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The Upside of Down, by Thomas Homer-Dixon

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For a few days after reading *The Upside of Down*, I annoyed most of my friends and family by reciting chunks of Homer-Dixon's work back to them -- I couldn't get it out of my head. I do this a lot to people, but not usually for days and days on end after reading a book.

The Upside of Down isn't an environmental book, exactly, though it does deal with environmental and energy issues. While it shares some themes with more explicitly environmental books (like Jared Diamond's *Collapse*), the core of the book is more political and sociological. Homer-Dixon is asking why societies collapse -- what are the pressures our society faces today, and what, if any, are the positive results from the kind of collapse he's talking about?

I've long been a skeptic of the "collapse-rebirth" school of green thought, so it's saying something that THD has written a compelling and convincing (to me at least) book about exactly that -- the opportunities that come for rebirth and reconstruction when societies face failures in the way their life support systems work. The book starts and ends with a gripping retelling of the earthquake and subsequent fire in San Francisco, 1906, and how the fire led to the creation of the Federal Reserve system in the United States. But Homer-Dixon doesn't hamper his theory by sticking to one core analogy and building his theory around it -- Rome is in there, the New Deal, any number of other examples to help bolster his arguments.

THD sees five structural pressures facing human society at the beginning of the 21st century:

- Population stresses arising from a) rapidly growing numbers in developing countries, and b) the creation of sprawling megacities.
- Energy stress, primarily as we shift from cheap, "high-quality" energy sources like oil and gas to expensive, low-quality sources.
- Environmental stress from our rapacious waste.
- Climate stress from anthropogenic climate change.
- Economic stress from global economic chaos, combined with widening inequality between rich and poor nations.

Part of the strength of the book is the fact that it's written in an extremely readable, compelling way -- even peak oil addicts who greedily slurp up every new bit of data from the internet could, I think, gain from reading his chapters on energy. As just one example, his explanation of the energy system of Rome (the ultimate solar empire, securing supplies of grain from its colonies to feed The City) and its relevance today is fascinating: THD calculates that to build the Roman Colosseum, it took a Manhattan-sized chunk of farmland producing food solely for the laborers (man and beast) for five years. To keep the empire running on any given day took farmland equal to the area of modern France -- which, conveniently, Rome used to own.

So what is THD's theory about societal collapse, exactly? You can read a brief treatment of it here (PDF); he assimilates a number of theories from various sources (sociological, anthropological, ecological) to argue that societies go through a predictable cycle: the work of Joseph Tainter shows that societies generally respond to challenges (of any kind) by adding complexity -- a drought is solved by building irrigation systems which require

more maintenance, bureaucracy, etc. But like any resource, the easiest, cheapest solutions are exploited first. As challenges add up (and they just keep coming), the complexity becomes more and more costly, until the solutions cost more than the problems they solve. Look at America's response to terrorism and tell me if this doesn't ring true immediately.

While complexity can be efficient, and can pay great dividends to a society, it can also make it more brittle, less resilient to an outside shock, the way a mature ecosystem occupies every available niche, using every resource available, but an invasive species can be a catastrophe. The problem comes not when one isolated problem -- even a large one -- comes a knockin', but when societies are faced with multiple converging problems and are unable to cope: for example, fuel shortages and climate change leading to drought, food shortages, power shortages, and more violent weather events. A society is pulled apart because it cannot marshal the resources necessary to cope with the simultaneous challenges it faces.

The good news -- and there is some -- is that the collapse doesn't need to be total and catastrophic. We needn't follow Rome into the dustbin. Rather, once the crisis is recognized, a new cycle can begin, if we're willing to go back to the drawing board. The Fire of 1906 led to a better, more resilient banking system in the U.S. -- not to mention better fire protection in San Francisco! -- and the Great Depression led to a more resilient economy in the U.S. The problems of the 21st century can be faced in one of two ways: we can keep trying to add complexity until the world is one giant, possibly horribly Orwellian, system of command and control (and still too brittle to cope with the problems of the 22nd century!), or we can recognize the crisis for what it is and start from scratch.

If Homer-Dixon had done nothing but list and explain the five challenges he sees us facing in the years to come, this would have been an excellent book. (I was particularly impressed with the chapters on the global poor, but that might be because I'm already more familiar with the energy and environment chapters.) But the book is much more than that. Some books are great for exploring the details of a particular issue, and those books are valuable and necessary. But other books -- and *The Upside of Down* is one of these -- are necessary for taking the longer, broader view and giving us a prism with which to view the world. They change the way you see things -- as if you've suddenly put on different-colored glasses. It goes without saying that environmentalists and energy wonks alike would get a lot from reading his book. And then, if you're like me, spend the rest of the weekend annoying friends and relatives alike.