

**SENSEMAKING IN CRISIS AND CHANGE:
INSPIRATION AND INSIGHTS FROM WEICK 1988**

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Maitlis, S., & Sonenshein, S. (2010). Sensemaking in Crisis and Change: Inspiration and Insights From Weick (1988). *Journal of Management Studies*, 47(3), 551-580.

We thank Joep Cornelissen, Claus Rerup, Tim Vogus and Karl Weick for their helpful comments on a previous draft of this paper.

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ABSTRACT

When Karl Weick's seminal article, *Enacted Sensemaking in Crisis Situations*, was published in 1988, it caused the field to think very differently about how crises unfold in organizations, and how emergent crises might be more quickly curtailed. More than twenty years later, we offer insights inspired by the central ideas in that article. Beginning with an exploration of key sensemaking studies in the crisis and change literatures, we reflect on lessons learned about sensemaking in turbulent conditions since Weick (1988), and argue for two core themes that underlie sensemaking in such contexts: shared meanings and emotion. We examine when and how shared meanings and emotion are more and less likely to enable more helpful, or adaptive, sensemaking. We conclude with some suggestions for future research in the sensemaking field.

Keywords: crisis, change, emotion, enactment, meaning, sensemaking

Weick's (1988) paper, "Enacted Sensemaking in Crisis Situations," appearing as part of the *JMS* Special Issue on *Industrial Crisis Management: Learning from Organizational Failures*, was part of a growing body of research that recognized that what are often thought of as predominantly technological failures have a strong human element to them. By shifting the focus from faulty technology to people's interactions with technology and with each other, this literature drew our attention to the highly consequential role of cognitions and actions during crises. In so doing, it not only increased our appreciation for the complex causes of many organizational crises, but also exploited important opportunities to build understanding of key organizational processes. Sensemaking, which lies at the core of Weick's (1988) seminal piece, is one such process.

Sensemaking is the process of social construction that occurs when discrepant cues interrupt individuals' ongoing activity, and involves the retrospective development of plausible meanings that rationalize what people are doing (Weick, 1995; Weick et al., 2005). Central to the development of plausible meanings is the bracketing of cues from the environment, and the interpretation of those cues based on salient frames. Sensemaking is thus about connecting cues and frames to create an account of what is going on.

The current paper is inspired by Weick (1988), and influenced by some of his subsequent writings about sensemaking. In this paper, we take stock of the contributions made by Weick's (1988) *Enacted Sensemaking* article (hereafter, W88), examining how it has influenced not only crisis management but sensemaking research more broadly. We begin by briefly summarizing core insights from W88, which is one of the earliest papers to examine sensemaking processes in the context of a crisis or disaster, and one of the few to address how crises in organizations are enacted rather than encountered by those who work in them. We then consider key developments

in sensemaking research since W88, expanding our analysis to look not only at sensemaking and crisis, but also at sensemaking and the often turbulent context of organizational change.

There are two main reasons for our choice to explore studies of sensemaking about organizational change alongside those of sensemaking and crises. First, while the sensemaking literatures on crisis and change have developed with little explicit integration, we see important parallels between the two contexts. For example, both are often situations characterized by ambiguity, confusion, and feelings of disorientation. Also, scholars in both fields originally emphasized technological factors, such as technical faults during crises or technological implementation difficulties during change, to explain outcomes, and thereby obscured the role of users of that technology and the meaning they make of it (Orlikowski, 1996; Orlikowski and Gash, 1994). Furthermore, although we sometimes think of crises as occurring very quickly and change unfolding over long periods, a crisis can also be enacted very slowly, and a change can occur in highly pressurized conditions. In addition to these frequent similarities between crisis and change contexts, a second benefit of exploring the influence of W88 on organizational change research is that it allows us to address the potential limitations of an exclusive focus on crisis. Weick (this issue) acknowledges that the study of crises may lead to oversimplified models of sensemaking that take only a few factors into account (Hernes, 2008). We suggest that integrating insights from studies of change enables a natural extension to research on crisis sensemaking because change is a much more commonly occurring event than crisis that nevertheless shares with it a number of important similarities, and has been one of the most extensive and fruitful streams in the sensemaking literature (e.g., Balogun and Johnson, 2004; Bartunek et al., 2006; Corley and Gioia, 2004; Gioia and Chittipeddi, 1991). Reflecting on how W88 has influenced this body of work therefore provides another window into the impact of

W88 on the sensemaking field more generally. Although sensemaking is triggered by any interruption to ongoing activity, crisis and change are conditions that, because of the degree of disruption they incur, offer particularly powerful occasions for sensemaking.

In exploring the sensemaking literatures for crisis and change, our purpose is not to engage in a comprehensive review. Rather, we want to reflect on what we believe are key lessons about sensemaking in these turbulent contexts from the last twenty years, and to build on these to discuss some common themes in sensemaking research in the contexts of crisis and change. In selecting these themes, we wish to highlight some important overlaps in this body of research, recognizing that our analysis is inevitably selective because of the large amount of sensemaking research published during the last twenty years. Nevertheless, the themes we identify are important signposts for how the sensemaking literature has developed in this time and intimate some opportunities for future sensemaking research that we consider due, or even overdue, for further exploration.

ENACTED SENSEMAKING AT BHOPAL

W88 draws on Shrivastava's (1987) analysis of a Union Carbide gas leak that occurred in Bhopal in 1984 to provide a vivid illustration of sensemaking during crisis. Weick argues that, as low probability/high consequence events, crises place strong demands on sensemaking. A central point he makes is that, when we take action to try to sort out a crisis, we simultaneously generate the raw material that is both used for sensemaking and that affects the unfolding of the crisis itself. As Weick notes, "There is a delicate tradeoff between dangerous action which produces understanding and safe inaction which produces confusion" (p. 305). The concept of enactment underpins this statement--the idea that people generate the environment through their actions and

through their attempts to make sense of these actions (Smircich and Stubbart, 1985). Enactment thus sits in sharp contrast to the more commonly held view in which organizations are distinct and separate from their environments, and the ensuing prescription that those in organizations should direct their energies towards assessing and responding to what is “out there”. Weick uses the example of the Union Carbide control room operator to explain how an individual “confronts a puzzling assortment of dials, lights and sounds and discovers, through action, what the problem is, but in doing so, shapes the problem itself” (p. 306).

While enactment is a core focus of W88, Weick addresses three related and foundational concepts for sensemaking: commitment, capacity and expectations. He looks first at commitment. Referring to Union Carbide’s prior decision to save costs by disconnecting the temperature control equipment for the gas, Weick notes, “When people make a public commitment that an operating gauge is inoperative, the last thing they will consider during a crisis is that the gauge is operating. Had they not made the commitment, the blind spot would not be so persistent” (p. 310). Second, he explores the importance of capacity for crisis perception (“people see those events they feel they have the capacity to do something about” (p. 311)), for crisis management (during a crisis, there is often “a reduction in the level of competence directed at the problem as well as an overall reduction in the use of action to develop meaning” (p. 312)), and for crisis potential, through the number and diversity of actors available (“If action is the means to understanding, then the number and quality of actors available to do that acting and interpretation become crucial variables” (p. 312)), which in the case of the Bhopal disaster were sharply affected when operating staff on each shift were cut by 50%. Finally, Weick considers how top management’s assumptions about the Bhopal plant’s unimportance, and the expectations that follow from this and that filter right through the organization, lead to the enactment of a self-

fulfilling prophecy (“A plant perceived as unimportant proceeds to act out, through turnover, sloppy procedures, inattention to details, and lower standards, the prophecy implied in top management’s expectations” (p. 313)). All of these examples highlight how crises unfold through the meanings that are made of seemingly unconnected and even inconsequential events, and how these meanings often derive from the actions of a range of different employees.

Weick’s assessment of Bhopal, and sensemaking during crises more generally, is intriguingly optimistic. First, he argues that crises are more controllable than we think, and that this very perception of control allows people to notice more things they can affect, and, in acting based on these perceptions, to transform more complex tasks into simpler ones. Consistent with a core premise of sensemaking, that action precedes cognition, Weick argues that, “action clarifies what the problem may be, specific action renders many cues and options irrelevant, and action consolidates an otherwise unorganized set of environmental elements” (p. 315). By this he means that while crises involve much complexity, individuals can take actions to reduce this complexity. As a result, enacted sensemaking can provide the basis of a crisis prevention and management ideology by leveraging a kind of human involvement in systems that is rooted in shared beliefs about self-control and voluntary cooperation, and that allows people to “think about crises in ways that highlight their own actions and decisions as determinants of the conditions they want to prevent” (p. 316). This, Weick believes, is perhaps the most powerful way to address crises and crisis management.

RESEARCH ON SENSEMAKING AND CRISIS

Following W88 and other key writings at this time (e.g., Gephart, 1984; Perrow, 1984; Shrivastava, 1987), a considerable body of work has grown to address sensemaking in the

context of crises. Some of this focuses on sensemaking *in* crisis, and some on sensemaking *about* crisis. In this section, we explore how some of the most important ideas from W88 have played out and been developed in subsequent writings on sensemaking and crisis.

Sensemaking in and about Crises

An organizational crisis is “a low-probability, high-impact event that threatens the viability of the organization and is characterized by ambiguity of cause, effect, and means of resolution, as well as by a belief that decisions must be made swiftly” (Pearson and Clair, 1998, p. 60). Such conditions provide powerful occasions for sensemaking, as individuals’ ongoing routines are interrupted and they are compelled to ask themselves, and those around them, what is going on. Studies of crisis sensemaking fall into two broad streams. First, we see research on sensemaking as it precipitates or unfolds during a crisis that spans a range of contexts, including mining disasters (Wicks, 2002), climbing disasters (Kayes, 2004), and disasters in entertainment events (Vendelo and Rerup, 2009), as well as Weick’s work on the Bhopal accident (W88; Weick, this issue), the Tenerife air crash (Weick, 1990), the Mann Gulch fire (Weick, 1993) and the medical disasters of Bristol Royal Infirmary (Weick and Sutcliffe, 2003). A second strand of research addresses how sense is made of crises after they happen, often drawing on public inquiry reports and other documents which have constructed an account of what happened, why it happened, and who was responsible. Public inquiries have been said to represent the longer term organizational responses to crises from which institutional and organizational learning can occur (Brown, 2000; Shrivastava et al., 1988; Turner, 1976). Seen as events in which “micro-level sensemaking practices produce the macro social order” (Cicourel and Knorr-Cetina, 1981; Gephart et al.,

1990, p. 44-5), they reveal much about how shared sense is made and given after a crisis (Gephart, 1993).

Looking across these two streams of crisis sensemaking research, we see three important themes, which reflect important individual, collective, and institutional influences on sensemaking processes. First, individuals' early, positive, public evaluations shape sensemaking in crisis by preventing them and others from bracketing contradictory cues until it is much too late (Weick and Sutcliffe, 2003; Salancik and Pfeffer, 1978). We also see, however, that after a crisis, such positive evaluations can have a powerful generative effect on organizations, enabling renewal, and energizing restorative action among their members. Second, we examine studies of collective sensemaking in crisis and see the range of challenges facing groups and teams trying to generate shared understandings and coordinated action in conditions that are fast-moving and frightening. Third, we show that sensemaking in crisis is cumulatively influenced by the institutional contexts in which the organization and its members are embedded, and that sensemaking about crises often serves to maintain these institutions.

We begin by considering studies that have shown the fatal influence of strong, positive statements that a situation looks ordinary and will likely turn out for the best. For example, Kayes (2004, p. 1277) notes how pre-summit assertions made by mountain climbers, such as 'as long as the weather holds, we will have success' and 'we've got the Big E [Everest] all figured out' prevented them from sensing what was really an ill-defined problem with no clear goal or solution, and ultimately led to the deaths of eight climbers. Similarly, Weick (1993, p. 635) notes the effect of the statement by the spotters on the smokejumpers' aircraft during the Mann Gulch fire that "the crew would have it under control by 10:00 the next morning" (Maclean, 1992, p. 43). This strong, optimistic construction of the situation provided a powerful frame for the

smokejumpers, blinding them to growing evidence to the contrary. Weick (W88) also notes how commitment to action and the tenacious justifications that follow it create blind spots. In particular, when these commitments are active, voluntary and public – for example, publicly assessing, explaining, and recommending actions in response to a crisis – people are much more likely to feel bound to them (Cialdini, 1998; Salancik, 1977). It is this kind of staunch commitment, coupled with the tendency to seek confirmatory and avoid disconfirmatory evidence (Nickerson, 1998; Weick and Sutcliffe, 2003), that can blind individuals to contradictory cues.

Recent studies of crises suggest that public commitments in the form of optimistic evaluations of a situation are especially likely to generate sensemaking blind spots. While research in psychology shows that “positive illusions” of control over the environment and of what the future holds can be highly adaptive (Taylor, 1989; Taylor and Brown, 1988), in certain organizational contexts, such illusions are potentially lethal. Indeed, Landau and Chisholm (1995) argue that pessimism, with the failure-avoidance management strategy it engenders, is the way to prevent a crisis, and suggest that we should “institutionalize disappointment” to protect against organizational self-deception. These ideas are consistent with research on high reliability organizations, which finds that members are instilled with a “preoccupation with failure” and encouraged to use “vigilant wariness” at all times (Weick et al., 1999; Weick and Sutcliffe, 2001). Although optimism, and the hopeful situation assessments that often accompany it, is often intended to motivate team members before a dangerous mission, it can instead create blinkers and prevent individuals from adapting their understanding of an unfolding situation to accommodate new information as it becomes available.

In contrast, optimistic sensemaking *after* a crisis can have a powerful, beneficial effect on organizations and their members. In a study of CEO discourse following devastating fires at two US manufacturing/processing plants, Seeger and Ulmer (2002) found the CEOs speaking of the crisis as an opportunity for organizational renewal (e.g., Dutton, 1993), emphasizing possibilities over issues of cause and culpability, and supporting these statements with guarantees of jobs and salaries for those who were temporarily displaced. Quite differently from the public commitments that contributed to the Bhopal crisis (W88), these CEOs' positive statements were enabling, permitting employees and other stakeholders to enact a trajectory of renewal and growth over subsequent years. Similarly, senior leaders' "recovery" interpretation after the roof of the Baltimore & Ohio Railroad Museum collapsed allowed organizational members to enact the disaster as a temporary setback and opportunity for renewal (Christianson et al., 2009). Clearly, then, positive, public evaluations of a situation can create frames for sensemaking that lead to disaster, but they can also enable post-crisis sensemaking that enables recovery and replenishment.

Second, we consider what we have learned about the complexities of collective sensemaking during a crisis. Weick (1990) identifies "pluralistic ignorance" (Miller and McFarland, 1987), the phenomenon in which "I am puzzled by what is going on, but I assume that no one else is" (Weick, 1990, p. 588), as an important contributor to the early stages of a crisis. The belief that others have made plausible sense of the situation prevents individuals from taking an action – even merely signaling their confusion to others – that could prevent a crisis. In Mann Gulch, collective sensemaking was made especially difficult because the smokejumpers' scattered locations made verbal and nonverbal communication nearly impossible, and because of the smoke and the noise and heat of the fire. In addition, team members were relative strangers

and were unfamiliar with the team leader, and therefore less likely to trust each other's actions or reactions (Weick, 1993). As a result, the firefighters experienced a growing panic as their incomprehension at the situation increased and they began to fear for their lives.

Vendelo and Rerup (2009) also examine the problem of crisis sensemaking among strangers in the context of the Roskilde Festival disaster, one which they characterize as a low risk context where swiftly incubating accidents can occur. Their analysis of an accident in which nine members of the audience suffocated or were crushed to death near the stage, while the band unwittingly played on, reveals that security guards failed to make sense of the swiftly incubating threat partly because they did not have "attentional coherence" (Rerup, *forthcoming*). That is, disparate individuals, teams, and levels were not jointly involved in scanning, sharing, and interpreting information to coordinate collective attention to a particular issue. As a result, each individual had little information about the issues to which others were attending, leading to a failure to coordinate information about potential threats. The coordination of information and the ability to create a shared understanding of the situation were made still harder by the increasingly intense emotional reactions of the guards and crowd, particularly the "frantic" behavior of the Front Area security guards, and the "desperation" of another guard who could see people were dying and not being helped. Although the disaster unraveled in just twenty minutes, these minutes were critical for the number of lives lost.

The timescales are a little longer in Dunbar and Garud's (2009) analysis of collective sensemaking in the Columbia shuttle disaster, where they examine organizational members' struggle to make sense of the situation over several days. Focusing on how knowledge is distributed, they note that, in this kind of crisis, people make sense by using a variety of knowledge sources that are distributed within different action nets. As a result, we see

“interpretive indeterminacy”, as individuals draw on different knowledge bases to develop different understandings about what is happening and what should be done to prevent crisis.

If sensemaking in crisis is difficult, we can see that collective sensemaking in crisis is near impossible in the absence of social processes that lead to collective mindfulness, the enriched collective awareness that facilitates the “construction, discovery, and correction of unexpected events capable of escalation” (Weick et al., 1999, p. 88). We return to this point later in the paper when we examine the conditions under which a collective is more likely to engage in adaptive sensemaking.

Moving up from studies of individuals’ and collectives’ influences on sensemaking, we last address institutional effects on sensemaking in crisis, and the effects of post-crisis sensemaking on institutions. Less sensemaking research has been conducted at this level, despite a growing acknowledgment of its importance both for institutional theory and sensemaking theory (Jennings and Greenwood, 2003; Weber and Glynn, 2006; Weick et al., 2005). A powerful example of institutional effects on sensemaking in crisis is provided by Wicks’ (2002) study of the 1992 Westray mine disaster, in which he explores how institutional and organizational logics over time affected organizational members’ sensemaking in ways that led them to overlook important cues. At Westray, miners’ daily practices were shaped by institutional and organizational rules, organizational and non-work roles, and by their identities as ‘real men’, which created a “mindset of invulnerability” through which miners framed their work. This frame in turn led miners to feel buffered from fear, and to overlook the potential dangers of the environment in which they were employed, and so, to accept inappropriate risks. Over time, miners’ day to day activities and the institutional and organizational sanctions that accompanied them, meant that those working in the most dangerous conditions came to

understand them as “normal” and unthreatening, creating fertile ground for one of the worst mining disasters in Canadian history. Wicks’ study builds on W88’s core theme of enacted sensemaking to show how individuals enact crises not only as they “tap the gauge or call the supervisor or proceed with a tea break” (p. 309), but through engaging, unwittingly, in “institutional work” (Lawrence and Suddaby, 2009) that maintains the rules and norms that provide the bedrock for a situation in which crisis is almost inevitable. Moreover we see how this recursive process enacts and re-enacts shared understandings, as dominant logics shape daily routines, which in turn recreate structures, identities and expectations that enable and constrain certain collective practices.

While organizational members play a key role, they are not, of course, the only individuals engaging in practices that maintain these institutions. Research on post-crisis sensemaking has shown that public inquiries constitute an important form of institutional work. In a series of studies, Brown (2000, 2003, 2005; Brown and Jones, 2000) explores how inquiry reports such as those following the Piper Alpha explosion and the collapse of Barings Bank use rhetorical strategies of normalization, observation and absolution to legitimize and restore trust in the social institution in question. These studies further suggest that such reports present the inquiry team’s sensemaking as authoritative, offering an account of the crisis that accomplishes verisimilitude and hegemony. Post-crisis inquiries, often despite laudable efforts to develop an accurate understanding of events, thus necessarily result in reports that provide a plausible and authoritative account, upholding the social institutions under investigation.

The media are also critical in shaping in post-crisis accounts, and therefore play a key role in maintaining and disrupting institutions. In their analysis of sensemaking following the Westray mine disaster, Mills and O’Connell (2003) examine the media’s construction of the

disaster and the impact of the account that circulated. Implicating journalistic work practices and the relationships between news workers and those holding power in organizations, they discuss how, early on, a discourse of natural disaster and tragedy prevailed over accounts that incorporated human agency and organizational culpability. The propagation of this account, the authors argue, had a significant impact on the broader discourses of worker safety and organizational responsibility in the province in which the disaster occurred, thereby contributing to the maintenance of the institution that enabled its slow incubation. Looking across research in this third core theme, we see that sensemaking in crisis is significantly shaped by institutions, but also that individuals enact understandings, both during and after crises, that maintain and even strengthen these same institutions.

RESEARCH ON SENSEMAKING AND CHANGE

While the influence of W88 is most immediately evident in writings on crises, we also see its impact in another area of research dominant in the sensemaking literature, that of organizational change. Although there are clearly important differences between the contexts of crisis and change, they also have much in common. One of the defining characteristics of most crises is that small failures become linked and amplified (Weick, 1990) in a rapidly changing environment (Weick, 1993). In situations such as Bhopal (Weick, 1988), Tenerife (Weick, 1990) and Mann Gulch (Weick, 1993), a rapid change in circumstances—and in how individuals subsequently enact their environments—imposes a set of structures that become too powerful to manage. A change in circumstances interrupts well-rehearsed patterns of action in a way that requires individuals, groups or other social entities to re-enact their environments. Similarly, in organizational change, a change in circumstances interrupts well-practiced patterns, because

change, by definition, involves a movement in an organizational entity over time (Van de Ven and Poole, 1995). In much the same way that social context, identities, and cues change as small failures become linked and amplified during a crisis, so too do these same elements during an organizational change. Moreover, both change and crises are inherently ambiguous events which typically generate confusion for those involved and observing. Both can also be threatening, triggering feelings of fear and anxiety (Ashford, 1988; Weick, 1993). In the following section, we revisit some of the recent writings on sensemaking and change, highlighting two primary themes that helps integrate and categorize the literature around change actors and change types.

Sensemaking and Change Actors

With the growing interest in the microprocesses that underlie organizational change (e.g., Dutton et al., 2001; Reay et al., 2006), we begin by considering sensemaking by the different actors involved in strategic change processes. These individuals can have a profound influence on how organizations adapt, and the sensemaking literature highlights the interpretive processes that undergird this adaptation. One key factor that differentiates these studies is whose sensemaking is examined. The common focus, as in much of organizational theory, is on top management. For example, Gioia's research on strategic change emphasizes top management sensemaking (Gioia and Chittipeddi, 1991; Gioia and Thomas, 1996; Gioia et al., 1994). This brings into focus how top managers not only make sense of the external environment to formulate change strategies, but equally importantly how they influence others' meaning constructions through sensegiving. The goal of this research is to access top managers' interpretive systems and understand how these impact important processes and outcomes of change (Thomas et al., 1993).

While top managers play a central role in change efforts, the literature has more recently broadened to emphasize the role of middle managers during change. For example, Balogun and her collaborators (Balogun, 2003; Balogun et al., 2003; Balogun et al., 2005) have articulated the vital role of middle managers in mediating the sensemaking of top managers and lower level employees, showing, for example, how middle managers' sensemaking moves from espousing old cognitions to endorsing new cognitions. Top management provides important details about the change, while middle managers are left to construct their own meanings of it, and therefore play a crucial role in how change ultimately gets passed on to frontline employees. Specifically, Beck and Plowman (*forthcoming*) highlight how middle managers frame and enrich the interpretation of unusual events in organizations, an activity they are uniquely positioned to do because of their proximity to the interpretations of both strategic and frontline managers. Another key activity for middle managers during change is emotional balancing, which they do partly by engaging in sensegiving that manages subordinates' emotions and creates a sense of continuity and change (Huy, 2002). More generally, this research shows that organizational change gets enacted through middle managers who mediate the sensemaking between top managers and employees on the frontline to affect both cognitions and actions.

A focus on managers—whether top managers or middle managers—is important, but in most change efforts, frontline employees are often responsible for implementing the bulk of change efforts. Accordingly, a key recent development in the literature has been to unpack how frontline employees make sense of change in ways that differ from management. This move is critical as it suggests potentially competing enactments of an organizational change. For example, since employees develop their own sense of a change that can deviate from managers' in dramatic ways (Bartunek et al., 2006; Sonenshein, *forthcoming*), employees may essentially

be enacting a type of change that differs from those of top managers. What might be a strategic change to top managers can be a change that has strong ethical, social or emotional overtones for employees (Sonenshein, 2009), something that may result in different pockets of shared meanings and subsequently divergent actions among these different groups. In looking across all three categories of focal actors, it is evident that change is a multi-vocal process, in which groups of members advance potentially discordant interpretations about their organizations (Dawson and Buchanan, 2005). As a result, sets of shared meanings develop around change, but the extent to which these meanings are shared widely across different levels of the organization may vary greatly.

Sensemaking and Change Types

A second important way to differentiate the extensive body of research on sensemaking and change is to look at the type of change under study. While most of our discussion so far has reflected the dominant emphasis of strategic change in the literature (e.g., Balogun and Johnson, 2005; Gioia and Chittipeddi, 1991; Rouleau, 2005), scholars have also addressed two related areas of research. First, some have focused on organizational identity change as a necessary component of the strategic change process. For example, Corley and Gioia (2004) examine how individuals cope with the identity ambiguity that comes from a corporate spin-off, highlighting the role of leader sensegiving in enabling members to construct a coherent organizational identity. Similarly, Fiol's (2002) process model shows how leaders use language to unfreeze employees' existing meanings about an organization's identity, replace them with new meanings about its identity, and then refreeze those meanings. From this research we see that a fundamental aspect of strategic change is the breakdown of shared meanings around an

organizational identity and the subsequent establishment of a new, different shared organizational identity. But we also see a key challenge, as individuals undergoing change are often emotionally tied to their current organizational identity and therefore reluctant to abandon it (Chreim, 2002).

Another development in sensemaking research has been recognizing its role in linking organizational change and social change. Gioia (1992) emphasized the importance of limited scripts (i.e., scripts that are devoid of key dimensions, in this case, ethics) in the sensemaking process that led to catastrophic events surrounding the Ford Pinto, which had broad social implications for automobile safety and corporate social responsibility, in addition to Ford's strategy. Sonenshein (2007) developed a model of sensemaking during decision making about ethical/social issues, arguing that issues are not objectively ethical/social but rather imbued with meanings that make them so. Scholars have also developed models of sensemaking about corporate social responsibility (Basu and Palazzo, 2008), theorizing how organizations make sense of and give sense about the meaning of social change (Maon and Swaen, 2009). These models suggest that the kind of sense that is made of a potentially socially important issue in turn affects how individuals respond to it. This is especially so when a group of individuals together develops a shared understanding of the social significance of certain issues. Weick (1999) identifies such a case in the Worker's Defense Committee in Poland, whose collective sensemaking in the face of confining and coercive macro structures led to micro changes that brought about widespread democratic social change. This bottom-up approach to social change is also evident inside work organizations, where actors use both sensemaking and sensegiving to pressure organizations to adopt certain social issues (Sonenshein, 2006).

Looking across these studies of strategic, identity and social change, we see that all three types of change emphasize the importance of shared meanings, whether around a key strategy, collective identity or perception of social justice. Where they differ, however, is around the types of shared meanings emphasized, with strategic change primarily focusing on meanings around a vision or strategic direction, identity change focusing on the implications of the vision for the way members understand themselves, and social change focusing on meanings about the ethical or social implications of a change.

SENSEMAKING IN TURBULENT CONTEXTS: CORE THEMES

While the literatures on crisis sensemaking and on change sensemaking each suggest some quite different insights about the nature of sensemaking in turbulent conditions, these writings point us to two core themes that are present in these two significant sensemaking contexts. First, crises and change highlight the importance, but often elusiveness, of shared meanings. Second, both contexts suggest that emotions may play a key role in the process of sensemaking in such conditions. Below, we elaborate on these two themes with the aim of broadening the application of key sensemaking concepts, learning more about the importance and challenges of collective sensemaking, and addressing the critical issue of how sensemaking can both aid and hinder adaptation in environments that are dynamic and unpredictable.

Shared Meanings in Turbulent Times

While sensemaking is understood as a process of social construction, it is easy to slip into theorizing it at the individual level of analysis, overlooking the importance of the social processes through which sense is made, and the shared meanings that can emerge from them (Maitlis, 2005; Weick, 1995). Yet, as the preceding discussion suggests, the construction of

shared meaning plays a significant role in both crises and change. We elaborate this role by focusing on certain types of meanings and the related social processes through which meaning is shared. By doing so, however, we do not mean to imply that crisis or change management necessarily involves shared meaning throughout a team or organization. Indeed, the degree to which meanings *can* be fully shared or need to be shared to enable collective action is much debated (Balogun and Johnson, 2004; Labianca et al., 2000; Maitlis, 2005; Martin, 2002; Rerup and Feldman, *forthcoming*; Weick et al., 2005), with some scholars even arguing that the degree of shared meaning is less relevant than the extent to which different meanings enable the same behavioral consequences (Donnellon et al., 1986; Gray et al., 1985). Further complicating this picture is that sometimes shared meanings can actually create sensemaking that is less effective for a situation. Later in the paper, we will suggest that collectives that engage in two key processes—updating and doubting—are less likely to fall prey to a host of difficulties that turn shared meanings into substantial blinders (e.g., Nickerson, 1998). But for now, we start from W88 and from our reading of numerous crisis and change sensemaking studies, and propose that certain kinds of shared meaning can be especially important – *and that their impact may be either helpful or harmful* – in turbulent organizational contexts: commitment, identity, and expectations. In doing so, we build on W88 and related research (see especially, Weick, 1995), which identified similar elements (commitment, capacity (which we connect to identity), and expectations) as critical levers in crisis sensemaking. However, W88 and related research primarily attends to these elements as they shape sensemaking at the individual level within a crisis context.

Commitment

Commitment serves as a foundation for sensemaking. This is because individuals often generate explanations retrospectively to justify actions to which they have committed (Weick, 1995).

While this has the potential to create helpful meanings in the wake of ambiguity, it can also create dangerous blind spots (W88). When we add the presence and participation of others (the “social” aspect of sensemaking), the dual roles of commitment as dangerous and adaptive play out in important ways for both crisis and change. For example, commitment to secrecy during Bhopal (to avoid alarming people and for competitive advantage) led to a dangerous blind spot, including a reluctance to sound an alarm as the crisis was unfolding (W88). Embedded in a social system beyond an individual, the organization became blinded by and consequently affected by the public commitment of a few to secrecy, thereby limiting a future repertoire of meanings (e.g., this is a situation that calls for an alarm) and actions (e.g., sounding the alarm). Yet, in other cases, commitment serves as a vital resource from which to construct meaning to help adapt to crisis conditions. We saw this in Seeger and Ulmer’s (2002) and Christianson et al.’s (2009) studies of sensemaking after organizational disasters, where the CEOs chose to commit to and enact organizational renewal. We also see it in Weick’s (1979) retelling of a story of lost soldiers who safely found their way through the Alps by committing to a map that later turned out to be of the Pyrenees. This shows that a tenacious commitment to even the wrong plan provides a foundation for acting that is vital to keep people moving forward, constructing new meanings, and ultimately averting a more dangerous crisis. In this example, commitment did not create a blind spot but facilitated action that kept panic at bay and allowed the soldiers to keep moving so they could update the sense they were making.

As in crises, commitment can both facilitate and inhibit sensemaking during organizational changes. Practitioners of change consider the creation of a clear, compelling

vision a vital ingredient for a successful change (Kotter, 1996). Such a strong, public commitment allows individuals to envision new organizational meanings that facilitate dramatic change. For example, in Gioia's research on strategic change at a public university (Gioia and Chittipeddi, 1991; Gioia et al., 1994), the university President's commitment to the strategic change fuelled his sensemaking and sensegiving activities to communicate his vision, and to convince organizational members of it. This helped energize the organization and mobilize action. But in other instances such staunch commitment to a particular set of meanings (such as a strategy or vision) creates substantial blind spots that impede adaptation, such as when the environment shifts and an organization is committed to a misaligned vision (Tushman and O'Reilly, 1996), or when individuals within the organization fail to account for the competing commitments of other members. Returning to the public university example, we see top managers, who overlooked members' allegiance to the status quo, failing to recognize that a commitment to an old vision often needs to be reduced before instilling a new one (Gioia and Chittipeddi, 1991).

Identity

Another important type of shared meaning that often surfaces in sensemaking research about crises and change is identity, a construct that scholars more generally think is crucial for sensemaking (see especially, Weick, 1995). The importance of identity in such contexts becomes especially evident when it is threatened. In a crisis, a threatened identity constrains action as individuals and teams lose important anchors about themselves. Perhaps the most vivid example of this comes from Mann Gulch, where firefighters were told to "drop your tools" and suffered from a collective existential crisis as they turned from a team of firefighters to a group of

endangered individuals who were running from a fire without their tools (Weick, 1993). Similarly, during organizational change, identities often get completely replaced (Corley and Gioia, 2004), or at least go through a process of major updating (Fiol, 2002). It is during this process of identity transformation that powerful existential problems arise that can lead to change resistance (Bridges, 1986; Chreim, 2002; Reger et al., 1994); employees sometimes have difficulty answering questions around, “who are we?” and are therefore prone to resist change (Sonenshein, *forthcoming*). Returning to Gioia and Chittipeddi’s (1991) example of strategic change, some university members struggled to make sense of their new roles and update their understanding of what they were supposed to be doing (e.g., what does it mean to now be part of a newly established School of Communication?), and as a result, resisted the change. What this suggests is that a key ingredient for sensemaking—whether in the context of a crisis or a change—is a shared identity, which provides a vital anchor around which collectives construct meaning and understand their experiences.

While the identity crises of firefighters at Mann Gulch or employees involved in change can inhibit sensemaking, so too can having a very strong identity that is no longer relevant or helpful. We see this in Wicks’ (2002) analysis of the disaster at Westray, where miners’ identities as “real men” and also as “providers” blinded them from seeing the dangers inherent in their work. We also see it in the case of the shift supervisor at Bhopal (W88) who took on the additional responsibilities and identity of a maintenance supervisor—someone presumed to have important knowledge about maintenance operations but in reality with little knowledge or experience. As a result, the supervisor exercised the authority and decisiveness that came with a role identity of being in charge without the necessary knowledge to actually be in charge. In W88, Weick discusses the importance of capacity, and, in particular, people’s belief in their own

capacity. Such beliefs can be a significant part of an individual or collective's identity (Maddux and Gosselin, 2003), and, when positive, can increase vigilance, reduce defensiveness, and facilitate sensemaking (W88). But these same capacity beliefs can be very constraining when the material experience implied by the identity claim is lacking. In the context of Bhopal, the supervisor drew on an identity of someone with the authority and capacity to do his job, and as a result, made decisions that crystallized the organization from averting a catastrophe and neutralized the broader capacities of the collective, i.e., the maintenance workers who started sensing something was going awry. At the same time, because identities are socially negotiated (Gergen, 1991), the identities of the supervisor's staff also play a role in explaining the Bhopal crisis. These employees readily granted the supervisor's claim to authority and the implied capacity he had to act, thereby enacting shared meanings around who was in charge. Subsequently employees abandoned any attempt to more forcefully engage in sensegiving with their own interpretations of the situation. They were limited, of course, by the collective construction of their identities as subordinate or inferior, and of the supervisor's identity as authoritative and knowledgeable. This type of strong identity can also be disruptive in change situations, particularly when managers collectively label employees as resisters and consequently enact an environment full of resisting employees, even in the presence of those who clearly defy that label (Kelman, 2005).

Expectations

A third type of shared meaning we consider is expectations. As Weick (1995) notes, expectations connect with cues to create meanings. Individuals then filter subsequent cues against this meaning and gradually build up confidence about a definition of the situation. But, just as with

commitment and identity, such expectations can be both enabling and constraining. We saw the impact of overly optimistic expectations in Kayes' (2004) analysis of the Everest climbing disaster, and in Mann Gulch, where hopeful expectations were set by labeling the fire a "10:00 fire," signifying a routine and relatively easy to manage fire (Weick, 1993). But shared expectations can also be detrimental when they are overly negative. In explaining the Bhopal disaster, Weick (W88) argues that top managers' poor performance expectations of the plant were not only tenacious but also transferred down to employees. These employees in turn came to perceive their own work as unimportant and therefore acted out this expectation with "sloppy procedures, inattention to details, and lower standards" (W88, p. 313). As a result, top managers, through their low expectations of the plant, enacted an environment which confirmed their perceptions of lower performance, as the lower performance label "stuck" with employees (Livingston, 1988). In change, similar to crisis, managers and employees can develop a shared set of expectations about performance, which in turn leads to the enactment of that performance.

While this suggests the potentially harmful effect of overly optimistic and overly pessimistic expectations, individuals can, of course, update their expectations *in situ* based on new cues. This is what the crew leader (Wag Dodge) did in Mann Gulch as he revised his sensemaking of the fire and recognized the pending danger. Nevertheless, even though Dodge updated his expectations, he could not convince his team that he now anticipated a much more intense fire, demanding a different set of responses. Expectations are sticky and this is where the danger lies—as individuals grasp tenaciously onto familiar meanings. Another potentially troubling development is that meanings among a collective can grow to be so diverse that coordinating actions becomes difficult (Smircich, 1983). This was not only the case at Mann Gulch where Dodge and his crew differed in their expectations about the fire but also at Roskilde

(Vendelo and Rerup, 2009), where the few individuals who recognized that the crowd's behavior signaled crisis rather than festival fun were unable to build a collective understanding of the new situation. In contexts such as these, we see a variable disjunction of information (Turner, 1976), where information is dispersed across people and locations in a rapidly changing situation, and resources are inadequate to enable any real shared model of what is going on.

Enabling adaptive sensemaking: updating and doubting

The above discussion about three types of meanings—commitment, identity, and expectations—builds on W88's more individual-level analysis of similar concepts to suggest that shared meanings are vital to sensemaking but also potentially destructive. Clearly this raises a question about the conditions under which shared meanings are helpful rather than dangerous in crises. An insight into this issue comes from Weick (1996, p. 148) who suggests that "wisdom" can help overcome the seemingly contradictory roles sensemaking can play in averting crises (and we would also argue, managing change). He writes:

"Ignorance and knowledge grow together... In a fluid world, wise people know that they don't fully understand what is happening at a given moment, because what is happening is unique to that time. They avoid extreme confidence and extreme caution, knowing that either can destroy what organizations need most in changing times, namely, curiosity, openness, and the ability to sense complex problems. The overconfident shun curiosity because they think they know what they need to know. The overcautious shun curiosity for fear it will only deepen their uncertainties. Both the cautious and the confident are closed-minded, which means that neither make good judgments. In this sense, wisdom, understood as simultaneous belief and doubt, improves adaptability."

Applying these lessons to our own analysis, we suggest that two actions associated with wisdom—updating and doubting—are essential to enable an adaptive rather than destructive role for shared meanings during crisis and change. Updating, an activity that Weick (this issue) might argue comes with awareness, allows individuals to revise interpretations based on new information (Christianson, 2009; Rudolph et al., *forthcoming*), something we saw with Dodge’s revised understanding of the “10:00 Fire” and the updated identity constructions of those undergoing strategic change. But while pockets of individuals may be particularly adept at updating, updating can go awry when these revised interpretations are not shared. This suggests the importance of both information collection and knowledge transfer (Waller, 1999). A focus on information collection and its subsequent interpretation has been something that sensemaking scholars in both crises and change have taken seriously, but the knowledge transfer part—that is, the development of shared meanings based on collective knowledge—has been more elusive (Dunbar and Garud, 2009).

Doubt is another essential component for adaptive sensemaking, a point also noted by Weick (this issue). As Locke et al. (2008, p. 908) observe, “the living state of doubt drives and energizes us to generate possibilities, try them out, modify, transform or abandon them.” What this recognizes is that all sensemaking is provisional. Doubt reminds us of this provisionality and encourages us to keep generating new understandings. One never makes finite sense of a situation because things are always changing. Where commitment, identity and expectations get us into deep trouble is when we have the false belief that our sensemaking is finished and that we have arrived at *the answer*. But for reasons such as conformity or groupthink (Asch, 1956; Janis, 1982), collectives often struggle to critically appraise and subsequently update their

sensemaking, overlooking that commitments, identities and expectations are meanings that are just as contingent and fragile as the environments in which we construct them.

Emotion in Chaotic Conditions

A second theme that underlies much of the literature on crisis and change, but one which has been less explored, is that of emotion. Weick (this issue, p. X) describes his analysis of Bhopal as “cool and cognitive”, and suggests that “a newer interpretation of crisis sensemaking at Bhopal would highlight the morale, emotional tone, and energy associated with plant operations” (p. Y). However, in the twenty plus years since W88, only a few studies have explicitly addressed the role of emotion in sensemaking in such chaotic conditions (e.g., Bartunek et al. 2006; Myers, 2007; Sonenshein, 2009; Weick, 1990). This relative dearth of research belies the extreme emotionality of most crises and many change events (Poole, 2004), and leaves under theorized the likely impact of emotion on sensemaking in these contexts. In this section, we consider how the emotion present in such settings affects sensemaking, and specifically how different kinds of emotion differently influence sensemaking.

Crisis situations are typically characterized by intense negative emotions, most frequently those associated with anxiety, such as fear, panic, and desperation (Kayes, 2004; Weick, 1990, 1993; Withey, 1962). Negative emotions are also prevalent in organizational change (Ashford, 1988; Huy, 2002; Kiefer, 2005), and, as in crises, these emotions are often intense. At the same time, lower arousal emotions, such as sadness, gloom, or guilt, can also be widespread (Bovey and Hede, 2001). Below we first note how emotion has traditionally been regarded in the sensemaking literature, and then explore the effect of negative emotions on sensemaking in the complex, uncertain and dynamic environments of crisis and change. Next, we consider how

positive emotions may affect the kinds of sensemaking found in these contexts, and conclude with a discussion of the unique role played by certain “self-conscious” emotions.

Emotion – specifically, felt emotion – has traditionally been seen as an impediment to cognitive processing in general, and to sensemaking in particular (Shiv et al., 2005; Weick, 1993). There has been relatively little exploration of the impact of different discrete felt emotions, but some consideration has been given to the role of “arousal” in sensemaking. Drawing on the work of Berscheid (1983) and Mandler (1982), Weick (1990, 1995) argues that an unexpected interruption in an ongoing flow of activity triggers arousal of the autonomic nervous system, and that this arousal serves as a warning that there is a stimulus to which attention must be paid and that one’s well-being may be at stake. In other words, interruptions do not directly activate sensemaking, but do so through the arousal they trigger. The sensemaking process thus has emotion – or at least arousal – at its core. However, while arousal stimulates sensemaking, the autonomic activity triggered can also consume cognitive capacity, as attention is taken away from the task in hand and refocused on the interrupting event and on the autonomic activation itself (Bazerman et al., 1998). The result is a reduction in the number of cues that can be processed from the central activity underway at the time of the interruption (Easterbrook, 1959).

Negative emotions in crisis and change

The intense, negative *felt* emotions typically found in crisis and change contexts are especially likely to impede sensemaking. As Weick (1990) describes in his analysis of the Tenerife air disaster, two interruptions to the pilot’s plan – the unexpected diversion of the plane’s route and a cloud moving down the runway and preventing takeoff – created arousal in his autonomic

nervous system, absorbing information processing capacity and decreasing his attention to peripheral cues such as what was being said on the radio transmission. While sensemaking plays a crucial role in diminishing the emotional power of events (Roese and Olson, 1996; Wilson and Gilbert, 2005), in many crisis and change situations, people struggle to make meaning of what is happening. In the absence of a plausible understanding of the situation, and as individuals try to diagnose problem and decide what they should do about it, their anxiety, fear and frustration may increase--further affecting their ability to understand what is happening, and to take action which could help them to do so. Threat engenders rigid reactions, such that individuals enact well-learned, habituated responses that are often inappropriate to the changing situation (Staw et al., 1981; Weick, 1990). These rigid responses, or in some cases, paralysis (D'Aveni, 1989), may further intensify individuals' negative emotional reactions, and, together, these can further enact the evolving crisis or hamper change efforts. This is evident in Diamond's (1985) account of Bhopal, cited in W88 (p. 312), when the plant superintendant is described as coming in "pretty much in a panic", and asking "what should we do?". Weick makes the point that the superintendant lacked requisite expertise in dealing with a technical crisis; we suggest that his panic diminished his response repertoire still further.

Felt emotions can thus derail sensemaking, but they can also provide valuable information that facilitates sensemaking (Maitlis et al., 2009). Several examples of this can be found in the change literature, where research has shown that employees draw on their felt emotions in interpreting a change program (George and Jones, 2001, and may interpret negative feelings as a sign that an organizational change is detrimental to their well-being (Bartunek et al., 2006; Sonenshein, 2009). Alternatively, leaders can generate negative emotions in organizational members to create a sense that change is necessary. For example, in their study of strategic

change initiation, Gioia and Chittipeddi (1991) explain how the university President signaled the need for change by actions that infused the organization with anxiety. This process was described as, “stirring everybody up, making everybody talk and think and worry” (p. 439), and is consistent with practitioners’ calls to create urgency for change through appealing to emotions (Kotter and Cohen, 2002), and the notion of an “autogenic crisis” that enables learning rather than rigidity (Barnett and Pratt, 2000). Felt emotion thus shapes the meanings that organizational members make of change, leading them to reframe issues in ways that result in new interpretations of the environment and the organization’s response to it (Sonenshein, 2009). Specifically, a negative emotional frame makes negative cues salient, and engenders careful, critical and systematic forms of sensemaking (George and Jones, 2001; Sinclair, 1988). Related to this are arguments to institutionalize emotions such as disappointment and to encourage wariness in high reliability and other organizational contexts in which such negative affective states may result in the better anticipation and detection of errors (Landau and Chisholm, 1995; Weick et al., 1999; Weick and Sutcliffe, 2001).

Expressed negative emotions, as forms of conscious or unconscious action, can also play a powerful role in sensemaking. Since sensemaking involves bracketing cues in ways prompted by certain frames, others’ expressions of panic or dismay can powerfully frame our interpretation of an ambiguous situation (Schachter and Singer, 1962). Further, these emotional expressions can be contagious, significantly affecting group sensemaking processes (Hatfield et al., 1994). For example, as the security guards at Roskilde became aware of the fatal crush in the front stage area, their expressions of horror and desperation signaled to others that quick, radical action was essential (Vendelo and Rerup, 2009), but simultaneously may have fuelled feelings of anxiety and fear that impeded their sensemaking about how best to act. In organizational change,

members' emotions provide valuable data to leaders about how a change is being received and so contribute to its enactment (Rubin et al., 2005). Further, managers who notice and attend to the emotions of their employees are more likely to succeed in their change implementation efforts (Huy, 2002; Sanchez-Burks and Huy, 2009). We see an example of leaders' attention to emotion in Gioia and Chittipeddi (1991, p. 439), when they describe how the President met with stakeholders to discuss their "hopes and concerns, which allowed him to "allay some of the anxiety" among organizational members.

Positive emotions in crisis and change

Although crisis and change tend to be associated with negative emotions, positive emotions, such as hope, relief, and even joy, are also found in these contexts. Looking first at positive *felt* emotions, recent research has shown that they broaden individuals' scope of attention and their thought-action repertoires (Fredrickson and Branigan, 2002). We noted earlier how increased capacity broadens attention (Weick, 1988), and research also suggests that emotions may do this in part through the positive affective states that accompany or follow the awareness of enlarged capacity (Pelham and Swann, 1989). Other research suggests that positive emotions are important resources in building capacity (Bandura et al, 2003; Fredrickson et al., 2003), increasing resilience and individuals' ability to cope with stressors. Another body of work has shown that positive felt emotions are associated with the more inclusive and flexible categorization of cues (Murray et al., 1990). There are thus several reasons to expect positive emotions to shape sensemaking in ways that can avert crisis and enable constructive change. At the same time, however, because of people's tendency towards affect-congruent judgments, positive emotions may cause individuals to judge situations overly optimistically and

misinterpret indicators of danger (Mayer et al., 1992). This may be increasingly likely to occur when the emotions are very intense. For example, when organizational leaders or members experience excitement or exhilaration, they may entirely overlook important cues, or inappropriately interpret the situation as safe and trustworthy.

Turning now to positive expressed emotions, it has been shown that in organizational change situations, leaders often express excitement and enthusiasm to signal their commitment to the new direction. These emotions act as a sensegiving resource to influence employees' understandings of the value of the change (Huy, 1999; Huy, 2002), and potentially trigger a contagion of positive emotion through the workforce. For example, the President of the university studied by Gioia and Chittipeddi (1991) was described as having "a certain cheerleading quality" which he used to drive change forward. Later in the process came the "energizing" phase, in which he sought to generate widespread enthusiasm for a variety of specific change initiatives. Similarly, after the crisis induced by fires in two US manufacturing/processing plants, the CEOs engaged in upbeat sensemaking as they enacted the opportunity for organizational renewal (Seeger and Ulmer, 2002). At the same time, however, we saw how sensegiving that is positive and optimistic can create blinkers for those in teams and organizations, causing them to overlook or collectively reinterpret cues that signal potential danger (Kayes, 2004; Weick, 1993).

Self-conscious emotions

Finally, we consider the special role that "self-conscious" emotions may play in sensemaking, and explore the implications for crisis and change situations. Self-conscious emotions are those arising from people's inferences about others' evaluations of them, and include guilt, shame,

embarrassment, social anxiety, and pride (Leary, 2007). These emotions play a central role in guiding behavior, and have the potential to significantly influence sensemaking during organizational crisis and change. This is particularly so when individuals either believe their actions may have contributed to the unfolding crisis (as in the case of the train driver who goes through a stop signal), or when they feel unfairly affected by the changes taking place in the organization (as with victims or survivors of an organizational change that involves downsizing).

Guilt and shame are negative emotions that arise when people believe they have wronged: guilt results from the belief that, “I have done something bad”, and shame from the belief that, “I am a bad person” (Niedenthal et al. 1994). Each of these emotions has different consequences for sensemaking and action, so that individuals feeling shame tend to focus on themselves rather than those they may have hurt, while those experiencing guilt do the opposite, and are more likely to try to think of ways to repair the situation, for example, by letting others know of the mistake they have made (Tagney, 1995). In many crisis events, the need to be perceived as strong and fearless, and the prospective shame of being seen otherwise, can drive individuals to take actions (e.g., not retreating, holding onto one’s tools) that in fact escalate the disaster (Staw and Ross, 1987). This is especially so in the macho cultures of contexts such as wildland firefighting and the mining industry (Weick, 1993; Wicks, 2002). In contrast to negative self-conscious emotions, pride arises when people believe that they are responsible for a socially valued outcome, for example, when taking an action that will avert a crisis or enable positive organizational change. Pride can also be a defensive reaction to threat, associated with exaggerated consensus, or a person’s belief that others see a situation in the same way that she does (McGregor et al, 2005). In a turbulent organizational situation, this dangerous assumption could prevent an individual from seeking others’ interpretations of an unexpected event, and

escalate disaster (Janis, 1982). Thus, through feelings of shame that lead people to withdraw from others, and defensive feelings of pride that cause them to mistakenly assume that their beliefs are widely held, self-conscious emotions may be important in explaining when and why shared meanings fail to develop among collectives.

Enabling adaptive sensemaking: moderately intense emotions

Looking across this body of research, we see how felt and expressed emotions can, directly and through the actions they engender, provide valuable information to those trying to understand an unfolding crisis, or leaders in the process of implementing change. It is also evident, however, that they can have a problematic impact on sensemaking. Intense negative emotions, such as panic and fear, may be the most commonly found in these contexts and, by causing individuals to experience a threat response, may lead them to narrow their attention to cues, engage in systematic but less expansive forms of sensemaking, and fall back on dominant action repertoires. Others' expressions of panic and fear may serve as powerful cues, enacting the same outcome. In addition, managers or employees experiencing the self-conscious emotion of shame may focus on themselves rather than addressing the problem at hand, and withdraw from activities that could help avert disaster. Positive emotions seem likely to have a more constructive effect on sensemaking, acting as powerful sensegiving resources, and broadening organizational members' attentional focus and their response-action repertoires. At the same time, these emotions can lead to overly-optimistic judgments, and the self-conscious emotion of pride (for example in a change program champion) may cause difficulties if it comes as a defensive reaction to threat and leads to exaggerated assumptions about consensus.

In sum, we see that negative emotions are more prevalent than positive emotions in crisis and change, and may in general be more problematic for sensemaking. We argue, however, that intensity is the critical dimension determining the adaptive or maladaptive effect of emotion on sensemaking. Emotions need to be moderately intense to be noticed at all, but very intense negative emotions are likely to be more distracting and consume more cognitive resources than lower arousal emotions, such as sadness (Maitlis et al., 2009). Similarly, positive emotions can provide valuable energy, but may be blinding and depleting when experienced or expressed intensely over time. Further, we suggest that certain self-conscious emotions, both negative and positive, play a distinctive role, with intense shame and pride creating particularly powerful impediments for sensemaking and constructive action in turbulent organizational conditions. Crises are over-determined (Weick, 1988), as is the success or failure of an organizational change program (Pettigrew, 1985). Nevertheless, we have argued that the emotionality inherent in these contexts is an important, and oft-overlooked, influence on the sensemaking that shapes them.

DIRECTIONS FOR FUTURE RESEARCH

Our discussion reveals quite an explosion of sensemaking research in both the crisis and change literatures in the two decades since W88, and we have here sought to show how these two often disparate streams of research converge. Our exploration of the core themes of shared meanings and emotion has also allowed us to examine how sensemaking can be more and less adaptive in turbulent conditions (see Table 1 for an overview of these themes). Building on this discussion and looking ahead, we see two primary areas for opportunities in sensemaking research: the politics of sensemaking, and sensemaking as an embodied practice.

****INSERT TABLE 1 ABOUT HERE****

The Politics of Sensemaking

The politics of sensemaking play an important role in the crisis and change literatures. We saw these politics manifested in W88 where one meaning from a subordinate at Bhopal gets brushed aside in favor of another meaning from a supervisor. As Weick (this issue) points out, lower level workers at Bhopal lost their opportunity to enact an environment. As a supervisor brushed-off the suggestion that the shut down MIC production facility had failed, the worker's more plausible interpretation of the cues (e.g., the pressure gauge, the fumes) was replaced with the supervisor's fatal one. Similarly, in the change literature, we saw that scholars (and managers) often privilege the interpretations of those in top management, overlooking the sensemaking of lower level employees (e.g., Gioia and Chittipeddi, 1991). Both of these examples add texture to Weick's (1995) intimation of the key role of power and politics in sensemaking, where he recognizes the structural constraints on action and cognition (Magala, 1997). Despite Weick repeating his call for increased attention in his updated theory of sensemaking (Weick et al., 2005), we still find his hopes largely unfulfilled.

We suggest that one promising direction for future sensemaking research that accounts better for politics and power would be the investigation of how multiple accounts compete in crisis and change situations, and with what effect, allowing insight into the politics of organizational sensemaking. Research which considers organizational change as an unfolding set of narratives, inevitably shaped by power relationships, is one approach that can capture the political processes through which dominant interpretations emerge (Buchanan and Dawson, 2007; Dawson, 1994; Sonenshein, *forthcoming*). Such narrative research disciplines scholars to seek out the multiple, often conflicting, but tightly coupled narratives that undergird the change

process, and reminds us that change and crises evolve not only as a function of which interpretations become consensually shared and politically legitimated but also which ones quickly evaporate. Uncovering these alternative meanings that rarely surface is vital in explaining how consequential events unfold, and we see narrative studies of sensemaking as providing a powerful way of exploring this.

While existing power differentials play an important role in explaining some of the flawed sensemaking during crises, our review shows that power is also enacted—whether it comes in the form of the citizens of Poland enacting their power to revolt against a coercive government (Weick, 1999) or employees altering the meaning of an organizational change to push for social change (Sonenshein, 2009). More broadly, those with relatively less formal power can nevertheless construct meaning in a way that resonates with others such that their meaning becomes the dominant one used to enact an environment. At the same time, holding formal power does not unconditionally bestow upon an individual a monopoly (or even a dominant position) in constructing meaning. On the contrary, compare the different roles of the maintenance supervisor in Bhopal with the crew leader (Wag Dodge) at Mann Gulch, who could not effectively convince his subordinates that a secondary fire he lit had the meaning of an “escape fire” that ultimately could have saved the lives of some of his crew. Accordingly, a strong discursive ability (or its notable absence) can influence how meanings get constructed and which ones dominate (Maitlis and Lawrence, 2007). This suggests a tighter integration of sensemaking and influence research (Cialdini, 1998), as the possession of influence skills is vital for shaping the meaning of situations and may equip individuals with the political skills to advocate their preferred meanings of a situation (e.g., Gioia and Chittipeddi, 1991).

A discussion of politics also raises questions over who is granted the opportunity to make sense of situations. As we saw above, power, coupled with a lack of influence skills on the part of lower level employees, can preclude these lower level employees from shaping the sensemaking of those at the top. This raises the question of what is the optimal balance between including a wide range of actors to make sense, while preventing the introduction of too much equivocality. This tension highlights both the need for requisite variety (Weick, 1979) and the danger of introducing too much equivocality from too many different sensemakers. Too restricted of a set of individuals might lead to limited complexity in the sensemaking system, yet too many individuals may lead to multiple, conflicting interpretations of a situation that inhibit action (Maitlis, 2005). As Weick (1995) points out, a key challenge for sensemaking is the presence of too many, not too few interpretations. Accordingly, another direction for future research is to understand the relative tradeoffs in broadening a system of sensemaking to facilitate requisite variety versus designing mechanisms to reduce equivocality. Underlying this tradeoff are politics, as such dynamics ultimately control who gets the opportunities to influence sensemaking.

Embodiment in Sensemaking

We propose embodiment as a second important area for future sensemaking research, connecting our previous discussion of emotion in sensemaking to the growing interest in “embodied cognition”, seen in cognitive science and related fields (Anderson, 2003; Cornelissen and Kafouros, 2008; Gibbs, 2006). This work is rooted in earlier thinking on “enaction”, or the idea of cognition as embodied action, involving not only abstract and symbolic mental representations, but also knowledge grounded in experiences gained through the body’s

sensorimotor capacities (Varela et al., 1991). We further bridge to research that has explored aspects of embodiment in decision making, and the body as a resource for meaning making.

Emotion has long been understood to be “of the body” (James, 1884; Lange, 1885), and although emotions cannot be defined solely by bodily feelings, there is widespread agreement that an emotional experience is at least in part a bodily experience (e.g., Elfenbein, 2007; Frijda, 1988; Scherer, 2005). Moreover, a recent stream of research suggests that people experience in their bodies not only their *own* emotions, but also the emotions of others. fMRI studies of neural mirroring show changes in brain activity that mirror those of an observed person, revealing how a person can quite literally *feel* the emotions they perceive in another (e.g., Preston and de Waal, 2002; Singer et al., 2004). Connecting to the literature on embodied cognition, this research highlights the powerful connections that exist between individuals’ bodily experiences and a variety of social perceptions and judgments, which include, but are not restricted to, emotional ones (Niedenthal et al., 2005). For example, in one experimental study, participants who were free to mimic facial expressions in which they were asked to detect changes did so more quickly than those who were prevented from mimicking (Niedenthal et al., 2001). In another, participants holding a cup of hot coffee before they were asked to rate the warmth and friendliness of a random person rated them more highly than did those who had held a cup of cold coffee (Williams and Bargh, 2008). Such studies offer support for the idea of cognition as partly grounded in bodily states.

Based on research on emotion and on embodied cognition, we see two clear reasons to think that the body may be important in sensemaking. First, emotions, which play a key role in sensemaking, involve changes in bodily states, and this happens both when we experience an emotion ourselves and when we witness another’s emotion. If we take seriously the idea of

sensemaking as an emotional process, then we must also understand it as an embodied one. Second, because research on embodied cognition shows that certain cognitive processes are grounded in the body, it seems likely that the same will be true for at least some sensemaking processes. This suggests some intriguing questions for future research, such as how bodily sensations associated with certain emotions in ourselves and others trigger sensemaking, and how the process of sensemaking can attenuate, intensify, or otherwise change the body's response to certain cues.

A third reason to attend to the body in sensemaking research comes from writing on the influence of visceral factors – such as physical cravings and pain – on decision making and a range of related behaviors (Loewenstein, 1996). Loewenstein argues that an important effect of intense visceral feelings is that they narrow attention in various ways, for example, causing individuals to orient towards the present, and towards themselves rather than others. This clearly has implications for the availability of cues for sensemaking, as well as the frames brought to bear on a situation, and is especially pertinent for our understanding of sensemaking in some of the physically harsh contexts we have considered in this article.

Finally, there are indications from research on meaning making that individuals' subjective experience of their bodies provides important bodily cues for meaning making about work (Heaphy, 2006; Heaphy and Dutton, 2008). In contrast to psychological research which has shown that body sensations can influence cognition outside of awareness (e.g., Schubert, 2004), Heaphy (2006) considers the impact of bodily cues – both private and public – that grab our attention, thereby providing a valuable resource for our sensemaking about work environments. Other research in a related vein has explored how people suffering physical injury or significant illness are forced to make sense of themselves and their lives in new ways (Frank, 1997, 2002;

Maitlis, 2009). This work reveals that the body, especially when malfunctioning, can create important occasions for sensemaking, and that the content of this sensemaking extends far beyond that person's physicality. Future research in this area could valuably explore the kinds of sensemaking occasions that the body provides, and investigate how the body is used to frame or otherwise shape people's accounts of themselves and their places of work.

In this article, we have argued that prior research has tended to give primacy to cognitive processes over social and affective processes in sensemaking. All of these, however, have received more attention than has embodiment in sensemaking. This is particularly surprising since sensemaking, with enactment at its core, is, we would argue, inherently embodied. We make sense through acting, and this strongly implicates the body in our ways of understanding the world. Despite this, the role of the body in sensemaking research has been largely ignored, an oversight that extends through much of organizational studies (Hassard et al., 2000; Hindmarsh and Pilnick, 2007), and also within a great deal of cognitive and social psychology (Loewenstein et al., 2001). By continuing to ignore how the body is used to make sense of the world, however, we risk impoverished theorizing about how and when sensemaking takes place, as well as the kinds of outcomes it enables. We therefore propose embodiment as an area for future research – or even as the basis for a new conceptualization of the sensemaking process – that can yield significant insights for sensemaking theory.

CONCLUSION

Disasters such as Bhopal will always be deeply regrettable, but they nevertheless provide powerful opportunities for learning. W88 realizes this potential, helping us to think differently about crises and crisis management, and imparting lessons that are transferable to other turbulent

contexts. In fact, one conclusion from our paper is the need for more explicit integration of the main bodies of sensemaking research, which heretofore have developed largely independently of each other. As our discussion of common themes suggests, the crisis and change research contexts share many similarities that are not usually exploited by scholars working across the different domains. In this article, we have used core themes from W88 as a springboard, highlighting common themes in crisis and change sensemaking, and exploring what makes sensemaking more and less adaptive in turbulent organizational conditions. We have also identified some opportunities for further scholarly inquiry. In the process of identifying these themes and opportunities, we have sought to honor the tremendous impact of W88 on sensemaking scholarship. W88 and the corpus of Weick's work that builds on it has not only significantly influenced our own research but also that of organizational scholars researching a wide range of topics from a sensemaking perspective. Our hope is to stimulate further research in this area, which may, over time, enable more adaptive sensemaking during crisis and change.

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Table 1: Summary of Mechanisms, Levers and Future Directions for Sensemaking

Key Dynamics/Mechanisms	Levers for Adaptive Sensemaking	Future Research Directions
<p><i>Shared meanings</i></p> <ul style="list-style-type: none"> - Collective commitment - Shared identity - Shared expectations 	<p><i>Updating and doubting</i></p>	<p><i>Politics of sensemaking</i></p> <ul style="list-style-type: none"> - Competition among multiple accounts - Enactment of power - Tradeoffs between requisite variety and equivocality
<p><i>Emotion</i></p> <ul style="list-style-type: none"> - Negative emotions - Positive emotions - Self-conscious emotions 	<p><i>Moderately intense, positive or negative emotions</i></p>	<p><i>Embodiment in sensemaking</i></p> <ul style="list-style-type: none"> - Bodily sensations as triggers - How sensemaking changes bodily responses - Visceral feelings as cues and frames - Occasions and resources for sensemaking provided by the body