Mindful Organizing

Establishing and Extending the Foundations of Highly Reliable Performance

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Abstract

Consistent with the positive organizational scholarship (POS) focus on positively deviant performance, mindful organizing represents a set of social processes that underlie the near-flawless performance of high-reliability organizations (HROs). This chapter details the foundations of mindful organizing, reviews recent empirical developments, and proposes five potential directions for further theoretical and empirical development, each of which deepens its contribution and connection to POS. The first proposed direction is to conceptually and empirically link both Eastern and Western conceptions of individual mindfulness and mindful organizing. The second is to establish the affective foundations of mindful organizing, namely how emotion affects the relationships between mindful organizing and error-free performance, the discrete emotions that constitute mindful organizing, and how emotional narratives sustain mindful organizing. Third is to examine a broader range of outcomes of mindful organizing, including its effects on employees. Fourth is to better link mindful organizing to leader attributes and leadership processes. Last, the impact of mindful organizing also requires further construct validation, including differentiating it from related constructs and establishing its responsiveness to interventions.

Keywords: Mindful organizing, mindfulness, high reliability, error, safety, safety culture

Positive organizational scholarship (POS) seeks to rethink organization studies through an affirmative bias (i.e., understanding excellence), a focus on endogenous resourcefulness (i.e., emergent organizational capabilities), and a careful rendering of the subjective experience of work (Cameron, Dutton, & Quinn, 2003). Over the past several years, it has made significant contributions to understanding positive deviance (Cameron & Lavine, 2006; Spreitzer & Sonenshein, 2003) and the organizational capabilities that make such outcomes possible (e.g., compassion organizing, Dutton, Worline, Frost, & Lilius, 2006). In that spirit, I look to the literature on high-reliability organizations (HROs), organizations that are positively deviant in their nearly error-free performance despite operating in complex, dynamic, interdependent, and time pressured settings in which errors should be plentiful (Roberts, 1990; Schulman, 1993; Weick, Sutcliffe, & Obstfeld, 1999). In that literature, we find the capability that underlies the exceptional performance of HROs is mindful organizing—the collective capability to detect and correct errors and unexpected events (Weick, Sutcliffe, & Obstfeld, 1999; Weick & Sutcliffe, 2001; Weick & Sutcliffe, 2007; see also Sutcliffe & Christianson (2011), Chapter 64, this volume, for a broader discussion of managing the unexpected). More recently, mindful organizing has become a burgeoning, if still nascent, literature in its own right.

At first blush, the collective capability to detect and correct errors and unexpected events might seem to be a poor fit for POS. Error-free performance seems like it should be a jumping-off point for a POS approach rather than the destination. However, if we consider that organizational systems...
in dynamic environments tend toward disorder and entropy, then preserving order, reversing chaos, and containing errors and near misses becomes exceptional (Weick, 2003). In other words, an organization performing in a nearly flawless manner is an extraordinary organization. I review the foundations of such flawless organizing in this chapter and offer five areas for future development.

9 Mindful Organizing: Definition and Dimensions

Reliability is essential for survival, but difficult to achieve. Reliability is so challenging because many organizations operate in trying conditions rife with complexity, dynamism, interdependence, and time pressure. Complexity refers to the nature of the technical knowledge required. Dynamism refers to the fact that the knowledge base is ever-changing and growing, and that novel problems are regularly emerging. Interdependence means that reliability is a collective achievement rather than a sum of individual achievements. Time pressure means that action cannot be postponed. High-reliability organizations are those (e.g., aircraft carrier flight decks, air traffic control, nuclear power plants) that demonstrate an exceptional ability to navigate these conditions in a nearly error-free manner (Roberts, 1990; Schulman, 1993; Weick et al., 1999; Weick & Sutcliffe, 2007). They do so by solving the challenges of complexity, dynamism, interdependence, and time pressure through mindful organizing.

Mindful organizing is the collective capability for detecting and correcting errors and unexpected events (Weick et al., 1999). As a collective capability, it is a social process grounded in the actions and interactions of a workgroup. It becomes a shared property of a collective because the members of a given collective (e.g., a workgroup) encounter the same situational cues and, due to the interdependent nature of their work, often consult one another in the interpretation of those cues (Hofmann, Lei, & Grant, 2009; Klein, 2003), which results in interpretations and actions that converge (Salancik & Pfeffer, 1978; Weick & Roberts, 1993).

The capability of mindful organizing is a function of a collective’s (e.g., workgroup) attention to context and capacity to act (Levinthal & Rerup, 2006). Attention to context is the sustained attention to operational challenges in the form of efforts to develop, deepen, and update a shared understanding of local context. Capacity to act is the collective’s ability to marshal the necessary resources to act on that understanding in a flexible manner that is tailored to the unexpected event.

Attention to context and capacity to act is produced on the front line through a set of interrelated organizational processes—preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, commitment to resilience, and deference to expertise (Weick et al., 1999; Weick & Sutcliffe, 2001; Weick & Sutcliffe, 2007). Preoccupation with failure directs attention and effort to complex threats to the system, through proactive and preemptive analysis of potential novel sources of error or conditions that can produce the unexpected (LaPorte & Consolini, 1991; Weick & Sutcliffe, 2007). Reluctance to simplify interpretations means that a collective does not take the past as an infallible guide to the future. Instead, its members actively question received wisdom and ensure that key variables are not overlooked by frequently discussing alternatives as to how to go about their everyday work (Fiol & O’Connor, 2003; Schulman, 1993; Weick & Sutcliffe, 2007). Sensitivity to operations means creating and maintaining an up-to-date understanding of the distribution expertise, so that it is appropriately utilized in the face of unexpected events (Weick et al., 1999; Weick & Sutcliffe, 2001, 2007). Together, these three processes richly represent the complexity of potential threats, dynamically deepen this understanding with new data, and manage interdependence through collective knowledge of relevant expertise. Commitment to resilience is discussing errors and deriving lessons learned, such that a collective is able to extract the most value from the error data they have (vanDyck, Frese, Baer, & Sonnentag, 2005; Weick et al., 1999; Weick & Sutcliffe, 2001, 2007; see also Barker Caza (2011), Chapter 68, this volume; Sutcliffe & Christianson (2011), Chapter 64, this volume).

Last, deference to expertise occurs when, in the face of an unexpected event, a collective pools the necessary expertise and utilizes it by allowing the person or people with the greatest expertise in handling the problem at hand to make decisions, regardless of formal rank (Roberts, Stout, & Halpern, 1994). Commitment to resilience and deference to expertise jointly comprise the pool of expertise and the capacity to use it in a flexible manner tailored to the unexpected event. Taken as a whole, these processes constitute mindful organizing. That is, no one process or subset of processes is sufficient for mindful organizing.

The discussion of mindful organizing that follows refers to the construct as conceptualized and

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Table 50.1 Correspondence theory and measurement of the processes of mindful organizing

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition</th>
<th>Survey Item(s)</th>
</tr>
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<tbody>
<tr>
<td>Preoccupation with failure</td>
<td>Operating with a chronic wariness of the possibility of unexpected events that may jeopardize safety by engaging in proactive and preemptive analysis and discussion.</td>
<td>When handing off an activity to another employee, we usually discuss what to look out for. We spend time identifying activities we do not want to go wrong.</td>
</tr>
<tr>
<td>Reluctance to simplify</td>
<td>Taking deliberate steps to question assumptions and received wisdom to create a more complete and nuanced picture of ongoing operations.</td>
<td>We discuss alternatives as to how to go about our normal work activities.</td>
</tr>
<tr>
<td>interpretations</td>
<td></td>
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</tr>
<tr>
<td>Sensitivity to operations</td>
<td>Creating and maintaining an up-to-date understanding of the distributed of tasks and expertise, so that these are appropriately utilized in the face of unexpected events.</td>
<td>We have a good &quot;map&quot; of each other's talents and skills. We discuss our unique skills with each other so we know who on the unit has relevant specialized skills and knowledge.</td>
</tr>
<tr>
<td>Commitment to resilience</td>
<td>Discussing errors and deriving lessons learned, such that a collective is able to extract the most value from the error data they have to prevent more serious harm.</td>
<td>We talk about mistakes and ways to learn from them. When errors happen, we discuss how we could have prevented them.</td>
</tr>
<tr>
<td>Deferece to expertise</td>
<td>During high-tempo times (i.e., when attempting to resolve a problem or crisis), decision making authority migrates to the person or people with the most expertise with the problem at hand, regardless of their formal authority.</td>
<td>When attempting to resolve a problem, we take advantage of the unique skills of our colleagues. When a crisis occurs, we rapidly pool our collective expertise to attempt to resolve it.</td>
</tr>
</tbody>
</table>


1 measured by Vogus and Sutcliffe (2007a).  
2 Table 50.1 illustrates how each conceptual component of mindful organizing relates to specific survey items in Vogus and Sutcliffe's (2007a) measure. The table contains all nine survey items measured using a seven-point Likert scale (from "not at all" to "to a very great extent"). Mindful organizing is then constructed for a collective by averaging all nine items across all respondents. It is important to note that all items are behavioral (to capture the fact that mindful organizing is a social process) and that the referent of each item is "we" (to capture the fact that mindful organizing is a collective capability).

14 Relationship with Other Safety Constructs  
15 Mindful organizing also differs from existing constructs that characterize a workgroup’s orientation toward error (error management climate), safety (safety climate), and speaking up (psychological safety). Error management culture (van Dyck et al., 2005)—communicating about errors, analyzing and correcting errors quickly, sharing error knowledge, and helping in error situations—is most closely linked to mindful organizing in that it captures processes that are highly similar to commitment to resilience and deference to expertise. In other words, error management culture is much like the components of mindful organizing that encapsulate a capacity to act. However, error management culture differs in that it does not simultaneously encompass the proactive elements of mindful organizing, including preoccupation with failure, reluctance to simplify interpretations, and sensitivity to operations (Weick & Sutcliffe, 2007). Safety climate is the shared perceptions regarding the safety policies, practices, and procedures that an organization expects, rewards, and supports (Zohar, 1980). Safety climate focuses on managerial commitment to safety (e.g., through investments in safety), priority placed on safety (i.e., the extent to which safety is subordinated to other goals), and the extent to which safety information is disseminated (Katz-Navon, Naveh, & Stern, 2005). As such, safety climate focuses on the initiating and enabling role of managers in promoting safety and compliance with safety procedures. In contrast, mindful organizing focuses on the interactions of workgroup members directed at anticipating and responding to the unexpected.
Similarly, psychological safety—a shared belief that it is safe to take interpersonal risks—is also a function of leader behaviors and discursive practice (Edmondson, 1999, 2004) that facilitate, but are distinct from, front-line action (Edmondson, 1996). As such, safety climate and psychological safety are potential antecedents of mindful organizing rather than analogues of it.

9 The Performance Effects of Mindful Organizing

Empirical examinations of the effect of mindful organizing on organizational reliability and other performance outcomes remains in its infancy. Despite this small number of studies, some clear findings have emerged. There is consistent qualitative and, more recently, quantitative evidence that higher levels mindful organizing improve safety and quality outcomes in health care contexts. In a multiyear qualitative study of a pediatric intensive care unit (PICU), Roberts and colleagues (2005; Madsen, Desai, Roberts, & Wong, 2006) found that diligent leaders trained in the principles of HROs enabled mindful organizing that corresponded with higher levels of performance. Front-line staff were constantly alert to the possibility that they had missed something (preoccupation with failure), regularly interpreted and questioned data that appeared relevant to their working hypotheses (reluctance to simplify interpretations), collaboratively constructed an up-to-date picture of potential threats to safety for each patient (sensitivity to operations), discussed errors and incidents to enlarge the repertoire of possible actions that caregivers could take to manage the unexpected (commitment to resilience), and migrated decisions to bedside caregivers who had more experience with a specific patient (deference to expertise). Together, these enactments of mindful organizing were associated with infrequent patient deterioration on the unit, a significant improvement from prior to the HRO intervention (Madsen et al., 2006; Roberts et al., 2005). In a study of perinatal units, Knox, Simpson, and Garite (1999) found that units that systematically enacted the processes of mindful organizing had better safety performance and fewer malpractice claims. In a first quantitative study of mindful organizing in 94 hospital nursing units, Vogus and Sutcliffe (2007a) found that higher levels of their measure of mindful organizing were associated with fewer medication errors and patient falls in the subsequent 6 months. In contrast, when the processes of mindful organizing are absent or underdeveloped, different outcomes obtain. For example, the less mindful action characteristic of the cardiac unit of the Bristol Royal Infirmary was associated with shocking levels of excess deaths among infants, which forced a governmental inquiry (Weick & Sutcliffe, 2003).

There is more suggestive evidence that mindful organizing produces highly reliable performance in other contexts. Bigley and Roberts (2001) document a set of five “structural processes” analogous to mindful organizing that allows the fire-fighting Incident Command System (ICS) to function reliably in crisis conditions. For each structural process, the corresponding process or processes of mindful organizing are denoted. Role switching assigns and reassigns people based on situational demands. This builds a deeper attention to context and the likelihood that the system they create might fail to conform to the situation’s needs (preoccupation with failure). Cognitive management and constrained improvisation further deepen the appreciation of context as they allow for refinement in the face of emerging data from the field that creates a more nuanced and holistic picture (reluctance to simplify interpretations). The ICS frequently refines its image of the big picture through “size ups” that construct and disseminate increasingly high-fidelity models of the evolving emergency. System resetting is the ability to disengage and reset the structure to confront a “nasty surprise” or an evolving problem (commitment to resilience). Last, authority migration allows for the necessary resources and skills to flow to emerging problems (deference to expertise). Taken together, these five interrelated processes lead to highly reliable management of emergencies. In a rigorous longitudinal case study of Novo Nordisk, Rerup (2009) found three attentional processes focused on attending to weak signals led to recovery from crisis and subsequent highly reliable performance. Each of the three attentional processes is akin to an equivalent process of mindful organizing (denoted in parentheses). Attentional stability is the deep consideration of issues that led to a more nuanced understanding and an awareness of potential pathways of failure (preoccupation with failure). Attentional vividness is the development of increasingly rich, detailed, and complex representation of issues (reluctance to simplify interpretations). Attentional coherence is the merging of vividness and stability into an integrated big picture (sensitivity to operations). In an intriguing qualitative study of habitual entrepreneurs, Rerup (2005) found that the processes of mindful organizing contribute to...
Emerging evidence also suggests that pairing mindful organizing with other supportive practices enhances the impact of mindful organizing on performance. Specifically, in a study of 73 hospital nursing units, Vogus and Sutcliffe (2007b) found that fewer medication errors occurred over the subsequent 6 months on units with high levels of mindful organizing and registered nurses reported high levels of trust in their nurse managers. In a sample of software firms, Vogus and Welbourne’s (2003) results suggested that HR practices unleashed microprocesses (e.g., respectful interaction) and employee characteristics (e.g., professional tenure). In focusing on structure (e.g., Roberts, 1990) and process (e.g., Weick et al., 1999), the characteristics of the personnel on the front line charged with organizing more or less mindfully have been minimized. This is a significant oversight because mindful organizing and reliable performance are a function of “reliability professionals” (Roe & Schulman, 2008). Reliability professionals

Antecedents of Mindful Organizing
The earliest studies of high reliability tended to focus on the organizational practices of HROs (e.g., Roberts, 1990). Studies of mindful organizing have built on this tradition and expanded it to include microprocesses (e.g., respectful interaction) and employee characteristics (e.g., professional tenure). I review this small, but growing body of work next. Human resource (HR) and work design practices have been qualitatively and quantitatively examined as antecedents of mindful organizing. Vogus (2004) built on earlier descriptions of the importance of training and empowerment in HROs to examine the effect of a bundle of HR practices, including selective staffing, extensive training, developmental performance appraisal, and decentralized decision making on mindful organizing and reliability. He found that HR practices produced higher levels of mindful organizing through dyadic respectful interactions (i.e., interactions characterized by trust, honesty, and mutual respect; Vogus, 2004). In a sample of software firms, Vogus and Welbourne’s (2003) results suggested that HR practices unleashed similar practices of mindful organizing that led to reliable innovation over time. In their study of the PICU, Roberts and colleagues (Madsen et al., 2006; Roberts et al., 2005) found that implementing practices derived from research on HROs, including regularly training (in-servicing) staff, team briefings (i.e., collaborative rounding), empowerment (decision migration to bedside caregiver), and frequent and inclusive post-event debriefings, generated and sustained more mindful organizing. At Novo Nordisk, the Novo Way of Management—a commitment to openness, continuous learning, and dialogue—was reinforced by organizational audits of the Novo Way and “facilitation” to coordinate weak signals across the organization to produce attentional processes analogous to mindful organizing (Rerup, 2009).

In other words, mindful organizing and reliable performance are a function of the cumulative knowledge base of front-line employees and their ability and willingness to effectively access the experience and expertise embedded in the knowledge base. In a sample of 122 hospital nursing units, Vogus, Ramanujam, and Tangirala (2010) examined the effects of workgroup-level professional experience, the workgroup’s variability in experience, and workgroup professional commitment on mindful organizing. They found that professional experience had a positive nonlinear relationship with mindful organizing. That is, the benefits of experience are positive, but they increase at a decreasing rate over time. They also found that this relationship was moderated by workgroup variability in professional experience (makes the diminishing returns to experience set in sooner) and workgroup professional commitment (delays diminishing returns to experience). Taken together, these studies provide an impressive and systematic, if incomplete, basis for future research.

Future Directions
Mindful organizing presents organizational researchers and practitioners with a largely untapped resource for understanding and unleashing positively deviant performance in very difficult circumstances. Furthermore, it is a construct that is
conceptually well grounded in a set of rich case studies on HROs conducted over the past two decades (see Weick et al., 1999 for a review). More recently, quantitative work has shown that mindful organizing is also measurable and significantly predictive of safety outcomes in the workplace. However, at this early stage, there are numerous potential directions for future research on mindful organizing. I propose five necessary and promising directions for future research. In developing each future direction, I attempt to outline plausible study designs and potential hypotheses to test.

**Eastern and Western Conceptions of Individual Mindfulness**

Mindful organizing has been defined as a collective capability. As such, it is a social process that becomes collective through actions and interactions among individuals, rather than in the minds of individuals (e.g., Langer, 1989). However, distinguishing mindful organizing in order to achieve construct clarity is different from saying individual and collective mindfulness are unrelated. Mindful organizing was developed with Langer’s (1989) work on individual mindfulness as a foundation. More recent writings on mindful organizing have begun to link it to Eastern mindfulness, with foundations in Buddhist thought (Weick & Putnam, 2006; Weick & Sutcliffe, 2006). I briefly review each of these perspectives, their linkages to mindful organizing, and offer some suggestions for future empirical investigation.

The Western perspective on mindfulness largely derives from Langer’s (1989) work. A Western perspective means that this approach is a variant of an information processing approach (Weick & Sutcliffe, 2006). For Langer (1989), mindfulness is expressed through active differentiation and refinement of existing categories and distinctions (p. 138), creation of new discontinuous categories out of streams of events (p. 157), and a more nuanced appreciation of context and alternative ways to deal with it (p. 159). From this definition, it is evident how it deeply influences the processes of mindful organizing. Active differentiation and refinement, creating new categories to make sense experience, and more nuanced appreciation of context and ways to cope with it are all found in preoccupation with failure, reluctance to simplify interpretations, sensitivity to operations, and commitment to resilience. Deference to expertise is the way in which the work of mindfulness is put into practice to resolve a crisis.

In contrast, Eastern mindfulness is a state of consciousness in which attention is focused on present-moment phenomena occurring both externally and internally (Dane, forthcoming) or moment-to-moment, nonreactive, nonjudgmental awareness (Weick & Putnam, 2006). This also has workplace implications. For example, in a qualitative study of trial lawyers, Dane (2010) found that mindfulness permits lawyers to attend to a wide range of phenomena, such as reactions of the judge, jury members, and opposing counsel, and tailor their arguments to be most persuasive. Eastern mindfulness also has some speculative connections with mindful organizing. The processes of mindful organizing can be viewed in terms of their effects on concentration and strength of insight (Weick & Putnam, 2006). Weick and Putnam (2006, p. 282) provide interesting connections for each of the processes of mindful organizing. Preoccupation with failure, with its focus on emerging failures above all else, induces concentration and potentially vivid insights. Resistance to simplify interpretations and sensitivity to operations increase the vividness of insight by replacing conceptual categories with awareness of current details, but possibly at the expense of concentration. Commitment to resilience is concentration complemented with vivid representation of errors as the means to achieve insights for future actions. Last, deference to expertise increases concentration by routing decisions to experts who are best able to focus on the present phenomenon without distraction.

The preceding discussion of individual mindfulness suggests interesting directions for future conceptual and empirical work. First, what factors moderate the relationship between individual mindfulness and mindful organizing? That is, does the value of individual mindfulness for mindful organizing depend on other traits (e.g., extraversion), skills (e.g., task expertise, Dane, forthcoming), work characteristics (e.g., task interdependence), or practices (e.g., protocols for interaction) that ensure that individual insights are socially shared? Second, if individual mindfulness is an antecedent of mindful organizing, how widespread must individual mindfulness be for mindful organizing to emerge? For example, Fiol and O’Connor (2003) suggest that an organization is less likely to adopt a management fad if it has more mindful senior managers that scan the environment more broadly and question interpretations. Does the individual mindfulness of top managers have cascading effects for employees on the front line? That is, does leader individual mindfulness lead to...
mindful organizing on the front line? Or, does it affect individual mindfulness on the front line? Similarly, what proportion of a workgroup needs to be mindful in order for mindful organizing to emerge? Which form of individual mindfulness (Western or Eastern) has greater impact on the emergence of mindful organizing? In addition to answering these questions, work that examines this question would also be beneficial for empirically differentiating Eastern mindfulness, Western mindfulness, and mindful organizing.

Moreover, is the individual mindfulness of senior managers sufficient to secure the operational benefits of mindful organizing? If so, what proportion of senior managers needs to be mindful? Under what conditions might individual mindfulness capture all the performance benefits of mindful organizing (e.g., task interdependence; individual mindfulness may capture performance benefits for work with low levels of interdependence). Examining these questions would provide important insight into whether hiring mindful managers or selecting mindful employees are viable substitutes for mindful organizing. Blending these three perspectives on mindfulness in organizations offers many exciting opportunities for further empirical and theoretical development.

**Affective Foundations of Mindful Organizing**

As is evident from the review of the emerging research on mindful organizing, prior work has emphasized its structural antecedents and cognitive processes. In doing so, this literature overlooks the degree to which effectively marshalling emotion may be necessary for mindful organizing to lead to nearly error-free performance, how emotion helps constitute the processes of mindful organizing, and how emotion, in the form of narratives, may sustain mindful organizing over time.

Mindful organizing, in part, is a capability to detect weak signals of danger and mobilize swifter interventions to avoid or curtail harm. Detecting weak signals and nearly error-free performance partly rely on effectively recognizing and interpreting one’s own (Klein, 2003) or others’ emotions (e.g., Benner, Tanner, & Chesla, 1996). Emotional information is especially important because it is often a leading indicator of deeper changes. Weak signals are often expressed emotionally through subtle changes in tone, facial expression, body language, or energy level; information might not be able to be expressed through another (nonemotional) channel (Madsen et al., 2006). Klein offers numerous examples from high-reliability contexts (e.g., fire fighting, health care) of how individuals detect weak signals as a result of their own emotion in the form of gut instincts and intuition (Klein, 2003). Benner, Tanner, and Chesla (1996) describe how nurses work to construct an “intimate and particular understanding” of their patients and become “emotionally attuned” to them. Attuned nurses have the capacity to “read” the emotional tone of a patient situation to know when something is “off” when it looks okay on the surface, or to sense that something is actually all right despite appearances to the contrary. Thus, emotional attunement can help mobilize appropriate action in the face of deteriorating conditions and militate against a strong response to every weak signal that might otherwise overwhelm a workgroup (Rudolph & Repenning, 2002). As such, a collective’s emotional attunement to their work (e.g., their patients) should enhance the benefits of mindful organizing on performance (i.e., moderate the relationship between mindful organizing and performance).

The traditional conception of emotion in studies of mindful organizing and high reliability is ostensibly in tension with the conception of emotion in POS. Positive organizational scholarship has emphasized the benefits of positive emotion for broadening and building cognitive and behavioral capabilities (Fredrickson, 1998). The literatures on mindful organizing and high reliability have emphasized that positive emotions associated with success (Miller, 1993) produce an unwarranted illusion of control and optimism that can create blind spots that leave important discrepancies unnoticed (Landau & Chisholm, 1995) or arrogance that creates a reluctance to adapt and change (Schulman, 1993). The two can be reconciled through a deeper consideration of how mindful organizing operates. The process of preoccupation with failure illustrates how emotion is potentially constitutive of mindful organizing and how it relies upon the benefits of both positive and negative emotion.

Preoccupation with failure has emotional underpinnings as a state of tension and alertness. As such, a preoccupation with failure runs the risk of deteriorating into a debilitating state of fear and paranoia. To prevent this descent into negative emotions that can debilitating state of fear and paranoia. To prevent this descent into negative emotions that can debilitating state of fear and paranoia. To prevent this descent into negative emotions that can debilitating state of fear and paranoia. To prevent this descent into negative emotions that can debilitating state of fear and paranoia. To prevent this descent into negative emotions that can debilitating state of fear and paranoia. To prevent this descent into negative emotions that can debilitating state of fear and paranoia. To prevent this descent into negative emotions that can debilitating state of fear and paranoia. To prevent this descent into negative emotions that can debilitating state of fear and paranoia.
focus on failure. Mindful organizing may be best characterized as hopeful. Hope is an emotion grounded in a realistic appraisal of the challenges in one's environment and one's capabilities for navigating around them (Groupman, 2004). Hope combat-bats the vagaries of unexpected events by making it more likely that threats will be labeled challenges, thus instilling a belief in an organization's ability to be resilient, and emphasizing the importance of updating and refining one's appraisal of the environment (Lazarus, 1999). As such, hopefulness is akin to a simultaneous focus on both success and failure that begets scanning for confirming and disconfirming data (Fiol & O'Connor, 2003).

Emotion may also play a crucial role in sustaining the fragile processes of mindful organizing (Weick & Sutcliffe, 2007) over time. Specifically, to maintain focus on error-free operations, members of HROs produce and widely share evocative accounts that preserve and communicate emotions (Weick et al., 1999). Weick and Roberts (1993) describe how personnel on aircraft carrier flight decks recount "war stories" that emphasize how "most positions on this deck were bought in blood." When these accounts are shared, they serve to socialize newcomers and resocialize insiders to the importance of executing tasks with care and attention to their impact on the overall safety of the system. Emotion-laden accounts can help create and sustain performance over time because they are durable, discursive resources that transcend the specific individuals participating and the circumstances surrounding a war story. That is, they possess an ongoing emotional resonance that shapes subsequent action, such that prior learning is not lost and vigilance and alertness remain high.

**Employee Outcomes of Mindful Organizing**

At this early stage in its development, little is known about the subjective experience of engaging in mindful organizing and its effects over time. Although it is rarely acknowledged, mindful organizing is effortful and costly (Levinthal & Rerup, 2006; Vogus & Welsbourne, 2003). Mindful organizing is costly in the sustained commitment and effort it demands from employees on the front line (Roe & Schulman, 2008). High commitment and effort coupled with the potential hazards inherent in the work can result in employee exhaustion and turnover. However, it is possible that mindful organizing may reduce the likelihood of turnover because it provides a great deal of social support and resources that improve the experience of work and enhance performance. These competing hypotheses merit further exploration.

The effects of turnover on mindful organizing also merit investigation. There is suggestive evidence that employee turnover, to the extent that it creates greater variability in experience, may negatively impact mindful organizing (Vogus et al., 2010). However, research in HROs seems to suggest that mindful organizing is maintained and possibly even enhanced by turnover (e.g., Weick & Roberts, 1993). There are two potential explanations for why HROs, like aircraft carrier flight operations, may seem to handle turnover well. First, the turnover facing these organizations may only be planned turnover and should therefore be less disruptive to ongoing organizational processes than more unexpected turnover events. Second, and related, there is some evidence that HROs have strong socialization practices in place that minimize the disruption caused by turnover on processes of mindful organizing (see Weick & Roberts, 1993). That said, exploring the effects of differing types of turnover (e.g., planned/unplanned, voluntary/involuntary) on mindful organizing, as well as the practices that might mitigate the deleterious effects of turnover on mindful organizing (e.g., practices that ease accessing experts, Hofmann, Lei, & Grant, 2009) deserve further empirical examination.

A similarly reciprocal process might also occur between affective commitment to one's profession and mindful organizing over time. For example, Vogus, Ramanujam, and Tangirala (2010) found that professional affective commitment has a direct and moderating effect on mindful organizing, but it is also plausible that, over time, mindful organizing can influence professional commitment. That is, engaging in mindful organizing and its intense focus on delivering error-free performance corresponds with the deeply held professional values that inspired professionals to enter their field (e.g., in nursing, Benner et al., 1996; Institute of Medicine, 2004).

It is equally possible that professional normative commitment (i.e., feeling one ought to remain in the profession, Meyer, Allen, & Smith, 1993) might also be an outgrowth of mindful organizing. As mindful organizing is consistent with ideals of professional practice, it is possible that it could generate normative commitment in the form of a moral duty rather than indebtedness (Meyer & Parfyonova, in press) and lead employees to fulfill their obligations to their profession (i.e., by using all of their skills, collaborating with coworkers, and staying up-to-date on new knowledge). Mindful organizing
may also generate a commitment profile—for example, by simultaneously possessing high levels of affective and normative commitment—that in turn drives subsequent discretionary behaviors like mindful organizing (Gellatly, Meyer, & Luchakm 2006; Wasti, 2005). Therefore, the effects of mindful organizing on multiple forms of commitment to a profession might also further reinforce and deepen the processes of mindful organizing over time.

**Relationship with Leader Attributes and Leadership Processes**

Leaders can enable mindful organizing on the front line in at least two ways: first, by directing attention to safety, and second, by creating contexts in which practitioners feel safe to speak up and act in ways that improve safety. Directing attention to safety and ensuring that the front line speaks up enable greater attention to context and a richer capacity to act, and these constitute mindful organizing (Levinthal & Rerup, 2006). Both directing attention to safety and ensuring employees speak up are a function of leadership style and leader process. Leader style (e.g., empowering transformational leadership, Yun, Faraj, & Sims, 2005) and leader process (e.g., safety climate, psychological safety, and leader–member exchange [LMX]) can affect what employees attend to and how they carry out their work.

Transformational leadership is a leadership style that holds potential for influencing mindful organizing. Prior research has found that the commitment to employee welfare and empowerment characteristic of a transformational style are strongly associated with employee (e.g., satisfaction and commitment) and organizational (unit performance) outcomes in high-hazard industries (Gilmartin & D’Aunno, 2007). Such an empowering leadership style also allows employees to think, apply their knowledge (e.g., speak up), and learn by doing. For example, in a study of trauma units, Yun and colleagues found that applying an empowering approach during low- to moderate-severity trauma events resulted in greater learning by team members without compromising patient safety (Yun et al., 2005). As such, empowering transformational leadership may enable the processes of mindful organizing.

Leaders may be able to influence the processes of mindful organizing through employee perceptions of safety climate. As mentioned earlier, safety climate is a function of perceptions of a leader’s commitment to safety, priority placed on safety, and dissemination of safety information (Katz-Navon et al., 2005). For example, a supervisor who disregards safety procedures whenever production falls behind schedule or who punishes people for mistakes, signals a low commitment to safety and that a low priority is placed on safety (Carroll & Quijada, 2004; Zohar, 2000). Safety climate potentially influences mindful organizing by directing employees’ attention to their context and the factors influencing its safety. Specifically, a strong safety climate means people more clearly understand threats to safer practice (Carroll & Quijada, 2004; Zohar, 2000) and attend more closely to errors and other incidents (Naveh, Katz-Navon, & Stern, 2006; Weingart, Farbstein, Davis, & Phillips, 2004), consistent with a preoccupation with failure. A safety climate also heightens safety motivation (i.e., willingness to exert effort) and participation in voluntary safety activities (e.g., helping coworkers with safety-related issues and attending safety meetings) (Neal & Griffin, 2006) necessary for reluctance to simplify interpretations and sensitivity to operations. Last, a safety climate produces more open and constructive problem solving in the face of errors (Hofmann & Mark, 2006; Singer, Lin, Falwell, Gaba, & Baker, 2009), commitment to resilience, and deference to expertise. Examining safety climate could also help illuminate the microfoundations of mindful organizing as leaders who are personally committed to safety and give it a high priority have employees who are more likely to make internal attributions for safety incidents (i.e., incidents are seen as being more correctable; Hofmann & Sterzer, 1998), which is consistent with a preoccupation with failure, a reluctance to simplify interpretations, and a commitment to resilience. Further study of the attribution process for errors, near misses, and other threats to safety would deepen our understanding of the microfoundations of mindful organizing.

Mindful organizing may also be enabled when leaders create a context in which employees are empowered to speak up and act to resolve threats to patient safety. Speaking up is more likely to occur in an organization when psychological safety is present (Edmondson, 1999). Leaders create psychological safety through subtle acts, such as changing the language used in an organization from threatening terms like “errors” and “investigations” to more psychologically neutral terms such as “accidents” and “analysis” (Edmondson, 2004). Leaders also create psychological safety through being more inclusive, by means of words and deeds that appreciate others’ contributions (Nembhard & Edmondson, 2006).
and by pardoning employees who disclose their unintentional mistakes (Edmondson, 1996). This leads to a greater disclosure of errors and close calls (Edmondson, 1996) that produces richer understanding of context and allows for the more detailed processing of a wider range of safety data, as in preoccupation with failure. Psychological safety also produces higher levels of engagement in patient safety improvement projects (Nembhard & Edmondson, 2006; Tucker, 2007) that create the capacity to act in response to errors and unexpected events required of commitment to resilience and deference to expertise.

In high-quality LMX relationships, the leader and subordinate engage in collaborative sense-making that produces a richer and more elaborate set of role behaviors to enact (Hofmann, Morgeson, & Gerras, 2003). High-quality LMX relationships make it more likely that employees expand role definitions to include additional safety tasks (Hofmann et al., 2003) and foster open and constructive communication about safety and errors (Hofmann & Morgeson, 1999). However, prior work on LMX has tended to focus on individual processes and individual safety. It would be fruitful to see if high-quality LMX leads to improved higher levels of mindful organizing and organizational performance outcomes.

**Additional Construct Validation**

For mindful organizing to have maximum impact on research and practice, the construct needs further empirical validation and conceptual development. Prior work has established convergent validity (see Vogus & Sutcliffe, 2007a), criterion validity (mindful organizing has been shown to reduce medication errors and patient falls over time, Vogus & Sutcliffe, 2007a, b), and to a limited extent discriminant validity (i.e., differential differentiation from related constructs, Vogus & Sutcliffe, 2007a). A starting point for further construct validation would be to move beyond the conceptual differentiation from related constructs presented in this chapter to empirical differentiation. Specifically, future research should use confirmatory factor analysis to test the discriminant validity of error management culture (van Dyck et al., 2005), psychological safety (Edmondson, 1999), safety climate (Zohar, 1980), and mindful organizing.

Another conceptual and empirical area ripe for development is the behavior of mindful organizing over time. Prior work paradoxically suggests that mindful organizing is fragile and needs to be continuously reaccomplished, but at the same time suggests that mindful organizing is a stable characteristic of HROs (Weick et al., 1999; Weick & Sutcliffe, 2001; Weick & Sutcliffe, 2007). Rerup’s (2009) excellent longitudinal study of Novo Nordisk seems to support the fragility of mindful organizing (see also Roberts et al., 2005 for a different example). He finds that mindful organization gradually erodes into more mindless organizing in the face of other (financial) pressures. At Novo, mindful organizing was only restored after instituting a bundle of practices designed to sustain vigilance to weak signals of threats to quality and safety—the Novo Way of Management (Rerup, 2009). This work offers a strong qualitative foundation for further examination of the processes of mindful organizing over time.

The generalizability of mindful organizing remains poorly understood because prior work has either been qualitative examinations of HROs in which mindful organizing was deeply ingrained (e.g., Schulman, 1993) or, more recently, how variation in mindful organizing relates to safety outcomes (e.g., Vogus & Sutcliffe, 2007a). We are lacking in intervention studies in which an organization moves from less mindful organizing to more mindful organizing and, in turn, from reliable performance to highly reliable performance. There are promising leads in the existing literature in the form of two longitudinal case studies. Roberts and colleagues (Madsen et al., 2006; Roberts et al., 2005) study of a PICU suggests that a change in leadership—specifically leaders trained in high-reliability principles—can improve mindful organizing and move an organization from low reliability to high reliability. Similarly, Rerup’s (2009) research at Novo Nordisk suggests that comprehensively implementing a new set of management practices (the Novo Way of Management) can restore mindful organizing after its collapse. Future research can build on these retrospective qualitative accounts to a more traditional assessment of change effectiveness. For example, one might assess baseline levels of mindful organizing and then implement leader training on high-reliability principles, front-line employee training in high-reliability principles, or a systematic implementation of a new set of management practices, and track the effects of mindful organizing and reliability over time. Another option might be assessing levels of mindful organizing prior to a new leader taking over an organization or organizational unit and tracking those effects over time. Yet another possibility would be to implement a...
more focused intervention shown to be effective in improving safety (e.g., Executive WalkRounds; Frankel, Grillo, Pittman, Thomas, Horowitz, Page, & Sexton, 2008) and see if it operated through enhancing processes of mindful organizing.

In sum, these future directions indicate that, even though mindful organizing is a promising construct for understanding positively deviant safety performance, there is a great need for further conceptual and empirical work.

Conclusion

This chapter has outlined the mindful organizing construct, detailed its contributions, and proposed five new directions for further theoretical development and empirical testing: exploring the relationship between individual mindfulness and mindful organizing, building affective foundations of mindful organizing, expanding outcomes of mindful organizing examined to include employee outcomes, investigating the roles leaders and leadership processes play in fostering mindful organizing, and finally, conducting further construct validation. This agenda also holds the potential to deepen mindful organizing’s connection and contribution to POS.

Part of the strength of POS is its focus on richly capturing the subjective experience of organizational life. Mindful organizing offers a compelling lens for understanding the cognitive and social processes through which those on the front lines successfully navigate high-risk, high-hazard work. Further research on the affective foundations of mindful organizing will only enrich our understanding of the subjective experience of exceptional performance in trying circumstances. The research on high reliability and mindful organizing also provocatively prods POS to rethink positive emotions. Specifically, in high-hazard organizations, positive emotions like happiness may lead to deleterious outcomes (e.g., Landau & Chisholm, 1995). Therefore, in these organizations, positivity might need to strike the more balanced tone of hope or even emotional ambivalence (e.g., simultaneously holding positive and negative conceptions of a situation).

In POS, positivity is socially embedded. Mindful organizing embodies this embeddedness as a collective capability. Existing research on mindful organizing further shows how social practices enable it, and some of the suggested future directions will further reveal how it emerges. For example, studying the relationship between individual mindfulness and mindful organizing will demonstrate if and when a group of mindful individuals mindfully organize. This has implications for other emergent capabilities that are hallmarks of POS (e.g., compassion, resilience).

In addition to being a powerful lens for understanding organizational life, POS is also a science (Cameron et al., 2003). Mindful organizing offers substantial contributions to the science of POS as a construct that has been rigorously developed, well validated, and strongly related to important outcomes across a number of organizations. As such, it provides one possible template for developing measures of positive organizational capabilities and building a systematic research program through which they are tested and refined. For all these reasons, POS and mindful organizing enrich each other in important ways. I hope this chapter plays a role in deepening and sustaining this fruitful relationship.

Note

1. In this chapter, I view Vogus and Sutcliffe’s (2007a) measure of mindful organizing as “the” measure of mindful organizing because it is the best validated—its items emerge directly from theory and field observation (Vogus, 2004), it demonstrates strong psychometric properties (i.e., reliability and validity), it is a collective measure (i.e., the referent of the items is the collective, and it meets statistical criteria for aggregation to the group level), is linked to theoretically justified antecedents (professional experience, human resources practices), and is significantly related to performance over time (e.g., medication errors and patient falls). I know of two alternative measures of collective mindfulness. Knight’s (2004) master’s thesis measures collective mindfulness of lifeguards working at community swimming pools, but this measure demonstrated poor psychometric properties and failed to impact performance outcomes. Ray, Baker, and Plowman (forthcoming) developed a measure of “organizational mindfulness” and validated it using a sample of business schools. Their measure had strong psychometric properties and was well grounded in theory (Weick et al., 1999), but also has significant limitations. First, it treats each process of mindful organizing as independent. Prior theorizing views these processes as observable indicators of the underlying process of mindful organizing (e.g., Weick et al., 1999). Second, it did not link its measure to any performance indicators (i.e., no evidence of criterion validity) or antecedents. Third, they did not demonstrate that their measure was collective in a statistical sense. That is, they offered no evidence for aggregating perceptions of organizational mindfulness to a collective level.

References


