

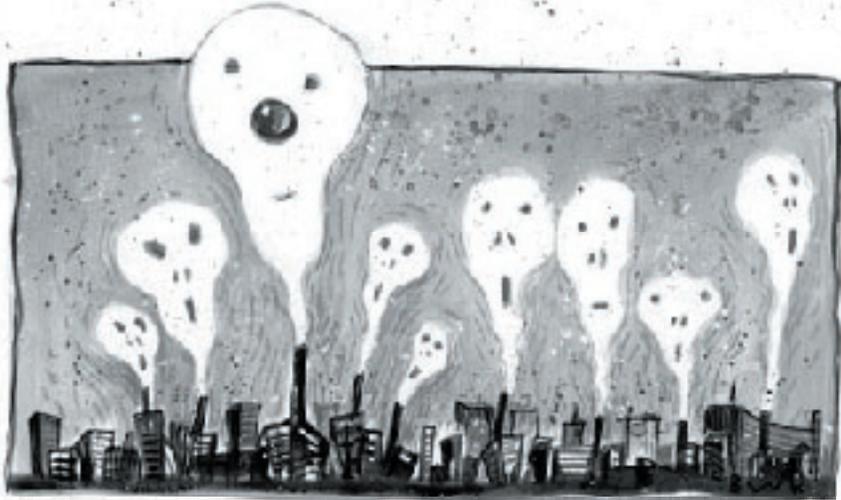
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The Idea Juggler

New thoughts, new approaches, new words to tackle old problems.

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I am sitting on a train between Montreal and Ottawa reading Benjamin Friedman's *The Moral Consequences of Economic Growth* and thinking about how to characterize Thomas Homer-Dixon's *The Upside of Down: Catastrophe, Creativity and the Renewal of Civilization*. Is it a thoughtful, intellectual and well-researched treatise or is it a well-meaning, rhetorical polemic? Then I realize the previous sentences reflect Homer-Dixon's own style of doing research and writing books.



The Upside of Down is both scholarly research and argumentative pamphlet. And stylistically, it is an interesting approach to personalizing the process of research and presenting its results in an engaging and clever fashion. With mostly success, but some failure, the book is a translation of scholarly research into popular idiom. In this book we find the boyish Tad at about 20 years old (irritatingly, even today he still looks too young) "throwing the chain" on an oil-drilling rig in Alberta as a set-up to a discussion of the energy return on investment. Or we find the naively inquisitive Tad sitting on a stone contemplating the Coliseum in Rome and puzzling over a run-of-the-mill keystone and the acreage of grain-based energy required to cut it, haul it and then erect it. Or we find the perplexed Tad on Yonge Street watching Torontonians walking around their city in the aftermath of the blackout in 2003 as he curiously intuits the fragility of modern society due to its complexity. Personal photos and drawings illustrate all of these stories.

I like it! But it is not the type of scholarship we might be used to. And exactly 100 pages of footnotes do not a scholar make. But it is nonetheless more rigorous than most popular writing, and certainly more accessible than most scholarly works.

These personal reflections and presentations of how Homer-Dixon arrived at his thesis and ultimately his conclusions make this a very easy yet thoughtprovoking book to read. The process of discovery is the story. The plot is about hope. The *dramatis personae* include eccentric academics, his research assistant Karen, Roman emperors, Roman slaves, his friend Laura whom he sent back to the Coliseum to take the photo of the arch and, of course, our hero, Thomas Homer-Dixon himself.

His references to Karen, his research assistant, put me in mind of a fascinating conversation I had with a senior official in the United Kingdom about whom I would rather be stuck with on a desert island versus whom I would prefer to have dinner with: Tony Blair or Gordon Brown. Blair would definitely be the better dinner conversationalist.

But Brown might save you from starvation. Well, I would rather be stuck on a desert island with resourceful Karen, the research assistant. However, I have to admit, I would much rather have dinner with Thomas Homer-Dixon, because he sees the big picture. (In the interests of full disclosure, I did have dinner with him in the UK while he was writing this book. The conversation was fun.)

The book paints a grand sweep of five strategic tectonic forces at work on our world that will fundamentally alter the future. These are population stress, energy stress, environmental stress, climate stress and economic stress. Homer-Dixon then identifies those elements that accentuate the negative effects and act as multipliers of these stresses, such as the speed of communication and global connectivity and the increasing ability of small groups to destroy things and people.

He then presents the concept of “synchronous failure” to further exacerbate the catastrophic scenarios that he loves so much. An example would be the simultaneous rise in sea level due to climate change and the forced migration of populations from small island states as a result. Either would be devastating, but together they are catastrophic. He then combines this concept with “threshold effects,” which allow us—no, force us—to fall off edges rather than adjust smoothly. For instance, minor melting of some of the polar ice cap causes less reflection of the sun’s energy and therefore more rapid melting of the polar ice cap, which leads to devastating sea-level rise. In an economic example, the Asian financial crisis of the late 1990s saw the implosion of the Thai bhat trigger widespread losses.

Finally he introduces the concept of “panarchy,” by which he means nature’s resilient adaptability, and comes up with the hopeful prospect of our society rising like a phoenix out of the ashes of catastrophe. He creates and borrows words such as “catagenesis” to combine cataclysm and regeneration. His catagenesis is a broad-based, democratic form of “wiki-renewal,” in which members of the public at large each contribute to social regeneration. The key to the latter is the “prospective mind” with which we are endowed to fill the “ingenuity gap.”

(Homer-Dixon is an “etygenerist,” which I define as someone who creates new words based on the etymology of their component parts. Damn! He’s got me doing it now. But his terms like catagenesis and panarchy can actually be useful.)

Notwithstanding the author’s reluctantly positive sense of catagenesis, the world model he has created here is not only unstable, but is actually in perpetual disequilibrium. More on this later.

Stylistically, Homer-Dixon takes the product of serious, scholarly research and popularizes it. This unfortunately can have the effect of undermining the seriousness of the product. He presents these grand concepts with such facility that they seem too evident. If you say it fast, it sounds good. The facile and obvious actually mask the sophistication of the analysis. The click wheel on my BlackBerry, the control wheel on my iPod and the retractor on my ballpoint pen are all innovations that are remarkable not for their complexity, but rather for their simplicity. In the same way, Homer-Dixon’s presentation is simple. However, discovering the blindingly obvious makes it no less profound.

The author also uses some irritating devices. The personal account of visiting scholars and reporting their discussions over tea on the porch takes some getting used to. Moreover, he has a very cloying, if endearing, way of writing. At one point, complexities become “lots of bits and pieces” and a resilient system is like “Goldilocks’s preferred bowl of porridge.” He describes his own process of discovery with: “And then a bizarre thought entered

my mind.” He repeatedly takes complex ideas and gives generalized credit by saying “what specialists call,” “what economists refer to as,” “what physicists characterize as.” I find this tiresome: the generalization undermines the seriousness of the analysis.

The problem for a public intellectual is that he has to appeal to the public. But this simplification and generalization allow Homer-Dixon to do what he does best, which is to integrate. He links the dots better than most. For example, he combines the results of serious climate models with biodiversity effects, and follows that up by combining economic analysis with sociological adaptation, all of which permit him to make a convincing case for the catastrophic effects of climate change. I can remember when “interdisciplinary” meant no discipline. But today, given the complexity of the economic, social and environmental systems we are dealing with, we need the integrative big-picture thinkers as well as the focused depth and rigour of academic discipline. You can be interdisciplinary and disciplined at the same time. It is called discipline for a reason.

Homer-Dixon also has a juvenile wonder that comes through in his writing and thinking, which again risks making his work seem trivial. But, in fact, it is an enthusiastic curiosity that stimulates awe and challenges what we take for granted.

In substantive terms, Homer-Dixon sees the world in its interdependent entirety. But in looking at the prospect of synchronous failure, caused by the five tectonic stressors and exacerbated by multipliers and threshold effects, he is far too pessimistic. Not that this scenario is not believable and possible. It is. But there are internal forces at work in the world that will indeed lead to panarchy (that’s Homer-Dixon’s notion of resilient adaptability, remember?). One of these forces for good is humankind. He grossly underestimates our ingenuity and the human ability to adapt.

Our ability to create an international architecture of decision making where countries cede sovereignty and authority to multilateral bodies is an important adaptive mechanism. And indeed, we have many examples of our having done this with some significant measure of success. Examples include United Nations conventions, treaties and programs such as the Montreal Protocol on Substances that Deplete the Ozone Layer, treaties on transboundary sulphur emissions, or the landmines or anti-torture treaties of the UN.

Our resilience is robust. We have adapted dramatically over time. We will continue to do so. A friend once pointed out to me that there is a profound difference between something that is complicated and a system that is complex. Calculating the trajectory of a rocket is complicated, but bringing up children is complex. I went to grade 22 in school and no one ever taught me about the most important thing I would do: raise my children. The adaptability of humankind is profound. Only our failures show as history. All our successful adaptations are not apparent because we were successful.

Homer-Dixon takes an engineering approach to life. Factors of production are fixed, markets are dysfunctional and prices do not lead to adaptation. It is like an operations research or input-output view of the production function of life. Luckily for us, we can change technology to our purpose, reallocate inputs, respond to scarcity with price changes and, most importantly, innovate. When Homer-Dixon looks at recoverable oil and gas resources, for example, prices are irrelevant, as is technological development. If he took account of the decreased quantity of energy demanded as a result of higher prices and the increased quantity of energy recoverable as a result of technological innovation, he would indeed find panarchy. In imagining impending disasters, both natural and human-made, Homer-Dixon does not take account of the incentive effects created by insurance companies in internalizing costs and forcing adaptation. He takes an approach that reminds me of the U.S. patent commissioner at the beginning of the 20th century who said everything that can be invented has been invented. That was just

a prefiguration of Homer-Dixon's concept of *The Ingenuity Gap*, the title of his earlier, interesting, but far less sophisticated book, which won the Governor General's Award for Non-Fiction in 2001. He clearly underestimates our ability to fill that gap. But he is wrong. Remember that Al Gore is a renewable resource.

Homer-Dixon, of all people, should avoid the error of oversimplification. After all, one element of his thesis is that complexity makes our lives fragile and precarious. The fundamental Roman problem was that social and energy complexities had become too great for a food-based energy system. However, Homer-Dixon simplistically pulls a thread from the cloth of Roman history and applies it to modern society and then tells us the sky is falling. He should avoid portraying our current circumstances as theirs.

He does not engage in Malthusian or Club of Rome simplicity. He is much too sophisticated and indeed scholarly for that. He takes explicit account of alternative approaches, referring to scholars who have come to other conclusions because of methodological or ideological differences. Homer-Dixon describes as "deniers" all those scholars who point to technology, markets and international political action as instruments that could lead us to adapt smoothly rather than to end in crisis. For instance, he cites Rudiger Dornbusch and Stanley Fischer, economists who have developed sophisticated analyses that show how resource constraints can be released through technology. But then he dismisses them as apologists for capitalism. This is an over-simplified and unsatisfying response to serious research. Some contrarian views, whether Homer-Dixon wants to acknowledge the fact or not, are based on hard analysis.

In his critique of the work of Paul Krugman, in fact, Homer-Dixon himself reverts to belief and dogma rather than hard analysis. He refers to Krugman as a defender of "the ideology of laissez-faire capitalism," and suggests that that ideology denies the possibility of instability and inefficiencies. Rather, Krugman's substantive and academically respected analyses of trade and development, and in particular his work on the role of fixed exchange rates in currency crises (in his academic books and articles, not his *New York Times* columns), make him a "denier" who demands to be taken seriously. Homer-Dixon's discussion of denial is, unfortunately, a tad simple (I couldn't resist).

Finally, the most egregious inadequacy in the analysis is the only slightly veiled rant against market economies and economic growth. To Homer-Dixon's credit, he cites, but then dismisses, Benjamin Friedman's thoughtful, analytic and balanced treatise on *The Moral Consequences of Economic Growth*. In it, the Harvard economist shows how economists can marry the objectives of economic growth and well-being. And he does so by noting the way economic growth can avert precisely the dire consequences that Homer-Dixon fears. Friedman looks at the role of markets and the traditional criticisms of growing inequality and moral corruption that may flow from it. However, he convincingly shows that economic growth is a prerequisite for the creation of a liberal and open society. Moreover, he argues, if you see your circumstances improving, it fosters tolerance, democracy and generous public support for the disadvantaged. Furthermore, it is the *rate of growth* that is key. It is not high living standards, but rather growth in income that gives hope. And Friedman notes the need for governments to play a role in guiding and stimulating growth and distributing the benefits of that growth.

Friedman, like the 18th-century economists of the Enlightenment, is a moral philosopher. He sees the interrelatedness of human, economic and natural phenomena, not unlike Homer-Dixon. Yet Homer-Dixon, unfortunately, views Friedman's work as simply an apology by one of the leading "economic optimists," a group whose analyses he dismisses. Homer-Dixon would do well to incorporate the analysis of markets into his model rather than dismissively ignoring it. Economics may be part of the answer. Internalizing externalities, attributing property rights and charging for external costs will allow for catagenesis ... before the crisis occurs.

The New Year 2007 edition of *The Economist* had as its cover story "Happiness." It charted the redirection in formal economic analysis from simply economic growth to well-being. In Canada, the work of John Helliwell, among others, on well-being and social capital is exemplary. Amory Lovins, of whose work I am not a particular fan, has a clever approach that Homer-Dixon could well adopt. Lovins says that "economists are not to be ignored; they are to be taken with a grain of salt."

Homer-Dixon may be overly pessimistic. But *au fond*, he is correct. We do have to face the tectonic forces challenging our civilization. Part of me wants to tell the reader: Don't buy this book; it doesn't matter, we are all going to die. The other part of me, and the intellectual, rational and optimistic part, would tell you: indeed, read this book. Its ideas are important and we can do something about them. Homer-Dixon is an integrative thinker and clear expositor. He deals with big, existential subjects and largely gets them right. His five tectonic stressors (remember? population stress, energy stress, environmental stress, climate stress and economic stress) are like the weather. Everyone talks about them, but no one is prepared to do anything about them.

The book runs the risk of promoting complacency. Pages 1 through 280 talk of collapse. Then for the last 25 pages the author talks about regeneration after the fall. I found that Homer-Dixon actually focused on the downside of down. Well, we should not take his gloomy prognostication of the revenge of nature as an excuse for doing nothing. In fact, read the right way, this book will make you want to do something to avoid the catastrophe part of the catagenesis. We have all the capacity we need to adapt and to engage in what I call "anticipagenesis," which is the ability to anticipate, adapt, regenerate and ... Damn! I did it again.

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[Click here to read Thomas Homer-Dixon response.](#)