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In the Wake of Disaster: Resilient Organizing and a New Path for the Future

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In the Wake of Disaster:

Resilient Organizing and a New Path for the Future

A. Erin Bass and Ivana Milosevic

Abstract

High-hazard organizations are unique due to their susceptibility to disasters that can have grave consequences not just for the organization, but also for stakeholders, the communities in which they operate and the environment. Though prominence is placed on understanding how high-hazard organizations avoid such events, how they create a new future when such an event does occur is underexplored. The purpose of this chapter, thus, is to investigate how organizations create a new future in the wake of a disaster through resilient organizing. Using an instrumental case study methodology, this study investigates how executives at BP, a high-hazard organization, embodied resilient organizing following the Deepwater Horizon oil spill. We show how resilient organizing helped BP bounce back and beyond by learning from the disaster, finding resolve, refocusing and experiencing transformation through action. In doing so, BP endeavored to prepare for, build, cultivate and commit to a new future. Insights from this research point to resilient organizing as a promising strategy for creating a new future and suggest future avenues for research on resilient organizing in high-hazard contexts and beyond.

Introduction

Increased environmental complexity has led some to argue that organizations exist in a perpetual state of crisis (Davis et al. 2009; Hannah et al. 2009). Indeed, in addition to institutional and competitive dynamics (Chen and Miller 2015; Gnyawali and Madhavan 2001), organizations today face natural as well as manmade disasters (Van Der Vegt et al. 2015). From the financial crisis that shocked the world to near-annual natural disasters, to the BP oil spill and the GM and Volkswagen recalls, it seems that corporate crises are an ongoing concern. Understanding how organizations experience and recover from a disaster may be needed now more than ever.

Previous research has suggested that when faced with an uncertain future and a high probability for disaster, organizations should either shield their core via emphasis on activities that maintain equilibrium (Meyer et al. 2005; Voss et al. 2008) or, alternatively, embrace an uncertain future through complex organizing and careful interweaving of administrative and innovative practices (Uhl-Bien and Marion 2009). The former perspective — focused on maintaining equilibrium —suggests that organizations develop slack resources (Daniel et al. 2004; Wang et al. 2016) and boundary-spanning departments (Aldrich and Herker 1977; Foss et al. 2013) to buffer the organization from uncertainty. The latter perspective — focused on complex organizing —suggests that organizations develop dynamic capabilities (Barreto 2010; Helfat and Martin 2015; Schilke 2014), entangle administrative and adaptive functions (Uhl-Bien and Marion 2009), or engage in ambidextrous organizing (Raisch et al. 2009) to embrace, rather than shield from uncertainty.

Both of these views suggest that organizing — either via equilibrium maintenance or complexity — is critical for maintaining successful performance in the face of an uncertain future. Though both literatures build on the assumption that organizations are capable of withstanding uncertainty, it is less clear how to organize when the future is punctuated by a

devastating disaster, such as those mentioned above, especially when the disaster completely obliterates any opportunity for business as usual. Despite creating devastating consequences and uncertainty, the disaster may also create a new future for the organization. To this end, we utilize insights from the resilient organizing literature (Weick & Sutcliffe, 2011) to explore how organizations bounce back and even beyond post-disaster to chart a new path for the future.

Resilient Organizing

Resilient organizing is critical for a contemporary organization's ability to confront, absorb and adapt to unplanned organizational events (Meyer 1982; Williams et al. 2017; Weick and Sutcliffe 2011). It embodies 'the process by which an actor (i.e. individual, organization or community) builds and uses its capability endowments to interact with the environment in a way that positively adjusts and maintains functioning prior to, during, and following adversity' (Williams et al. 2017, p. 742). Resilient organizing is characterized by three key elements. First, resilient organizing involves positive adjustments under difficult conditions (Lengnick-Hall et al. 2011; Luthans et al. 2007). These positive adjustments entail confidence in the organization's ability to bounce back and optimism that a new path for the future can be uncovered and pursued. Second, resilient organizing involves redefining success based on the new reality that the disaster creates (Lengnick-Hall et al. 2011). The effort here is on reestablishing a fit between the organization and the new environment through focusing on behaviors and activities that strengthen this fit, and shedding behaviors and activities that detract from it (Quinn and Worline 2008). Third, resilient organizing involves hardiness, or the organization's ability to experience and navigate the disaster (Mamouni Limnios et al. 2014; Kobasa et al. 1982). In this vein, resilient organizing compels organizations to experience the disaster (Weick and Sutcliffe 2011) and find resolution in achieving organization–environment fit in the new, post-disaster reality (Williams et al. 2017).

Although literature on resilient organizing implies that organizations will build a new future post-disaster when they embody resilient organizing (Weick and Sutcliffe 2011), the relation between resilient organizing and organizing for the future has not been systematically explored. Building on the previous literature (Lengnick-Hall et al. 2011; Mamouni Limnios et al. 2014; Weick and Sutcliffe 2011), we endeavor to uncover how resilient organizing in the wake of a disaster enabled a high-hazard organization to build a new future. In the subsequent section, we present an instrumental case study of BP's post-disaster activities following the Deepwater Horizon oil spill in 2010 to explicate how BP embodied resilient organizing to create a new future. We describe BP as a high-hazard (Perrow 1984), rather than a high-reliability (Wieck and Roberts 1993) organization because, in the period before the disaster, BP did not embody the key elements of high-reliability: a preoccupation with failure, system-wide processes focused on reliability, and a strong focus on learning (La Porte and Cansolini 1991; Milosevic et al. 2016; Roberts 1989).

Research Methods

The research context for this study is BP's post-disaster activities following the 2010 Deepwater Horizon oil spill. BP is a 'high-hazard organization' because it engages in 'potent activities with the power to kill or maim' (Gaba 2000, p. 85). These potent activities can create catastrophic events (Carroll 1998), which often arise because of (1) the unpredictability or unusual circumstances created by individuals and/or machines, (2) poor training, or (3) management carelessness, all of which can produce disasters coupled with performance failures (Perrow 1984). High-hazard organizations often operate in demanding contexts, including extractive industries such as the petroleum industry; technology-intensive industries such as the aeronautic industry; or highly-coordinated industries such as the transportation industry

(Roberts 1989). Given our focus on resilient organizing post-disruptive and hazardous events, BP's activities following the Deepwater Horizon oil spill is an appropriate context for the study. On April 20, 2010, an explosion, or blowout, occurred on BP's Deepwater Horizon rig. Workers, in an attempt to save their lives, abandoned the burning rig and jumped into the flaming ocean. Eleven workers were killed by the explosion and an additional 17 were injured (Ingersoll et al. 2012). A series of response efforts to find and treat workers on the rig and contain the spill ensued. The spill was contained in September 2010, after an estimated 4.9 million barrels of oil was discharged into the area. The oil spill reached the shoreline of all five states on the Gulf coast (Texas, Louisiana, Alabama, Mississippi and Florida), resulting in contamination of over 55 miles of shoreline (Lozano 2010). Given the large-scale nature of this disaster, many questioned whether BP could survive the disaster and ever return to its previous operational and financial performance.

To better understand how organizations that embody resilient organizing build a new future post-disaster, we collected conference call and presentation transcript data of BP executives following the spill, from 2010-2012 inclusively, in addition to other archival documents (See Table x. 1 for additional information on data sources and Figure x. 1 for the data collection and analysis procedures). We followed previous research that emphasizes the critical role of human capital and especially senior managers in resilient organizing (Lengnick-Hall et al. 2011) and focused the analysis on how executives at BP organized for the future. We utilized MAXQDA software to analyze transcripts. We coded the data following inductive thematic analysis of both the semi-scripted and unscripted portions of the transcripts (Creswell 2012; Strauss and Corbin 1994). We adopted a categorical aggregation approach to data analysis (Creswell 2012; Stake 1995), identifying a collection of similar strands of data and allowing elevated themes to emerge.

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Resilient Organizing and a New Path for the Future

In this study, we uncovered four related themes embodied in resilient organizing — the process that created a space for BP to chart a path for a new and different future: learning from the disaster, finding resolve, refocusing efforts and experiencing transformation through action. Evidence of these themes is interwoven in the subsequent paragraphs as well as being provided in Table x. 2. Learning from the disaster was the most salient and overarching finding, because it demonstrated the organization's ability to use the disaster as a learning opportunity through which it moved forward renewed. Finding resolve enabled BP to reconcile its internal and external relationships following the disaster. BP created a sense of urgency in order to refocus on its strengths and identify how to proceed towards a new future. Enacting resilience enabled BP to identify and serve stakeholders, and in doing so discover new opportunities for future success. Through these activities embodied in resilient organizing, BP was able to navigate the disaster, but also bounce back and beyond towards a new future. We depict our findings in Figure x. 2.

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Preparing for the New Future: Learning from the Disaster through Resilient Organizing

Experiencing and navigating a disaster requires the organization to recognize that what's been done in the past cannot be acceptable when preparing for a new future (Weick 2010). In this vein, the organization must use the disaster as a learning opportunity to foster renewal (Carroll et al. 2002; Madsen 2008). For example, Madsen (2008) explored accidents in coal mining and proposed that individuals create new knowledge as they gain both direct and vicarious experience with minor accidents and major disasters — new knowledge that enables them to

handle future obstacles. This is in line with research that suggests that changes in internal and/or external environments, such as disasters, represent chances for organizational renewal, which 'requires managers to change their mental models in response to environmental changes' (Barr et al. 1993, p.16).

As depicted in Table x. 2 and Figure x. 2, we discover that learning was manifested in the way the executives experienced and navigated the disaster. The oil spill appeared to humble BP because, especially during the Q&A sessions, the executives used statements like 'we don't know' or 'we're not sure' to temper responses to questions about the organization's operations, the environment or the market. In other words, we show that resilient organizing involves tempered confidence (Radzevick and Moore 2011, p.103) in which confidence is 'more muted, marked by lower peak confidence levels and wider distributions'. Tempered confidence is different from loss of confidence because BP believed it had a future post-disaster, but that future would be different. BP acknowledged that its operations had faltered, resulting in disaster. It demonstrated humility on the part of the organization, that it didn't have all the answers, and that, despite its best efforts, it was not invincible. This introduced a human, imperfect element to the organization that was a necessary part of learning from the disaster to prepare for a new future.

Executives often discussed 'finding the silver lining in the disaster and using it as a learning opportunity', to build the resilience needed for the future. Learning from mistakes embodied in resilient organizing enabled BP to address questions with regard to its ability to survive the disaster in the period between the blowout in April 2010 and when the well was capped in September 2010. Once BP survived the blowout, it turned its attention towards recovery from the disastrous oil spill via opportunities to learn (Bandura 1990; Bohn 2002). This was evident not just in the recognition executives paid toward the recovery efforts, but also in the consistent message that BP had the ability to learn and make improvements as a result of the Deepwater

Horizon oil spill, and that it could leverage and apply these improvements to other global locations, positively impacting the future of the organization's operations as a whole:

What people have done in the Company, has worked incredibly hard to take a step back from drilling, how we manage our own activities, how we interact with contractors, have developed a new set of voluntary drilling standards in the Gulf which will adopt much of that and use it globally, and getting ready, and then approaching the authorities who I think value the work that we're doing and they see the changes and the commitment to it, and as a result of that we are step-by-step going back to work in the Gulf.

To prepare for a new future, the conversation moved away from what went wrong to what could be gained and leveraged for a new future. This discussion encompassed not just learning from the spill, but also how the spill fostered new relationships between BP and other organizations in the industry, the government, and even seemingly unrelated industries, such as tourism and fishing. Indeed, BP executives recognized that: 'there is always more to do and in every crisis there is an opportunity' (BP 2010 Q2 Earnings). Thus, executives positively described how the oil spill fostered a platform for change in the organization — change that can prepare the organization for a new future through relationships with others:

> BP is a company that has been tested to the utmost, but we have resilient committed people. I believe we are equal to the test we face in this event that will simply underscore our determination to run our operations that are safe, secure, enabled to delivery energy for customers and value for shareholders (BP 2012 Q4 Earnings).

Building the New Future: Finding Resolve through Resilient Organizing

A large part of navigating the oil spill required BP to find resolve not only within the organization, but also in its relationships with affected entities external to the organization. Finding resolve encapsulates organizational efforts to reconcile wrongdoing in order to generate

a new future. Indeed, an important facet of resilience is being able to right a wrong. This search for resolution was consistently conveyed by the BP executives:

> We deeply regret the impact of this incident, and we are committed to healing and restoring the communities of the Gulf of Mexico, to finish immediate cleanup, to mitigate the long-term environmental impacts and to make whole those whose livelihood has been damaged (BP 2010 Q2 Earnings Q&A).

We provide evidence for this theme in Table x. 2, and depict its role in the process embodied in resilient organizing in Figure x. 2.

The executives often referred to finding resolve as making commitments: internally to operations or employees and externally to stakeholders and the environment. Internally, BP sought to find resolve by making changes to its operations and searching for ways to make the organization a better place for employees. The main contributors to the blowout on the Deepwater Horizon rig and the subsequent oil spill was a lack of maintenance and upgrades to the rig and its support systems, lack of procedural control and human error. As an organization, BP incurred debilitating costs from the blown rig: amassing approximately $374 million in lost revenues and the loss of 11 workers' lives. Resilient organizing through finding resolve with individuals working for BP enabled the organization to enact radical change in operations so that the failures that contributed to the blowout on the Deepwater Horizon rig would not be repeated. As indicated by one BP executive: '…we're fundamentally a different company in about how we manage risk and how the care that we take with our decisions. If you spend time with any of our management team and employees, I know you'll feel that' (BP 2011 Q3 Earnings Q&A).

Externally, BP sought to find resolve through commitments to stakeholders. In addition to lost revenues and the loss of 11 lives, the oil spill deeply impacted the gulf coast ecosystem, from fisheries to wetland wildlife to tourism (Ingersoll et al. 2012). Finding resolve by deepening its

commitment to impacted external stakeholders was a common theme expressed by BP executives throughout the data: 'Following the accident we acted rapidly to fulfill our commitments as a responsible party' (BP 2010 Q4 Earnings). Resilience was important to finding resolve because, at the time of the disaster and especially in the months following its occurrence, BP came under scrutiny by many stakeholders. Resilience was critical to help the organization stay committed to finding resolve by 'righting the wrong' created by the oil spill with external and internal stakeholders.

Cultivating the New Future: Refocusing through Resilient Organizing

In order for BP to cultivate the new future post-disaster, a sense of urgency emerged to refocus on the organization's strengths and on where it excels (see Figure x.2 and Table x.2). In this effort, BP funneled resources back to its core, refocusing on where it found success in the past to cultivate its new future. Previous literature describes refocusing as realigning operations after disaster and participating in '"active" thinking about how best to respond, asking themselves what aspects they can control, what impact they can have, and how the breadth and duration of the crisis might be contained' (Margolis and Stoltz 2010,p. 4). We build on this insight and illustrate how BP refocused on its strengths as a global organization and recommitted itself as an industry leader with a new future. An executive described this as recommitment to quality: 'we are not focused on being the largest player in any of our businesses, but of holding the highest quality portfolio and operating it well. I believe this is beginning to show through in our competitive results' (BP 2010 Q4 Earnings).

Indeed, BP had amassed extensive experience and expertise by operating as an integrated energy company with locations across the globe and an employee base of industry experts. It subsequently leveraged this expertise and global reach as a necessary stepping stone to cultivating a new future, as described by the executive: 'BP has a portfolio of very strong businesses and great professional teams around the globe to ensure that we will be back on the

on the road to recovery' (BP 2010 Q2 Earnings Q&A). The refocusing effort also encompassed the commitment to identifying and improving what, to that point, wasn't working well. High-hazard organizations, like BP, should be preoccupied with safety (Weick and Roberts 1993) and achieve a state of high-reliability — something BP lacked before the disaster occurred. Thus, a large part of the refocusing effort entailed reemphasizing safety and how instilling mistake-free operations would help cultivate a new future for the organization. By refocusing on what the organization hadn't done well and improving its areas of weakness, it could be repositioned to leverage its successes and recommit as an industry leader: '…[operations] must be safe and reliable. Across BP, safety remains our number one priority' (BP 2010 Q1 Earnings).

This refocusing effort fundamentally changed 'business as usual' for BP. The disaster required BP to prepare for and build a new future. Through resilient organizing and by refocusing its efforts via organizational changes such as 10-point plans, new safety measures and improved documentation of operational processes, it could cultivate a new future that was markedly different than the one pursued prior to the disaster. As described by a BP executive: 'Our 10-point plan provides the roadmap, how we will play to our strengths and be safer, stronger, and simpler and more standardized' (BP 2011 Q4 Earnings).

Committing to the New Future: Experiencing Transformation through Action

In order for BP to pursue a new future, it had to experience transformation by not just speaking of a new future, but acting upon it. This required executives at BP to see the disaster as a way to move forward renewed. Seeing the disaster as a way to move forward renewed helped BP recognize that it could bounce back to be something greater than it was before (Youssef and Luthans 2007). It wasn't just about coming back or surviving but, rather, the executives saw BP as a 'phoenix rising from the ashes': 'I believe strongly that the strength of this team is the way we see the opportunity to instill those lessons deeply into the fabric of our company, this

will make BP a safer, stronger and more resilient company. And this is good business' (BP 2010 Q4 Earnings).

As depicted in Figure x. 2 and Table x. 2, BP was confident that it could commit to a new future by acting on its obligations to others. That is, rather than just emphasizing the commitment in this stage of resilient organizing, the organization actualized its commitment through actions: 'This program will reset our position and create a stronger performing portfolio, while at the same time remove any worry about our financial strength' (BP 2010 Q2 Earnings). This sentiment — that transformation could only occur through action — was echoed by a BP executive: 'BP is a changing company as a result of what happened in 2010. I believe the changes will be for the better. These are not just words: you can see that from our actions' (BP 2010 Q4 Earnings).

Given its focus on actions that contributed to its commitment to a new future, BP executives looked for and emphasized promising signs of resilient organizing to signify that the transformation for the future was in fact taking place. One of the executives explained: 'The lubricants business…continued to deliver resilient profitability both year-on-year and compared with last' (BP 2012 Q2 Earnings). These signs led to BP distancing itself from the disaster on one hand, and painting a picture for the renewed future via transformation on the other. In other words, these turning points indicated that BP was purposefully committing to a new path for the future. A BP executive described the critical nature of turning points:

> So, we will have taken major steps forward on many fronts in a relatively short space of time. Of course, as we said upfront this has increased some costs and reduced some volumes, but these were short-term effects as we laid stronger foundations for the future. This has brought us to a clear turning point (BP 2011 Q3 Earnings Q&A).

Resilient Organizing for the Future: Implications and Future Directions

The experience and actions of BP executives post-disaster show that resilient organizing may enable organizations to bounce back from a disaster and chart a path for a new future — a process that has not been systematically explored to date. Our findings build on previous work that points to the importance of learning (Weick and Sutcliffe 2011), leadership (Williams et al. 2017) and resolution (Legnick-Hall et al. 2011) for organizing post-disaster and enabling the organization to navigate it. We contribute to this area of research by developing a process model embodied in resilient organizing that enables the organization to prepare for, build, cultivate and commit to a new future. In doing so, we extend the literature in three important ways. First, we illustrate the nature of resilient organizing in organizations in high-hazard contexts. Unlike other industries, organizations operating in these contexts embody two important differentiating characteristics: (1) they are often vital for the region they operate in due to the resources they possess as well as the services they provide (Milosevic et al. 2016), and (2) they are capable of experiencing disasters that can have far-reaching consequences (such as the oil spill discussed here) (LaPorte and Consolini 1991). Consequently, many of these organizations build dynamic structures that enable tight control on one hand, and responsive locales on the other (Milosevic et al. 2016; Weick and Roberts 1993) that enable them to minimize opportunities for disaster to occur. We contribute to this line of research by illustrating how organizations may bounce back and beyond when disasters do occur via embodying resilient organizing. We emphasize learning, resolution, resolve and transformation as key to the process embodied in resilient organizing. Although we provide insights on resilient organizing in high-hazard contexts, one of the key research questions emerging from our study is how does resilient organizing manifest in more mainstream (i.e. non-hazardous) organizations? Understanding this may be particularly important today when even failure-tolerant organizations experience constrained opportunities to learn from mistakes when faced with relentless competitive pressures and increasing customer expectations.

13

Second, we show how resilient organizing enables the organization to create a path for a new future by recognizing the organizational shortcomings that might have contributed to creating the disaster. By viewing the disaster as a learning opportunity, organizations can bounce back and beyond to experience transformation and commit to a new future. We show the process embodied in resilient organizing as BP was grappling with the devastating consequences of its own misjudgments — trying to make sense of what transpired while searching for ways to move forward. Our process model demonstrates resilient organizing and how a disaster triggers an organization to prepare for, build, cultivate and commit to a new future. However, given the importance of resilient organizing, both in terms of avoidance of errors (Weick et al. 2008) and bouncing back and beyond once those do occur, it may be important to explore the process embodied in resilient organizing *a priori* rather than in the wake of the disaster. This may be particularly important for organizations in high-hazard contexts where errors may have devastating consequences for all involved.

Finally, we show how resilient organizing enables organizations to leverage and recombine scarce resources when faced with a changing context (Rouse and Zietsma 2008). More specifically, we show that resilient organizing creates a space where organizations are able to identify which resources to use and how to leverage positive attributes to experience and overcome the disaster. To this end, resilient organizing may enable the organization to not just withstand the disaster, but also prepare for a future renewed. Thus, we emphasize that resilient organizing enables organizations to experience, rather than fix, a disaster. In doing so, the organization can use the disaster to bounce back and beyond to a new future. However, given our focus on resilience in times of disaster, we have provided limited insight into the nature of resilience once the organization has been renewed. To this end, a final research question we suggest is: How do organizations leverage resilience for the future? More specifically, is resilient organizing relevant only in disaster situations, or is it relevant in times of relative

stability (i.e. positive future) (Osborn et al. 2002)? We hope that future studies will address these questions and provide additional insight into the nature of resilient organizing.

References

Aldrich, Howard, and Diane Herker. 1977. "Boundary Spanning Roles and Organization Structure." *Academy of Management Review* 2 (2): 217–230.

Bandura, Albert. 1990. "Perceived Self-Efficacy in the Exercise of Control over AIDS Infection." *Evaluation and Program Planning* 13: 9–17.

Barr, Pamela S, J.L. Stimpert, and Anne S Huff. 1993. "Cognitive Change, Strategic Action and Organizational Renewal." *Strategic Management Journal* 13 (S1): 15-36.

Barreto, Ilídio. 2010. "Dynamic Capabilities: A Review of Past Research and an Agenda for the Future." *Journal of Management* 36 (1): 256–280.

Bohn, James G. 2002. "The Relationship of Perceived Leadership Behaviors to Organizational Efficacy." *Journal of Leadership & Organizational Studies* 9 (2): 65–79.

Carroll, John S. 1998. "Organizational Learning Activities in High-Hazard Industries: The Logics Underlying Self-Analysis." *Journal of Management Studies* 35 (6): 699-717.

Carroll, John S, Jenny W Rudolph, and Sachi Hatakenaka. 2002. "Learning from Experience in High-Hazard Organizations." *Research in Organizational Behavior* 24: 87–137.

Chen, Ming-Jer, and Danny Miller. 2015. "Reconceptualizing Competitive Dynamics: A Multidimensional Framework." *Strategic Management Journal* 36 (5): 758–775.

Creswell, John W. 2012. Qualitative Inquiry and Research Design: Choosing among Five Approaches. 3rd ed. Thousand Oaks, CA: Sage.

Daniel, Francis, Franz T Lohrke, Charles J Fornaciari, and R Andrew Turner. 2004. "Slack Resources and Firm Performance: A Meta-Analysis." *Journal of Business Research* 57 (6). Elsevier: 565–574.

Davis, Jason P, Kathleen M Eisenhardt, and Christopher B Bingham. 2009. "Optimal Structure, Market Dynamism, and the Strategy of Simple Rules." *Administrative Science Quarterly* 54 (3): 413–452.

Foss, Nicolai J, Jacob Lyngsie, and Shaker A Zahra. 2013. "The Role of External Knowledge Sources and Organizational Design in the Process of Opportunity Exploitation." *Strategic Management Journal* 34 (12): 1453–1471.

Gaba, David M. 2000. "Structural and Organizational Issues in Patient Safety: A Comparison Of Health Care To Other High-Hazard Industries." *California Management Review* 43 (1): 83-102.

Gnyawali, Devi R., and Ravindranath Madhavan. 2001. "Cooperative Networks and Competitive Dynamics: A Structural Embeddedness Perspective." *Academy of Management Review* 26: 431–445.

Hannah, Sean T, Mary Uhl-Bien, Bruce J Avolio, and Fabrice L Cavarretta. 2009. "A Framework for Examining Leadership in Extreme Contexts." *The Leadership Quarterly* 20 (6): 897–919.

Helfat, Constance E, and Jeffrey A Martin. 2015. "Dynamic Managerial Capabilities: Review and Assessment of Managerial Impact on Strategic Change." *Journal of Management* 41 (5): 1281–1312.

Ingersoll, Christina, Richard M Locke, and Cate Reavis. 2012. "BP and the Deepwater Horizon Disaster of 2010." *MIT Sloan Management Case Collection* 10 (110): 1–28.

Kobasa, Suzanne C, Salvatore R Maddi, and Stephen Kahn. 1982. "Hardiness and Health: A Prospective Study." *Journal of Personality and Social Psychology* 42 (1): 168–177.

LaPorte, Todd R, and Paula M Consolini. 1991. "Working in Practice but Not in Theory: Theoretical Challenges of 'High-Reliability Organizations.'" *Journal of Public Administration Research and Theory: J-PART* 1 (1): 19–48.

Lengnick-Hall, Cynthia A, Tammy E Beck, and Mark L Lengnick-Hall. 2011. "Developing a Capacity for Organizational Resilience through Strategic Human Resource Management." *Human Resource Management Review* 21 (3): 243–255.

Lozano, Juan A. 2010. "Tar Balls in Texas Mean Oil Hits All 5 Gulf States." *The Associated Press*, July 6. http://usatoday30.usatoday.com/news/nation/2010-07-05-Texas-oil-spill_N.htm.

Luthans, Fred, Carolyn M Youssef, and Bruce J Avolio. 2007. *Psychological Capital: Investing and Developing Positive Organizational Behavior*. Edited by D Nelson and C Cooper. *Positive Organizational Behaviour*. Thousand Oaks, CA: Sage.

Madsen, Peter M. 2008. "These Lives Will Not Be Lost in Vain: Organizational Learning from Disaster in U.S. Coal Mining." *Organization Science* 20 (5): 861–875.

Mamouni Limnios, Elena Alexandra, Tim Mazzarol, Anas Ghadouani, and Steven G M Schilizzi. 2014. "The Resilience Architecture Framework: Four Organizational Archetypes." *European Management Journal* 32 (1): 104–116.

Margolis, Joshua D, and Paul G Stoltz. 2010. "How to Bounce Back from Adversity." *Harvard Business Review* 88 (1-2) 86–92.

Meyer, Alan D. 1982. "Adapting to environmental jolts." *Administrative Science Quarterly*, 27 (4): 515–537.

Meyer, Alan D, Vibha Gaba, and Kenneth A Colwell. 2005. "Organizing far from Equilibrium: Nonlinear Change in Organizational Fields." *Organization Science* 16 (5): 456–73.

Milosevic, Ivana, A Erin Bass, and Gwendolyn Combs. 2016. "The Paradox of Knowledge Creation in a High-Reliability Organization: A Case Study." *Journal of Management*, 149206315599215. doi:0149206315599215.

Osborn, Richard N, James G Hunt, and Lawrence R Jauch. 2002. "Toward a Contextual Theory of Leadership." *The Leadership Quarterly* 13 (6): 797–837.

Perrow, Charles. 1984. Normal Accidents: Living with High-Risk Technologies. New York: Basic Books.

Quinn, Ryan W, and Monica C Worline. 2008. "Enabling courageous collective action: Conversations from United Airlines flight 93." *Organization Science* 19 (4): 497-516.

Radzevick, Joseph R, and Don A Moore. 2011. "Competing to Be Certain (But Wrong): Market Dynamics and Excessive Confidence in Judgment." *Management Science* 57 (1): 93–106.

Raisch, Sebastian, Julian Birkinshaw, Gilbert Probst, and Michael L Tushman. 2009. "Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance." *Organization Science* 20 (4): 685–95.

Roberts, Karlene H. 1989. "New Challenges in Organizational Research: High Reliability Organizations." *Organization & Environment* 3 (2): 111–25.

Rouse, Michael J, and Charlene Zietsma. 2008. "Responding to Weak Signals: An Empirical Investigation of Emergent Adaptive Capabilities." In *OLKC 2008, The International Conference on Organizational Learning, Knowledge and Capabilities*. Copenhagen, Denmark.

Schilke, Oliver. 2014. "On the Contingent Value of Dynamic Capabilities for Competitive Advantage: The Nonlinear Moderating Effect of Environmental Dynamism." *Strategic Management Journal* 35 (2): 179–203.

Stake, Robert E. 1995. *The Art of Case Study Research*. Thousand Oaks, CA: Sage.

Strauss, Anselm, and Juliet Corbin. 1994. "Grounded Theory Methodology." *Handbook of Qualitative Research*, 17, 273–285.

Uhl-Bien, Mary, and Russ Marion. 2009. "Complexity Leadership in Bureaucratic Forms of Organizing: A Meso Model." *The Leadership Quarterly* 20 (4): 631–650.

Van Der Vegt, Gerben S, Peter Essens, Margareta Wahlström, and Gerard George. 2015. "Managing Risk and Resilience." *Academy of Management Journal* 58 (4): 971–980.

Voss, Glenn B, Deepak Sirdeshmukh, and Zannie Giraud Voss. 2008. "The Effects of Slack Resources and Environmentalthreat on Product Exploration and Exploitation." *Academy of Management Journal* 51 (1): 147–164.

Wang, Heli, Jaepil Choi, Guoguang Wan, and John Qi Dong. 2016. "Slack Resources and the Rent-Generating Potential of Firm-Specific Knowledge." *Journal of Management* 42 (2): 500–523.

Weick, Karl E. 2010. "Reflections on Enacted Sensemaking in the Bhopal Disaster." *Journal of Management Studies* 47: 537–550.

Weick, Karl E, and Karlene H Roberts. 1993. "Collective Mind in Organizations: Heedful Interrelating on Flight Decks." *Administrative Science Quarterly* 38 (3): 357–381.

Weick, Karl E, and Kathleen M Sutcliffe. 2011. *Managing the unexpected: Resilient performance in an age of uncertainty*. Vol. 8. New York: John Wiley & Sons.

Weick, Karl E, Kathleen M Sutcliffe, and Davide Obstfeld. 2008. "Organizing for High Reliability: Processes of Collective Mindfulness." *Crisis Management* 3 (1): 81–123.

Williams, Trenton A, Daniel A Gruber, Kathleen M Sutcliffe, Dean A Shepherd, and Eric Yanfei Zhao. 2017. "Organizational Response to Adversity: Fusing Crisis Management and Resilience Research Streams." *Academy of Management Annals* 11 (2): 733–769.

Youssef, Carolyn M, and Fred Luthans. 2007. "Positive Organizational Behavior in the Workplace." Journal Article. *Journal of Management* 33 (5): 774–800.