

Pathfinding Our Destiny: Preventing the Imminent Fall of Our Democratic Republic

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Introduction

The Problem

The United States is on the crumbling precipice between linear, orderly change and non-linear, disorderly change.

When a change in output is not proportional to the change in input, this is called a *non-linear* system. In linear change, an input of 1 that yields an output of 2 continues to yield an output of 2 until the input increases to 1.5, at which point the output increases to 3. In non-linear change, an input of 1 yields an output of 2, then an output of 4, then of 8, then of 16 and so on in a rapid snowballing. In the first case, moving 1 unit of snow clears a modest path. In the second case, moving 1 unit of snow soon unleashes an avalanche.

Our economic and political structures are optimized for linear, gradual adjustments. In the non-linear era we are now entering, this means they are effectively *designed to fail*.

To prevent the fall of United States and other democratic republics, we must radically transform the structure of our current economy and society. This requires a comprehensive strategy, what some call a National Strategy (or in previous eras, a Grand Strategy). In the past, such plans were drawn up and put into action by political elites, and millions of citizens obeyed the dictates of authority. This is the model that has been dominant not just in the modern era but for imperial eras stretching back thousands of years.

In the non-linear era just ahead, the citizens will have to lead the elites, who as always will cling to their concentrated wealth and power even as the era demands the adaptability and resilience of decentralized power and capital.

The Current Strategy

The implicit assumption underpinning America's current state-market economy is that everyone's best interests are served by a winners-take-most market built on advocating for state favors—in effect, a state-cartel system that has greatly enriched the few at the expense of the many. (The vast majority of the past decade's gains in wealth and income have flowed to the top 5%, and within that class, most of the gains have flowed to the top 0.1% of households.)

Markets only factor in real-time demand, supply and price, and ignore everything beyond this narrow calculation: lifecycle and social costs, externalities, etc. Markets have no mechanisms for pricing value that isn't based on price alone (for example, resilience, positive social roles, self-reliance, etc.) The implicit strategy of markets is to maximize personal gain, make decisions based solely on price, and ignore everything that isn't factored into price.

Everything valued by other metrics is ignored, devalued or destroyed by this strategy-of-no-strategy. Biological diversity, for example, isn't included in the price discovered by markets because markets have no mechanism for valuing biological diversity. In the logic of the market, an ecosystem that's been destroyed by profiteering is of no consequence; the market will provide a substitute for whatever is no longer available.

According to this logic, the market solution to the destruction of air quality is to sell cans of fresh air, a recent innovation in heavily polluted cities in China. That what's truly valuable has been destroyed doesn't register in the logic of winner-take-most, price-is-all-that-counts markets. Those claiming markets solve all problems are willfully blind to the perverse deficiencies of markets' price discovery mechanisms.

As for lobbying the state to maximize private gains: this pay-to-play institutionalizes perverse incentives and regulatory capture, a process that's already reduced our democracy to a self-serving oligarchy.

Ill-defined *national interests* guide a foreign policy of military force and commercial interests that lacks strategic coherence, predictably leading to catastrophically misguided policies that have enriched the well-connected few at the expense of the many.

Markets and advocating for state favors are not substitutes for strategy. Markets and lobbying must be guided by incentives and goals established by an explicit strategy that serves sustainability, adaptability and the common good. Anything less dooms us to decay and collapse as non-linear storms arise and envelope the world.

The Required Strategy

To pathfind an alternative destiny, we must create new structures optimized for resilience and adaptability, not for centralized wealth and control. Rather than rely on the dysfunctional incoherence of narrow self-interest and force, we need a national strategy based on evolutionary principles and systems dynamics—i.e. a system based on an understanding of the structural differences between systems doomed to collapse and those with the flexibility to adapt successfully to non-linear disruption.

This is neither an easy subject nor a breezy read. While the basic ideas are simple, understanding how they manifest in complex systems can be challenging. It may also be difficult for many of you to embrace the disconcerting and possibly bewildering idea that the entire status quo is untenable and will disintegrate not from policy errors or poor leadership but simply as a consequence of its current structure.

SECTION I. The Dynamics of Decay and Collapse

In this section, we'll explore dynamics of decay and collapse, starting with the basics: the structure of organizational resilience and moving on to the sources of instability leading to collapse. Our goal is to understand how states adapt or collapse based on the resilience of their economic, political and social structures.

The Structure of Resilience and Fragility

While we're drawn to narratives that feature dramatic leaders and pivotal challenges, survival or collapse of human organizations ultimately depends not on individual leaders or specific policies but on the structure of the organization. And just like human organisms, human organizational structures have traits that manifest either resiliency or brittleness. Resilient ones adapt; brittle ones collapse. Such manifestation is *scale-invariant*, meaning it holds equally true for small groups, global corporations and/or states.

Dynamics that favor maintaining the status quo are intrinsic to all organizations. These include: 1) the structural bias for current optimization; 2) incentives for insiders to protect their positions; 3) the high costs and risks of structural changes; 4) decisions based on a past that no longer exists and 5) conserving structures that once conferred an adaptive advantage but are now maladaptive.

Simply put, it's extremely difficult for organizations to change their structure once it's been institutionalized. As a result, organizations are suited for gradual, modest changes that leave their processes and outputs intact. When survival depends on radically reorganizing these structures, organizations lack the institutional mechanisms, funding, history and skills required to do so.

In other words, rapid adaptation that puts insiders at risk is not a natural function of organizations; institutionalized resistance to systemic, risky transformations makes sense when change is gradual and incremental.

As a result, organizations that aren't specifically designed to adapt very rapidly and take risks—changing their stripes, as it were, on the fly--*are designed to fail* when conditions switch from linear to non-linear.

Every organizational structure is optimized to function in specific conditions and produce specific outputs. This optimization might be implicit, that is, not well understood by insiders within the organization, who inherit structures whose original purpose and design may have little connection to current conditions.

In this sense optimization is akin to *specialization* in the natural world, where natural selection optimizes some species for specialization to exploit a specific niche while other species are optimized for a wider range of conditions. The narrower the specialization, the greater the vulnerability to changing conditions. The slower the rate of adaptation, the lower the odds of survival in fast-changing conditions.

Optimization can be understood as *what the organization is designed to produce* or more simply, *what the organization produces as output*. Just as species develop traits and behaviors that serve their current specialization/optimization, organizations develop structures that serve their current optimization. These include structures for decision-making, collecting information, acquiring inputs, producing outputs, distributing rewards, limiting risks and managing feedback.

The output isn't limited to the stated primary purpose; it includes a wide range of tangible and intangible secondary outputs. For example, a university's primary output is the education of its students and the issuance of diplomas. But universities also produce stable employment, and if they have the necessary structures, they may produce research and alumni networks that encourage and support new enterprises. They may also generate intangible output such as prestige.

Universities can also generate student loan debt that cripples their students.

What's actually being optimized can be quite different from the purported output. If the diploma issued by the university has lost its market value, and students graduate with little measurable learning, then the university isn't optimized for its purported purpose, education of students. It's actually optimized to benefit insiders.

This is the natural evolution of organizations with centralized *power structures*: insiders have compelling incentives to maintain their power and income at the expense of the organization's output.

Every organization has a *power structure*, a mechanism for processing inputs into outputs, distributing benefits and making decisions. It could be autocratic, hierarchical, or participatory.

These structures lend themselves to optimizing certain conditions. Once those conditions change, few organizations are able to adapt to new conditions if the adaptation requires a fundamental reordering of the power structure. Very few individuals or groups voluntarily relinquish power and income, even for the good of the organization. People cling very tenaciously to the self-serving belief that whatever changes need to be made can be done while leaving their positions and power intact.

In other words, insiders prefer to conserve the status quo rather than increase the resilience of the organization, because the costs and redistribution of power required to increase resilience come at the expense of insiders. This divergence between the needs of the organization and the incentives of insiders to maintain the status quo is ultimately fatal to the organization.

This divergence manifests as political expediency, short-term thinking, magical thinking and denial—in short, insiders are incapable of recognizing and addressing problems if taking curative action disrupts the power structure.

This inability to accept the necessity of radical change is intellectual and cultural. Rather than being flexible, versatile and seeking to promote variability within the organization to strengthen adaptive capabilities, insiders *do more of what's failing/failed*.

Culturally, the required changes may be outside the institution's behavioral norms, or so far off their radar they don't even register as possibilities, much less necessities; anyone daring to propose such changes is sacked or exiled as threats to the status quo. Such institutional culling of those willing to pursue needed changes dooms the organization, as it lacks both the structures and leadership needed to institutionalize flexibility, versatility and variability.

Developing and maintaining such structures requires an investment of resources that doesn't make sense in stable eras. Once change shifts from linear (gradual and predictable) to non-linear (unpredictable and volatile), the organization lacks the time and ability to develop these structures. It's too late.

Ironically, the very success of an organization in optimizing linear stability hampers its ability to adapt to non-linear instability. This dynamic is visible throughout history: states collapse from the heights of their greatest expansion and optimization. The very success of their status quo structures makes them highly vulnerable to collapse once conditions change, as insiders lack the capacity to see problems for which the only solution is the dissolution of their institutions and power.

All systems need feedback and what Nassim Taleb calls *skin in the game*—accountability and consequence. This is the essential structure of classic markets: customers' decisions to buy is feedback on demand and price, and suppliers provide cost and availability feedback. Enterprises that lack feedback or ignore it lose sales and are eventually forced to close their doors. *Feedback, accountability and consequence* are the core dynamics of markets.

Bureaucracies excel at blunting or eliminating feedback, accountability and consequence. Why risk negative consequences if the organization enables avoidance of accountability and consequence?

If we combine these factors, we understand why so few organizations (and states, which are simply large organizations) are resilient when linear, predictable stability is replaced by non-linear, rapid change: they lack the structures needed to counter the intrinsic brittleness of organizations that optimize avoidance of accountability and consequence. In effect, the vast majority of institutions are optimized to *do more of what's failed*.

It is particularly difficult to accept that structures that once conferred an adaptive advantage are now maladaptive. Paolo Rognini has proposed an evolutionary dynamic which he terms *Vestigial Drifting Drives*, "the natural propensity to maintain behavior far beyond the time when the triggering motivation has been removed." This propensity also manifests in organizations as extreme resistance to the realization that all the

processes that have been optimized for decades to produce a specific output—a structure and output considered highly advantageous—are not just no longer beneficial but now are in fact active hindrances to desperately needed adaptations.

We can imagine a university, for example, that appoints a committee to study how the university might adapt to the rapidly changing economy. What are the odds that the committee will conclude that virtually all the university's structures and processes are now maladaptive and must be scrapped and replaced?

We can now understand why apparently robust states collapse with such regularity: their institutions (and the state itself) were optimized for a period of linear stability insiders assumed was permanent, and so flexibility, versatility and variability were weeded out as unnecessarily costly and disruptive. As a result, core institutions lacked the structures that optimized rapid adaptation.

The ingrained bias within organizations is to conserve whatever worked well in the past, including the existing power structure. As non-linear change overwhelms the organization, those in power will sacrifice the organization itself, perhaps unwittingly, rather than see their power diminished. From the perspective of those in power, their control is the glue holding the institution together. The possibility that the power structure is itself the cause of the institution's failure simply doesn't compute.

Even if well-meaning leaders are willing to sacrifice their personal power, large institutions lack triggers that would signal the need for radical reorganization. In small businesses, the triggers are falling sales and profits. Owners who ignore these triggers are soon driven out of business. While these signals also raise alarms within institutions, large organizations have the resources to paper over warning signs. Institutional maladaptation is gradual; insiders respond to declining output by moving the goalposts (i.e. the definition of success) and making window-dressing changes to how expenses are accounted.

Institutions are also prone to *Vestigial Drifting Drives* that no longer offer selective advantages. For example, publicly funded institutions are programmed to respond to cuts in their budget as existential threats that demand the equivalent of war. Devoting resources to defend the budget made sense in flush times, but it is maladaptive when the institution's output is clearly falling and public funding is tightening across the board. The resources squandered on a losing battle to maintain funding would have been better spent on radically remaking the entire institution to become flexible, resourceful and adaptive.

The typical organization lacks the structure, history and leadership to upend a dysfunctional power structure and shift resources from well-understood processes to new and untried processes. And so the organization *does more of what's failed*, pushing whatever it has optimized as the solution, even when the problem cannot possibly be solved by the structures and processes of the past.

What organization will invest resources during stable times to maintain what appears to be an unproductive waste of time and effort, i.e. versatility and flexibility? Why create structures that have the potential to disrupt the status quo? Insiders have no vested interest in supporting institutional structures that could someday diminish their power and perquisites. Rather, they have every incentive to ruthlessly eliminate such structures to preserve the status quo that serves their interests so well.

Unlike the resilience embedded in genetic and epigenetic codes, it's costly to maintain the structures of rapid adaptability in human organizations. Why would any organization make the sacrifices necessary to maintain these capabilities if the need for them isn't even currently there?

The only exceptions are organizations that must adapt rapidly to survive—a common example being small businesses in rapidly evolving fields. To survive, these enterprises may have to change not just their product line, but their location and their organizational structure. They may not even be in the same business a few years hence. To avoid perishing, these organizations must overcome all the non-linear dynamics that arise not because of poor leadership, poor policies or ideology; rather, they arise from the very structure of the organization itself.

The Challenge of Adapting to Profound Changes and Extreme Variability

The dynamics of natural selection are not limited to organisms; human systems also conserve traits that aid survival. The core survival trait is *adaptability*, the innate ability to generate variations as the species comes under pressure, and propagate those variations that enable the species to adapt to new realities. Adaptability is scale-invariant, meaning that it's true for individuals, species, organizations and societies. The traits of *flexibility*, *versatility* and *variability* are the key dynamics of adaptability and thus of survival.

Adaptation/evolution is complex. It's a fool's game to predict which specific traits will prove beneficial in a new environment. Those organisms or organizations that optimize a narrow band of specific capabilities at the cost of versatility can be driven to extinction by even modest changes in their environment. Optimally, organisms and organizations must find a way to both adapt to gradual, long-term changes in their environment and also survive sudden variability that exceeds the normal range—for example, extremes of drought, heat, financial crises, war, etc.

But optimizing for gradual changes vs. optimizing for sudden extremes require different capabilities.

Adapting in Nature: Natural Selection

Many traits are conserved to serve the normal or preferred environment of the species. For example, a bird's beak lengthens to enable it to feed on long-stemmed flowers that are abundant in its habitat. But other traits must also be conserved to meet the most challenging conditions the species might face. These traits will only reveal their value in extreme conditions where the habitat is disrupted by highly variable conditions.

This critical aspect of adaptability is known as *variability selection*, the conservation of traits that favor versatility and flexibility, traits which enable species to survive fast-changing, highly variable conditions.

In other words, adaptability includes selecting traits that enable the species to adapt to gradually changing conditions (for example, rising temperatures) and the ability to survive short-term fluctuations that disrupt the normal environment.

Natural selection conserves these versatility traits via genetic/epigenetic instructions. This is how natural selection works: the survivors of extremes of drought, hunger, etc. conserve whatever genetic variations enabled their survival. Natural selection is feedback, accountability and consequence. As conditions change, the organism responds to the limit of its genetic capacity, and either survives and expires. The survivors pass on the coding for the mix of traits that enabled their survival.

Genetic/epigenetic coding is a cheap form of insurance. It doesn't cost the organism much to conserve instructions for rarely needed but essential-to-survival versatility.

Adapting in Human Systems

Human systems are not so fortunate. In human systems/organizations, the ability to survive extreme fluctuations must be consciously developed and maintained. Maintaining flexibility is not free; there are costs to maintaining this adaptability, and in times of stability, these costs appear to be superfluous.

One example is *redundancy*, the maintenance of spare capabilities. Carrying a spare camp stove while backpacking, for example, may seem like needless extra weight as long as the primary camp stove is functioning, but should the primary stove fail, it suddenly seems brilliant to have packed the auxiliary stove.

Some forms of redundancy are cheap, for example, buying a spare wrench to have on hand should the primary tool break. But others that require testing and maintenance are costly. The higher the cost of redundancy, the greater the skepticism in periods of stability as to its value.

Another example is a *buffer*. Let's say a bank maintains 5% of its deposits as reserves to cover depositors' withdrawing their money. This buffer is adequate during periods of relative stability, but should a financial panic trigger a widespread urgency to withdraw cash from banks, the bank's buffer will quickly be expended and the bank declared insolvent.

A more conservatively managed bank might maintain a buffer of 10%, and as a result it survives the panic, but only at the cost of forgoing the profits that could have been earned by lending out that additional 5% buffer.

A third example is *versatility*. If a construction-related problem arises and the full extent of the situation is unknown or ambiguous, does the manager dispatch four workers who each know only one trade, or is there one versatile worker who has all four skills who can be sent out?

A fourth example is *dissent*, variations that challenge the narratives and assumptions of the status quo. This includes skeptical inquiry, the introduction of new ideas and experimentation.

You see the point: flexibility requires tradeoffs and costs. Redundancy, buffers and versatility aren't free to develop or maintain. The default inclination of any organization that's optimized to protect the security of insiders is to repress any dissent as dangerous, and punish or exile the dissenters.

The typical approach in human systems is to weigh the risks of some extreme variation occurring and devise a buffer whose costs align with the risk (high or low). For example, if the risks of flooding are high, spending money on high flood barriers makes financial sense, as the damage from repeated flooding is costly. If the costly barriers limit the occasional extreme flooding for decades, the barriers yielded a great return on investment. Conversely, if it's decided that building barriers against 100-year floods makes little financial sense, and then there are multiple extreme floods in the span of a few years, the assessment of risk and cost will change very quickly: skimping on barriers ended up costing much more in flood damage than building barriers.

Resiliency—the ability to adapt to both gradual changes and extreme fluctuations—isn't quick or cheap to develop. And in many cases, there is the additional factor of institutional or cultural resistance to investing in what's perceived as unnecessary or even counterproductive.

Case Study of Non-Linear Dynamics in Action

War and combat offer insightful case studies of non-linear dynamics in action.

The pivotal Battle of Midway in the Pacific Theater of World War II hinged not just on leadership decisions and strategies but on often-overlooked systems of damage control, the institutionalized capability to survive the most challenging sea-based combat conditions: multiple hits from torpedoes and bombs, onboard fires fed by fuel and munitions, etc.

The Japanese Navy optimized an idealized strategy in which their ships suffered little damage while destroying opposing forces with offensive capabilities. As a result, there was very little institutional infrastructure for damage control training or equipment. Culturally, damage control was viewed as defeatist.

Ironically, Japan's loss of their four aircraft carriers in the battle of Midway to U.S. Navy dive bombers—the cream of the Imperial Fleet, and a blow they never recovered from—was due in part to this institutional choice to optimize offensive capabilities and discount damage control as defeatist.

In contrast, damage control was an integral part of U.S. Navy training and shipboard infrastructure.

Thus when Japanese pilots left the U.S. aircraft carrier *Yorktown* in flames and listing badly, dead in the water, they reported the carrier as lost. But onboard damage control efforts extinguished the fires and got the ship underway again, much to the surprise of the Japanese. When the *Yorktown* was later sighted steaming under its own power, no longer trailing plumes of smoke, Japanese observers assumed it was a newly arrived aircraft carrier that was just joining the battle.

The point here is that organizations have a choice that few clearly discern: resources can be invested in optimizing the preferred or idealized environment, or they can be invested in capabilities that appear to have little value until conditions become extremely challenging, i.e. non-linear. Those who presume such conditions will never arise, or over-estimate the resilience of their systems, belatedly discover their presumption leads to disaster.

To recap, using the pivotal carrier-based battle as an example: every blue-water navy had to adapt to the profound change in naval strategy from relying on surface warships to air power based on aircraft carriers. Those who failed to adapt were destroyed in the first contact between their surface ships and carrier-based air power.

But this was not the only essential adaptation: navies also had to evolve an ability to operate carrier battle groups that integrated surface ships and submarines to protect the carriers. In other words, developing the offensive capacity of aircraft carriers was only half of what was required to survive combat; navies also had to develop defensive capacities to protect their carriers from enemy attacks.

As well, navies that developed flexible carrier group capabilities had a greater range of options in the highly non-linear environment of warfare. If a rigidly organized (i.e. optimized for specific scenarios, highly centralized, intolerant of dissent) naval force meets an opposing force that is more versatile and has a greater capacity to survive non-linear conditions (i.e. optimized for flexibility), the rigidly organized force may prevail if the conditions of battle align with its idealized optimization.

But if conditions change rapidly or veer outside the optimized scenario, the more flexible force is likely to carry the day, even if it has fewer assets.

This brief analysis helps us understand why apparently robust states collapse in crisis: they appeared robust in normal conditions because their institutions were optimized for a narrow range of stable conditions they reckoned was permanent.

But stability is never permanent; things change, and often generate feedback loops that strengthen the destabilizing effects of what at first glance looked like a minor problem. This is the essence of a non-linear system: multiple feedback loops interact in difficult-to-forecast ways.

Returning to our example of damage control and the Battle of Midway: The true cost of leaving their aviation fuel lines exposed was only revealed to the Japanese leadership when all four of their aircraft carriers had been reduced to infernos by relatively few hits—in one case, a single bomb destroyed the entire carrier by igniting fires that could not be controlled once aviation fuel and munitions were ignited.

Those focused on optimizing offensive combat operations were blind to the costs of under-investing in the capability to survive extreme challenges. And even if they realized the true cost of discounting damage control and sought to fix this deficiency, there was no easy or cheap way to distribute the needed infrastructure, training and culture throughout a fleet that was steeped in tradition and orthodoxy—an organization that was intolerant of dissent.

Those who suppress dissent as a danger to the status quo are in effect eliminating a key component of adaptability and resilience: the unpredictable variability of individuals' insights and questions.

Developing institutional knowledge and infrastructure takes more than just investment, time and training; it requires replacing the previous mindset and slowly nurturing a new one that requires not just the nuts and bolts of new equipment and training but an institutionalized openness to dissent.

Author/analyst Donella Meadows explained that changing systems requires adding new feedback loops; adjusting existing parameters won't change the system. We can add that accountability and consequence must also be present to make use of the new feedback.

Adding a new feedback loop sounds innocuous, but that apparently benign process has the potential to disrupt power structures. How many organizations have the capacity to add new feedback loops and the will to accept the risk that this might disrupt the status quo?

In other words, versatility and flexibility in service of adaptability require a suite of capabilities that can take the operational equivalent of genetic instructions and add feedback loops that distribute and refine new variations rapidly.

Very few institutions have the capability, will or means to throw off their own organizational and cultural dysfunction. As a general rule, organizations expire long before they develop the requisite capabilities and culture needed for rapid adaptation. The cumbersome processes and glacial timelines that function in periods of stability are fatal in eras of non-linear change.

A national strategy that doesn't understand the organizational limits of adaptability will fail in a spectacularly unexpected fashion. Assuming that optimizing the present stability will be successful because this stability will endure into the indefinite future is a well-trod path to collapse.

Non-Linear Change, Resilience and Collapse

When a change in output is not proportional to the change in input, this is called a non-linear system. An example is the famous flapping of a butterfly's wings that unleashes a distant hurricane: the output (a hurricane) is out of proportion with the input (a butterfly's wings flapping).

Nature is fundamentally non-linear, as are all complex systems. To understand how apparently stable systems can collapse quickly, let's turn to the example of a bank panic in which depositors suddenly worry that their money isn't safe in the bank and rush to withdraw it.

Based on a linear projection of average daily withdrawals and deposits, the bank keeps 5% of its total deposits in cash as a reserve against withdrawals and losses from borrowers defaulting on loans issued by the bank. As a buffer against extreme conditions, the bank maintains a line of credit with another financial institution so it can borrow an additional 5% should the need arise.

As long as the system is linear, the bank is stable.

But then a financial panic strikes, a not uncommon, unpredictable occurrence in the financial system. As withdrawals increase, the bank reassures depositors there are sufficient funds, and activates its line of credit as a prudent reserve.

But the panic doesn't subside as expected, and soon the bank's cash and line of credit have been depleted. The bank asks for an additional loan, but the other financial institution is wary of risking any more of its capital, so it refuses.

At 10 am the next morning, a depositor withdraws the modest sum of \$1,000, and the bank is declared insolvent and closes its doors. The output—the closure of the bank—is out of proportion with the input—the seemingly minor withdrawal of \$1,000.

One of the factors that increases non-linearity is *hyper-coherence*, the tight links between complex systems in the global economy. In this example, a banking crisis in a distant nation might trigger a global contagion that generates such a bank run.

As explained before, the 5% cash reserve is a buffer that is designed to absorb unusual surges of withdrawals and defaults, much like wetlands buffer the storm surge from offshore hurricanes.

As buffers thin, the danger of sudden collapse increases, but the thinning of buffers is invisible to everyone but those with the knowledge and access to monitor the thinning.

For all the reasons described in the previous section, insiders tend to downplay the risk of collapse, rationalizing magical thinking and denial, in effect counting on previous stability to reassert itself. Efforts to restore the buffer tend to repeat whatever worked in the past, even if the conditions are entirely different.

In our example, let's say the bank barely survives the bank run, clinging precariously to less than 1% of remaining deposits on hand while having to pay interest on the money it borrowed in the crisis.

On the surface, the bank looks stable and everyone inside and outside the bank assumes a return to pre-crisis conditions is assured. But the distant financial crisis has disrupted various parts of the global financial system as a result of the system's *hyper-coherence*. Deposits slow, the interest on the debt taken on in the crisis eats away at the bank's earnings, and the process of rebuilding cash reserves is anemic and fitful.

The bank's buffers remain severely depleted, and so the surface stability is deceptive; the return of "calm" is only relative to the previous panic state because of the buffers not yet being fully recharged.

Then another financial crisis arises elsewhere in the system, one that spreads a contagion to housing markets around the world. Defaults of the bank's outstanding mortgages begin to pile up, and in response the bank starts playing financial tricks to mask the defaults and keep the losses from being recorded on the bank's balance sheets. These tricks include making new loans to borrowers so they can make mortgage payments for a few more months, reducing their mortgage payments to a nominal sum, creating a new category in the balance sheet for temporarily non-compliant loans, and so on. But none of these processes actually address the real problem; they merely paper it over in the hopes that some bolt from the blue will magically bail out the defaulting borrowers and rebuild the bank's buffers.

At this point the bank could undertake a radical reorganization by closing branches and slashing management's compensation, selling off assets, seeking new deposits in underserved markets, selling impaired assets and booking the losses, and so on. But such radical actions are risky, and fearing the risk and the perception that the bank is in trouble, the management decides instead to borrow more money at high rates of interest to stabilize the situation.

But the stability is also illusory. The higher interest actually decreases the bank's buffer and increases its vulnerability to external shocks or unexpected consequences of management's decisions. Thus when a sudden spike in mortgage defaults cannot be hidden from auditors, the bank is declared insolvent.

Every action of management increased the brittleness of the organization by conserving maladaptive policies that thinned its buffers while creating a false façade of stability.

This is the global financial system in a nutshell. The average person sees stability, but beneath the surface the unprecedented expansion of debt has thinned the system's buffers and increased its hyper-coherence. The system's resilience and adaptability have been sacrificed to maintain a surface stability.

An avalanche is one example of a non-linear system. Beneath the placid surface of apparently stable snowpack, conditions are changing. At some unpredictable point, a small input causes the snow to give way in an avalanche.

Much of what we take for granted as permanently stable is actually hovering on the boundary of non-linear collapse. Many of the systems we rely on have been rescued by fortuitous discoveries of new resources or an influx of borrowed money (i.e. debt). But history informs us that relying on fortuitous discoveries and debt to save us from radical reorganization is not a sustainable strategy. Deeply destabilizing events occur on a regular if unpredictable schedule, and if systems are fragile, these events cause apparent stability to collapse with a suddenness that surprises the unwary.

The resilience of our systems is illusory. Unprecedented expansions of debt and currency have papered over the maladaptive nature of these structures. The only National Strategy with any value going forward is one that restructures systems to withstand non-linear dislocations. These are not disasters for the well-prepared—they are opportunities.

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