

# FIVE

## GOOD MESS MANAGEMENT

The question whether it's best to swim with the current or against it seems to me out of date. . . . The method of the yachtsman who tacks with the wind as well as against it seems more fruitful. Such a procedure applied to society demands stoic disbelief and the greatest attentiveness. Anyone who wants to reach even the nearest goal must expect, step by step, a thousand unpredictable variables and cannot put his trust in any of them. —Hans Magnus Enzensberger (1992)

This chapter is longer than others, because it is important to establish how much more can be said about good mess management than conveyed by that casual dismissal: Good messes are transitory, bad messes aren't. My argument here has two parts. First, I summarize the different points we have learned so far about good messes and their management. Then I spend considerable time discussing five major ways to promote good mess management.

### The Argument and Implications So Far

If we stay with the framework used in the preceding chapters, what more is involved in managing policy well than avoiding managing it poorly? What more do we need to say than that managing well means you move across performance modes as conditions require with the skills that you need?

As there is much more to say, let's start with the points we now know. When working under conditions that are highly unpredictable or uncontrollable, it is better to manage your options creatively up to the last moment (just on time) than manage reactively with fewer options over prolonged periods (just for now). One way to make conditions more predictable (just this way) is by declaring an emergency, but that course of action has built-in problems as well. We've seen how searching for better practices may be the only viable avenue to reduce the volatility of the task environment in which you work and to increase your options to

respond to that volatility. All this is not without its own risks, but at least they are risks that are known or knowable. Furthermore, as we shall see more fully below, what makes for good mess management is that ability to bounce back from a surprise or shock while planning the next step ahead. Moreover, this resilience-with-anticipation involves learning from the inevitable setbacks to management. It bears repeating that to manage this way means you have to work within a network or networks of like professionals who are skilled in recognizing system-wide patterns, formulating contingency-specific scenarios, and translating patterns and scenarios to achieve reliable services, both at the system and case levels.

If managing messes poorly comes in part from mistaking the hubs and standpoints around them in the mess and reliability space, then managing a policy mess better entails sorting out the standpoints and hubs. We, the mess and reliability professionals, do this to show the many different standpoints and establish why managers are pushed and pulled away from any single one. Is evolution a macro theory or an empirical generalization, or does having to choose push and pull you to more-nuanced positions? Is leadership a micro experience specific to certain individuals, a scenario based on locally contingent leadership principles, or some kind of composite? From time out of mind, the farmer has been central to rural development. But to which hub are we looking when we address better policy for farmers? The farmer we know personally? The risk-averse farmer or the progressive farmer, so loved in theory and project design? The female farmer, given the empirical generalization that many farmers in the developing world are women? Are we talking about “the farmer in Asia” as he or she differs from “the farmer in the American Midwest” who in turn differs from those of other regions and contexts of the world? Because farmers are all this and more, the policy that can tell farmers apart is more effective than the one that homogenizes them together.

Won't making such differences visibly worsen the mess? Doesn't the proliferation of and insistence on distinctions make for bad messes rather than good ones? Such a conclusion may itself reflect one scenario or set of patterns, but not the only one. Revealing hitherto obscured elements may change the nature of the mess from bad to good. You would think, for example, that people who are concerned with poverty and inequality would be interested in not only unequal incomes but also more-equal consumption patterns.<sup>1</sup> And you would think that with so much attention being given to relative poverty and inequality—the rest are poorer because the West is richer—there

would be more empirical research on just how, if at all, real Indian farmers or Chinese workers compare themselves to real U.S. farmers or European workers (Panagariya 2003, 1289).

Or return to the major policy mess of having had more than forty million uninsured Americans. This was not as large a group as those without adequate water and sanitation worldwide, but forty million is a big number, with the group including some uninsured people who are better off and others who are worse off than the average uninsured. Doesn't this imply there was a good mess here to be managed—regardless of enacting any official healthcare reform—where those millions of uninsured who were worse off had a variety of things to learn about survival strategies from those millions who were better off but still uninsured? Might it make more sense that we professionals assess these strategies before we leap from the charismatic number of forty million—plus directly to one macro-design “solution” of, say, a bigger or more comprehensive single-payer system?<sup>2</sup> “If the world is complex and messy, then at least some of the time we’re going to have to give up on simplicities,” argues one mess researcher, John Law (2004, 2).

If the above is correct, then the most important question in a policy and management analysis is not how do we solve this? Instead, networks of reliable mess managers have to ask: What are we missing by way of patterns and scenarios? What are we not seeing that is right in front of us by way of better practice? By asking what we are missing, we also acknowledge our cognitive biases and limitations, and the role of the network in adjusting for them rather than trying to eliminate them once and for all. In fact, when it comes to managing mess well, thinking that you or I can eliminate our own cognitive biases is the cognitive bias that we have to adjust for in management. Ken Fisher, a well-known asset manager, recommended asking yourself the following when considering any investment: “What do you believe that is actually false?”; “What can you fathom that others find unfathomable?”; and “What the heck is my brain doing to blindside me now?” (quoted in Gangahar 2006). This is still good advice.

While I stress the search for better practices, I must be clear that mess and reliability management is also about what is being missed when accounting for how context compels adaptation of principles and precepts in light of local conditions. Another example helps underscore this. Assume that the weight of the evidence indicates unionized firms as compared to nonunionized firms have lower rates of productivity, employment creation, and investment, other things being equal (see, for example, Karabegovic et al. 2004). Contrary evidence exists, as

is the case in any messy pattern recognition, but assume on net that the negative relationship with economic growth holds on average across firms. Even then, professionals must ask of this conclusion: So what? It may be true as far as it goes, but it clearly does not go far enough.

Even if the recognized pattern is as stated, localized scenarios in which the opposite holds are possible. For example, considerable evidence suggests that the “union/nonunion” dichotomy masks great variability in collective bargaining laws and wage arrangements across countries and regions (Aidt and Tzannatos 2008; Boeri, Brugiavini, and Calmfors 2001). That variability, in turn, suggests we take another look at the macro-design standpoints to which this local variability is a response when it comes to the union/nonunion dichotomy. What human rights, for instance, are at issue when one talks about unionization? In reviewing the literature, one quickly realizes that the rights concerned relate not to any “right to unionization” but to the more traditional ones of collective bargaining and freedom of association (see Aidt and Tzannatos 2002). Taking the latter as the point of departure brings to the surface two issues that may well have been missed by others. First, focusing on different rights means the prior focus on unionization and economic growth at the pattern recognition hub is too narrow. We should instead be looking at the evidence related to growth and collective bargaining arrangements generally. Second, if we did that, we would better understand why local conditions are so variable with respect to “unions” now variously defined.

Last, by way of summarizing the implications of the argument so far, asking what you and your network are not seeing in the policy mess means you have to reflect on what matters for management. Not only is it too easy to confuse a mess for a problem or a crisis, but we are also apt to confuse our definition of the problem for the problem itself. Then we wonder why trying to solve the problem definition ends up producing a really bad mess.<sup>3</sup> “We had the wrong assumptions and therefore we had the wrong plan to put into play,” concludes a U.S. Army general of the planning mess for the post-2003 occupation of Iraq (quoted in Gordon 2008).

We can, however, do much more by way of nurturing, expanding, and protecting good mess management for better policy than the above insights suggest. I turn now to five major ways to do so, along with some of their specifics: recognize and protect mess and reliability professionals; be your own mess and reliability professional; join disciplines that are becoming real-time professions; favor networked deci-

sionmaking over problem-centered approaches; and manage setbacks better. These interventions are neglected when they should be championed, especially in light of the societal challenges in the next chapter.

## Recognize and Protect Mess and Reliability Professionals

As our goal is managing well rather than poorly, we must protect those professionals who do manage well. By protect, I mean that these middle-level managers and networks need not only to be defended, but also shielded and buffered from the wider volatility around them. These professionals are under threat from economists who see them as rent-seeking bureaucrats; business faddists who see middle-level management as ripe for reengineering; and politicians who revile both regulation and regulators but who nonetheless demand all kinds of real-time protections to safeguard them from all manner of risk. There is also that “us” whom reliability professionals need protection from, because the more we-the-public know about how many close calls and near misses are involved in order to keep our services reliable, the more we—as consumers and citizens—demand high standards of performance whose invariance would undermine that reliability even further.

But why should we protect professionals who take reliability seriously? Because, without them, all those glitches that are already happening in our complex technical and service systems would turn into major accidents and failures. The net present value of savings that these managers and operators achieve every day across the world must be in the billions of dollars. Depending on whom you ask, the ratio of near misses to actual failures in our critical infrastructures ranges between 1,000 and 100 to 1 (Robert Bea, personal communication). Imagine what that number would be if no one were converting the near misses into close calls and actual saves.

If mess and reliability professionals are not protected, who would buffer society from actions based on risk management models that fail to predict events that actually happen, or fail to provide scenarios about what to do once the possible improbably does happen? Networks of such professionals are to be protected in major part because of their dual ability to assess the probable (what is likely to happen in light of the systemwide patterns observed) as well as the possible (what can happen by way of scenarios given a constellation of contingencies, few of which may have been encountered before).

Start with the probable. While the conventional definition of risk is

the product of the magnitude of a hazard and the hazard's probability of occurrence, as we saw earlier, this is only a point of departure to understanding risk from the perspective of mess and reliability. From the other side, the development of worst-case scenarios—especially when it involves thinking about what has not happened before—is another conventional way to approach risk. To reiterate, these two common views of risk represent the respective bookends of pattern recognition and scenario formulation. In between is where mess managers and professionals undertake the hard work of interpreting and differentiating these risks in the name and under the discipline of reliability-seeking management. It is in that hard work where the skills of recognizing and formulating possibilities are also honed, as mess managers move across performance modes and the specific risks entailed in managing there.

While it is more familiar now to distinguish thinking about the possible from estimating the probable (see, for example, Hirschman 1970, 343), for professionals in the middle these activities are reciprocal. Thinking about the possible is one way professionals manage within a domain where system-based inferences and context-specific deductions must be connected. To translate the patterns you see and the scenarios you formulate so as to ensure reliable performance is also to validate the possibility that you may have to add to, let alone revise, your repertoires of patterns and scenarios. How so?

At the end of October 2007, during the firestorms then affecting San Diego, I was in the control room of the California Independent System Operator, which manages the state's electricity grid. Engineers and support staff were huddled around the shift supervisor's conference phone as he talked to his counterparts in San Diego and elsewhere. At one point, a San Diego control room operator said something like, "The two lines relayed [went out of service] this morning, and that could happen again this afternoon." This immediately sent the engineers and staff to their grid maps to figure out what such relays would mean in terms of shifting the load later that day.

What is important about the episode is that the two lines went out of service that morning in a way that had not been seen before, as far as I could determine. While fires are a feature of the San Diego region, the operators hadn't seen this kind of event in that way. For them, this one instance of relaying was enough to prove the truth of the statement, "It could happen again." If it happened in the morning, it could happen in the afternoon. This if-then statement was not a conditional probability—that is, a statement of what was *likely* to happen, given

what had occurred. Probability in that sense requires a run of cases, yet the defining feature of the episode was that the professionals involved had never experienced this type of problem in that set of circumstances. Something had to be done, because harm to the electricity supply was entirely possible.<sup>4</sup> Not just a scenario or—I concluded as I listened—even a worst-case scenario, the relaying was a live possibility as real as if the operators could have put odds on it happening.

We expect the professionals who provide critical services—again, not just in control rooms—to move beyond pattern recognition of risk and worst-case scenarios and manage in the face of the inevitable surprises that contingencies bring. As Maynard Keynes famously quipped, “The inevitable never happens. It is the unexpected, always.” We want professionals in their domain to navigate between the best that is possible enough for them to anticipate (prepare for), given the system and local scenario they confront, and the worst that is impossible for them to dismiss, given the same system and scenarios (see, for example, dos Anjos and Chick 1995, 257). In these circumstances, having to make a decision becomes even more difficult to avoid because both probability and possibility are evident to managers. The sensitivity of professionals to such distinctions, I believe, comes from their ability to differentiate and appraise risk—the probabilities and hazards and scenarios—under shifting performance conditions. They have learned the importance of possibility because no amount of retrospective success in management prevents the manifest possibility—not just probability—of future failure (Roe and Schulman 2008). In a policy and management world where decisionmakers reel from what was just inconceivable to what now seems inevitable, it is essential to have and protect good managers who don’t skip a step in between and who take seriously both multiple possibilities and multiple risks.

How would the protection of the mess and reliability professionals proceed for those involved in the financial mess? There certainly is the need to protect that dog that hasn’t barked—yet. From this book’s vantage point (chapter 2), the most important priority would be for the government and regulators to protect the professionals managing our other critical infrastructures, particularly electricity and telecoms, from any cascading contagion in banking and finance. If they are not protected—and presumably infrastructure protection is the good mess in “protectionism”—we potentially face a socioeconomic crisis more dangerous than the one after late 2008.<sup>5</sup> Why? Because the Great Recession has left us with fewer options and more volatility for governments than before it, and some critical infrastructures are already

operating close to their respective performance edges. If luck is when skill meets opportunity, then many infrastructures may be running out of luck, and we along with them.

We should also be protecting those professionals within banking and finance. The entire sector did not melt down—to use our terminology, not all its mess and reliability professionals were pulled out of their domain of competence into unstudied conditions. “Contrary to popular perception,” writes Gillian Tett of the *Financial Times*, “by historical standards, most of the financial world was *not* crazily leveraged in the past decade. Instead, the crazy debt increase was focused on a small group of brokers, and global banks” (2010). The banking and financial sector was never in pervasive crisis globally or regionally. The United States needed to look no further than next door, where a headline said “Canada banks prove envy of the world” (Mason and Simon 2009; see also Flaherty 2008). Since not all banks and investment firms, in the United States or abroad, weathered the financial mess in the same way with the same effect, how similar banks were able to avoid disaster should be of keen interest to managers, a point to which we return throughout this book.<sup>6</sup>

Some financial firms all along refused to involve themselves in mortgage-backed securities or did not require bailout funds (see, for example, Cohan 2009). One observer put it: “We should also recall that not all public banks have behaved badly. For every Credit Lyonnaise there is a BNP, which did a respectable job when state-owned” (Jackson 2008; Jolly 2012; on reliability in U.S. equity markets during the financial upheaval, see Greifeld 2009).<sup>7</sup> European-based banks also varied in terms of their performance (on the comparative success of Santander in Spain, see Mallet 2009). “Unlike so much of the financial system, the mutual fund industry came through this crisis unscathed,” argue Niall Ferguson and Laurence Kotlikoff (2009). But, you ask, how long can that continue? My point, precisely. If the first priority is to protect those mess and reliability professionals in other, interconnected infrastructures, then the second priority must assuredly be to protect those that remain within finance itself.

Protecting professionals means protecting their networks. A number of financial reform proposals have called for good bank–bad bank mechanisms that would fence toxic assets off from viable ones (see Blinder 2009; Jenkins and Johnson 2012; Sidel 2009). It is by no means clear, however, how one improves reliability by breaking up networks of competent managers and then expecting the segments to be reliable once they are reassembled into banks with good assets and other

banks with bad assets. Both types of banks require active management, and they may well operate in the same global markets—yet the two types may well require very different kinds of managers. “Bankers want to keep customers. That’s how they define success,” according to the head of the Swedish central bank, based on Sweden’s own experience with this kind of arrangement. “If you’re running a ‘bad bank,’ success is to get rid of your customers—and that means you have to have a different mindset” (quoted in Thal Larsen and Giles 2009). Such cognitive flips, as we shall see, create considerable challenges ahead.

### Be Your Own Mess and Reliability Professional

Reading this book makes you more than a student of mess and reliability. A good number of you are already professionals—if only because the only reliable manager any individual has in the healthcare mess is him- or herself.<sup>8</sup> The modern corporation has outsourced to you not just your healthcare management but also other operational responsibilities, be it your banking through ATMs or your tracking of your own packages online (see Alvin Toffler in Gardels 2006). Many of you are already networked into several other professional domains. So far, my left eye has been operated on, well, let’s not count the number of times, so it now exists within an extended network of ophthalmologists, glaucoma specialists, eye surgeons, and more—a network I belong to only because the eyeball in question happens to be in my body.

Many readers work in organizations or sociotechnical systems that consider their services to be critical and for which reliability is a mandate or part of their mission. To that end, you spend a good deal of time caught between balancing the immediate past with the next step ahead. This defines “real time” for many of us: a past that isn’t yet over and a future that has already started, leaving the present mess in between to be managed. In contrast to what some studies have found, that people exhibit “an *excessive* preference for the present” (Offer 2006, 72), the professionals we are talking about exhibit a *justifiable* preference for real time.

I think of my own profession in these terms. Policy analysts and public managers are mess and reliability professionals charged with making sense of the wider patterns and local contingency scenarios they face, case by case and often just on time. They are caught up in the middle of things, where it’s easier for them to say we’re in a policy mess than to tell the story about how it began or will end (see Beer 1983; Roe

1994, 2007). At their best, analysts and managers identify and sort out the standpoints they confront around the four hubs of macro, micro, pattern, and scenario, with an eye to rummaging out the good mess from the rest when it counts the most—for this step and the next one ahead. To do so means that analysts and managers are occasionally pushed and pulled to think in terms of careers rather than solely in terms of the immediate tasks, because no one job can provide the unique knowledge and experience required for real-time management.

One way to become such a professional is to use the mess and reliability space in chapter 3's figure 3 as a diagnostic in one's own practice. Next time you are in a meeting about some policy mess, map the positions you are hearing. If experience is any guide, you will find that the participants feel compelled to map out all the hubs and major standpoints around them before some of them are pushed from their viewpoints and pulled to translating what all of this means for the case at hand. After a time, someone finally asks, "Just what does all this mean for what we should be doing?" Then you can answer with your own question: "I wonder what other people in your situation have done that actually worked?" This is why there is great virtue in the practice of trying to "bring the system into the room," so that comments of stakeholders around the hubs driving the policy mess actually map the entire mess and reliability space. In these ways, you're muddling through, but you aren't muddle-headed. All this seems horribly counterintuitive to those who want to gloss over differences so as to "get to the point," albeit the point they get us to is more mess.

As with brainstorming, the point of mapping the mess and reliability space for the policy issue is not to rush the talk by leaving out important standpoints. Otherwise you and others risk not being pushed and pulled to the mess that can be managed. It is in this middle where the heavy lifting and balancing of that barbell with patterned anticipations at one end and formulated contingency scenarios at the other has to take place. Think of plotting and populating the hubs as the way you can get to a position where everyone uses a constantly updated reference list of what has worked elsewhere and more effectively.

A critical part of becoming a mess and reliability professional is an appreciation of the dangers inherent in both prolonged just-for-now performance and operating outside of the competence and skills in any of your networks. Mandating more for less, and then even more for even less, is the surest prescription for backing managers into a corner, forcing them to manage to the edge of failure while task volatility remains high and options progressively fewer. But no manager believes

professionalism lies in failing to fail. Prolonged just-for-now performance, as we saw, is sure to deprofessionalize operators, and that includes you. It is true that some features of just-in-time manufacturing are now treated pejoratively (see, for example, Lynn 2005), but the just-on-time performance discussed in this book is different. A particularly salutary feature of just-on-time performance, from a professional standpoint, is the search for alternative ways to assemble options even when task volatility is high.<sup>9</sup> It has been suggested that “one of the strongest safeguards against cognitive errors” is “to generate a short list of alternatives” (Groopman 2007, 66; see also Marcus 2008, 165). While professionals cannot eliminate their cognitive limits,<sup>10</sup> adjusting for them is one of the few things that professionals and teams networked together are able to do, and do well (see, for example, G. Klein 2009, 63; Sorensen 1992, 256–66).

Note that for just-on-time professionals the greatest danger is not the lack of deliberation or analysis, although you will often be told otherwise (see Sunstein 2007). It scarcely suffices to urge you to take time and plan better, when conditions push and pull you differently in the midst of an inescapable urgency. “Be deliberative!” or “Think through the worse-case scenarios!” is a good macro principle as long as you remind yourself of those cases in which deliberation had consequences that differed little from those well-documented instances of groupthink, escalation, and entrapment in decisionmaking (see, for example, Drummond 2001). “Contrary to conventional wisdom,” concludes a *Science* article on deliberating about complex matters, “it is not always advantageous to engage in thorough conscious deliberation before choosing” (Dijksterhuis et al. 2006, 1005). “Thinking Too Much: How Introspection Can Reduce the Quality of Preferences and Decisions” is the title of a well-known article from the field of social psychology (T. Wilson and Schooler 1991). Better to rely on training our gut feelings and intuition, concludes the well-known psychologist Gerd Gigerenzer (2007; see also G. Klein 2009).<sup>11</sup> Yes, of course, there are problems with just-on-time performance; as we saw, it risks misjudgment. Yes, the downside is that rapid adaptation is purchased at the cost of discouraging second thoughts before acting (see Schlesinger 1997, 7).

Yet Mintzberg (1973) demonstrated long ago that managerial work almost always involves tough decisions under severe time constraints, with incomplete information and in high-paced environments. Scholars may aspire to completeness (see, for example, Nuttal 2003), but analysts and managers are all about being timely without being definitive. If politicians have to fight to get heard and be taken seriously—

and if when they succeed, it is only at the last minute, with but a vote to spare, and then only after a great deal of very hard work—why should things be different for the analyst and manager? Rather than recommending “more deliberation” as the best solution—a mess-inducing single standpoint, if there ever was one—wouldn’t it be better to find out how real-time mess managers achieve reliability in the ways they do and their practices in doing so?

## Join Disciplines That Are Becoming Real-Time Professions

A forgotten thread of diplomatic folklore suggested that when the new Kingdom of Belgium emerged in 1831—much to the annoyance of the Congress Powers who had imposed the Vienna settlement on Europe after 1815—there had been a demarcation error at the point where the borders of Belgium, Germany and the Netherlands met. Somewhere between Aachen and Verviers, there existed a tiny triangular space, big enough to contain a house, a patch of field and a few fruit trees, which belonged to nobody.—Neal Ascherson (2001, 8)

Disciplines and professions are also just like that: Their demarcators lay down formal boundaries, while those operating locally find things aren’t as sharp on the ground as they are on paper. In fact, the interstices, though not officially recognized, sometimes provide just enough room for those in the field to work well.

Professionals thrive in such spaces, and I can think of no better way to protect, let alone become, a mess and reliability professional than by working in real-time professions not (yet) recognized by their counterpart mainline disciplines. Of course, a few professions have always been real time. “Foreign policy,” a former U.S. Secretary of State, Dean Acheson, said, “is one damn thing after another.” Hospital emergency rooms and incident command centers are familiar examples of real-time mess management when life and death are at stake. Other disciplines and fields are in different stages of emergence when it comes to their real-time professions, and these evolving areas of knowledge are their own training grounds for mess and reliability professionals. Here I discuss two emerging fields of interest: real-time ecology, which I discuss briefly, and real-time economics, which I discuss at length. It turns out that understanding real-time economics better—if only to acknowledge the field’s existence and practices—provides important insight into the financial mess and better mess management.

*Real-Time Ecology*

What has been called “real-time ecology” are the patterns, scenarios, and knowledge of ecologists (writ broadly) involved in the day-to-day, if not hour-to-hour, operation of large water and hydropower supplies (Roe 2004). The involvement of these ecologists arises out of legislative and regulatory mandates for the protection of endangered species and habitats as well as for the safety and reliability of water supplies. The knowledge generation and transfer in this field typically take place when ecologists advise and interact with infrastructure operators. That ecological advice, in my experience, can be based on ecologists’ case-specific analyses, their anticipations founded on patterns perceived across a run of (often patchy) cases, and their localized contingency scenarios for cases that have not yet occurred but might well—all frequently applied “just on time” for management or regulation purposes.

What does that entail? The control room operator asks the ecologist: What do I do now? Do I open that gate and save the endangered species, or close it and dry out the already endangered habitat? Do I shut down the pump to save the Delta smelt, even if I would risk violating urban water-quality standards in the process? Do I bring online that old generator to keep the lights going, but increase air pollution at the same time? What do you, the staff scientist, recommend I do, right now when it matters? (van Eeten and Roe 2002). Answers to such questions contribute to its own “ecological” knowledge base, albeit one not currently recognized or utilized by many ecologists outside that domain of competence. It may seem that I am suggesting that control room operators of society’s critical infrastructures could be better positioned to manage the environment than even our most talented research scientists operating independently of our infrastructures. You bet I am.

Much of academically based ecology is driven by theory and research more than it is by better management practices emerging nationally and internationally across often very different ecosystem management programs and projects. In fact, a great deal of what passes for management in ecology has been theory-based, scientifically sanctioned “adaptive management” whose baseline is not existing better practice by real-world resource managers but rather the null hypothesis that little scientifically sanctioned “evidence-based” practice yet exists. Much of the real-time ecology advice described above is summarily dismissed by university researchers as “agency science.” Still,

the drive to move away from macro-design theories of ecological management is a feature of ecology as a real-time discipline that is growing and will continue to do so (for more on these issues, see Roe 2011).

### *Real-Time Economics*

Doubtless, histories of the financial meltdown will continue to give prominence to the disabling role played by the macro-to-micro short-cuts of finance theory, risk modeling, and economic assumptions about individual investor behavior (see, for example, Alloway 2012; S. Patterson 2010). Here I want to highlight not just the importance of the middle-level professionals who were not so deluded, but also the underreported field to which they have been contributing: real-time economics.<sup>12</sup>

This emerging field differs considerably from what is taught in textbook economics. Put yourself in the middle of the financial sector looking out to the extremes of the mess and reliability space where the economic sciences are said to hold sway. Off in the distance, the real-time economist glimpses not one economic theory but many at the macro-design hub of his or her cognitive space for economic reliability. Neoclassical economics says it is a Good Thing when competitive markets are in equilibrium; Austrian economics says it can be a Very Good Thing when competitive markets are in disequilibrium (see, for example, Littlechild 2002, 7–16). Of course, there are business cycles; of course, prices go up and down. But no real-time professional expects those matters to be decided at the level of deductive principles in a textbook. Of course, it would be a consolation for middle-level professionals to know if they were on the upside or downside of a credit cycle, but they could never depend solely on knowing that to produce real-time reliability for economic and financial services. After a point, the seriatim laws of economics—Pareto’s law of unchangeable inequality of income, the iron law that wages never fall below subsistence levels in the long run, Say’s law that supply creates its own demand, Marx’s law of the falling rate of profit, Keynes’s consumption function based on a “psychological law” (see, for example, Pizano 2009, 52)—do no more than flare on the horizon as if dropping from another planet.

The far reach of distance also comes into view when the real-time economic professional looks to the horizon in the opposite direction, to the lower right-hand corner of the mess and reliability space where micro operations thrive. There some would have us believe economic agents operate individually at the micro level, each with his or her own animal spirits and risk appetite. One agent responds in a risk-averse

way when facing uncertainty; another one acts in an imitative fashion under the very same conditions, which may be risk-taking depending on whom he or she is imitating (Roe 1998). Neuroscientists and behavioral economists are tracking all manner of splotches in functional magnetic resonance imaging brain scans in order to understand just such micro decisionmaking (Tallis 2008).

Much closer to home for real-time economists and finance managers are the systemwide patterns and localized scenarios they must synthesize if their respective services are to be reliable in the present. The real-time professional cannot expect one economic theory or micro behavior to hold across all cases and contexts, including the one he or she faces right now and in the networks they find themselves. *Cheyenne*, real-time economists know, is not *Shanghai*, and markets vary accordingly. Sadly, the situation differs for their academic counterparts, who “have moved steadily away from seeing location as a determinant of human experience. Indeed, economic progress [for them] is seen as a release from location’s grip,” writes Partha Dasgupta, a professor of economics at Cambridge University (2005).

The real-time economists’ search is for better practices minus the illusions—particularly the illusion that better-practice economics approximates textbook economics (see, for example, Kaplan 2011). In fact, real-time economics can be thought of as better-practice economics that has had to move well beyond the Economic Theory of the day and the Horatio Alger stories of Today’s Model Entrepreneur.<sup>13</sup> As an example, debate heats up from time to time between proponents of a principles-based form of regulation and accounting and those who favor more specified rules and procedures (see, for example, Wallison 2007). At one point, Europeans preferred broad principles under which “light-touch” regulation took place, while the United States favored less discretionary and more formal enforcement of specific rules and regulations. At first glance, the empirics seem to be a contrast between light-touch regulation encouraging light-fingered corruption versus formal regulation becoming murder by overregulation. At second glance, the difference would seem to be between a macro-design approach grounded in principles and a localized-scenario approach based on regulatory protocols applied to specific and varying cases at hand. But real-time economists understand that the controversy has often been one revolving around systemwide pattern recognition and anticipations—in other words, an attempt to determine better-than-prevailing practices with respect to regulation and accounting, be those new practices principle-based, rule-based, or, as turned out to be the case, some hybrid version (see

Duffie and Hu 2008; for postcrisis changes in positions, see A. Hill and Leahy 2009; Thal Larsen 2009). Certainly the financial mess has fueled the search for regulation that works for really existing entrepreneurs. John Mack, the head of Morgan Stanley, is reported to have said in one of his more candid moments in 2009 that “regulators have to be much more involved,” adding “we cannot control ourselves” (quoted in Sorkin 2010).

Where are the real-time economists? Some examples are a network of fourteen of the largest credit derivative dealers who, with their staff, worked through an early backlog of over-the-counter transactions; bankers at the Bank of International Settlements’ Financial Stability Forum, who meet bimonthly; and the staff of the same bank who worked on the Basel capital security accords (see, for example, Geithner, McCarthy, and Nazareth 2006; Tett 2007b).<sup>14</sup> If contemporary media accounts are correct, histories of the financial mess will find it difficult to separate Henry Paulson and Timothy Geithner from their networks, so frequently was each Secretary of the Treasury on the phone (Anderson 2007; Solomon and Paletta 2009; Tett 2008a). There are later examples of wider networks at work: “Back in the summer of 2011, when U.S. default loomed, the senior managers in the largest banks spoke extensively with each other about their preparations. They then communicated these collaborative moves in extensive detail to the U.S. Treasury, the Federal Reserve and other regulators” (Tett 2012). By and large, though, the real-time economic professionals are little researched or understood. It thus bears repeating that these middle-level staff and specialists are those who make the out-of-sight “plumbing” of the financial infrastructure work (see, for example, Grant 2011a). Those responsible for “clearing . . . ‘the essential plumbing’ that underpins equities, derivatives and bond trading,” for example, have this know-how (Grant 2011b). This is not quite Keynes’s idea of economists as dentists, but it’s close enough when the practices that work are thrown in. When described, these professionals are often defined by the experience they have had with highly volatile situations. “In any market that is volatile, previous experience helps a tremendous amount,” reported the head of one European commodity derivatives unit. “Traders who are experienced are less inclined to panic, and keep their discipline because they have seen it before. It’s not a shock to the system. If you’ve been in a car crash once, then you know what to expect” (quoted in Oakley, Mackintosh, and Gangahar 2008). “The supervision of major financial institutions requires deep skills in credit, deep skills in risk analysis techniques and it requires within that organization very skilled, trained professional people,” counsels Henry Kaufman, a respected Wall

Street economist, based on his own long career (quoted in van Duyn 2008). While the theory is that a firm depends on the transactions of buyers and sellers who are price-taking, context-free (so-called methodological) individuals in markets that would not exist without them, real-time managers find themselves facing highly context-dependent transactions that would not take place in the absence of reliably managing the underlying infrastructures for markets.

Quite clearly, the financial mess tested the limits of knowledge of even the best of those economists, who were adept at working under pressing time constraints and heightened reliability mandates.<sup>15</sup> For example, initial improvements in financial modeling arising from the mess fell short of ensuring the pattern recognition needed to avoid just-for-now quick fixes by finance professionals. At one point, the Basel Committee on Banking Supervision proposed guidelines for improving risk calculations related to the structured financial instruments that were on the trading books of large banks. The committee admitted, however, that factors connected to foreign exchange and commodity prices that might “create large trading losses if they are not managed effectively” were excluded from the guidelines. Why? Because even the proposed guidelines on their own went “well beyond the current state of risk modelling at most banks” (Basel Committee on Banking Supervision 2008, 4). Nor did “questions about the reliability of the [risk] models” diminish later on (Masters 2012b).

It is all well and good to call for transparent financial instruments, more savvy investors, and greater attention to moral hazard, but the fact remains that the new financial instruments were and are still too complicated to be transparent (see Tabb 2007). For real-time economists, the global financial system is patently complex; calls for greater transparency only serve to demonstrate that others find it next to impossible to get the “big picture” of the system. Paul Samuelson summed it up neatly: “What makes this meltdown different is that we have built such an elaborate house of cards on the fiendish financial schemes of ‘brilliant’ MIT and Wharton School graduates that it will take a great deal of time to unwind the mess and rebuild confidence in the financial system” (2009, 43).

This is why readers, let alone the economics profession, need to know more about this emerging field of real-time economics, the skills of its practitioners, and the better practices to be relied upon. Otherwise, the conventional economics we have hitherto relied on risks remaining in the same cognitive mess that it has been in for decades. Friedrich von Hayek put it early and best in his speech accepting the

Nobel Prize: “We [economists] have indeed at the moment little cause for pride: as a profession we have made a mess of things. . . . What looks superficially like the most scientific procedure is often the most unscientific, and, beyond this, that in these fields [including economics] there are definite limits to what we can expect science to achieve” (1974).

### Favor Networked Decisionmaking

What should you do if you cannot find a real-time version of your field or discipline? Join a network of professionals within which to work, for you will never be able to manage policy messes well on your own. This applies to those in economics as well in finance and banking.<sup>16</sup>

Substantial work has been done on network-based decisionmaking and how it differs from conventional problem-centered decisionmaking.<sup>17</sup> Much of the literature on the latter reverberates with macro-design approaches to operations, while the literature on network-based decisionmaking is more closely aligned to the domain of mess and reliability professionals. The contrast between the two approaches—here too, little is hard and fast—is summarized in table 2. Both decisionmaking approaches start in dynamic conditions, and both recognized that the more turbulent the conditions, the greater the emphasis in decisionmaking on managing reliably. For the problem-centered approach, the best response to conditions is to ensure that problems and goals are well defined before management starts. If the problem is ill structured, then define it so that it can be addressed in the presence of clear goals and objectives that drive the problem solving. The approach starts with the problem’s dynamic features, including uncertainty about their substance, and the role of problem definition and goal specification is to stabilize the assumptions needed for resolving the problem. The temptation, of course, has been to resort to only macro principles as the best way to stabilize those assumptions.

The network-centered approach responds to the dynamics differently. The driver here is the sense of urgency that a decision needs to be made now or very soon and that management must proceed as quickly but reliably as possible. For instance, a major setback has just occurred, rendering the issue of management even more urgent (this is one sense in which things have to get worse for them to get better). Network participants and stakeholders know that some kind of intervention has to be made, but the rest remains fuzzy. Decisionmakers

Table 2. Two decisionmaking approaches in dynamic environments

<i>Problem-centered</i>	<i>Network-centered</i>
Problem exists for problem solvers	Sense of urgency exists for networked decisionmakers and managers to intervene
Define problem for analysis	Define rules of the game for decisionmaking within the professional network (for example, procedures and processes)
Clearly defined goal of analysis is formulated prior to problem solving	Formulating the goal within management network is an ongoing process
Information, including design and research, exists for analysis	Knowledge is negotiated in the process of synthesizing information and research about better practices by networked professionals
Decision follows from problem, goal, and information and brings closure	After decision, another round of negotiations follows, with possible new opportunities as network comes to understand changes and reconfigures itself
Lock it up!	Keep options open!
Analysis → synthesis → action	Action → synthesis → analysis
Problem solving is effective when implementation achieves the goal defined earlier	Network decisionmaking is effective when information that has been gathered is used, including emerging better practices

Source: Adapted from de Bruijn and ten Heuvelhof 2000

and managers end up formulating their goals as they go along. What network professionals are doing may become clear to them only along the way. In this manner, a “solution” may make visible for the first time the real “problem” that ends up being managed. Such learning is never guaranteed, however, and professionals may only be able to

agree on the rules of the game for making decisions and undertaking management interventions in light of the dynamic conditions.

Within problem-centered decisionmaking, just as a problem exists to be solved, so too do the information and approaches for solving it. The data and tactics may not be identified beforehand, but they are out there to be researched, found, and analyzed. In network-centered decisionmaking, information is also collected, but its importance—the knowledge it conveys—is negotiated by those in the network. Deciding what is to be gathered by way of information ends up being the way knowledge is managed for use. The search for information about better practices, for instance, produces its best results when the network converts the knowledge it gains into better management.

For problem-centered decisionmaking, once the analysis has been done and the big picture made clearer, the results are synthesized into recommendations. If this is the problem and that is what the evidence and its analysis show, then decisionmakers would be irresponsible not to “lock in” the conclusions to be drawn. Not so for network-centered decisionmaking. No decision is explicable solely in terms of where the professionals started from, because changes in course are open to renegotiation in light of new possibilities and emerging goals. In particular, what works by way of “best” practices is always evolving. The overall drive in decisionmaking is to keep options open in the midst of contingency—or, better yet, to create options as you go along. “The best way to predict the future,” said the computer scientist Alan Kay, “is to invent it.”

In sum, the problem-centered approach revolves around articulating goals, analyzing problems, and synthesizing results: You make a decision and take action based on the results of analysis. In network-centered decisionmaking, a sense of urgency compels networked professionals to take action by coming together and synthesizing what they can know and decide. The analysis and definition of the issue, the goals to be pursued, and the knowledge on which they make their management decisions all come out of the negotiated synthesis. In one approach, the solution follows from a clear problem statement; in the other, what the “problem” was or is becomes clear after probing a number of possible interventions. In one, analysis leads to synthesis and then action; in the other, action leads to synthesis and then to analysis, although “synthesis” and “analysis” differ in the two approaches. One seeks to fix the mess and get out of it; the other finds the mess that can be better managed and tolerated. Effectiveness for problem-centered decisionmaking is measured by how well results conform to the original goals; effectiveness for network-based deci-

sionmaking is measured by how well better practices can be modified locally in useful ways, as goals and options evolve over time for the networked professionals.

The two approaches can occur together with variations. Let's think again about a traffic mess. As traffic becomes congested, more signage goes up to sort the traffic out. At some point, an awful accident occurs, which brings urgency to rethinking the mess that the traffic and signage now pose. In a well-known Dutch example, a traffic engineer and community members embarked on a process that led to taking down traffic signs. This created a new mess that led drivers and pedestrians to proceed more cautiously, thereby reducing the overall accident rate: "Without bumps or flashing warning signs, drivers slowed. . . . Rather than clarity and segregation, [the traffic engineer] had created confusion and ambiguity. Unsure of what space belonged to them, drivers became more accommodating" (Vanderbilt 2008, 30). No one, of course, should expect this new mess to last forever.

The decisionmaking differences between the two approaches are profound for policy and management. In a world where reliability-seeking professionals are pushed and pulled to work together, policy formulation—as researchers have long insisted (see M. Hill and Hupe 2002, 77–79)—is much more a species of process and network management than macro-design approaches to problem solutions would lead us to believe. Leadership is about managing within a network rather than designing solutions. Agenda setting takes place, but often after the fact, when you know better what the agenda is. Implementation by networked professionals turns out to be less a stage of a policy cycle than a critique of policy having any "cycle," idealized or otherwise.<sup>18</sup>

Consequently, policy evaluation is difficult, if undertaken at all; it could not be otherwise when goals are defined in a process whose driver is to keep options open. All this is crucial to understand and expect when it comes to ongoing management of the financial mess, as we will see. Financial reform differs considerably, depending on whether the reform treats contemporary finance as a problem to be solved or as a mess to be managed. If seen as a problem, the public will insist on decisionmakers coming up with the best reform possible, given the constraints we all are operating under. If seen as a mess, networked professionals will have to manage it and be evaluated on that management, as it morphs in unpredicted directions in response to inevitable setbacks along the way.

## Manage Setbacks Better

You cannot be a reliability-seeking mess manager and not expect setbacks in your work. After all, most things are said to fail (see Oremond 2005). Something sudden or unexpected happens that stalls management, and this setback is itself a mess that could go bad or good. It depends on how the setback is managed. For our purposes, setback management means managing events that are on the way to becoming bad messes, unless managed better. If that happens, the setback could even become a good mess. (For more on “managing the unexpected,” see Weick and Sutcliffe 2007.)

Try to put yourself in the position of the Secretary of the Treasury or the head of the Federal Reserve in February 2008, before the collapse of Lehman Brothers, the Freddie Mac and Fannie Mae debacle, and the bailouts of AIG and Citigroup. What you lack in terms of predicting the future has to be made up for by your attempts to prevent the subprime mortgage mess from metamorphosing into the free fall it did become in the last months of 2008.

What you do know in early 2008 is that underlying the subprime mortgage mess are those novel financial instruments having virtually no mandates to ensure their high reliability management.<sup>19</sup> The securitized instruments were so baroque that the initial good news that risk was to be dispersed through these instruments had, by the end of 2007, been more than offset by the bad news that risk had ended up back on the banks’ balance sheets and under the purview of their regulatory mandates. “Imagine NASA sending men to the moon before it had figured out how to get them back home,” writes a columnist in the *Financial Times* at the end of 2007. “That is sort of what happened in the world of securitisation this year, as complex structures such as collateralized debt obligations blew up” (Lex Column 2007).

By February 2008 you know enough to understand that the financial instruments have increased the interconnectivity of the financial sector without the reliability requirements that the regulated banks had. You know, in short, that you have to move to the very limits of your competence to manage this mess. Why? Because you are now being told that the debt these instruments represent constitute “an accident waiting to happen” (Norris 2008; see also Wolf 2007). Indeed, the management challenge had become, as one U.K. regulator put it earlier, to turn “an accident waiting to happen into a near miss” (quoted in P. Davies, Tett, and Scholtes 2006). That is what the Treasury and the

Federal Reserve tried to do—to turn a very bad mess waiting to happen into a close call—when March 2008 rolled into view, and with it came the challenge of Bear Stearns, the investment bank.

In retrospect, the Bear Stearns bailout failed to prevent the financial mess from imploding into a crisis. But would conditions have been better or worse without the bailout? Having to answer that question raises the issue of trying to manage any kind of setback inside versus outside your domain of competence. For it is not possible to ascertain the counterfactual when you are in unstudied conditions. The issue of what would have happened had Bear Stearns not been bailed out will be a major bone of contention for years ahead. “All one can say is, ‘It’s probably not as bad as it would have been,’” Alice Rivlin, the former director of the Congressional Budget Office, concludes (quoted in Ben-david 2008). But can the professionals involved know enough to say even that?

It is much better to manage the mess of a setback within your domain of competence, even at the limits of what the professionals know, as managers can then resort to strategies involving bouncing back while planning the next steps ahead. If, however, the setback occurs in the midst of what is for professionals profound ignorance, its unpredictable consequences simply cannot be estimated. Under these circumstances, the inability to measure risks associated with the setback so as to manage them is the threat that has to be coped with. Coping is more reactive than it is resilient and anticipatory—coping is less mess and reliability management than it is crisis management.

What do I mean by “resilient and anticipatory” as distinct from “reactive”? There is no better place to start than with the definition of a setback: an unanticipated or sudden check in progress. Being unanticipated (that is, being unprepared for) has at least three implications for reliably managing setbacks as messes. First, the pressure is to catch setbacks early on. This means trying to address the conditions that make them unanticipated. Second, since setbacks are sudden, managers find them surprising. Third, because ignorance governs outside the domain of competence, setbacks and surprises can be expected to be more common when having to cope in that unchartered terrain. All of this implies that we cannot anticipate all the contingencies ahead in mess and reliability management, so we must have the resilience to bounce back from or absorb that which we cannot anticipate.<sup>20</sup> The further implication is that some degree of planning ahead is involved when trying to manage setbacks, as no one can expect the lack of anticipatory planning to be compensated for by greater resilience later.

But how do resilience and anticipation actually work in mess and reliability management? To answer this question, we can return to the control room operators whom Paul Schulman and I study. For these operators, anticipating the next step ahead is an instrumental part of responding to an interruption or shock that just happened (Roe and Schulman 2008). Anticipation is important because professionals may well not want to return to the original position. Managers for any critical service do not absorb shocks just so they can get back to the bad mess from which they started. Bouncing back is bouncing forward for them.

To translate the recognized patterns and contingency scenarios into reliable services, operators, be they inside and outside the control room, both plan the next steps ahead and respond to unanticipated events during the current or preceding steps. Thus, managers are eager to stay inside their domain of competence. Outside it, instead of being resilient and anticipatory, they end up reactive. Firefighting, band-aids, and quick fixes become the norm, but now to what end? What are they bouncing forward to? A widening reactivity, and with it the impulse to start all over again, become very much part of defining when a mess becomes a crisis.<sup>21</sup> In effect, a crisis is the collapse of the mess and reliability space into the reactive micro-operations hub of figure 3. Resilience linked with anticipation, in contradistinction, are part of that space's middle domain of competence.

More often than not, however, the literature on crisis prevention treats resilience and anticipation as separate, alternative strategies rather than linked and as basically one strategy as just described. This decoupling of resilience and anticipation, in turn, limits our understanding of the importance of managing setbacks. To see how, turn to that wider literature on crisis prevention and its discussion of the putative differences between anticipation and resilience.

A major part of crisis preparation is planning ahead in order to be agile and quick (that is, resilient) when crisis hits. You plan now so you are not solely reactive later; better anticipation today leads to better resilience when you need it afterward. For example, *The Federal Response to Hurricane Katrina: Lessons Learned* (2006), a report to the U.S. president, identified eleven "critical actions" that had to be completed before the next hurricane in order to have a "national preparedness system" and a "culture of preparedness." Six of the eleven are listed here:

- Co-locate relevant Federal, State, and local decision-makers, including leaders of State National Guards, to enhance unity of effort;

- Pre-position a fully resourced and integrated interagency Federal Joint Field Office to coordinate and, if necessary, direct Federal support to the disaster;
- Ensure situational awareness by establishing rapid deployable communications;
- Designate locations throughout the country for receiving, staging, moving, and integrating them;
- Encourage States to pre-contract with service providers for key disaster relief efforts; and
- Enhance on-going review of State evacuation plans; and incorporate planning for Continuity of Government to ensure essential and emergency services.

Note that a setback in executing one or more of the action items amplifies the crisis when it occurs. If you do not work out the collocation plans or service contracts or evacuation plans before the disaster, you will be worse off when disaster strikes. A setback in anticipation leads to the inability to respond as rapidly as you could have, had the action item been implemented beforehand. Setback in anticipation leads to setback in resilience.

Much the same complaint has been made about the financial mess. It has been argued that the subprime mortgage mess was anticipated but that warnings about it were not heeded.<sup>22</sup> Consequently, so this argument runs, emergency measures, not resilience, moved to the fore in the form of reactive bailouts and policy U-turns (see Taylor 2009 on the Federal Reserve).<sup>23</sup> From the perspective of the crisis prevention literature, forecasting a mess but not taking action to prepare for it because of this or that setback is a prescription for brittleness and lack of resilience.

In other words—and here is the important point—the role of setbacks in anticipation and resilience in crisis prevention turns out to be orthogonal to the role of successful resilience and anticipation in mess and reliability management. In the former case, the failure to anticipate reduces the ability to be resilient later on. In the latter, being resilient and anticipatory occurs in the same moment—for example, when operators respond to a shock, they are already preparing for what's next. The chief virtue of managing messes so they do not turn into crises is then this: You get resilience and anticipation jointly, not separately.

From the vantage point of mess and reliability, the response to Hurricane Katrina might not have been better had there been more

pre-Katrina reports pointing out levee deficiencies, more newspaper articles on a pending disaster, and more “Hurricane Pam” simulations that turned out to be prescient. What we had here was more complex than a failure to anticipate, subsequently producing a failure to be resilient. In the same way, crisis management in the financial mess might not have been better had there been more experts, like the Federal Reserve’s Ned Gramlich and the investor Warren Buffett, sounding early alarms. From a mess and reliability management perspective, the primary problem was not anticipation *per se*. Rather, it was what was happening as well to resilience before and afterward.

How so? The mess and reliability perspective would be asking the following about Katrina: Given that before the hurricane some 60 percent of U.S. grain exports went through New Orleans and over 25 percent of domestic oil production—mostly offshore oil drilling—came from the Gulf of Mexico, how did grain companies and oil refineries—reliability-seeking mess managers *extraordinaire*—build resilience into their operations before the disaster, and how did that capacity affect their rebounding during and after it? Parallel questions were raised in the financial mess, though not always with the priority their answering deserved: Because not all banks and investment firms, in the United States or abroad, weathered the financial mess in the same way with the same effect, how similar banks were able to avoid or better accommodate similar problems is of acute interest, if only to compare the better practices for mess management at those banks to what those more reactive decisionmakers did by way of crisis management at the failing banks. How, in short, did those oil and grain companies or these banks and investment firms—which, like many public-sector agencies, have long supply chains—manage the inevitable setbacks, and what can the rest of us, as prospective better mess managers, learn from this?<sup>24</sup>

Where, though, are the good messes in managing setbacks? Managing setbacks better is one thing; pulling the good messes out is another. Positive setbacks are never far away, if only because “brains have a remarkable talent for reframing suboptimal outcomes to see setbacks in the best possible light” (Begley 2005b). My reading and work suggest that there are four types of good mess management when it comes to casting setbacks in that positive light. Most familiar is the argument that organizations do not transition from one stage to another in their life cycles without overcoming the obstacles characteristic of the organization’s current stage (Harrison and Shirom 1999). Other setbacks serve as a test bed for developing (more) resilient and anticipatory strategies in the organization. Another cluster of setbacks

can be better thought of as design and practice probes into whether that organization is broadly on track and, if not, what track it should be on. In yet other instances, setbacks serve to remind managers that other things matter for what they are doing. Here, setbacks unsettle what had been settled knowledge yet in a way that does not question the premise of having to reliably manage regardless (see Hillman and Phillips 2007).

In all four cases, the positive feature of the setback is to slow down—or add a “lag” to—a process that could be very difficult to manage if that interruption had not occurred. Unlike free-floating calls for more deliberation, the “lag” here is the specific combination of being resilient and anticipatory at the same time, so as to cool down what could be hot processes that would otherwise be even more difficult to manage.<sup>25</sup> Suffice it to say that these positive setbacks are much better messes to be in from the perspective of network-centered decision-making than from that of its problem-centered counterpart.

Will the financial mess serve as a timely interruption that confirms just how central the regulators are to the continuity of the financial and credit systems? Will the mess end up as a much-needed probe of just which financial institutions are staying on track and under mandate? Will the mess be the test bed for strategies and practices that ensure more resilience and anticipatory capacity in lending and investing? Last but not least, will the mess in effect be an obstacle, the surmounting of which is necessary to promote the operational redesign of the financial and banking sectors in more reliable ways? Certainly policymakers and regulators have tried answering “yes” to each of those questions, but that, as with all macro designers, is only a first step. Reliably answering those questions is, I believe, a core task of the real-time economists and financial professionals (Roe 2009). The answers are also core to a financial regulation that took positive setbacks and associated operational redesign of those regulated much more seriously. This is particularly important when (1) senior executives of the organizations in which the setbacks are occurring are denying that there are setbacks or (2) if the setbacks are recognized, the organizations are so seized up in just-for-now management that they do not have a longer-term perspective to render the setbacks under way as positive.

By way of summary, many of the points about good mess management in this chapter are neatly illustrated through the story behind one of the most famous pieces of Chinese calligraphy, Wang Xizhi’s *Preface to*

*the Poems Composed at the Orchid Pavilion*. It is said that on the third day of the third month of the year 353, Wang Xizhi invited some forty fellow scholars to a purification ceremony. After the ceremony, the scholars sat on both banks of a winding stream to compose poems and enjoy wine in a drinking contest. Cups of sake were floated down the stream, and in one version of the story, wherever a cup stopped, the scholar closest to it had to extemporaneously compose a poem. If he could not come up with an impromptu poem quickly enough, he had to drink the sake as a penalty. Merry he might end up, but the drunken scholar risked his reputation as a poet in the process. At the end of the contest, twenty-six of the participants had composed thirty-seven poems. It is this pressure, skill, and contingency—all with the mandates governing their interaction, and most of it done just on time—that describe this book's professionals, the contest they undertake on behalf of what matters, and the notion that being unprofessional has its penalties. I shift now to the specific challenges ahead for these professionals.