Systemic Risk and the Government of Crisis

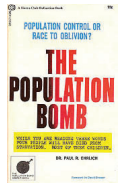
Various experts analyzing the 2008-10 financial crisis have relied on the concept of "systemic risk" as an explanation. In a widely cited 2003 article, George Kaufman and Kenneth Scott defined systemic risk as the "the risk or probability of breakdowns in an entire system, as opposed to breakdowns in individual parts or components, and is evidenced by co-movements (correlation) among most or all the parts." But the centrality of the problem of systemic risk is not limited to the domain of finance. The National Academy of Science convened a high profile meeting in 2006 to discuss the relation between ecological concepts of catastrophic risk in interdependent systems and systemic risk in finance. In looking at other domains–energy, information, health–one finds similar modes of thinking among experts about both problems and potential solutions.

WHAT IS SYSTEMIC RISK? SOME KEY MOMENTS

1930's
STRATEGIC BOMBING During WWI, Germany used Zeppelins to drop bombs on England, Russia, and France.

By the end of WWI and in the years leading up to WWII, Germany and England developed a theory that mass long-range bombing, could potentially result in sufficient loss of morale to make the enemy surrender.

1952
H-BOMB TESTS On November 1, 1952, the United States conducted its first hydrogen bomb test, code-named *Mike*, as a part of operation *Ivy*. Mike was part of a series of nuclear tests which marked the dawn of thermonuclear missile age and the beginning of programs of total preparedness and national survival.



1968
THE POPULATION BOMB The American biologist Paul R. Ehrlich wrote *The Population Bomb,* which sold over 2 million copies, and influenced public policy in the years to come.

Population predictions and world-systems modelling adapted models of defence mobilization and disaster planning into the domains of social policy.

1973
ENERGY CRISIS The 1973 oil crisis began with the oil embargo in response to the U.S. decision to re-supply the Israeli military during the Yom Kippur war; it lasted until March 1974.

It was the first "systemic" crisis in oil markets and led to the effective globalization of oil markets.

1978-1983
LATIN AMERICAN DEBT CRISIS The Latin American debt crises of 1978-1983 represent the first instance of the use of the term "Systemic Risk" by William Cline of the Peterson Institute. The debt crisis raised issues of "external shocks" and the question of how insolvency or bankruptcy could be propagated across nations and into the increasingly global economy.

1988
MORIS WORM The Morris worm was the first widespread internet worm. It temporarily crippled the Internet and caused major media interest in the problem of the system-wide risks of computer hacking in networked environments.

Key technical or political responses:	Critical target mapping. Stockpiling, redundancy.	Programs for total preparedness, national survival.	World systems theory, computer modeling of crises.	Fuel efficiency standards; national maximum speed limit.	Structural adjustment.	Computer fraud legislation and emergency response teams.
Conceptual connections:	The translation of catastrophe modeling from defense mobilization to natural disasters in the mid-1960s.			The migration of the norm of "resilience" from ecology to systems engineering in response to electrical grid breakdowns in the 1970s.		
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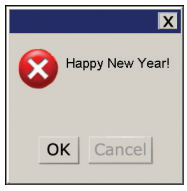
Problematizing systemic risk reveals at least the following elements:

1. **Interdependency** Contemporary society depends on complex, interdependent systems—energy grids, information networks, financial systems, and mechanisms of industrial production.

2. **Cascading Failures** Disruptions of these systems can have cascading effects that lead to systemic collapse.

3. **Resilience** Proposals for regulatory intervention focus on the notion of "resilience" to perturbations in the system.



1998-2000
Y2K "MILLENIUM BUG" The "Year 2000" bug captured popular attention and highlighted the possible systemic collapse created by engineering decisions taken decades earlier. Before 9/11 it gave momentum to "critical infrastructure planning" projects and proposals.

Massive reprogramming efforts aimed at stemming collapse.

Cavelty p. 12

2000-2001
ENRON AND THE CALIFORNIA ENERGY CRISIS Enron's financial shenanigans combined with the deregulation of energy markets created rolling blackouts in California. The event clearly ensnared consumers in the effects of systemic and infrastructural decisions.

Sarbanes-Oxley, energy re-regulation.

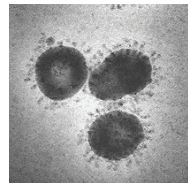
Poon, p. 38

2001
9/11 ATTACKS 9/11 gave enormous momentum to preparedness planning programs, critical infrastructure protection and the exploration of alternative forms of risk and planning, including especially scenario planning.

Critical infrastructure preparedness; scenario exercises.

Bougen, p. 20
Cowen, p. 9

Post 9/11, the generalization of "critical infrastructure protection" from computer network vulnerabilities to a more generic method of assessing infrastructural vulnerability to a terrorist attack.



2002-2003
SARS OUTBREAK A *Severe Acute Respiratory Syndrome* outbreak confirmed fears of emerging diseases and their rapid spread through globally interconnected systems. The near pandemic brought attention to systemic challenges of monitoring, containment and response.

Disease early warning systems. Scenario exercises.

Dunn p. 14

The adaptation of scenario-based exercises from the military to public health preparedness in the early 2000s, in the wake of SARS and in anticipation of H5N1.

2005
HURRICANE KATRINA The worst natural disaster in recent memory highlighted failures in emergency management, government response, infrastructure maintenance and public trust.

Sims, p. 6

2010
DEEP WATER HORIZON OIL SPILL The out-of-control oil spill in the Gulf of Mexico turned into an engineering drama as BP tried technique after technique to cap the well and stop the flow. It highlighted the absense of expertise concerning deep-water drilling safety.

2008-?
CURRENT FINANCIAL CRISIS A now canonical example of the effect of systemic collapse that combined poor lending decisions in the mortgage market, poorly or unregulated financial engineering, and ineffective oversight by ratings agencies.

Dunn Cavelty, p. 12
Holmes, p. 30
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Thompson, p. 41
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