

# Preventing Transboundary Crises: The Management and Regulation of Setbacks

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## Abstract

*Setbacks—unanticipated, unwanted, and often sudden checks on moving forward—are common in crisis prevention. Managing setbacks, however, is rarely discussed. Even less discussed is the central role that setback management can play in preventing transboundary crises across interdependent critical infrastructures for electricity, water, transportation, and financial services. With a focus on the ongoing financial crisis and on strategies for resilience and anticipation, the article draws out implications for crisis prevention as the first, rather than last, line of defense in managing future crises.*

**KEY WORDS:** organizational setbacks, crisis prevention, high reliability management, disaster and risk management, ICTs

## Introduction to Setback Management and Initial Distinctions

Reportedly, Mao Tse-tung's prime minister, Chou En-lai, famously said when asked about the significance of the French Revolution, "It's too soon to say." It is always too soon to say if today's crisis will end up viewed later as a major setback on the long road to success. For example, Three Mile Island was a major nuclear power failure. Yet nuclear power and environmental groups have recast it as a setback to nuclear energy's significant role in a post-global climate change world. Given long enough and a context broad enough, almost any disaster can be a setback on the path to some blessed prospect.

This article concerns the opposite setback. I will not be examining how to manage today's failure so as to become a harbinger for success in the future. Rather, what follows is about how to manage what is considered a setback today so it does not become a failure tomorrow or in the near future. In one case, the setback has to be managed so it does not lead to conditions that could themselves lead to a crisis; in the other case, the setback would actually lead to crisis, unless directly prevented from doing so.

Setback management is crisis prevention, but with a difference.<sup>2</sup> First, relatively little has been written about how to manage the inevitable setbacks that occur in the process of trying to prevent crises. It behooves us to think more about this, if only because preventing a crisis is preferable to managing one. Second, it is important to distinguish crisis prevention in terms of whether the setback is itself a harbinger to something worse or whether it is being managed so as to prevent it from becoming that harbinger. What is at issue are different mixes of resilience and anticipation strategies, which in turn determine in what ways crisis prevention is the first or last line of defense against failure.

For the purposes of what follows, setback management means managing events that are recognized to be on the way to becoming disasters for the system, unless managed. The events can be those conditions that create a close call

or near miss, if not managed, or they could be the actual close call or near miss leading to something worse unless preventative action is taken. In either case, the event is unwanted or unexpected—a setback—that could in the absence of management morph into a crisis. How that management takes place depends on whether the events are directly or indirectly a precursor to the crisis prevented.

To help understand these distinctions within crisis prevention and their role in addressing future crises, two literatures are drawn upon, one on high reliability management (e.g., on high reliability organizations [HROs]) and the other on crisis management. The two literatures intersect in their grappling with the precursors to disasters and crises. They share concern for what my colleague, Paul Schulman, calls the precursor zone.

The precursor zone is best thought of as the set of activities of managers when they are at the cognitive limits of the known patterns and scenarios they use in decision making. The precursor zone is where the skills of managers to recognize patterns and formulate scenarios are significantly challenged, as these skills are no longer matched to the intensified or now-novel tasks they face. Managers continue to calculate risks and formulate worst-case scenarios, but in uncertain situations that continually test the limits of their knowledge. We're hitting the boundaries of known reality, reported one fund manager concerning the Treasury bond market during the financial crisis (Rappaport & Tuna, 2008, p. 20). In this way, the precursor zone lies within the domain of professional competence but at its very edge (for more, see Roe & Schulman, 2008).

This is a dangerous area for managers to operate in and have events happen that are unanticipated or sudden, as are setbacks. Here the consequences of a setback and trying to manage it can be so uncertain that the risk of failing to manage—the product of the probability of failing and the magnitude of that hazard—cannot be calculated. As such, it is better that a setback be managed before entering the precursor zone, a kind of risk management involving both anticipation and resilience, as we shall see.

If, however, the setback occurs in the midst of uncertainty such that its risky consequences cannot be estimated, let alone measured, then the inability to manage risks arising from the setback is the hazard which must be managed and which calls for a different kind of management strategy, one that is more reactive than resilient and anticipatory. Since the precursor zone has no bright boundary when entering or leaving, the preference to manage a setback before it becomes a precursor to disaster is patent.

The literature on HROs is storied with cases of organizations and systems trying to stay out of the precursor zone, although they sometimes find themselves in it.<sup>3</sup> The crisis management literature is storied with cases where organizations and systems are already in the precursor zone, trying not to be pushed over into outright disaster.<sup>4</sup> Within these endpoints, setbacks in crisis prevention fit somewhere between conditions that make for a close call or near miss and a full-blown crisis, with the feature that they could arguably go either way—a close call or a disaster—if the setbacks were not managed. Regulation, as we will see, has an important role, albeit a different kind of regulation than commonly supposed today.

## An Example

A short example of how these initial distinctions work in practice is useful. Let us take as our case the financial crisis underway at the time of writing (May 2009). The crisis has the added virtue of illuminating other distinctions developed later in the article.

A great deal in the preceding depends on what is taken to be the precursor zone, and this depends on how the disaster is described, in this case the financial crisis. Assuredly, the crisis seems everywhere confirmed. The descriptors are dire: The financial crisis is a “catastrophe,” “meltdown,” and “hurricane,” the “worst since the Great Depression” and one full of “contagion,” and “herd mentality.”

The facts are also unprecedented: Trillions of dollars promised in loan, credit, and insurance guarantees to banks and financial institutions by a host of national governments and central banks; far more trillions lost in value of 401k’s, residential mortgages, and stock market value; and a series of bailouts, the first of which in the United States exceeded what its federal government spent on Medicare, Medicaid, and Food Stamps that year (e.g., Davies, Atkins, & Mulligan, 2008, p. 31; Marsh, 2008, WK4). Last and its own unique indicator of the crisis, economists are far less surefooted and more confused: They talk about how markets no longer “reflect fundamentals” and “rational prices,” without explaining how these could even be markets if this were so. Certainly, the freezing up of credit markets in a financial sector whose *raison d’être* is to provide credit is nothing less than scandalous.

For our purposes, the best measures of being in the financial crisis are not the facts and views of financial journalists or academic economists, but the actual experience of the bankers, traders, and investors undergoing the crisis at its height (so far) in September–October 2008. “It feels as if we are 15 minutes away from the end of the world,” the head of equities at a large UK bank told the *Financial Times* concerning the lead up to the first major U.S. bailout (*FT Reporters*, 2008, p. 1). “The market has changed more in the past 10 days than it had in the previous 70 years,” reports a senior executive at a European investment bank in late 2008 (Thal Larsen & Guerrero, 2008, p. 12). “The reality is that we are not going to know what the right price is for years,” says a bond portfolio manager at a major mutual fund (quoted in Bijaj, 2008, p. A1). “It was just mayhem,” said the CEO of New York-based hedge fund concerning the markets (Mollenkamp et al., 2008, p. A22); “People were paralyzed by fear of what could erupt.” “We have no idea of the details of our derivative exposures and neither do you,” conceded a senior Lehman Brothers official at a meeting of bankers and regulators just before it collapsed (quoted in Guerrero & Bullock, 2008, p. 16).

In the midst of one particularly bad trading day at this time, Morgan Stanley CEO John Mack sent an urgent email to employees: “What’s happening out here? It’s very clear to me—we’re in the midst of a market controlled by fear and rumors” (Mollenkamp et al., 2008, p. A22). After the plunge in Morgan Stanley shares, a senior manager at the Swiss UBS said, “It felt like there was no ground underneath your feet. I didn’t know where it was going to end” (Sorkin et al., 2008). Nor was he alone. George Soros (2008a, p. 11), the global investor, argued, “the financial crisis is spinning out of control.” The chair of Morgan Stanley Asia concluded, “We have gone to the edge of an abyss that few thought was ever possible” (Roach, 2008, p. 26).

Other quotes could be added, but the point remains the same: Those in the midst of the financial crisis—the traders, bankers, and investors—were operating outside known patterns and scenarios in a domain of thorough-going uncertainty, if not ignorance. For those operating within—just barely within—their knowledge and skills base, the challenge was to manage the uncertainty that would spiral out of control, if action were not taken.

As an example of this kind of preventative action, a major debate over fair-value accounting of assets (including credit default swaps) also took place within the financial sector in the last quarter of 2008. This accounting, it was argued, created a destructive downward cycle that had to be stopped if full-blown financial collapse were to be averted.

Fair-value accounting requires firms to report the majority of their holdings at current market prices. In a plunging market, this practice of marking-to-market meant firms and banks had to write down billions in assets values. The write-downs in turn increased pressure to lower the firms' credit ratings, given their weakened balance sheets and capital reserves. Lower credit ratings meant higher collateral requirements on the loans, which sent the firms scrambling for even more funds, thereby weakening the firms further. Government authorities eventually modified fair-value accounting practices in late 2008 as a way of managing to break (perhaps only temporarily) the self-feeding spiral of asset decline (e.g., Hughes, 2008a, 2008b; Scannell, 2008). Here crisis prevention was underway well within a precursor zone, where the failure to be avoided was quite visible to those concerned and where each setback in the process of obtaining regulatory relief proved to be majorly unsettling.

What about managing in order to stay out of the precursor zone altogether? Are there examples from the height of the current crisis, where financial professionals were able to manage a setback in such a way that they not only avoided conditions that could worsen the crisis, but did so by controlling those conditions? One such example is from the Lehman bankruptcy.

After the collapse of Lehman Brothers, it became a priority to close out its trading positions, many of which were very complicated. Yet the transfer of almost all trading positions held by Lehman to other banks proceeded far better than initially expected. While a great many problems remain with unwinding Lehman commitments, the former president of the New York Federal Reserve Gerald Corrigan (2008, p. 26), reported:

First, in line with [earlier recommendations], the dealer community adopted a common methodology for the execution of close-out against a defaulted counterparty. Because this was accomplished prior to the Lehman failure, the extraordinarily complex and delicate close-out process in the Lehman case is being managed with greater certainty and greater safety that would otherwise have been the case, helping to contain systemic risk.

This close-out was undertaken primarily by LCH.Clearnet, Europe's largest clearer, who "in the space of just over a week, managed down the main risks associated with the Lehman default without any disruption to the markets and without having to resort to using the clearer's main default fund" (Grant & Hughes, 2008, p. 20). Similar success was achieved on the American side by The Depository Trust & Clearing Corporation in closing out market participants' exposure in the

United States as a result of the Lehman collapse (Grant, 2008, p. 29). Although complications with the Lehman bankruptcy will persist for years, what is important is that the close-outs took place in a context and format where risks could be managed. Thus, another setback—say, it took two weeks to undertake the close-out of major risks when one week looked doable—became much less unsettling.<sup>5</sup>

The difference in crisis prevention depending on whether managers are already in the precursor zone having to manage setbacks there or they are managing setbacks so as to stay out of that danger zone takes us directly to issues of resilience and anticipation in setback management.

### **Anticipation and Resilience in Managing Setbacks in Crisis Prevention**

There is no better place to continue this discussion than with the dictionary definition of a setback: an unanticipated or sudden check in progress.

The feature of being unanticipated has at least three implications for managing setbacks in crisis prevention. First, the pressure is to catch setbacks early on. This means trying to better address the conditions that make for their being unanticipated. Second, because setbacks are unanticipated (or sudden, even if anticipated), managers will find them surprising. Third, because uncertainty is higher in the precursor zone, setbacks and surprises will be more common there.

These factors, in turn, imply that because we cannot anticipate the contingencies ahead in crisis prevention, we must have the resilience to bounce back from that which we cannot anticipate (this is a shared concern of both the crisis management and high reliability management literatures). However, the implication also is that one cannot get away from a considerable degree of planning ahead when trying to manage setbacks, because we cannot expect that lack of front-end anticipatory planning will be compensated, one-for-one, by greater resilience later on after a crisis hits. Accordingly, planning ahead for setbacks has a much greater chance for success in high reliability management settings where the goal is to stay out of unplanned situations that could lead to a crisis.

Here it is productive to engage an important difference between the HRO and crisis management literatures when it comes to anticipation and resilience strategies for disaster management. It turns out the respective mix of strategies are opposites, and never more so than when disaster strikes.

Start with the HRO literature (e.g., Roe & Schulman, 2008). For control room operators Paul Schulman and I have studied, anticipating the next step ahead is an instrumental part of bouncing back from a shock that has just happened. Anticipation is important because bouncing back to the original position may not be the best position to which to return. The last thing operators would want to do in some cases is absorb shocks so they can get back to where they started.

Operators are able to be anticipatory and resilient in the same instant because of their skills in recognizing system-wide patterns and formulating contingency-specific scenarios. Translating the patterns recognized and the contingency scenarios for the case at hand into the provision of reliable services means operators both plan the next steps ahead and respond to unanticipated events during the current or just preceding steps undertaken. That is why managers are so keen to stay out of their precursor zone: Inside, their ability to bounce back and plan ahead

is compromised. Instead of being resilient and anticipatory, they end up reactive to the degree they cannot plan ahead and know what to bounce back to. Indeed, a widening reactivity and with it the desperate search to start all over again becomes very much a part of defining a crisis.<sup>6</sup>

Turn now to the wider literature on crisis prevention and see how it discusses the relationship between anticipation and resilience. A major point in crisis preparation is to plan ahead in order to be agile and quick (aka resilient) as the crisis hits. You plan in order not to be reactive. To see how this works, take an example from another major disaster. A report to the President, *The Federal Response to Hurricane Katrina: Lessons Learned*, identified 11 “critical actions” that had to be completed before the next hurricane season as key to a “national preparedness system” and a “culture of preparedness.” A sampling of the actions is provided below:

- Colocate 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;
- Identify and develop rosters of Federal, State, and local government personnel who are prepared to assist in disaster relief;
- Employ all available twenty-first-century technologies both to update and utilize the national Emergency Alert System in order to provide the general public with advanced notification of and instruction for disasters and emergencies;
- Encourage States to pre-contract with service providers for key disaster relief efforts; and
- Enhance ongoing review of State evacuation plans; and incorporate planning for Continuity of Government to ensure essential and emergency services. (accessed online on May 9, 2008 at <http://www.georgebush-whitehouse.archives.gov/reports/katrina-lessons-learned.pdf>)

Note that a setback in executing one or more of the action items ahead of time can determine why a subsequent crisis is the crisis it is. If you do not work out the colocation plans or assistance rosters or evacuation plans well before the disaster, you will be worse off after the disaster. A setback in anticipation leads to the inability to respond as adequately as would have been the case had the action item been implemented beforehand. Here, setback in anticipation leads to setback in resilience.

Much the same complaint has been made with respect to this financial crisis. It has been argued that the subprime mortgage crisis was anticipated, these warnings were not heeded, and consequently, the crisis has turned out much worse.<sup>7</sup> Since

the mortgage crisis morphed into the financial crisis, reactive measures such as “one-off events,” “special dispensations,” seriatim bailouts, and U-turn management reversals, have become common. At the time of writing, it is difficult to see many managers who are bouncing back in ways that they can plan the next steps ahead.

The role of setbacks in anticipation and resilience in conventional crisis prevention is thus orthogonal to the role of successful resilience and anticipation in high reliability management. In the former, the failure to anticipate reduces the ability to be resilient later on. In the latter, being resilient and anticipatory occurs in the same moment, i.e., when operators respond to a shock they are already planning the next step ahead. In the former, setbacks in anticipation precede resilience; in the latter, successful resilience entails thinking ahead, and in virtually the same moment. This then is the chief virtue of preventing a crisis by managing to undertake activities that do not precipitate events that could themselves lead to a crisis: You get both resilience and anticipation jointly, not disjointly.

This suggests that for there to be few or no setbacks in crisis prevention, high reliability management should be in place from the outset. Sounds obvious? Not if you believe, *pace* crisis prevention, that more and better anticipation is the answer to more and better resilience later on. Not if you believe, *pace* high reliability management, that the lack of resilience early on is one major reason accounting for the lack of resilience later on after disaster has struck.

In this view of high reliability management as a special case of crisis prevention, disaster management in response to Hurricane Katrina may well have not been better had there been more pre-Katrina reports pointing out levee deficiencies, more newspaper articles on the pending disaster, and more “Hurricane Pam” simulations showing the range of likely disaster in the region. So too crisis management in the current financial crisis may not have been appreciably better had there been more Ned Gramlichs and Warren Buffetts sounding the early alarms. This financial crisis, and Hurricane Katrina, were long predicted and soundly so (Alden, 2005; Authers, 2008, respectively). From a high reliability management perspective, the primary problem was not anticipation; it is centered on what was happening to resilience before and after the crises.

The high reliability management perspective would be asking among other things the following: Given some 60 percent of the U.S. grain exports went through New Orleans and over 25 percent of domestic oil production—most offshore oil drilling—came from the Gulf of Mexico, how did grain companies and oil refineries—HROs in presumption if not fact—build in resilience in their operations before the disaster and how did that capacity affect their rebounding back afterward?

Parallel questions would be raised as a matter of priority in the financial crisis: Not all banks and investment firms, in the United States or abroad, have weathered the financial crisis in the same way with the same effect, and how like banks have been able to avoid like problems is of keen interest, if only to compare their better or best practices to what reactive decision makers are now undertaking by way of crisis management. Or in the terminology of this article, how did those oil and grain companies or these banks and investment firms—which like many public sector agencies have long-linked supply chains—handle the inevitable setbacks in their

resilience capacity building and in planning their next steps ahead, and what can crisis prevention learn from this?<sup>8</sup>

To summarize, crisis prevention in the precursor zone may be our last line of defense, but high reliability management is crisis prevention's first line of defense.

### **Crisis Prevention, Setback Management, and Regulation**

It is scarcely surprising that what policy-makers say they learn from a crisis is that better regulation would prevent further ones. More stringent levee construction designs and capital reserve requirements have predictably surfaced as regulatory priorities in our examples. Yet the focus on managing setbacks in crisis prevention—be it in the precursor zone when things are already bad or before that when high reliability management is required—suggests a different role for regulation: regulation as the guardian of setback learning.

Government regulation has three interrelated functions when it comes to service provision related to society's core infrastructures. First, regulators seek to prevent crises in or affecting the critical infrastructures because the knock-on impacts could be catastrophic. Regulation of nuclear power is the exemplary case. What operates here is, in Paul Schulman's terms, a precluded events reliability: Some events are so dreadful that society avoids even the precursors that might lead to them. Regulators ensure our critical infrastructures operate in ways that seek to avoid such circumstances altogether.

Second, regulators can seek to increase the options and reduce the task environment volatility faced by the critical infrastructures that cannot anticipate every accident waiting to happen. In such a world, regulators have a role in increasing the anticipation and resilience capabilities of the frontline managers and operators in the infrastructures. Third, regulators can seek to set rule-based regulations that ensure the first and second functions appear as specific operations in the critical infrastructure, i.e., *these* procedures and activities reflect *those* options and *that* task environment, which in turn reflect *this* precluded events reliability, where specification of "this, that, these, and those" is ensured by the regulators.

The three functions entail an increasing knowledge intensiveness on the part of the regulators as to what infrastructure managers and operators actually do, the third being more intensive than the first, while the second recognizes that the managers and operators have real-time operational requirements that regulators cannot foresee and regulate in advance. In all three cases, regulators are meant to have a high degree of knowledge concerning what operators actually do—if only to ensure regulators do not get in the way and make things worse.

It is important to understand the manner in which the third regulatory function is knowledge intensive. Not only do the regulators need to know what is going on operationally in the critical infrastructures, they must know how to transform dread and precluded events reliability into operational activities in longer-term ways that the infrastructure's operators and managers who are caught up in real-time operations may not appreciate or recognize. Ideally, regulators would have the skills of real-time pattern recognition and scenario formulation that operators in critical infrastructures have, especially when it comes to managing unforeseen setbacks and

redesigning operations in light of them.<sup>9</sup> Having those skills, however, would mean that regulators not only could take on the jobs of the professionals they are regulating. They could also do those jobs better because they, the regulators, have more prevention-oriented patterns and scenarios at their call, namely, they have longer-term cause-and-effect knowledge that operators do not have. Yet our regulatory regimes—be they principle- or rule-based—avoid fostering that kind of operational experience among regulators.

We now see why the three conventional functions of regulation are problematic, because each assumes regulators have operational knowledge they do not have nor could have, given the fast-changing sectors they regulate. Let me propose, then, a fourth regulatory function that makes sense in a world where setback management as a form of crisis prevention is expected—namely, regulation as the custodian of setback learning across our critical infrastructures.

Regulation in this fourth view would focus on interdependent critical infrastructures with transboundary operations. This is a regulatory world in which electricity depends on hydropower and telecommunications depend on electricity while financial services depend on telecommunications and electricity. Infrastructures are vulnerable to what happens in other infrastructures—in brief, it is a world where setbacks and their consequences circulate and amplify, when not managed. It is a world in which preventing a crisis has often meant preventing others.

We are already seeing the effect of the financial crisis on some electricity, shipping, and public transit (respectively, Jackson, 2008, p. 17; McNulty, 2008, p. 23; Politi, 2008, p. 2), and it is easy to see how it can affect the operation of other critical infrastructures and their services. “Since the international system depends on the free, reliable and orderly flow of financial resources,” writes the head of the Brookings Institution, Strobe Talbott (2008, p. 11), “failure to solve the current mess will stymie progress in those other areas—trade, climate and proliferation.” A cross-infrastructure crisis that extends from finance through electricity, telecommunications, and transportation would be its own economic calamity, and one calling for a kind of inter-infrastructure regulation we do not now have.

More formally, this regulation would seek to ensure that setbacks in interconnected critical infrastructures are managed in such ways that (1) a setback in one infrastructure does not pull it into its precursor zone nor others into theirs, although if that should happen, (2) the infrastructures together would manage so as not to be pulled across their respective edges into joint disaster. The role of regulation here is to be the guardian of setback management and promoter of its evolution across infrastructures. Regulators are the protectors of the evolutionary advantage of learning from managing inevitable setbacks that have inter-infrastructure, transboundary implications. This is especially pertinent when officials in the respective infrastructures in which the setbacks are occurring may be denying they are occurring, or if setbacks are recognized, the respective organizations are so seized up in reactive response that they do have the cross-scale, networked perspective to transform the setbacks into learning.

In this management world, regulation is about aiding mutual adjustments when the respective edges of infrastructures are interdependent. Note that in this approach, setbacks with transboundary consequences frequently have to happen before they trigger this kind of regulation. This is because the setbacks, when they

occur, substantiate the magnitude of the hazard that should be managed, which if not, could lead to an even worse situation involving more systems. In these ways, the “long run” is defined and introduced into our critical infrastructures via regulation, albeit through learning from setbacks that are taken to compel operational changes across infrastructures continually preoccupied with real time.

Before describing just what this “learning” is about, an example of the fourth regulatory function is useful. One caution before proceeding: Nothing in the above argues that all regulation should be with respect to guarding and promoting learning from setback management across infrastructures, nor does anything below argue that all critical infrastructures have setbacks that can be managed by regulators as in the following example. We will once again see that, when it comes to the regulators, trying to manage a setback within the precursor zone is more difficult and ambiguous than managing it so as to prevent entering that zone.

Try to put yourself in the position of the secretary of the U.S. Treasury or the head of the Federal Reserve in February 2008, before the collapse of Lehman Brothers, the bailout of Freddie Mac and Fannie Mae, and the further bailouts of AIG and Citigroup. You know nothing about the future ahead, but you are trying to prevent the subprime mortgage crisis from metastasizing into the kind of free-fall crisis it became.

What you do know in early 2008 is that underlying the subprime mortgage crisis are novel financial instruments that operated under no—or virtually no—mandates to ensure the high reliability management of those instruments. Credit derivatives, credit default swaps, collateralized debt obligations, special conduit vehicles, and other securitized financial assets enabled banks to shift off their balance sheet “a dizzying array of mortgages, credit-card receivables and corporate loans” (*Economist*, 2007, p. 28), without similar reliability arrangements found at those banks. The securitized financial instruments were also exceptionally complex and opaque. The supposedly 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 the risk was concealed in the process, only to end up back on the banks’ balance sheets and under the purview of their reliability mandates.<sup>10</sup> “Imagine NASA sending men to the moon before it had figured out how to get them back home,” writes back-page 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).

In sum, by February 2008, you know enough to understand that the financial instruments have increased tight coupling and complex interactivity within the financial sector and that this happened without having the more strenuous reliability mandates that banks conventionally have. You know, in short, you are in the precursor zone.

Specifically, the debt these instruments represented to the banking sector constituted “an accident waiting to happen” (Norris, 2008; see also Wolf, 2007). Here the management challenge was, as one UK regulator put it earlier, to turn “an accident waiting to happen into a near miss” (quoted in Davies, Tett, & Scholtes, 2006). That is what Treasury and Federal Reserve tried to do—to turn a disaster waiting to happen into a close call—when March 2008 rolled into view, and with it the challenge that surfaced with Bear Stearns, the investment bank.

In early March 2008, the U.S. Federal Reserve arranged with J.P. Morgan a last-minute bailout for Bear Stearns, as the latter moved to bankruptcy. The reason was that if Bear Stearns collapsed, the financial sector was at considerable risk of collapsing as well (e.g., Stoddard, 2008). Why was Bear Stearns vulnerable? Because, although comparatively small, it was a central counterparty to transactions involving a very large number of credit default swaps and related financial instruments. Clearly, having to bail out Bear Stearns posed a setback to Treasury and Fed managers. A Bear Stearns failure would mean it could not meet its obligations for contracts involving these instruments, and the knock-on effects were thought too dire to risk.

How that bailout was managed is instructive:

In an action almost unprecedented in takeover history, JPMorgan bought 39.5 percent of Bear on the spot to ensure that it would have close to a majority of the votes to approve the deal. That agreement completely disregards New York Stock Exchange's rules that prevent anyone from buying more than 20 percent of [a] company without a shareholder vote. Other parts of the new agreement either stretch the rules or disregard years of precedent in Delaware, where both banks are incorporated. Of course, all this rule-bending was done with the tacit, if not outright, approval of the federal government. (Sorkin, 2008, p. C10)

Paul Volcker, former head of the Federal Reserve, summarizes this just-for-now behavior as having taken the Fed to the "very edge of [its] lawful and implied powers" (Scholtz, 2008, p. 4), while Paul Krugman (2008), the economist and journalist, calls it "barely legal." This article calls it setback management through official and unofficial channels taken under increasing urgency within the financial sector's precursor zone.<sup>11</sup>

In hindsight, the Bear Stearns bailout looks to have failed in preventing the financial crisis from spreading. But did it fail? Having to answer that question is the problem of managing setbacks in the precursor zone: You cannot ascertain the counterfactual in all that uncertainty. What would have happened had not Bear Stearns been bailed out will be the topic of the years ahead. "All one can say is, 'It's not as bad as it would have been,' " Alice Rivlin, former director of the Congressional Budget Office concludes (quoted in Bendavid, 2008, p. 9). However, can you even say that with any degree of assurance?

Thus, from this article's perspective, it is better to regulate in order to ensure (1)—a setback in one infrastructure does not pull it into its precursor zone nor others into theirs—because by the time (2) comes around conditions have become incalculably—repeat, *immeasurably*—worse. When infrastructures are already in their precursor zone trying not to be pulled across into joint disaster, it is always unclear to what extent setback management there is effective. All I can say—and it is important when it can be said—is that those in the midst of such circumstances feel they are managing in ways that forestall their setbacks from spinning out of control, however temporary that respite may prove.

### **What Then Is to Be Learned from Setback Management?**

If regulation is to be the guarantor of lessons learned from jointly managing setbacks affecting multiple critical infrastructures, what kind of learning are the

regulators looking for? Here the challenge is to learn from setbacks that cannot be prevented so as to better prevent the crises those setbacks could or would otherwise precipitate.

First and foremost, we cannot assume learning will be there nor can we assume even the conditions for learning. All too often, the preconditions for learning—stability in preferences, goals, and tasks—are precisely those that are missing in a crisis.

Still, it seems appropriate to ask what specific kinds of learning from setbacks would be useful to managers trying to forestall failures across their interconnected infrastructures. Presumably, their answer would be: We want the same things we value from better managing setbacks within our own infrastructures. My reading and research suggest at least four types of setback management that cast setbacks in a positive role for those who manage them. Best known is the argument that organizations do not transition from one stage to another in their life cycles without overcoming the obstacles characteristic of the stage in which the organization finds itself (Harrison & Shirom, 1999). This could hold for crisis preventing organizations as well.

Other setbacks, in contrast, serve as a test bed of developing (more) anticipatory or resilient strategies in the crisis preventing organization. Some setbacks are better thought of as design probes as to whether that organization is broadly on the “right track,” or if not, what track it should be on. In yet other cases, setbacks serve to remind crisis prevention managers that other things matter for what they are doing. Setbacks unsettle what had been settled knowledge to that point. Yet the setback does this in a way that does not question the premise of continuity without which any interruption would make no sense.

In these four ways, setbacks are used for learning, and it is a learning that can connect today’s crisis management with tomorrow’s crisis prevention. For example, how effective setback management is in the financial crisis depends on if and how the regulators and their networks manage to transform those setbacks into positive interruptions, probes, tests, *and* obstacles to be surmounted. Will the crisis serve as a timely interruption that reminds us just how central the regulators are to the continuity of the financial and credit systems? Will the crisis end up as a much-needed probe of how well the financial and credit institutions themselves are keeping their sectors on track and under mandate? Will the crisis be the test bed for more resilient and anticipatory strategies in credit lending and financial investing? Furthermore, will the crisis in effect be an obstacle, whose surmounting is necessary to promote the operational redesign of the financial and credit sectors in more reliable ways?

These are the questions that matter to those seeking to prevent such crises in the future and, unlike Chou En-lai, we need answers sooner than later.

## Notes

- 1 The author wishes to thank Arjen Boin, Paul Schulman, and Ian Mitroff for their comments.
- 2 For those in the building and zoning arena, setback management is about regulating the distance between boundary and facility. This article concerns the obstacles and hurdles organizations encounter along the way that must be managed in order to prevent a crisis.

- 3 For the early work on HROs, see LaPorte and Consolini (1991), Roberts (1990), Rochlin (1993), Schulman (1993) and Weick (1987).
- 4 Other fields reinforce attention on precursors. Engineering risk assessment, for instance, examines risks of failure from both crisis management and high reliability management perspectives.
- 5 Some countries, as another example of trying to stay out of the precursor zone, resisted calls for a major conference to rework global finance. Japanese leaders echoed the U.S. hesitation, worried what signals such a conference would send to markets. “Our honest feeling is that we want to prevent a situation where we need to hold such a summit meeting,” Japanese Prime Minister Taro Aso said in parliament’ (McKinnon, MacDonald, & Galloni, 2008, p. A7). To hold the meeting was to admit being then in a position that could lead to something altogether worse.
- 6 Some policy-makers assume an unprecedented crisis requires unprecedented reaction. The chair of the UK’s Financial Services Authority argued for example: “When you’ve been through a [financial] crisis like this, it’s rather sensible to wipe the slate clean in terms of your previous assumptions rather than say: ‘because this has previously been my policy line, I still stick to my policy line’ ” (quoted in Thal Larsen, 2008, p. 20). This is hazardous thinking if it means moving to policies that have no competent managers.
- 7 Ned Gramlich, former Fed Governor, warned early and often concerning the dangers of the subprime mortgage “boom and bust,” as he called it (Andrews, 2007; for other Cassandras, see Blackburn, 2008, pp. 81–4; and Giles, 2008).
- 8 Or, to take another example, how have derivative exchanges with central clearing been able to survive the shocks of the financial crisis in ways that noncleared, over-the-counter credit default swaps clearly have not (e.g., Steil, 2008, p. 11)?
- 9 The two factors have been summarized by Alan Greenspan (2008, p. 9) for the banking sector:

Bank loan officers, in my experience, know far more about risks and workings of their counterparties than do bank regulators. Regulators, to be effective, have to be forward-looking to anticipate the next financial malfunction. This has not proved feasible. Regulators confronting real-time uncertainty have rarely, if ever, been able to achieve the level of future clarity required to act pre-emptively.

- 10 To consider the potential magnitude of crisis, consider only credit default swaps (CDS):

The notional amount of CDS contracts outstanding is roughly \$45,000 billion [\$45 trillion]. To put it into perspective, that is about equal to half the total US household wealth and about five times the national debt. The market is totally unregulated . . . (Soros, 2008b; for a counterargument, see Pickel, 2008)

At the time of writing, credit default swaps had increased to what the *Economist’s* special report on international banking calls the “insanely large notional value of \$62 trillion” (Palmer, 2008, p. 4).

- 11 Legal reservations have also been made concerning later developments, such as Treasury Secretary Paulsen’s requirement that the CEOs of nine major financial institutions sign a document enabling government equity participation in their institutions. William Poole (2008, p. A13), the former CEO of the Federal Reserve Bank of St. Louis, points out,

To my knowledge, there is no statute that permits the U.S. government to require that a corporation see stock to the government . . . One risk posed by Treasury’s less-than-voluntary approach: What if a courageous board of directors of one of the nine large banks doesn’t agree with the CEO’s promise?

If such a board did not agree, then Treasury finds itself once again pushed from the precursor zone well into the crisis.

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