Mindfulness and the Risk-Resilience Trade-off in Organizations

Ravi S. Kudesia[i,iii]* and Jochen Reb[ii,iii]

Keywords: Risk, resilience, mindfulness, organization, theory

*Corresponding author: rskudesia@temple.edu

Through this chapter, we seek to contribute to ongoing discussion about risk, resilience, and how they can be jointly managed (see Linkov, Trump, & Keisler, 2018), particularly in the context of organizations. We start by reviewing the traditional image of organizations. In this traditional image, processes related to risk and resilience are seen as complementary, as these processes pertain to distinct aspects of the organizational environment. We then complicate this theoretical image by introducing five underappreciated ways that risk and resilience processes may not be complementary in practice—because the aspects of the environment to which these processes pertain cannot always be easily distinguished and because enacting either of these processes can produce tradeoffs that constrain the other. We conclude by suggesting three principles rooted in mindfulness to help organizations manage these risk-resilience tradeoffs. In so doing, we hope to offer an updated image of organizations. This updated image may enrich discussions about risk and resilience within communities of theorists and practitioners alike—as well as across them.

Why risk and resilience appear complementary

The traditional image of organizations is one in which risk and resilience imply complementary processes. Risk-related processes help organizations select among actions by predicting how the actions will affect their environment, whereas resilience processes help organizations adjust actions when the outcomes of action are uncertain and environments prove unpredictable. The implications of this image are straightforward: organizations should resolve uncertainty into risk by increasing information processing and then increase resilience for residual uncertainty through organization design and social interactions. Both implications are elaborated below.

Resolving uncertainty into risk by increasing information processing

Uncertainty describes situations in which actions lead to potential outcomes with unknown probabilities, whereas risk describes situations in which the probability distributions of actions are objective and are quantitatively known (Luce & Raiffa, 1957). Organizations can resolve uncertainty into risk by increasing their information processing (see Frame, 2003). For instance, an organization may need to decide on production rates, knowing that faster production rates increase the number of product defects. Increasing information processing can resolve the uncertainty of this decision by objectively quantifying the relevant costs and benefits. Historical sales data from firm and industry

i Fox School of Business, Temple University
ii Lee Kong Chian School of Business, Singapore Management University
iii Future Resilient Systems, Singapore-ETH Centre

sources can help quantify the additional demand that could be met by increased production, legal precedent can be used to estimate the costs associated with the sale of defective products, and industry benchmarks can better delimit the acceptable range of defects-per-million.

By increasing the information processing used to decide on its production rates, the organization resolved uncertainty into risk. As a result, the organization can use sophisticated quantitative tools like Monte Carlo simulations to make predictions and enact risk management strategies such as risk mitigation (e.g., preventive maintenance on machinery) or risk transfer (e.g., insuring against costs of defective products). Once risk management strategies are used, the information processing requirements for action diminish. Having predicted and planned for future outcomes, the selected action can theoretically be executed in the present with less need for active information processing. For instance, top managers must actively process a large amount of information to select the new production rate, but the unit charged with executing this new production rate on the front-lines need not process any of the information the managers used in selecting the new production rate. They only need to know the new production rate in order to execute. Thus, a temporal separation emerges between planning and execution in this traditional image—whereby planning is deliberative and demands intensive upfront information processing and the subsequent execution is more automatic and less intensive in its information processing.

Yet, there will always be some residual uncertainty that organizations cannot resolve into risk, as not every aspect of the environment is predictable. For instance, the outcomes of setting production rates in a manufacturing unit are more readily quantifiable than are the outcomes of entering a new market in a strategy unit or developing a new product line in an R&D unit. Thus, different units in organizations will face different levels of residual uncertainty (see Tushman & Nadler, 1978). Organizations are typically designed such that most uncertainty resides atop the hierarchy, where top management teams develop plans to cope with wicked strategic problems, and less uncertainty resides near the bottom of the hierarchy, where plans are executed on the front-lines (March & Simon, 1958). Thus, there is also a spatial separation between planning and execution—as planning and execution processes are typically enacted by different units that are situated at different locations in the organizational hierarchy.

In sum, this traditional image of organizations therefore presumes both temporal and spatial separation between planning and execution, where planning occurs atop the hierarchy prior to its execution on the front-lines and requires more active information processing than execution does. As a result, this image portrays top management units in the hierarchy as mostly enabling resilience in organizations because they handle the unexpected outcomes of planned actions and the unpredictable aspects of the environment. Namely, to the extent that the outcomes of actions can be rendered predictable by increased information processing, as in the case of risk, top management units plan the actions and distribute the execution of these plans down the hierarchy to units on the front-lines. To the extent that these plans produce unexpected outcomes, the front-lines are presumed to make upward demands for guidance from top management. And, in this image, top management also handles the residual uncertainty in the environment that cannot be adequately planned for and distributed down the hierarchy.

Increasing resilience for residual uncertainty by organizational design and social interactions

Because the traditional image of organizations presumes a spatial and temporal separation between planning and execution, it links resilience with an increased information processing capacity of top management units, as these units should face the most residual uncertainty. The information processing capacity of top management units can be increased by organizational design and by the quality of social interactions among unit members. Organization design can protect the information processing capacity of top management units by limiting upward demands posed by those executing plans in the hierarchy below (see Galbraith, 1973). For instance, units at the bottom of the hierarchy can be given greater slack resources (e.g., increased budgets, decreased time pressure for production). Units can also be designed in ways that decrease their dependence on other units (e.g., using cross-functional teams so all needed expertise resides in-unit, granting more autonomy to the unit, reducing resources it shares with other units). Organizational design can further reduce upward demands by improving lateral relations across units at the bottom of the hierarchy (e.g., liaison roles can solve problems between units and share best practices). And when upward demands are necessary, information technology can make demands more efficient, reducing the time and effort required of managers.

Information processing, however, is not a purely individual activity, but a collective one. A unit's capacity for information processing thus depends on the quality of its social interactions. In particular, increased information processing capacity is associated with social interactions that occur frequently because members work proximally, participate equally in decision-making, and trust each other—as well as through interactions that are guided, but not governed, by established rules and roles (Bigley & Roberts, 2001; Okhuysen & Bechky, 2009; Tushman & Nadler, 1978). Five social interaction patterns in particular characterize units with high information processing capacity: unit members often raise and openly discuss potential problems before the problems escalate into crises, communicate enough to ensure all members have a good mental "map" of ongoing operations, seek to question operational assumptions and received wisdom, rather than to confirm them—and, when crises do arise, they listen to the members with expertise rather than the members with formal power and they do their best to utilize and update their existing expertise by improvising solutions to the crisis (see Weick, Sutcliffe, & Obstfeld, 1999).

When risk and resilience processes produce tradeoffs

This traditional image of risk management and resilience as complementary processes in organizations, however, belies important tradeoffs, which we now introduce and explore.

When risk erodes resilience

Risk and resilience processes are appropriate for rather different aspects of the environment. But it is not clear that managers can reliably differentiate between these aspects. Organizations tend to romanticize the quantitative (Feldman & March, 1981), in part because investors, regulators, customers, and business partners expect them to act according to rationality norms. Although organizations can maintain the mere façade of rationality to satisfy their external stakeholders (Abrahamson & Baumard, 2008), in many cases, the rationality norm prevails internally within organizations as well. And when a rationality norm prevails internally, organizations may misapply sophisticated quantitative risk management tools on non-quantifiable or computationally intractable problems that are better suited for resilience processes (Artinger, Petersen, Gigerenzer, & Weibler,

2015). Risk management tools can enable more intricate plans held with greater confidence than the data support. Misapplying these tools can therefore set organizations up for nasty surprises for three reasons.

First, misapplied risk management separates planning from execution both temporally and spatially. Adjustments to plans are thus subject to time delays (in how often those on the front-lines inform those atop the hierarchy of issues) and reporting biases (in that near-misses or non-events are unlikely to ever be reported). Such time delays and reporting biases limit the efficacy of managerial action. Second, misapplied risk management disempowers those on the front-lines because risk and resilience entail different logics of employee action. Namely, when front-line employees enact resilience processes, they readily apply their direct access to information (from customers, operations, suppliers, etc.) toward strategic priorities (Vogus & Rerup, 2018). Such a logic of action is difficult to cultivate with risk-related processes, where front-line employees are disempowered to adjust plans because of the separation between planning and execution. Thus, misapplying risk management in situations where resilience is more appropriate foregoes a logic of action where front-line employees adjust plans based on their privileged access to direct information. Third, having limited the efficacy of managerial action and disempowered front-line employees, the organization is left incapable of coping with eventual surprises. Coping with surprises can require an extraordinary willingness to examine flawed model assumptions, to avoid the blame game, and to transparently bring forward all relevant information (Argyris, 1990)—including across units that may have previously been operating in silos (see Dunbar & Garud, 2009). But without having actively developed these virtues during good times, the organization is unlikely to somehow do so during crisis. In this way, risk management can erode resilience processes.

When resilience Increases risk

Conversely, resilience processes can increase risk in two ways. First, resilience can be treated as an outcome ("100 days since an accident"), rather than a process that emerges from the everyday actions of organizational members. If resilience is treated as an outcome, managers may act with the assumption that resilience will remain a stable property of their organization, instead of realizing that resilience is dynamic and responsive to their actions. For instance, after resilience had been established for some time, managers at NASA assumed that resilience would remain a stable outcome, and shifted priorities and funding away from resilience processes and toward productivity—leading them to repeat critical mistakes (Haunschild, Polidoro, & Chandler, 2015).

Second, adaptation at one level of an organization can substitute for adaptation at another level (Levinthal & March, 1993). This substitutability of adaptation can make resilience a risk, such that not all adaptation is normatively positive for the organization as a whole. Particularly in organizations where crises emerge from operations, highly resilient front-line employees can prevent adaptation atop the hierarchy. For instance, nurses often "work around" problems that arise during patient care. That is, they improvise on-the-spot actions that help them circumvent problems in a temporary way. As a result, problems are seldom reported to managers who can address them more systematically (Tucker, Edmondson, & Spear, 2002). A less resilient front-line would be unable to handle these problems, thus informing managers and allowing adaptation at the managerial level. Conversely, when selection pressures are most acute atop the hierarchy (from regulatory or competitive sources), managers may change rules, routines, and resources. But the front-line may

lack a wider context to understand such changes, leading them to resist change and thereby increase risk. In this way, resilience can increase organizational risk.

Mindfulness and managing the risk-resilience tradeoff

The cutting edge of organizational research asks how the risk-resilience tradeoff can be managed through mindfulness. Early mindfulness work suggested that the deliberate mental processes people use during planning could, and should, be retained during execution (Langer, 1989). Instead of execution occurring on autopilot, people can use their experiences during execution to refine their plans and assumptions. In time, mindfulness expanded from the individual to the group, referring to the five social interaction patterns characterizing units with large information processing capacity (Weick et al., 1999). Most recently, mindfulness is seen as requiring the integration of these mental processes and social patterns with the organizational designs in which they occur (Kudesia, 2017b). With such an integration, organizations can enact continuous improvisational change in which planning and execution converge both temporally and spatially (Brown & Eisenhardt, 1997; Moorman & Miner, 1998), thus limiting this key cause of the risk-resilience tradeoff. Instead of predicting the environment, such organizations directly act on it, notice the impact of their actions, and make adjustments through rapid feedback cycles.

We suggest this integration requires three principles. First, organizations must see expertise as not just deliberate and conceptual, but also automatic and perceptual (Dreyfus & Dreyfus, 2005). Mindfulness is less about constant deliberation. It instead requires that people switch mental processes between deliberation and automatic action based on their expertise in a situation (Kudesia, 2017b). This empowers useful improvisations to emerge from the automatic actions of experts (Chia & Holt, 2009). Second, for such improvisational actions to benefit the organization, they must be strategically aligned. Rather than relying on intricate plans to align actions, top managers can offer heuristics: simple rules that identify strategic priorities and values (Artinger et al., 2015; Brown & Eisenhardt, 1997). Heuristics give people a shared basis from which to improvise, ensuring alignment. Third, middle management plays a crucial role in troubleshooting areas of misalignment. Their position in the design best places them to reconcile differing priorities and values across the hierarchy—and to notice valuable improvisations on the front-lines, help articulate them, and encourage their adoption more broadly (Beck & Plowman, 2009; Eggers & Kaplan, 2013).

As such, expertise on the front-lines, simple rules from top managers, and troubleshooting from middle management seem to be three necessary mindfulness principles for managing the risk-resilience tradeoff in organizations. Although much remains to be understood about these principles, they may underlie an updated image of risk and resilience in organizations. In this updated image, planning and execution converge in a manner that allows organizations to transcend the risk-resilience tradeoff through rapid, intelligent action.

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