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Summer reading: The Upside of Down

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If you're off on holiday shortly and casting around for some readable tome, try Thomas Homer-Dixon's outstanding *The Upside of Down*. Homer-Dixon's 300 page essay on global risk trends and the prospect of a multidimensional 'perfect storm' is a real page-turner that skips neatly from the decline and fall of Rome to the great San Francisco earthquake and fire of 1906, seeking to extract the key lessons from each to apply them to the current predicament.

The book's recurring theme is that resilience is all about being able to make creative use of moments of breakdown so as to turn them into processes of renewal - rather than sliding into outright collapse (a la [Jared Diamond](#)). So, for instance, after we've had Homer-Dixon's epic description of the city fathers of San Francisco enlisting heavy artillery pieces to blow up one of its more well-heeled avenues - this in a last, desperate, and ultimately successful attempt to create a firebreak - we learn that the earthquake and fire led to the creation of the Federal Reserve Bank.

(How this happened, briefly: massive insurance claims destabilise London insurance market; with the gold standard still extant a huge flow of gold from London to San Francisco ensues; British money supply suddenly contracts, threatening a deflationary spiral; the Bank of England doubles interest rates in a month and cracks down on purchases of US debt by British banks; US debt markets get squeezed and its economy takes a hammering; by October 07 a New York Bank fails amid a serious liquidity crunch; and then - ta-dah! - one Mr J.P. Morgan organises a stunned group of bankers to tuck themselves away in a rural retreat, where they draft the outline of the Federal Reserve System.)

But what really has Homer-Dixon thinking in this terrific book is the centrality to any complex society of Energy Returned on Energy Invested (EROI). It was diminishing returns on this ratio, he argues, that finally did for Rome:

"Because energy is a society's master resource, when Rome exhausted its energy subsidies from its conquests - when it had to move, in other words, from high-EROI to low-EROI sources of energy - it faced a critical transition. And, at least in the Western part of the empire, it didn't make this transition successfully. It couldn't sustain the cost and complexity of its far-flung army, ballooning civil service, hungry and restless cities, elaborate information flows, and intricate irrigation systems. Not that it didn't try. Rome's prodigious effort to save itself by putting in place a system to aggressively manage its energy problem was simultaneously one of history's greatest triumphs and tragedies. It was a triumph because, for a while at least, the effort reversed what seemed like the empire's inexorable decline; but it was ultimately a tragedy because it didn't address the empire's underlying problem - complexity too great for a food-based energy system - and was thus bound to fail."

Today, Homer-Dixon argues, there are five "tectonic stresses", as he calls them - tectonic because the big shifts are taking place below the surface, away from view - which are shifting today's globalised society from a low-EROI (easy fossil fuels and resources; easy economy) to a high-EROI system. These five stresses, he says, are:

- “Population stress arising from differences in the population growth rates between rich and poor societies, and from the spiraling growth of megacities in poor countries;
- Energy stress - above all from the increasing scarcity of conventional oil;
- Environmental stress from worsening damage to our land, water, forests and fisheries;
- Climate stress from changes in the makeup of our atmosphere;
- and, finally, economic stress resulting from instabilities in the global economic system and ever-widening income gaps between rich and poor people.”

The book is scathing about prospects for successful “management” of these stresses, where “the goal is to keep our problems from becoming so bad that we have to significantly change our lifestyles”. Pah, says Homer-Dixon: we’re not much good at understanding complex technological, social or natural systems, much less managing them. And besides: “when we manage challenges like our tightening energy supply or the persistent instabilities in the global financial system, we usually have to make our technologies, procedures, and institutions progressively more complicated and often (in the process) less resilient”.

Instead, Homer-Dixon offers the idea of *catagenesis* (from the Greek: *cata* means “down” and *genesis* means “birth”):

“In my use of the term here, I retain the idea of a collapse or breakdown to a simpler form, but I especially emphasise the “genesis” - the birth of something new, unexpected, and potentially good. In my view of it, whether the breakdown in question is psychological, technological, economic, political, or ecological - or some combination of these forms - catagenesis is, in essence, the everyday reinvention of our future.”

So what’s the fulcrum upon which is determined the difference between a future of breakdown and renewal, or a future of outright collapse? In a word: resilience.

“Breakdown happens - in our personal lives as well as in our societies. If seldom desirable in itself, it’s nonetheless rarely the end of the world, and much good can come of it. We can boost the chances that it will lead to renewal by being well prepared, nimble, and smart and by learning to recognise its many warning signs.”

This is one of the must-read books of the last 12 months. In the meantime, here’s Thomas Homer-Dixon’s [website](#), and he has a good Toronto Globe and Mail article summarising some of the book’s ideas [here](#).