager with a consistently strong performance record recently assigned to a high potential general manager trainee program would have a strong sense of efficacy and yet have limited decision latitude as a trainee.

We suggest that Hambrick and colleagues’ (2005) strategy of *imitating others* should have the highest outcome expectancies for knowledge workers who feel overloaded and have high self-efficacy and low decision latitude. When knowledge workers believe their authority is constrained, even though they have high self-efficacy and believe that they can do what it takes to get the job done, this combination of beliefs should influence

their workload management strategies. When faced with feelings of overload, those with high self-efficacy should be more likely than those with low self-efficacy to believe that they can successfully implement the responses used by others. Moreover, prior actions of peers in the situation should provide vicarious evidence that the option is viable and within the authority of those in this role. As a result, we suggest that these knowledge workers with high self-efficacy should be most likely to implement responses used by others as their preferred workload management strategy. Implementing responses used by others allows them to lower their cognitive demands through substitution – by using the ideas of others instead of their own cognitive processing. Involving others in their work, thus, reduces their sense of overload.

Greve (1996) provides indirect support for this prediction, indicating that organizations engage in mimetic adoption when faced with high uncertainty and high information processing demands. Similarly, Lieberman and Asaba (2006) demonstrated that managers tend to imitate managers in other firms when faced with severe time pressures. Hence, we suggest that for knowledge workers who feel overloaded and believe they have the capability to do their work but also believe they have limited authority and few options, the workload management strategy of imitating others should have the most favorable outcome expectancy.

Proposition 3: Knowledge workers high in self-efficacy and low in perceived decision latitude should be more likely to ‘imitate others’ as a workload management strategy than to engage in other workload management strategies.

High self-efficacy and high perceived decision latitude

As noted above, when individuals feel they have high decision latitude, they believe their jobs provide them with the authority to use a wide range of options. In contrast, high self-efficacy is the sense of personal capability at a particular point in time. Combined, high self-efficacy and high decision latitude provide the most expansive set of beliefs. An example would be a senior systems analyst who has successfully solved major information systems technical challenges and also earned the trust and respect of the department manager.

Of the workload management strategies identified by Hambrick and colleagues (2005), we suggest that *pursuing risky options* should have especially favorable outcome expectancies for individuals who feel overloaded and have high self-efficacy and high decision latitude. Knowledge

workers with high self-efficacy typically believe they are more capable than others. Thus, in comparison to those with low self-efficacy, they should be more likely to rely on their own actions and less likely to increase demands on others. Furthermore, when they feel they have high decision latitude, they should believe they are not limited to traditional approaches. In comparison to those with low decision latitude, they thus should be less likely to implement familiar responses or imitate others. Instead, they should believe they have the capability and the authority to pursue risky options. Combined beliefs in personal efficacy and authority to use a wide range of options should allow these knowledge workers to reduce their sense of overload and time scarcity by using abridged processing – making decisions and taking action without thorough analysis. Thus, they should be decisive and should take action, even without detailed cost–benefit analysis.

This prediction is consistent with previous research. For example, Bandura (1997) argued that those with high self-efficacy sometimes fail to acknowledge possible difficulties and risks associated with their actions. This can be viewed as comparable to the *Chuck Yeager Effect*, where people with high self-efficacy do not admit that job demands exceed their capabilities (Zeitlin, 1995). Similarly, Judge et al. (1999) demonstrated that those with high self-efficacy are more tolerant of taking risks, suggesting that they are more likely to pursue risky options. In sum, we suggest that for knowledge workers who feel overloaded and believe they have the capability to do their work as well as many options for accomplishing their work, the workload management strategy of pursuing risky options should have the most favorable outcome expectancy.

Proposition 4: Knowledge workers high in self-efficacy and high in perceived decision latitude should be more likely to ‘pursue risky options’ as a workload management strategy than to engage in other workload management strategies.

Typology of workload management strategies

Integrating these arguments and propositions, which we developed based on Bandura’s (1997) work on self-efficacy and Karasek’s (1979) work on job demands and decision latitude, produces a two-by-two typology of workload management strategies. Figure 1 illustrates this typology which has perceived decision latitude on the horizontal axis and self-efficacy on the vertical axis. To summarize, knowledge workers with low self-efficacy and low decision latitude should bypass processing by engaging in familiar responses. Those

		Decision latitude	
		Low	High
Self- efficacy	Low	Utilize familiar responses: <i>Bypass processing</i>	Increase demands on others: <i>Shift processing</i>
	High	Imitate others: <i>Substitute for processing</i>	Pursue risky options: <i>Abridged processing</i>

Figure 1 A typology of workload management strategies

with low self-efficacy and high decision latitude should shift processing by increasing demands on others. Those with high self-efficacy and low decision latitude should substitute other people's processing by imitating others. Finally, those with high self-efficacy and high decision latitude should abridge processing by pursuing risky options.

We suggest that this typology provides a conceptual basis for clarifying similarities and differences in the workload management strategies described by Hambrick and colleagues (2005). Another key contribution is the organizing structure provided by the typology that clarifies the theoretical rationale for why knowledge workers should use specific workload management strategies when they feel that job demands require them to take shortcuts to alleviate their sense of time scarcity. We acknowledge that both self-efficacy and decision latitude are continuous constructs that vary from low to high rather than dichotomous ones. Thus, the purpose of the typology is to enhance understanding of contrasts represented by the two-by-two framework and serve as a useful model that can aid in understanding the propositions put forth in this article.

Fatigue

A primary purpose of this article is to consider the differential effects that physical and emotional fatigue should have on workload management strategies. In this section, we compare and contrast physical and emotional fatigue. Then, in the next section, we return to workload management strategies by theorizing that physical and emotional fatigue should have

differential effects on workload management strategies via the mediating mechanism of self-efficacy.

The Merriam-Webster dictionary (1999: 424) defines fatigue as a state of 'weariness or exhaustion from labor, exertion, or stress'. Employees in contemporary organizations are subject to two primary sources of fatigue: physical (e.g. Hursh et al., 2004) and emotional (e.g. Cropanzano et al., 2003). Physical fatigue is caused by physical demands and can be offset by adequate sleep. However, members of organizations often must deal with going a night without sleep (Harrison & Horne, 1999), 24/7 operations (Rogers et al., 2004), extended work hours (National Institute of Occupational Safety and Health, 2004), and/or frequent travel across multiple time zones (Waterhouse et al., 2003), each of which can prevent adequate sleep. Emotional fatigue can be caused by downsizing, job expansion, empowerment, and interpersonal conflict (Cropanzano et al., 2003; Lee & Ashforth, 1996; LePine et al., 2004; Maslach et al., 2001). As we note below, emotional demands are especially important in determining emotional fatigue. In particular, research indicates that emotionally demanding interactions with other people, such as are common in customer service contexts (see Bakker et al., 2001; Grandey et al., 2005), can take their toll and leave people feeling drained.

The physiological sensations of physical fatigue and emotional fatigue are similar in many ways. In both cases, individuals experience a sense of depletion such that they feel drained (Desmond & Matthews, 1997; Wright & Cropanzano, 1998). In addition, both types of fatigue are associated with depression (Caldwell et al., 2004; Leiter & Durup, 1994), irritability (Gaines & Jermier, 1983; Horne, 1993), and frustration (Baranski et al., 1998; Gaines & Jermier, 1983). Moreover, research shows that both types of fatigue have negative effects on performance (Cropanzano et al., 2003; Pilcher & Huffcutt, 1996; Wright & Cropanzano, 1998). As we describe in the following sections, both types of fatigue involve the depletion of a resource reservoir, albeit two different types of reservoirs. In both cases, demands deplete the reservoir, resulting in the experience of fatigue, with subsequent negative effects on mood, behavior, and performance. However, as we describe below, key differences between antecedents of physical and emotional fatigue should have important implications for employee responses to demanding work situations.

Physical fatigue

Working in the field of physiology, Hursh and colleagues (2004) developed the SAFTE reservoir model of physical fatigue based on empirical data

generated during a week-long laboratory study of human behavior and performance under sleep deprivation. The SAFTE model depicts a self-regulating homeostatic process focused on the sleep reservoir which is filled during sleep and drained by physical demands. Of particular importance in this model is sleep deprivation, which prevents the replenishment of the sleep reservoir. This is especially problematic when physical demands drain the sleep reservoir. The top half of Figure 2 illustrates the sleep reservoir. Physical demands deplete the sleep reservoir, which in turn results in physical fatigue. This is consistent with our definition of physical fatigue as the state of feeling physically drained (Hursh et al., 2004).

A large body of empirical research is consistent with the SAFTE model of physical fatigue, demonstrating that the sleep reservoir is depleted by physical demands and refilled by sleep (see Saper et al., 2005). Although physical exercise increases arousal and can temporarily lower symptoms of physical fatigue, physical activity depletes the sleep reservoir. Consistent with this, LeDuc et al. (2000) demonstrated that exercise initially lowered feelings of fatigue but enhanced physical fatigue 50 minutes later (compared to those who did not exercise). Thus, physical activity lowers the sleep reservoir, causing individuals to experience physical fatigue.

Empirical research has also supported the contention that sleep deprivation prevents sleep reservoir recovery. In an experience sample field study

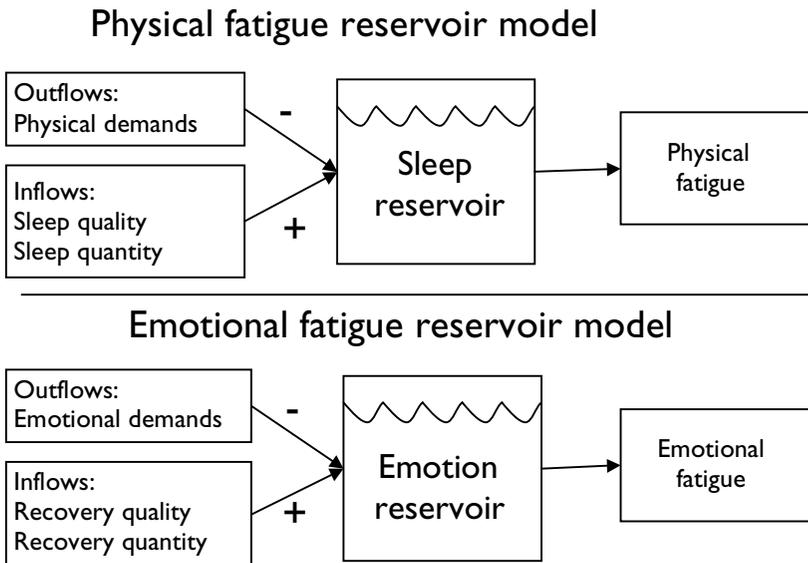


Figure 2 Reservoir models of fatigue

of nurses, Totterdell et al. (1995) demonstrated that nurses were less alert and performed worse on cognitive tests after they worked night shifts. This suggests that following the physical demands that drained their sleep reservoir, disruption to their sleep hindered the recovery that normally occurs during sleep. Other research indicates that sleep replenishes the sleep reservoir up until a threshold point where the reservoir is within the 'full' range. Groeger et al.'s (2004) nationally representative sample of British residents demonstrated that sleep (up to nine hours per night) enhanced energy.

Research documents negative effects of sleep reservoir depletion on well-being, attitudes, and behavior. Dinges and colleagues (1997) conducted a repeated measures laboratory study that restricted sleep of healthy adults 33 percent below habitual levels to an average of 4.98 hours of sleep per night for seven consecutive nights. Compared to the baseline, participants experienced more tension, confusion, mood deterioration, and fatigue. They also performed more slowly and made more performance errors on cognitive vigilance and memory tests. Integrating results from 19 studies on over 1900 subjects, Pilcher and Huffcutt (1996) showed sleep deprivation strongly impairs functioning – with negative effects on mood, motor performance, and cognitive performance. These negative effects are disturbingly powerful because participants with less than five hours of sleep in 24 hours performed an average of two standard deviations below control groups on tests of cognitive performance.

Emotional fatigue

Returning to the reservoir image, we note that physical fatigue and emotional fatigue similarly focus on the state of feeling drained. This is consistent with Maslach's (1982: 3) definition of emotional fatigue as the state of feeling 'overwhelmed, drained, and used up' based on emotional demands imposed by others. Management, applied psychology, and clinical psychology researchers use a variety of terms for the concept of emotional fatigue – including exhaustion (LePine et al., 2004), emotional exhaustion (e.g. Cropanzano et al., 2003; Wright & Cropanzano, 1998), and fatigue (e.g. Van Yperen & Hagedoorn, 2003). Another related construct is burnout (see Maslach et al., 2001 for a review) which has three subdimensions: diminished personal accomplishment, depersonalization, and emotional exhaustion (Lee & Ashforth, 1996; Maslach, 1982). We acknowledge research on exhaustion, emotional exhaustion, fatigue, and burnout as relevant to what we refer to as emotional fatigue. For consistency, we use the term emotional fatigue to parallel physical fatigue and to allow us to highlight similarities in the two depletion processes. The bottom half of

Figure 2 depicts our extension of the SAFTE model of sleep reservoir depletion, as we apply it to emotional fatigue.

Here, we introduce the concept of emotion reservoir. As with Hursh and colleagues' (2004) reservoir model of physical fatigue, we propose that emotional demands and recovery are key inputs to the emotion reservoir. Thus, our model of emotional fatigue is a depletion model, like the SAFTE model, where emotional demands and inadequate recovery drain the emotion reservoir, causing individuals to experience emotional fatigue. This is consistent with Wright and Cropanzano's (1998) conception of emotional fatigue as feelings of being emotionally overextended. Likewise, Cropanzano and colleagues (2003) explicitly used the term 'emotional depletion' in their description of emotional fatigue. Moreover, Fritz and Sonnentag (2006) and Sonnentag (2003) note the importance of recovery in the context of work demands. We take this a step further by proposing that the emotion reservoir is a mechanism through which depletion and lack of recovery lead to emotional fatigue.

Research provides indirect support for a reservoir model of emotional fatigue. Bussing and Glaser's (2000) field study of nurses demonstrated that more emotionally demanding environments caused greater emotional fatigue. Cordes and Dougherty (1993) noted a link between personal demands (i.e. frequent intense or emotionally charged face-to-face interactions) and emotional fatigue. Leiter and Maslach (1988) demonstrated that the emotional demands of unpleasant supervisor contact increased emotional fatigue. Bakker et al. (2000) reported that physicians with more demanding patients had higher emotional fatigue. In sum, this research supports the idea that emotional demands deplete the emotional reservoir in a manner that parallels the depletion process where physical demands deplete the sleep reservoir.

Just as sleep influences the level of the sleep reservoir, we propose that emotional recovery should influence replenishment of the emotion reservoir. Recovery activities include recreation, vacation, and time away from emotionally demanding contexts. For example, Kreiner et al. (2006: 1048) noted that temporarily getting away from high emotional demands allowed employees to recharge their 'occupational batteries'. Eden's (1990) study of employees involved in the stressful experience of installing a new computer system demonstrated that vacation time reduced stress. Etzion et al.'s (1998) burnout study of military reservists positioned reserve service as a respite (a break) because reservists who spent two weeks geographically separated from the emotional demands of work and family reported lower burnout and fewer emotional demands. Westman and Eden's (1997) study of clerical

employees demonstrated lower burnout during vacation, especially for those who were satisfied with their vacations.

Similarities and differences in types of fatigue

To summarize, we have proposed parallel definitions of physical and emotional fatigue and parallel models of depletion and recovery. Just as physical demands and sleep recovery influence the level of the sleep reservoir, emotional demands and emotional recovery should influence the level of the emotion reservoir. When either reservoir is drained below the tolerance level of the 'full' range, individuals experience fatigue, such that greater depletion increases fatigue. Overall, reservoir depletion is a continuous process, where small amounts of depletion have commensurately small influences and larger amounts have larger effects. We recognize that human tolerance for fatigue is finite and that extremely high levels of fatigue prevent functioning. Our model, however, focuses on the more typical range of demands at work where fatigued employees do not stop working.

Although researchers note similarities between the two types of fatigue (e.g. Maslach, 1982) and both types of fatigue involve similar feelings of being drained, researchers also note differences in the two types of fatigue (e.g. Melamed et al., 2006). Developing this idea below, a primary contention of our article is that the two types of fatigue should have differential effects on self-efficacy and therefore should have differential effects on workload management strategies.

Fatigue and self-efficacy

Researchers note that self-efficacy varies both between people as well as within people over time (Yeo & Neal, 2006). Going beyond this, we draw on existing theory and empirical research to propose that although both types of fatigue have similar negative effects on performance, physical and emotional fatigue should have differential effects on personal beliefs about self-efficacy. As we describe below, this should have important implications for the preferred workload management strategies of knowledge workers.

Research generally demonstrates that although physical fatigue reduces actual performance (Pilcher & Huffcutt, 1996), it has a much weaker effect on self-efficacy beliefs. For example, although Baranski and colleagues (1998) showed that physically fatigued individuals had some awareness of diminished capability, other research shows that individuals underestimate the negative effects of physical fatigue on their performance. Bard et al.'s

(1996) laboratory experiment involving military subjects engaged in a navigation task demonstrated that fatigued subjects were especially prone to overestimating their own capabilities. Harrison and Horne (2000b) demonstrated that physically fatigued college students were more confident about the accuracy of their memory (compared to non-fatigued subjects) and they were especially more confident when they were wrong.

Overall, this research indicates a weak relationship between physical fatigue and self-efficacy. One potential explanation for this is that physically fatigued individuals do not recognize the drop in their performance, much as an individual impaired by alcohol does not recognize a drop in driving ability. As a practical example, many people believe that they can drive their cars safely even when sleep deprived and sometimes they fall asleep at the wheel or find they are unable to respond quickly enough to the unexpected actions of others or to the sudden appearance of a deer on the road.

In contrast, theory and empirical research show that emotional fatigue has a stronger effect on self-efficacy beliefs (Lee & Ashforth, 1996; Leiter, 1991) than physical fatigue. For example, Maslach (1982: 3) described emotionally fatigued individuals as having a diminished sense of personal accomplishment and a 'gnawing sense of inadequacy'. A recent narrative review by Maslach and colleagues (2001) and a recent meta-analytic review by Lee and Ashforth (1996) both support this relationship. In addition, Bakker and colleagues (2000) demonstrated that emotional fatigue led to lower estimates of personal competence (see also Leiter, 1991). Lee and Ashforth's (1993) longitudinal study of supervisors and managers demonstrated that emotional fatigue at Time 1 led to feelings of helplessness at Time 2, indicating that emotional fatigue significantly reduced beliefs about personal capabilities. Integrating self-efficacy theory and the above empirical research on the two types of fatigue, we propose that employees who are emotionally fatigued should experience a greater drop in beliefs about personal capabilities (self-efficacy) than employees who are physically fatigued.

Proposition 5: The negative influence of emotional fatigue on self-efficacy should be stronger than the negative influence of physical fatigue on self-efficacy.

Fatigue and perceived decision latitude

In their seminal examination of perceived decision latitude, Hambrick and Finkelstein (1987) noted three types of antecedents: task environment, internal organization, and personal characteristics. Task environment

includes product differentiability, market growth, industry structure, demand instability, and powerful outside forces. Internal organization includes inertial forces, resource availability, and powerful inside forces. Personal characteristics include tolerance for ambiguity, cognitive complexity, internal locus of control, power base, and political acumen.

Two of these general types of antecedents (task environment and internal organization) are determined by macro-organizational forces beyond the influence of knowledge workers. Moreover, the specific personal characteristics identified by Hambrick and Finkelstein (1987) are relatively stable, trait-like individual differences. Accordingly, we do not expect that a knowledge worker's level of fatigue (a state at a specific point in time) should influence the personal characteristics noted by Hambrick and Finkelstein. As a result, we do not expect or predict a relationship between fatigue and perceived decision latitude; and since this would represent a null hypothesis, we do not include it as a proposition.

In the next section, we build on the differences in physical and emotional fatigue described above to highlight how their differential effects on self-efficacy should influence workload management strategies used by knowledge workers. In other words, we propose that physical and emotional fatigue should be connected to workload management strategies through the mediating mechanism of self-efficacy.

Fatigue and workload management strategies

Now that we have delineated a typology of workload management strategies based on self-efficacy and decision latitude beliefs, we consider the anticipated differential influence of physical and emotional fatigue on workload management strategies. As noted above, we expect no noticeable effect of fatigue on perceived decision latitude. Consistent with Proposition 5, however, we expect fatigue should be directly relevant to self-efficacy. Therefore, in this section we link Proposition 5 (the differential effects of physical and emotional fatigue on self-efficacy) with Propositions 1–4 (the joint effects of self-efficacy and decision latitude on workload management strategies). We start by focusing on knowledge workers with low decision latitude beliefs.

As previously argued, knowledge workers who believe they have low decision latitude feel they have limited authority and options. This should cause them to have unfavorable outcome expectancies for the workload management strategies of increasing demands on others and pursuing risky options which require high decision latitude. Instead, knowledge workers

who believe they have low decision latitude should view utilizing familiar responses and imitating others as having more favorable outcome expectancies for them. As noted above, empirical research demonstrates that both types of fatigue reduce actual performance, but the negative relationship between fatigue and self-efficacy is stronger for emotional fatigue than physical fatigue.

Accordingly, we suggest that type of fatigue should influence whether the preferred workload management strategy for knowledge workers with low decision latitude is utilizing familiar responses or imitating others. Restated, research indicates generally higher levels of self-efficacy for those who are physically fatigued compared to those who are emotionally fatigued. Thus, knowledge workers who feel physically fatigued should have relatively higher efficacy beliefs than knowledge workers who feel emotionally fatigued. Accordingly, physically fatigued knowledge workers should believe they can successfully implement short cuts used by others. In contrast, emotionally fatigued knowledge workers should have lower estimates of their own capabilities and should have generally lower self-efficacy beliefs, leading them to be less likely to believe they can successfully imitate others. Thus, we suggest that under conditions of low decision latitude, knowledge workers who are physically fatigued should be more likely than those who are emotionally fatigued to use imitating others as their preferred workload management strategy when they feel overloaded.

Proposition 6: When knowledge workers believe they have low decision latitude, those who are physically fatigued should be more likely than those who are emotionally fatigued to engage in the workload management strategy of imitating others.

An extension of this reasoning suggests that in the context of low perceived decision latitude, the relatively lower self-efficacy beliefs of emotionally fatigued knowledge workers (Lee & Ashforth, 1996; Leiter, 1991) should cause them to view utilizing familiar responses as the workload management strategy with the highest outcome expectancies for them. Holding low decision latitude constant, Proposition 5 indicates that those who are emotionally fatigued should be more likely to be in the low decision latitude/low self-efficacy condition than those who are physically fatigued. As indicated by Proposition 1, those with low self-efficacy and low decision latitude should believe they have neither the capability to perform the work nor the autonomy and authority to use a range of options to accomplish the work. As a result, they should feel limited to utilizing familiar responses. Thus, they should take the shortcut of bypassing cognitive processing and use their habitual routines when they feel overloaded.

Proposition 7: When knowledge workers believe they have low decision latitude, those who are emotionally fatigued should be more likely than those who are physically fatigued to engage in the workload management strategy of utilizing familiar responses.

We now consider knowledge workers with high decision latitude beliefs. Consistent with Figure 1, these individuals should have favorable outcome expectancies for the workload management strategies of increasing demands on others and pursuing risky options. We propose that which of these two workload management strategies has the most favorable outcome expectancies should depend on self-efficacy of the knowledge worker.

Because emotional fatigue has a stronger negative effect on self-efficacy than does physical fatigue, emotionally fatigued knowledge workers should have generally lower self-efficacy than those who are physically fatigued. Thus, emotionally fatigued individuals with high decision latitude should have more favorable outcome expectancies (compared to those who are physically fatigued) for the workload management strategy of increasing demands on others. This is consistent with research indicating that individuals often shift work to others when faced with heavy job demands (Barnes et al., 2008). Accordingly, we propose that in conditions of high perceived decision latitude, emotionally fatigued knowledge workers should be more likely than physically fatigued knowledge workers to engage in the workload management strategy of increasing demands on others when they feel overloaded.

Proposition 8: When knowledge workers believe they have high decision latitude, those who are emotionally fatigued should be more likely than those who are physically fatigued to engage in the workload management strategy of increasing demands on others.

Using parallel logic, we suggest that in the context of high perceived decision latitude, the relatively higher self-efficacy beliefs of physically fatigued knowledge workers (compared to those who are emotionally fatigued) should cause them to view pursuing risky options as high in outcome expectancies. This is consistent with research indicating that self-efficacy is positively related to risk tolerance (Judge et al., 1999) as well as with Harrison and Horne's (2000b) finding that physical fatigue did not decrease people's confidence in their own responses. This is because the combination of high self-efficacy and high decision latitude should lead people to believe they have the capability and authority to use a range of options to accomplish their work. Thus, pursuing risky options should have

the highest outcome expectancies for them, and they accordingly should use abridged cognitive processing when they feel overloaded.

Proposition 9: When knowledge workers believe they have high decision latitude, those who are physically fatigued should be more likely than those who are emotionally fatigued to engage in the workload management strategy of pursuing risky options.

Operationalization of workload management strategies

Previous research includes scales to measure self-efficacy, decision latitude, physical fatigue, and emotional fatigue (see Babkoff et al., 1991; Karasek, 1979; Pines & Aronson, 1988; Schaubroeck & Merritt, 1997; Schaufeli & Vandierendonck, 1993). However, we are unaware of any scales for measuring the four workload management strategies highlighted in this article. To facilitate future empirical work, we developed initial operationalizations for the workload management strategies.

We started by having three subject matter experts each generate 10 items for each of the four workload management strategies. Each expert then worked individually to sort all items into the four categories and eliminate redundant ideas. A sample of 251 undergraduates completed questionnaires after thinking about times when they had too much to do and not enough time to do it, by indicating the extent (1–5) to which they used specific behaviors to manage their workload. Based on our a priori conceptual framework, we assessed items with CFA and retained the highest loading four items for each workload management strategy. Coefficient alphas were acceptable: 1) utilize familiar options $\alpha = .786$, 2) increase demands on others $\alpha = .871$, 3) imitate others $\alpha = .891$, and 4) pursue risky options $\alpha = .816$. The largest intercorrelation among the scales was .252. The appendix lists each of these items.

Discussion

Competitive pressures in contemporary organizations often cause knowledge workers to experience work overload and feel they must do ‘more with less’ (Cappelli, 1997; Perlow, 1999; Rousseau, 1997; Van Dyne & Ellis, 2004). Accordingly, physical fatigue and emotional fatigue are important research topics. To date, although we know that fatigue generally has negative effects on performance, our conceptual models of fatigues have been relatively under-developed and generally do not differentiate the effects of physical and emotional fatigue.

Responding to the realities of ongoing heavy job demands faced by many knowledge workers, this article aimed to make three primary contributions. First, drawing on job demands theory and research (Hambrick et al., 2005; Karasek, 1979; Schaubroeck & Merritt, 1997), we considered the combined effects of self-efficacy and perceived decision latitude as the basis of our typology of workload management strategies. Second, we explicated similarities in physical and emotional fatigue and introduced the concept of the emotional reservoir, which parallels prior work on the sleep reservoir (Hursh et al., 2004). Third, integrating prior fatigue research with self-efficacy theory, we highlighted differences between physical fatigue and emotional fatigue and their implications for specific workload management strategies. To our knowledge, this is the first article to develop a systematic approach to workload management strategies, integrate theory on physical and emotional fatigue, and posit differential effects of fatigue on specific workload management strategies.

Theoretical implications

Some of the most obvious theoretical implications of our theory building are for the job demands literature. To date, theoretical work on job demands has focused primarily on how job demands influence health, well-being, and stress of organizational members (Fox et al., 1993; Karasek, 1979; Schaubroeck & Merritt, 1997; Van Yperen & Hagedoorn, 2003). Although this research is important, it is also critically important to theorize about the work strategies that employees use to deal with such ongoing heavy job demands. One key contribution our work makes to the job demands literature is providing a systematic and conceptually based typology that highlights similarities and differences in strategies that knowledge workers most likely use to take short cuts and reduce the mental demands of doing their work when they feel overloaded. Thus, we move from focusing on physiological reactions to emphasizing work behaviors of knowledge workers. In addition, our work explicates ways knowledge worker's beliefs about their capabilities (self-efficacy) and authority (decision latitude) most likely influence their strategies for dealing with job demands and sense of time scarcity.

Another set of theoretical implications applies to the previously fractured literatures on physical fatigue and emotional fatigue. To date, research on physical fatigue and emotional fatigue has developed independently, in part, because the research is done primarily in different fields. Physical fatigue has been examined primarily by physiologists and human factors engineers, and emotional fatigue has been examined primarily by clinical and applied psychologists. Thus, despite important theoretical and empirical

advances in research on each type of fatigue, the literature has lacked integration of the two types of fatigue.

Practical implications

These propositions also have important practical implications. First, because physical fatigue and emotional fatigue have different antecedents and consequences, knowledge workers should carefully differentiate the two types of fatigue. From a self-management perspective, an important practical implication is that knowledge workers should think carefully about what they mean when they say 'I'm tired'. They should reflect on the causes of feeling tired and determine if fatigue is primarily a function of physical fatigue or emotional fatigue. This should provide them with insight into the type of workload management strategy that their fatigued state may naturally drive them toward. Awareness of the typology may also help knowledge workers become more conscious of factors that influence their selection of workload management strategies. This should expand knowledge workers' sense of control by giving them a better understanding of strategies for coping with heavy work demands and a sense of time scarcity.

Second, since the model depicts anticipated differential effects of physical and emotional fatigue on workload management strategies, the typology should help managers understand and anticipate characteristic responses of knowledge workers who are emotionally versus physically fatigued. For example, anticipating that physically fatigued knowledge workers low in decision latitude should tend to imitate others and emotionally fatigued knowledge workers high in decision latitude should tend to increase demands on others can help managers understand ways knowledge workers may influence each other's work since both of these strategies involve relying on others. A manager may want to pair such employees with strong performers. The other two workload management strategies – utilizing familiar responses and pursuing risky options – also have managerial implications. Being aware that physically fatigued knowledge workers high in decision latitude should tend to pursue risky options, and that emotionally fatigued knowledge workers low in decision latitude should tend to stick with their own familiar responses can allow managers to anticipate employee responses to feeling overloaded.

Future research

Our model has focused on factors that should influence knowledge worker use of workload management strategies. Thus, we have advanced a

conceptual model that needs to be tested empirically. For example, it would be useful to ascertain if the four workload management strategies occur with similar frequency or if some are used significantly more than others. In addition, since we have developed an initial model, it is necessarily incomplete and we adopted some simplifying assumptions that should be relaxed in future theory building. These assumptions include the distinction between self-efficacy and decision latitude, the distinction between physical fatigue and emotional fatigue, and our predictions which focus on the most likely workload management strategy used in each of the self-efficacy/decision latitude conditions.

Since we have presented an initial model, we encourage future research that tests our predictions and relaxes our simplifying assumptions. For example, future research may suggest that workload management strategies are more complex than our model depicts. Knowledge workers may employ multiple workload management strategies at the same time and may employ multiple workload management strategies over time. Given that we emphasized high decision latitude as perceptions of the ability to shift workload to others in the form of delegation or asking for help, following Hambrick and colleagues (2005), future research might also consider a broader conceptualization of decision latitude including perceived ability to use financial resources. Future research may also identify additional workload management strategies, such as outsourcing certain tasks and may consider contexts where people experience both types of fatigue simultaneously. Extension of our model to include such contexts provides rich avenues for future research.

Finally, we focused on four particular workload management strategies and two depletion processes. We encourage future research on other workload management strategies, such as Hambrick and colleagues' (2005) description of executives putting forth an exaggerated impression of their work demands in order to avoid further assignments, and other depletion processes, such as ego depletion (Baumeister et al., 1998), that may also be relevant to knowledge workers. The interplay among different types of fatigue and depletion will likely reveal interesting and important findings for managers and members of organizations.

A final simplification of our model that should be considered in future research is our two-by-two matrix depiction of workload management strategies. As we noted earlier, both self-efficacy and decision latitude are continuous constructs and are not dichotomous. Thus, our two-by-two depiction is a simplifying heuristic intended to aid the understanding of our model that does not imply categorical or dichotomous constructs. Accordingly, empirical research should consider these constructs as continuous and test our predictions about the likelihood that one strategy will be most

common in each of the four cells. In addition, we note the possibility of finding non-monotonic functions in the tendencies to engage in specific workload management strategies.

In our theorizing, we focused explicitly on knowledge workers because competitive pressures, downsizing, and reorganizations have generally increased work demands for these employees while simultaneously emphasizing the critical importance of their work contributions. Thus, we argued that fatigue and its effects on workload management strategies should be especially salient to knowledge workers. Other types of employees, however, are also subject to fatigue. Perhaps different workload management strategies apply to employees who are engaged in less human capital intensive work. For example, they may adopt familiar options and imitate others more than increasing demands on others or pursuing risky options. Alternatively, they may focus primarily on strategies that minimize physical effort. We recommend future research on these issues. Finally, as theoretical and empirical research on physical and emotional fatigue continues to grow in the management and applied psychology literatures, researchers should continue to investigate the differential effects of physical and emotional fatigue. One such area of research that may prove valuable is the examination of fatigue at the group or team level of analysis. Researchers have taken initial steps in such examination, but have examined physical and emotional fatigue of groups in separate literatures (see Bakker & Schaufeli, 2000; Barnes & Hollenbeck, in press). Thus additional integration would be useful.

In conclusion, this article noted similarities in physical fatigue and emotional fatigue but emphasized differences in the anticipated causes and effects of the two types of fatigue. Our model begins to explicate these differences by specifying inflows and outflows to the sleep and emotional reservoirs and by predicting differences in the preferred workload management strategies that most likely are used by those with physical versus emotional fatigue. In sum, the comment 'I'm tired' has multiple meanings, suggesting it is important to understand *why* someone feels drained in order to understand, predict, and manage the effects of fatigue.

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Appendix: Workload Management Strategies Scales

Utilize familiar responses:

1. I used an approach that felt familiar to me based on my past experiences.
2. I used habits that I have developed over time.

3. I applied responses that I knew well.
4. I used a familiar approach that was comfortable to me.

Increase demands on others:

1. I asked others to share the load.
2. I recruited the efforts of others.
3. I looked for others who could take on some of the tasks.
4. I asked others to provide their help.

Imitate others:

1. I observed what others had done in similar situations and implemented those behaviors.
2. I utilized the same responses that I had seen others use.
3. I took an action that had worked for someone else.
4. I implemented a response that was previously successful for another person.

Pursue risky options:

1. I quickly pushed through uncertainty to take a course of action.
2. I shortened my analysis by using some educated guesswork.
3. I went with my gut and acted, despite the complexity of the situation.
4. I responded decisively in the face of uncertainty.

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