MAKING THE MOST OF MESS: RELIABILITY AND POLICY IN TODAY'S MANAGEMENT CHALLENGES

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Five hours ago (this writing begins at 5:31 am (EST) Tuesday, 1 October 2013), the mess of a government shutdown began to unfold. It is hard to imagine a more timely moment for this book. The word 'failure' is in the air, including the platitude 'failure is not an option'. But, as Emery Roe puts it, to say that 'failure is not an option is rubbish. Failure is always an option that professionals manage as reliably as they can in order to prevent it' (p. 131). Roe's deep and disciplined discussion in this book is a 'coherent frame of reasoning' that dimensionalizes messes while preserving the fact that people keep trying to provide reliable services under conditions that vary in their volatility, options available, and the extent to which they are unstudied.

To appreciate what Roe is tackling, recall the traditional policy cycle: define the problem, assemble evidence, construct alternatives, select evaluative criteria, project the outcomes, assemble the options, and choose, implement and evaluate (p. 166, fn. 8). Now, render each step as an amalgam of complex, disputed, uncertain, incomplete contingencies, and you have what interests Roe, a 'traditional' mess. You neither clean up a mess nor escape the chronic threat of failure. What you can do is to think like a 'reliability professional'.

The idea of 'reliability professionals' first appeared in the foundational earlier book, *High Reliability Management* (Roe and Schulman 2008), a tightly focused look at the time-pressured control room dispatchers who run the electricity grid in California. The dispatchers were dubbed 'reliability professionals' because of their competence in dealing with a volatile environment of changing conditions and changing options for reliably performing their tasks, as well as their competence at blending system/individual scales of analysis with both representational and experiential knowledge. They could recognize patterns and locally relevant scenarios that enabled continuing reliability. These particular skills were set forth in two 2×2 taxonomies that incorporated performance modes and analytic modes.

In this book, Roe has now added two more 2×2 taxonomies (J.Q. Wilson on organizations and Mary Douglas on culture) which results in four nested taxonomies that incorporate performance modes, analytic modes, organizational setting, and cultural setting. As the more mathematically inclined will have noted, that raises a lot of possible combinations. But, complex as this seems, it does impose a more focused structure on the conditions of mess. The taxonomies are also grounded in discussions of over-crowding, pandemic crises, electricity grid management, real-time ecology, and real-time economics.

As a mid-course aside to readers of the book, read as much of this book as you can in one sitting. The writing is filled with nuances, calibration, differentiation, and juxtaposition, all of which mean that, as you read, you are building a complex mental map that may be easy to put down but much harder to pick up in all of its complexity after an interruption. The developing structure is exemplified at several points by helpful illustrations. For example, unstudied conditions where there are no known patterns, scenarios, but high staff turnover and poor mess management are described in the context of forensic evidence. The sustained example that replaces electrical grid management this time is management of the financial mess of 2008, but references to it tend to be spotty and somewhat disconnected.

Before commenting on issues raised by the book, I want to mention some of the finer points within the argument. This is not about crisis management. Crises occur outside scenarios and patterns, in unstudied conditions where there is no experience to call on. Also, Roe is not talking about problem solving and designing a solution but rather about managing within a network where the driving question is, 'what do I need and who knows better?' (see table 2 on p. 96). This distinction refreshes the original emphasis in the early literature on high reliability organizations that self-designing, self-organizing networks were crucial for higher reliability. Then as now, the point was that managing for reliability more often involves the sequence action → synthesis → analysis than the problem-centred sequence, analysis → synthesis → action.

A crucial performance and reliability combination in mess management is Just-On-Time (JOT) practice, when an individual combines high volatility with high options (high seems to include both number and variety of options). 'Good enough reliability: fast enough, with just enough, knowing full well that this is never enough all the time.' In Roe's view, it is important to talk about Just-On-Time performance rather than Just-In-Time (JIT). JOT

requires real-time flexibility, just enough, and just when needed. JIT is different because it has fewer options (no substitutes, backups, and workarounds), is tied to inventory control, and fails to incorporate the dynamic in which better practices emerge while evolving, but are never final or definitive. To lose options is to shift to Just-For-Now (JFN) performance (e.g. stay just an hour longer for the next few days) which exhausts resources and amplifies any error that occurs (more hours, more fatigue, more errors) and casts reliability professionals in the role of fire-fighters instead. In the case of JFN, the problem is that a bad mess gets worse because reliability and volatility become more tightly linked (more of one leads more decisively to less of the other).

Recall that the 'original' reliability professionals were grid dispatchers and their modes of thinking, performing, and erring are the prototype on which Roe has generalized to the broader issue of policy mess management. Reliability professionals are 'charged with making sense of the wider patterns and local contingency scenarios they face, case by case, and often just on time'. They 'excel at cross-scale, context-dependent, case-by-case analysis. They work in the middle of the mess-reliability space, which positions them between localized contingency scenarios and global pattern recognition' (?). To become more reliable means to become more knowledgeable, about cases/experiences, at various scales.

Let me move on to examine some of the open issues raised by the book. These nuances are noteworthy both for the questions they raise and for the gaps they may suggest. What is the reliability component of this mess-reliability space referenced in the quotation above? Is it that there are patterns within the mess, localized scenarios in the mess, options in the mess, or volatility reduction in the mess, that elude the grasp of obsessed macro designers and equally obsessed micro operations implementers, but are more apparent to reliability professionals who look for them?

Additionally, if I am my own mess and reliability professional (p. 86), then I combine my knowledge bases (experiential, representational), the scales at which I operate (system, case-by-case), and blend in my view of what I see as indications of high/low volatility and many/few options, all of this influenced by the cultures and organizations in which I perform. When I do this, do I discover a mess and reliability space or do I create/label/define it? Undoubtedly both. And undoubtedly the pronoun should be 'we', not 'I'. A good example of this complex issue is Roe's discussion of the pricing of credit default swaps. Nevertheless, when we manage a mess, are we managing an entity? Are we 'thrown' into a mess, as if it is a distinct thing, or do we live in flux where the managing involves a more basic bounding, sorting and categorizing the flux using categories such as Roe's dimensions? That bounding would impose scope, knowledge, and performance/reliability modes on flux.

The translation of scenarios and patterns into reliable practices is crucial in the skill set for managing, blending, and interpreting, but this activity is given little attention in the book. That is surprising since reliability professionals blend knowledge of patterns and scenarios into stories that synthesize these inputs into reliable service provision. A common moment in a mess is the question, 'what's the story?' This is a robust probe that can evoke syntheses, patterns, and fine-tune principles into local contingencies, all in real-time.

As mentioned earlier, the financial mess of 2008 weaves in and out of the text. But it does so largely in macro-level, finance-based form with less attention to continuity, development, patterns, and scenarios. This suggests that Roe's framework works better on the scale dimension (system-individual) than on an experiential knowledge base. It also does not work as well on pattern recognition as a basis for anticipation or micro

operations. What I miss is the detailed description of the everyday work of the dispatchers in the 2008 book, a book that I loved as did my students. What is the policy control room? Are there policy dispatchers? What do they do? I'm still not sure what a day-in-the-life of policy reliability professionals looks like, but if Roe is right, that's probably not apparent to those professionals either.

A recurring description of what reliability professionals do is that they 'reliably sort out the mess' (e.g. p. 33). This hearkens back to the 'entity' issue mentioned earlier. Is a space sorted into patterns within the mess, localized scenarios in the mess, options in the mess, volatility reduction in the mess, all of which elude the grasp of those focused solely on macro system principles or micro individual experiences?

A challenge for further work is that Roe focuses mainly on maintaining and increasing options but has little to say about the reduction of volatility. It may be that volatility cannot be reduced. But it can be better characterized.

Ultimately, this is where Roe's book makes its most significant contribution. It provides a coherent, inclusive language and vocabulary that enables people to sort conditions of mess into meaningful dimensions. When this happens, analysts are better able to see less obvious dangers such as complacency, misjudgement, deviation amplification, and non-compliance. Roe also sharpens more specific terminology. For example, he describes 'better practices' rather than 'best practices' because neither patterns nor scenarios are stable enough to be called 'best'. He avoids reference to a 'worst case' because to do so is to propose a specific scenario that says nothing about the magnitude or frequency of such a scenario.

Finally, there is valuable advice for practitioners in the book, which essentially includes all of us. Professionals are urged to keep asking, 'what are we missing?' That's tougher than it sounds because people who feel that they can eliminate cognitive bias by asking this, exhibit the very bias that you have to adjust for in mess management. Perhaps even more crucial in practice is dogged application of the 'reliability matters test'. When you make a proposal, be explicit about its effects on options and volatility. For example, in a bank crisis, if you increase liquidity, you raise options but have no effect on volatility; if you increase capital reserves, this affects volatility but not options; only if you recapitalize the banks do you increase options and decrease volatility.

In summary, what is carried over and enlarged from the 2008 book is the picture of acting in real-time, described as balancing a past that isn't over yet and a future that has already started. 'The only place the future can be reliable is now, and only if we are managing our messes right now in light of our inability to predict with any great assurance' (p. 117). Here's where real-time, JOT, improvisation, using patterns and scenarios in your repertoire, and seeking help from the network come together. That very inability to forecast is part of the mess we are in.

My personal favourite sentence in the book is this one: 'There is no ''therefore'' in the middle' (p. 48). I applaud the economy of the phrase. But even more I applaud the insistence that a mess is not about a 'probable' next step built from logic, principles, and macro designs that often makes the mess worse. A mess is about a 'possible' next step built from patterns and scenarios. 'In a contingent world, real-time improvising in the face of what people cannot fully anticipate [is necessary because] having designs that work as planned is only one of the many contingencies we prepare for' (p. 135).

By the time you read this review, the government shutdown will have become history of some sort. And how it will have become that past, and what the present messes look like, will make more sense thanks to Emery Roe's considerable help.

REFERENCE

Roe, E. and P.R. Schulman. 2008. *High Reliability Management: Operating on the Edge*. Palo Alto, CA: Stanford University Press.

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