

Paying Attention to Mindfulness and Its Effects on Task Performance in the Workplace

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Although the concept of mindfulness has attracted scholarly attention across multiple disciplines, research on mindfulness in the field of management remains limited. In particular, little research in this field has examined the nature of mindfulness and whether it relates to task performance in organizational and occupational settings. Filling these gaps, the present article delineates mindfulness by (a) defining it as a state of consciousness in which attention is focused on present-moment phenomena occurring both externally and internally, (b) comparing it to a range of other attention-related concepts, and (c) developing theory concerning the factors that determine when mindfulness is beneficial versus costly from a task performance standpoint.

Keywords: *mindfulness; task performance; attentional breadth; expertise; intuition*

For centuries, thinkers across a number of societies—most notably, those from Eastern traditions—have discussed the importance of mindfulness (Conze, 1956; Hanh, 1976; Kabat-Zinn, 2005). Fundamentally concerned with “being attentive to and aware of what is taking place in the present” (Brown & Ryan, 2003, p. 822), mindfulness has been posited to help people become “alive” to the present moment (Hanh, 1976, p. 11), attuned to their internal processes and states (M. Epstein, 1995), and healthier, physically and mentally (Thondup, 1996).

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Until recently, such claims concerning mindfulness were largely unconsidered outside the fields of philosophy and religious studies. Scientific perspectives frequently write off mindfulness as being too mystical or “Zen-like” to merit systematic investigation. This dismissal may be in part due to confusion surrounding the term *mindfulness*. Mindfulness has been historically viewed as a state of consciousness cultivated through meditative practice (Conze, 1956). Reflecting this tradition, some contemporary techniques designed to develop mindfulness, such as mindfulness-based stress reduction (Kabat-Zinn, 1990) and mindfulness-based cognitive therapy (Segal, Williams, & Teasdale, 2002), include meditation sessions as fundamental elements of the program.

Perhaps as a result of this link between meditation and mindfulness, these two terms have become somewhat conflated such that they are often used interchangeably. Yet, at core, mindfulness is a psychological state, the emergence of which does not require meditation (Brown & Ryan, 2003). Indeed, as some have suggested, mindfulness is at the reach of many individuals (including those who do not meditate) to the extent that they focus their attention on events and phenomena transpiring in the present moment (Giluk, 2009; Narayanan & Moynihan, 2006; Weick & Sutcliffe, 2006).

As researchers have recognized mindfulness as a broadly accessible state amenable to scientific examination, there has been an outpouring of research on it, including a surge of empirical work (e.g., Arch & Craske, 2006; Brown & Ryan, 2003; Grossman, Niemann, Schmidt, & Walach, 2004; Lau et al., 2006; Shapiro, Brown, & Biegel, 2007; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008). In conducting research in this area, scholars have begun to converge on a collective understanding of mindfulness (Baer, Smith, & Allen, 2004; Bishop et al., 2004; Kabat-Zinn, 2005; Shapiro, Carlson, Astin, & Freedman, 2006; Wallace & Shapiro, 2006), and they have identified some of the benefits that it carries. For example, evidence suggests that mindfulness tends to increase physical and mental health, interpersonal relationship quality, and behavioral regulation (for review, see Brown, Ryan, & Creswell, 2007).

Despite burgeoning interest in mindfulness among researchers, there remains some degree of confusion, not only about what mindfulness is, but also what it is not. That is, few scholarly attempts have been made to embed the mindfulness construct into a conceptual network that clarifies the nature of mindfulness by revealing not only its points of overlap but also its distinction from other attention-related constructs, which raises the question of whether mindfulness is sufficiently unique from other concepts in the literature to merit scholarly interest.

In addition, from a workplace standpoint, little research has explored whether mindfulness matters. Specifically, research is underdeveloped with regard to whether mindfulness affects how individuals perform their work tasks.¹ This knowledge gap is not surprising given that the bulk of research on mindfulness has occurred in disciplines concerned with health and well-being, such as clinical psychology, and not in disciplines that are concerned with performance-related behaviors, such as management. This gap is unfortunate. As an attention-related concept, mindfulness is germane to the growing body of scholarship concerned with how individuals focus their attention in organizations. Previous research has demonstrated that the manner in which organizational members focus attention affects how they make strategic decisions (Nadkarni & Barr, 2008), whether they heed risks (Bazerman & Watkins, 2004), and if they notice key resources at their disposal (Weick, 1993). However, the role that

mindfulness plays with respect to these and other performance-related processes and outcomes remains largely unexplored. Simply put, there is a dearth of theory on whether and how mindfulness fosters or inhibits task performance in the workplace.

Seeking to reduce these theoretical blind spots, this article reviews and extends research concerning what mindfulness is and is not, and it develops theory surrounding the task performance effects of mindfulness in work settings. Structurally, it begins by conceptualizing mindfulness and differentiating it from a number of other attention-related concepts (e.g., absorption, prospection, mind wandering). Next, the article explores conditions that determine how mindfulness relates to task performance, and it suggests that the net impact of mindfulness on task performance depends on one's task environment and one's level of task expertise. Taken together, the arguments advanced here highlight the consequences of mindfulness in organizational and occupational settings and establish boundary conditions for the "more is better" logic that pervades research on mindfulness in other disciplines.

What Mindfulness Is: Defining and Differentiating the Construct

Mindfulness is an ancient concept. Its roots lie in various lines of Buddhist thought extending back over two millennia (Brown et al., 2007). Mindfulness has recently entered the scientific arena as a construct of interest. Although a range of definitions have been offered, most conceptualizations of mindfulness reference historical and philosophical usages of the term (e.g., Baer, 2003; Baer et al., 2004; Bishop et al., 2004; Gunaratana, 1993; Kabat-Zinn, 2003; Ryan & Brown, 2003; Shapiro et al., 2006). As such, academic and philosophical conceptualizations of mindfulness tend to be relatively convergent, as evident in Table 1, which presents a number of definitions of mindfulness advanced by scholars and thinkers operating from different perspectives that are largely cohesive.

As seen in Table 1, a relatively high degree of correspondence exists within a wide body of writings on the nature of mindfulness.² Taken together, the definitions offered in the table highlight features of mindfulness that are common across multiple conceptualizations. First, as suggested by multiple researchers and writers, mindfulness is a state of consciousness (Hanh, 1976; Harvey, 2000; Lau et al., 2006; Rosch, 2007). As a state, mindfulness is not a quality that some individuals possess and others lack. On the contrary, as argued by Kabat-Zinn (2005), attaining a mindful state of consciousness is an inherent human capacity—a claim implying that most people have been or at least can be mindful at one point or another. That said, research indicates that, because of dispositional tendencies, some people may be in a mindful state of consciousness more often than others (e.g., Baer et al., 2004; Giluk, 2009; Walach, Buchheld, Buttenmüller, Kleinknecht, & Schmidt, 2006), which suggests that, like a number of other psychological concepts (e.g., positive and negative affect; see George, 1996), mindfulness is fundamentally a state-level construct that can also be assessed at the trait level.

Second—and common among the majority of the definitions included here—is the view that the state of consciousness characterizing mindfulness is one in which attention focuses on present-moment phenomena. To be mindful, individuals must be firmly attentive to the "here and now" (Herndon, 2008, p. 32), as opposed to preoccupied with thoughts about the past or the future (Brown & Ryan, 2003). For this reason, Thondup (1996) describes mindfulness as

Table 1
Definitions of Mindfulness

Source	Domain	Definition of Mindfulness
Brown, Ryan, and Creswell (2007, p. 212)	Academia	"A receptive attention to and awareness of present moment events and experience."
M. Epstein (1995, p. 96)	Academia	"Bare attention in which moment-to-moment awareness of changing objects of perception is cultivated."
Hanh (1976, p. 11)	Buddhism	"Keeping one's consciousness alive to the present reality."
Harvey (2000, p. 38)	Academia	"A state of keen awareness of mental and physical phenomena as they arise within and around [oneself]."
Herndon (2008, p. 32)	Academia	"Being attentively present to what is happening in the here and now."
Kabat-Zinn (2005, p. 4)	Academia and medical practice	"Paying attention in a particular way: on purpose, in the present moment, and nonjudgmentally."
Lau et al. (2006, p. 1447)	Academia	"A mode, or state-like quality, that is maintained only when attention to experience is intentionally cultivated with an open, nonjudgmental orientation to experience."
Nyanaponika (1972, p. 5)	Buddhism	"The clear and single-minded awareness of what actually happens to us and in us at the successive moments of perception."
Rosch (2007, p. 259)	Academia	"A simple mental factor that can be present or absent in a moment of consciousness. It means to adhere, in that moment, to the object of consciousness with a clear mental focus."
Thondup (1996, p. 48)	Buddhism and academia	"Giving full attention to the present, without worries about the past or future."
Weick and Sutcliffe (2006, p. 518)	Academia	"Eastern mindfulness means having the ability to hang on to current objects, to remember them, and not to lose sight of them through distraction, wandering attention, associative thinking, explaining away, or rejection."

"giving full attention to the present" (p. 48), and M. Epstein (1995) views mindfulness as a "moment-to-moment" awareness (p. 96). In short, mindfulness involves, as far as possible, being there in the present moment (see Weick & Putnam, 2006).

Third, mindfulness involves attending to external (environmental) and internal (intrapsychic) phenomena. These two distinct outlets for attention are central to Nyanaponika's claim (1972) that mindfulness is "the clear and single-minded awareness of what actually happens *to us and in us* at the successive moments of perception" (p. 5; italics added). Likewise, Harvey (2000) noted that mindfulness represents "keen awareness of mental and physical phenomena" (p. 38). It also entails attending to external and internal phenomena because they are both part of the present moment (Brown & Ryan, 2003). Thus, to focus on external events to the exclusion of internal processes, or vice versa, would constitute a lack of mindfulness.

In bringing together these features that are common across many definitions of the construct, mindfulness may be defined as a state of consciousness in which attention is focused on present-moment phenomena occurring both externally and internally. This definition clarifies what mindfulness is and so helps to differentiate it from other concepts, as discussed below.

What Mindfulness Is Not

Extant research is replete with a number of attention-related concepts—several of which are identified and explicated here. This plethora of concepts begs the question of whether mindfulness is sufficiently distinct from other constructs to merit scholarly interest. In turning to this question, one may compare mindfulness to a range of other concepts in terms of two dimensions: temporal orientation and attentional breadth. First, as described above, mindfulness entails focusing one's attention on events associated with the present moment. As argued below, this feature differentiates mindfulness from states of attention that are oriented toward the past or the future.

Second, as noted, in a state of mindfulness, individuals are attuned to a relatively large number of external and internal phenomena, which suggests that, with regard to its attentional breadth—or the number and range of stimuli attended to during a given period of time (Ansburg & Hill, 2003; Kasof, 1997; Memmert, 2007)—mindfulness may be considered quite wide. In support of this claim, researchers have found that, even in extremely short intervals (measured in milliseconds), mindfulness increases the number of stimuli that individuals notice in their environment (Slagter et al., 2007). In addition, scholars suggest that mindfulness attunes individuals to a range of intrapsychic phenomena, including affective states (Brown & Ryan, 2003) and intuitions (Dane & Pratt, 2009), which may receive less attention in the absence of mindfulness.

As suggested, in taking note of its temporal orientation (present moment) and attentional breadth (wide), mindfulness can be compared to and differentiated from other attention-related concepts. These distinctions are discussed below and depicted in Figure 1. In considering the distinctions drawn here, note that the concepts selected for comparison with mindfulness are not intended to be comprehensive but illustrative. In addition, in revealing distinctions across two dimensions (temporal orientation and attentional breadth), the aim of this article is not to oversimplify the rich and nuanced nature of attention-related concepts but rather to position mindfulness in a broad network of concepts while emphasizing its uniqueness.

To begin, mindfulness can be compared to absorption—a state considered by some to be a core element of job engagement (Macey & Schneider, 2008; Rich, LePine, & Crawford, in press). In a state of absorption, one is deeply attentive to and engaged with a particular role, activity, or task (Agarwal & Karahanna, 2000; Rothbard, 2001; Wild, Kuiken, & Schopflocher, 1995). Thus, absorption, like mindfulness, involves directing attention to present-moment phenomena. However, absorption may be distinguished from mindfulness in that it involves narrower attentional breadth. In support of this claim, evidence indicates that, in a state of absorption, individuals tend to ignore stimuli not directly related to the task at hand (Rothbard, 2001). For example, Bazerman (2006) described a situation in which his absorption in a game of bridge prevented him from noticing the arrival of a large number of onlookers until the completion of the game. This type of oversight would be less likely to occur when one is in a mindful state, owing to the relatively wide attentional breadth characterizing mindfulness.

Similarly, mindfulness is both comparable to and distinct from a state referred to as *flow*—a high level of engagement in an optimally challenging activity that produces intense concentration and a strong feeling of control (Csikszentmihalyi, 1990; Csikszentmihalyi & LeFevre, 1989; Nakamura & Csikszentmihalyi, 2009). As depicted in Figure 1, flow is similar to both

Figure 1
Differentiating Mindfulness From Other States of Attention

		Attentional Breadth	
		Relatively Wide	Relatively Narrow
Present Moment Orientation	High	<i>Mindfulness</i>	<i>Absorption Flow</i>
	Low	<i>Mind Wandering</i>	<i>Counterfactual Thinking Prospection Fantasizing</i>

mindfulness and absorption given its present-moment orientation, although it is more similar to absorption with regard to its attentional breadth. In support of this claim, Quinn (2005) argued that flow involves a merging of action and awareness such that one becomes so focused on the task that he or she no longer perceives oneself as being distinct from the activity. As such, an individual in a flow state is unlikely to attend to a range of intrapsychic stimuli and is unlikely to perceive external phenomena not centrally relevant to the task at hand (Csikszentmihalyi, 1990). Thus, flow arguably involves a “limited stimulus field” (Nakamura & Csikszentmihalyi, 2002, p. 92).

Next, mindfulness can be differentiated from a number of states in which one focuses on thoughts, feelings, or possibilities that have relatively little to do with the moment in which one is engaged. For example, an individual reflecting on “what could have been” is engaging in counterfactual thinking (Roese, 1997). Rather than attending to events occurring in the present, one envisions an alternative reality. Somewhat similar, individuals who are simulating the outcome of future action through prospection (Gilbert & Wilson, 2007) or fantasizing about events that might come to pass (Oettingen & Mayer, 2002) are engaged in states in which present-moment phenomena have receded from their focus of attention. Besides differing from mindfulness in temporal orientation, states such as counterfactual thinking, prospection, and fantasy tend to involve a narrower attentional breadth in that a single line of thought is granted considerable attention, which may prevent one from attending to other stimuli. For example, fantasizing about one’s dream job precludes focusing attention in other directions (cf. Oettingen & Mayer, 2002). As such, Figure 1 depicts these states as being different from mindfulness along both dimensions of note.

In addition, whereas some states not oriented to the present moment may be relatively narrow in their attentional breadth, others may be wider in this respect. Evidence indicates that a state matching this description, mind wandering, tends to occur with some degree of frequency (Kane et al., 2007; Smallwood, McSpadden, & Schooler, 2007). When the mind wanders, it ventures away from a primary task and explores thoughts, memories, and desires in a largely undisciplined and, indeed, nondeliberate manner (Smallwood & Schooler, 2006). Although some instances of mind wandering may involve processes associated with certain states noted above (e.g., fantasy), this article adopts the term *mind wandering* to capture those instances in which one's attention shifts readily and frequently among various thoughts and targets. This view of mind wandering is consistent with standard use of the term *wandering* and is thus grounded in evidence that the human mind tends to wander quite extensively and widely in many situations (Mason et al., 2007). Thus, as argued here and as depicted in Figure 1, mind wandering is relatively detached from the present moment and tends to be relatively wide in its attentional breadth.

Although it is apparent that the concept of mindfulness can be differentiated from a number of attention-related concepts in the literature, the taxonomy depicted in Figure 1 may not be the only route by which differences between mindfulness and other concepts can be drawn. To illustrate, the type of mindfulness central to the present investigation is similar to, yet distinct from, another concept termed *mindfulness*, developed by Langer (1989a, 1989b). Although both mindfulness constructs are similar to the extent that each involves directing attention to present-moment phenomena and maintaining a wide attentional breadth, Langer's mindfulness, unlike the mindfulness of present interest, involves cognitive differentiation—the process of drawing novel distinctions (Langer, 2009; Langer & Moldoveanu, 2000). In other words, rather than relying on preestablished conceptions of what a given object is or should be, individuals approaching a situation in a manner consistent with Langer's mindfulness seek to reconceptualize the elements within their environment in a novel, generative way (Langer, 1989a, 1989b; Langer & Piper, 1987). For example, when individuals view an object, such as a dog's chew toy, as possessing other possible applications, such as an eraser, they have mindfully constructed a new categorization of the object (see Langer & Piper, 1987). This concept-developing feature of Langer's mindfulness makes this type of mindfulness similar to a cognitive style (Sternberg, 2000).

In summary, although mindfulness as conceptualized here parallels other attention-related concepts in certain respects, it can be differentiated from extant concepts by taking note of its constituent features. That mindfulness is a unique state of consciousness that has received little consideration among management scholars raises a key question from a workplace standpoint. Specifically, does mindfulness affect how individuals perform their work tasks? Addressing this question, the arguments that follow explore whether and how mindfulness affects task performance in the workplace.

Mindfulness and Task Performance

Before considering how mindfulness relates to task performance in organizational and occupational settings, it is worth observing that previous research points to a variety of non-task performance outcomes of mindfulness (for a discussion of the mechanisms accounting

for these effects, see Shapiro et al., 2006). For example, evidence indicates that mindfulness enables individuals to effectively cope with a range of experiences, including those associated with strong emotions or physical pain (Baer, 2003; Broderick, 2005; Shapiro et al., 2006; Shepherd & Cardon, 2009). Mindfulness has also been shown to reduce depression and anxiety and enhance vitality (Brown & Ryan, 2003).

Although issues involving the physical and mental health of organizational members are important, from a managerial perspective they are perhaps not as foremost a concern as performance-related outcomes. Yet, as noted, there has been little scholarly investigation of whether and how mindfulness affects task performance—a critical dimension of job performance involving behaviors that support or contribute to an organization's technical core (Motowidlo, Borman, & Schmit, 1997). As such, although mindfulness may contribute to task performance in a range of ways, it might not be beneficial for all tasks. That is, despite the unabashedly positive treatment of mindfulness found in extant scholarship, it would be hasty to assume that mindfulness is always without cost.

To understand when and how mindfulness may prove beneficial or costly from a task performance perspective, one should take into account the features of mindfulness described earlier. Notably, in a mindful state of consciousness, individuals are attuned to a wide breadth of present-moment phenomena occurring around and within them. Given its wide attentional breadth, mindfulness may influence task performance in organizations through multiple avenues. Indeed, both facets of wide attentional breadth—external and internal—may affect task performance uniquely. However, the degree to which these effects are beneficial likely depends on additional factors detailed in this section.

Figure 2 depicts the effects posited and described at length below. Regarding its effect on task performance, the following can be posited:

Maintaining a wide attentional breadth toward external present-moment phenomena (hereafter, wide external attentional breadth) is likely to vary with the nature of the task environment in which an individual is engaged.

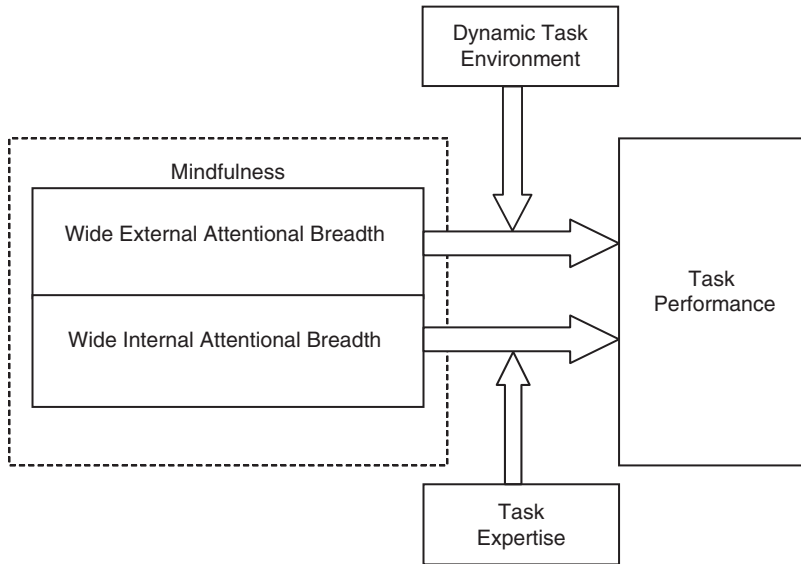
Maintaining a wide attentional breadth toward internal present-moment phenomena (hereafter, wide internal attentional breadth) is likely to vary with one's degree of expertise concerning the task of interest.

As argued here, the overall impact of mindfulness on task performance depends on both the task environment in which one operates and one's ability to perform the task.

Wide External Attentional Breadth and Task Performance

As described earlier, when individuals are in a mindful state, their attention to external phenomena is quite wide such that they are attuned to a relatively large number of stimuli, materials, and data in their surrounding environment. At first glance, this observation augurs well for the efficacy of mindfulness in enhancing task performance. Notably, acquiring a rich body of information has been posited to underlie task performance in a number of contexts (Eisenhardt, 1989; Eisenhardt & Zbaracki, 1992; Pfeffer & Sutton, 2006). In addition,

Figure 2
Relating Mindfulness to Task Performance



maintaining a wide external attentional breadth might be expected to decrease the rate of errors that tend to occur when individuals miss critical environmental cues (cf. Endsley, 1995; Stanton, Chambers, & Piggott, 2001). In support of this logic, Herndon (2008) found a negative relationship between mindfulness and cognitive failures, including the failure to notice key details of a given situation.

Through further reflection, however, one may see that although mindfulness attunes individuals to a wide range of environmental stimuli, this feature could prove costly. Notably, when one is in a state of mindfulness, one might misallocate attention toward potentially trivial stimuli at the expense of attending to those stimuli that are most critical for performing a given task. Indeed, in some cases, a state of attention characterized by a more limited attentional breadth, such as absorption, may be more useful than mindfulness from a task performance standpoint (Rich et al., in press).

In all, extant research suggests a tension with regard to the effect of maintaining wide external attentional breadth on task performance. On one hand, such breadth attunes individuals to a large number of stimuli, providing individuals with numerous potentially useful inputs on which to base their actions. On the other, as a result of such breadth, individuals may fail to devote sufficient attention to those stimuli that are most essential for performing the focal task. Taking this tension into account, one should consider whether the net benefit of the wide external attentional breadth associated with mindfulness varies as a function of the task environment in which one operates—that is, dynamic versus static.

Dynamic task environments. Maintaining a wide external breadth of attention is perhaps most useful in dynamic task environments—those in which individuals make a series

of interdependent decisions in real time (Edwards, 1962; Gonzalez, 2005). Dynamic environments abound in high-velocity industries—those that involve intense competition and rapid change (Bourgeois & Eisenhardt, 1988; Nadkarni & Barr, 2008)—and they often exist where individuals interact or compete in an interdependent manner. Thus, dynamic environments can be found in the context of negotiations (Polzer, Mannix, & Neale, 1998), emergency response operations (Klein, 1998), and crisis management situations (Drabek, 1985). In addition, as noted by Mintzberg (1973), managerial labor is often characterized by the immediacy of present-moment demands. That is, “fighting fires”—or responding to numerous unexpected crises on a daily basis—appears to be a fundamental reality of managerial work. Hence, at least some organizational managers may operate in environments that could be classified as dynamic.

In support of the claim that maintaining a wide external attentional breadth is beneficial for performing in dynamic environments, Dane (2008) found through a field study of trial lawyers that, because of the dynamic nature of trials (i.e., a continual stream of unpredictable events), it is imperative for lawyers to gain as much information as possible from the courtroom environment to make effective decisions. Mindfulness was found to play a key role toward this end because it permits lawyers to attend to a wide range of phenomena, including the reactions of the judge, jury members, and opposing lawyers—critical inputs for making decisions about when and how to employ their arguments and other persuasive tactics.

Additional support for the proposition that maintaining a wide external attentional breadth is critical in dynamic environments comes from research on the concept of improvisation, defined as “the degree to which the composition and execution of an action converge in time” (Moorman & Miner, 1998, p. 698). Although improvisation has been studied with respect to actions taken by organizational decision makers (Crossan, Cunha, Vera, & Cunha, 2005; Weick, 1998), entrepreneurs (Hmieleski & Corbett, 2003), and consultants (Vera & Crossan, 2005), as well as to behaviors exhibited in artistic domains including jazz (Berliner, 1994) and theater (Vera & Crossan, 2004), a common element among these contexts is the dynamic task environment that individuals tend to encounter.

Researchers suggest that maintaining a wide external attentional breadth in the dynamic environments in which improvisation often occurs is paramount to achieving improvisational success. Specifically, successful improvisation arguably depends on being “attentive and alert to what is happening in the *now*” (Vera & Crossan, 2005, p. 208) and remaining attuned to “temporally proximate stimuli” within one’s environment (Fisher & Amabile, 2009, p. 19). Thus, insofar as it attunes individuals to a wide range of stimuli, maintaining a wide external attentional breadth may foster effective task performance when improvisational behavior is called for.

Static task environments. The benefits of maintaining a wide external attentional breadth may be limited in a nondynamic, or *static*, task environment, compared to its usefulness in a dynamic task environment. Given that static environments involve relatively stable and predictable relationships (Edwards, 1962; Nadkarni & Barr, 2008), task performance in such an environment may require filtering out a number of present-moment stimuli and focusing more narrowly on the task at hand (Chajut & Algom, 2003; Easterbrook, 1959). For example, whereas a wide external attentional breadth may be useful for a university professor seeking to stimulate and moderate an active class discussion (owing to the dynamic nature of this task environment), attending to a large number of external stimuli may be unnecessary

for and, indeed, detract from the act of writing a research paper. Perhaps for this reason, a number of historically eminent writers and composers reported going to great lengths to seclude themselves from stimuli that might distract them from their work (Kasof, 1997).

In sum, these observations suggest that although maintaining a wide external attentional breadth is likely to contribute favorably to task performance in a dynamic task environment, this wide external breadth of attention may prove detrimental in a static task environment. This moderating role of one's task environment is captured by the proposition below and depicted in Figure 2.

Proposition 1: Wide external attentional breadth fosters task performance in a dynamic task environment and inhibits task performance in a static task environment.

Wide Internal Attentional Breadth and Task Performance

The wide external attentional breadth characterizing mindfulness is not the only channel through which mindfulness may influence task performance. The wide internal attentional breadth associated with mindfulness is also likely to play a key role. In particular, scholars argue that mindfulness attunes individuals to their own thoughts, beliefs, and emotions (Kabat-Zinn, 2005; Nyanaponika, 1972). To understand how certain internal phenomena can go unnoticed in the absence of mindfulness, it is worth considering that, at any given point in time, there are a myriad of intrapsychic phenomena occurring, only some of which an individual is likely to direct attention to (Bargh & Morsella, 2008; Dijksterhuis & Aarts, 2010; Wilson, 2002). Building on this notion, evidence indicates that individuals are often not attuned to certain feelings that might seem difficult to overlook. For example, one may be happy or sad, though unaware of the presence of this emotion (Lambie & Marcel, 2002). In addition, research has shown that performance-related behavior is often triggered through automatic goal activation such that, upon encountering certain cues, one executes a series of actions with little to no conscious deliberation or awareness of the thought sequence that precipitated one's behavior (e.g., Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001; Fitzsimons & Bargh, 2003; George, 2009).

Nonconscious versus conscious processing. In taking stock of these and related areas of research, it may help to consider dual-process accounts of human cognition. Research suggests that people process information via two relatively distinct cognitive systems—a nonconscious system and a conscious system (e.g., S. Epstein, 1994; Sloman, 1996; Smith & DeCoster, 2000; Stanovich & West, 2000; Strack & Deutsch, 2004; Wilson, 2002; for a review of dual-process theories of cognition, see Evans, 2008; for a critique of such theories, see Keren & Schul, 2009). The nonconscious system—also referred to as automatic (Bargh & Chartrand, 1999), experiential (Epstein, 1994), associative (Sloman, 1996), and System 1 (Stanovich & West, 2000)—tends to operate through relatively simultaneous, effortless, and holistic associations. In contrast, the conscious system—also referred to as intentional (Bargh & Chartrand, 1999), rational (S. Epstein, 1994), rule based (Sloman, 1996), and System 2 (Stanovich & West, 2000)—tends to operate through relatively systematic, effortful, and analytical connections.

Although processes occurring in the nonconscious system cannot be consciously observed, scholars maintain that some nonconscious processes may produce outcomes that can be consciously attended to. For example, researchers have argued that whereas the associations that trigger gut feelings, or intuitions, occur at a nonconscious level, the outcome of this process—an intuition, or intuitive judgment—may be perceived consciously (Dane & Pratt, 2007). In addition, a growing body of research demonstrates that other nonconsciously based phenomena, such as implicit attitudes, can be consciously accessed under particular conditions (e.g., Fazio & Olson, 2003; Gawronski, Hofmann, & Wilbur, 2006; Hofmann, Gawronski, Gschwendner, Le, & Schmitt, 2005; Nosek, 2005). As scholars have noted, the term *implicit* does not imply that something cannot be accessed consciously (Jordan, Whitfield, & Zeigler-Hill, 2007); rather, the term indicates that something has arisen through an automatic, nonconscious process (Hofmann, Gschwendner, Nosek, & Schmitt, 2005)—the outcome of which may or may not be consciously attended to (Gawronski & Bodenhausen, 2006; Wilson, Lindsey, & Schooler, 2000).

Building on this view that some nonconsciously based phenomena ultimately become consciously available, researchers have suggested that, because of its wide internal attentional breadth, mindfulness attunes individuals to phenomena that originate in the nonconscious system (Dane & Pratt, 2009). In line with this suggestion, Brown and Ryan (2003) found that mindfulness leads individuals to evaluate their level of affect (pleasant versus unpleasant) in a manner consistent with their implicit affective state (as assessed by an implicit association measure).

Attending to intuitions. The observations offered thus far suggest that mindfulness may attune individuals to a particular type of nonconsciously based phenomena, noted briefly above, that carries implications for task performance—intuitions. Researchers have discussed the role that intuitions play in terms of how individuals perform tasks in a number of situations and domains (e.g., Gigerenzer, 2007; Hogarth, 2001; Sadler-Smith, 2008). As scholars maintain, intuitions, or “affectively-charged judgments that arise through rapid, nonconscious and holistic associations” (Dane & Pratt, 2007, p. 33), are products of the nonconscious system of processing. Specifically, when environmental stimuli are matched with nonconsciously held cognitive structures, an intuition may arise (Hogarth, 2001; Sadler-Smith, 2008; Topolinski & Strack, 2009). Intriguingly, researchers have argued that not all intuitions receive conscious attention; some arise and dissipate with little to no conscious consideration (Hofmann & Wilson, in press). By attuning individuals to phenomena arising through nonconscious operations, mindfulness may enable individuals to notice more of their intuitions (Dane & Pratt, 2009).

Although this intuition-attuning function of mindfulness is likely to affect task performance, there are competing logics for whether this function is beneficial or costly. On one hand, extant scholarship suggests that, at least under certain conditions, intuitions can facilitate task performance (e.g., Dane & Pratt, 2007; Hodgkinson, Langan-Fox, & Sadler-Smith, 2008; Khatri & Ng, 2000; Sadler-Smith & Sparrow, 2008). Such conditions include loosely structured tasks, such as making decisions about what strategic initiatives to pursue and how best

to pursue them—tasks that many organization members encounter frequently, particularly, senior managers and executives (Hayashi, 2001; Hodgkinson et al., 2008; Shapiro & Spence, 1997). On the other, a number of scholars support the more traditional research view that intuitions are often biased or inaccurate and should thus be questioned or challenged (e.g., Bazerman, 2006; Denes-Raj & Epstein, 1994; Kahneman, 2003). This traditional perspective suggests that heeding one's intuitions may compromise task performance.

Task expertise. Emerging research suggests that the two positions noted above may be reconcilable. Although intuitions are likely to be accurate in some circumstances and inaccurate in others, research indicates that the accuracy of intuitions varies with one's level of expertise in the task domain (Hogarth, 2001; Kahneman & Klein, 2009; Klein, 1998). Whereas the intuitions of novices tend to be based on relatively simple and bias-prone heuristics, experts' intuitions tend to arise through pattern matching rooted in complex domain-relevant schemas (Dane & Pratt, 2007, 2009). As a result, compared to novices, experts tend to have more accurate intuitions that enhance their task performance (Salas, Rosen, & DiazGranados, in press), which suggests that taking note of one's intuitions is useful to the extent that one has enough expertise within the task domain that one's intuitions are accurate.

Taken in tandem with the claim that mindfulness expands one's internal attentional breadth and thus attunes individuals to their intuitions, the observations above suggest that the usefulness of capturing intuitions through this wide internal attentional breadth is contingent on the degree of task expertise individuals have attained. For those with a high level of task expertise, taking note of and drawing on a large number of intuitions provides critical inputs for guiding behavior. In contrast, for those who lack expertise within the task domain, intuitions pose risks in that they may be underdeveloped and biased. In this sense, attending to intuitions may hinder a novice's task performance by triggering action that "feels" right but is ultimately erroneous or misguided. This moderating role of one's task expertise is captured by the proposition below and depicted in Figure 2.

Proposition 2: Wide internal attentional breadth fosters task performance when one has a high level of task expertise, and it inhibits task performance when one is a task novice.

Mindfulness and Task Performance: A Contingency Framework

Taken together, the arguments underlying Propositions 1 and 2 provide a contingency framework for understanding the relationship between mindfulness and task performance. As argued, the external and internal attentional breadth facets of mindfulness contribute to task performance through distinct linkages, each of which is moderated by factors explored above. Specifically, to the extent that one engages in a dynamic environment and has accrued a high level of task expertise, both effects described above—the effect of wide external attentional breadth on task performance and the effect of wide internal attentional breadth on task performance—are expected to be positive. Thus, the overall relationship

between mindfulness and task performance should be positive under this constellation of factors. The following proposition captures this claim:

Proposition 3: The relationship between mindfulness and task performance is positive when one operates in a dynamic task environment and has a high level of task expertise.

In contrast, the relationship between mindfulness and task performance may not be positive in the absence of either of these factors. To illustrate, the task performance gains associated with maintaining a wide external attentional breadth in a dynamic environment may be counterbalanced by a lack of task expertise, which subjects individuals to inaccurate intuitions and compromises task performance. Likewise, although a task expert may attend to a relatively large number of potentially useful intuitions as a result of maintaining a wide internal attentional breadth, this gain may be counterbalanced when the expert operates in a static task environment—an environment ill-suited to maintaining a wide external additional breadth. In such cases, it is difficult to predict which factor will prove dominant in determining whether the relationship between mindfulness and task performance is positive or negative. More directly, given the arguments offered in this section, one can conclude the following: To the extent that one engages in a static environment and lacks task expertise, mindfulness inhibits task performance. The following proposition captures this claim:

Proposition 4: The relationship between mindfulness and task performance is negative when one operates in a static task environment and is a task novice.

Discussion and Implications

Rising interest in mindfulness across a number of lines of scholarship indicates that this ancient construct carries critical implications in modern society. On this point, research has helped to clarify the nature of mindfulness and has highlighted some of its benefits (e.g., Bishop et al., 2004; Brown et al., 2007; Brown & Ryan, 2003). Building from this body of research, the present article extends theory on mindfulness in new directions relevant to scholarship in the field of management. Specifically, it identifies the unique nature of mindfulness by differentiating it from other concepts and by developing theory concerning how mindfulness influences task performance in the workplace. In line with the contingency framework advanced here, the article argues that, with respect to task performance, mindfulness is neither an unquestionable asset nor a categorical liability but rather a state of consciousness that may either foster or inhibit task performance as a function of certain conditions.

From a practical standpoint, the arguments offered here suggest that individuals with task expertise should strive to focus their attention mindfully when engaged in a dynamic environment. For example, expert managers who operate in the type of firefighting environments described by Mintzberg (1973) may benefit from accepting and addressing head-on the unrelenting stream of disruptions that characterize their jobs. To the extent that these managers view present-moment demands not as unfortunate distractions to be dealt with expeditiously but as a natural and significant component of their job duties, they may be more likely

to focus on the details of the events surrounding them as well as their internal reactions to them. Thus, in focusing attention as directly as possible on the present moment, expert managers may achieve higher performance on a range of tasks.

Theoretical Implications

Beyond its direct practical applications, this article carries several theoretical implications worth considering. To begin, in identifying benefits associated with mindfulness, it provides a counterpoint to a claim found in a number of lines of extant theory. Specifically, multiple areas of research highlight how focusing attention on the past or the future is pivotal for performing effectively. For example, work on organizational learning trumpets the merits of learning lessons from the past to achieve more effective performance (Levitt & March, 1988). In addition, research on such concepts as implementation intentions (Gollwitzer, 1999), consideration of future consequences (Strathman, Gleicher, Boninger, & Edwards, 1994), goal setting (Locke & Latham, 2002), change-oriented behavior (Grant & Ashford, 2008), visceral behavioral influences (Loewenstein, 1996), and “should” versus “want” selves (Milkman, Rogers, & Bazerman, 2008) points to the benefits associated with directing one’s attention to desired future states and the costs associated with focusing attention on the present moment.

To be sure, as these lines of research indicate, focusing on the present moment is likely to carry certain risks and limitations, and focusing on the past and the future can prove beneficial in ways worth acknowledging. However, rather than presume that focusing attention on present-moment phenomena is generally problematic, this article suggests that, from a task performance standpoint, significant gains can be made from maintaining a mindful presence in the here and now (cf. Kahn, 1992). Particularly when one is operating in a dynamic environment and has a high level of task expertise, focusing attention mindfully on the moment in which one is involved can prove efficacious.

Of course, it bears noting that in focusing attention on the present, an individual does not necessarily cut ties entirely with non-present moment events. For example, an individual with a high level of task expertise who is mindfully attuned to his or her intuitions may be viewed as attending to judgments rooted in an extensive body of experience that he or she has accrued in the task domain. Thus, insofar as the intuitions captured via mindfulness are grounded in lessons learned in the past, mindfulness may be viewed as bridging the present and past by attuning individuals to their experiences that have been distilled into the form of intuitions (cf. Simon, 1987).

These considerations aside, this article also argued that, under certain conditions, mindfulness can prove costly from a task performance standpoint. In particular, mindfulness may be a hindrance in a static task environment or when individuals lack task expertise. These arguments challenge the view found in some lines of scholarship that, with regard to mindfulness, more is better. Specifically, it has been suggested that mindfulness is not only a fundamentally important state of consciousness but, generally speaking, a costless one as well (e.g., Claxton, 2005; Hanh, 1976; Kabat-Zinn, 2005). This belief may be sparked by a growing body of evidence indicating that mindfulness cultivates physical and mental wellness (see Brown et al., 2007; Shapiro & Carlson, 2009). Although the health-related consequences of mindfulness are

important, such findings do not imply that mindfulness is a panacea for all ailments, and they certainly do not indicate that mindfulness always comes without a price. As the present article suggests, there may be conditions in which mindfulness is more of a burden than a benefit. Thus, mindfulness—though indeed important in a multitude of respects, not least of which include its salutary effects on physical and mental well-being—appears to be more nuanced than some have imagined with regard to the range and valance of its outcomes, particularly from a workplace standpoint.

Directions for Future Research

The lines of inquiry pursued here suggest a number of future research directions. To begin, building on the contingency framework developed here, scholars could further explore the conditions under which mindfulness is beneficial versus costly from a task performance standpoint. In doing so, researchers could examine the outcomes that occur when an individual alternates between mindful and nonmindful states of consciousness. Along these lines, some have argued that interspersing tasks for which mindfulness may prove beneficial with easy, low-pressure tasks—those likely to lead to mind wandering—may foster creativity in some jobs (Elsbach & Hargadon, 2006). In general, there is a need for research exploring how various states of consciousness not only relate to a range of workplace outcomes but also work in conjunction with one another.

Moving beyond its effects on task performance, researchers could examine other ways in which mindfulness may prove either beneficial or costly in the workplace. One such possibility is that mindfulness carries implications for ethical behavior. Researchers have begun to converge on the view that a key determinant of ethical behavior is whether individuals recognize moral content in the problem at hand (Butterfield, Treviño, & Weaver, 2000; Sonenshein, 2007). In other words, if individuals do not perceive that a problem carries ethical implications or consequences, they are more likely to use amoral criteria to govern their behavior (Tenbrunsel & Smith-Crowe, 2008). Although the impact of problem representation on ethical behavior is often quite strong, mindfulness may help bring ethics into the foreground of a variety of problems. Specifically, by expanding attentional breadth to features of the problem at hand, mindfulness may lead individuals to look beyond a given frame and consider cues that signal a need to take ethical issues into consideration. Alternatively, because of this wide external attentional breadth associated with mindfulness, one may recognize more opportunities for self-serving behavior and be drawn, perhaps unwittingly, to disregard ethical considerations and focus instead on the pursuit of self-interest (cf. Moore & Loewenstein, 2004). Research is needed to explore these and related possibilities.

Finally, more research is necessary to determine when and how mindful states tend to arise. As noted at the outset of this article, mindfulness has long been thought of as a state of consciousness cultivated through meditative practice. Thus, a number of meditation-based techniques designed to induce mindfulness have been developed, including methods tailored specifically for managers (see Sadler-Smith & Shefy, 2007). Nevertheless, there may be a number of other conditions that enable individuals to achieve a mindful state of consciousness. As such, further research is needed to better understand how factors including but not limited

to dispositional tendencies (e.g., Baer et al., 2004; Brown & Ryan, 2003; Giluk, 2009; Lau et al., 2006; Walach et al., 2006) and job experience (Ashforth & Fried, 1988; Dane, 2008) may affect one's level of mindfulness in work contexts.

Conclusion

Owing to its longstanding reputation as a topic best suited for philosophical, as opposed to scientific, investigation, mindfulness has remained outside the purview of many disciplines, including management. In taking stock of the expanding body of research on the construct in certain areas of psychology, this article developed theory surrounding the nature of mindfulness and its effects on task performance in workplace settings. Given the claims advanced here that mindfulness can prove either beneficial or costly from a task performance standpoint, management scholars and practitioners should further consider the net impact of mindfulness across a range of organizational and occupational contexts.

Notes

1. Although management research on mindfulness is limited with respect to the type of mindfulness noted here, there is a sizable body of scholarship within the field of management associated with a different conception of mindfulness—specifically, a conceptualization offered by Langer (1989a, 1989b; see, e.g., Fiol & O'Connor, 2003; Levinthal & Rerup, 2006; Rerup, 2005; Vogus & Sutcliffe, 2007a, 2007b; Vogus & Welbourne, 2003; Weick & Sutcliffe, 2001; Weick, Sutcliffe, & Obstfeld, 1999). Note that, unlike the present work, most previous theorizing on mindfulness in the field of management has adopted either a group or organizational level of analysis.

2. Despite growing agreement among researchers about what mindfulness is, there remain debates about whether certain elements are integral features of mindfulness or rather correlates of it. For example, some scholars maintain that one facet of mindfulness involves accepting present-moment phenomena as they are, rather than evaluating or judging them (Bishop et al., 2004; Kabat-Zinn, 2005; Lau et al., 2006). However, it may be the case that maintaining such acceptance enables one to be mindful (and is thus an antecedent to mindfulness) or is inherent to and thus redundant with existing conceptualizations of mindfulness that do not explicitly mention acceptance (see Brown & Ryan, 2004). Rather than assume a position in this debate, the present article adopts a definition of mindfulness that is rooted in the features that are common across most conceptualizations of the construct and thus generally agreed on.

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