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'It's really late and it's really desperate'

Thomas Homer-Dixon, Canada's Cassandra, asks in his new book why an advanced civilization is intent on destroying its own environment: 'We're actually stupider as a whole than we are as individuals.' He considers solutions in conversation with MICHAEL VALPY

Thomas Homer-Dixon -- Tad to his friends, Cassandra to his followers -- has taken off the gloves with humanity. No more talk of what *might* occur. The 6.7 billion of us are driving too fast in the fog on the wrong road. A crash is inevitable.

When and where it takes place probably will be a surprise, but as sure as God made apples, it's going to happen.

The lanky, trim, 50-year-old political theorist and director of University of Toronto's Trudeau Centre for Peace and Conflict Studies says matter-of-factly in an interview: "Yes, there will be some form of breakdown. I feel pretty confident of that."

For instance? "We're going to lose some coastline." Throw out the old maps. Think submerged cities. The time for a pre-emptive fix to global warming has passed.

He has other scenarios as well. One begins with al-Qaeda detonating a radioactive device in the Abqaiq oil-processing facility in Saudi Arabia that takes 5 per cent of world production off-line and sets off a cascade of political, social and economic shocks in a too tightly interconnected global society -- riots in poor countries; the assassination of Pakistan's President Pervez Musharraf by hard-line Islamic military officers; bank failures; an ugly Sino-Japanese conflict, and Western plans for a massive invasion of the Persian Gulf.

All coming to a planet near you.

In Greek mythology, Cassandra was the daughter of King Priam of Troy. Apollo offered her the gift of prophecy if she would grant his desires. She accepted the gift, but rebuffed the god, who took his revenge by ordaining that her prophecies would never be believed.

Professor Homer-Dixon will know what she went through. He began prophesying 20 years ago that problems in the planet's simultaneously complex and fragile, intertwined human-built and natural networks were starting to overwhelm humankind's ability to solve them.

In his bestselling 2000 book, *The Ingenuity Gap: How Can We Solve the Problems of the Future?*, he warned that if a society is unable to deal with the multiplying stresses of population expansion, gaps between rich and poor, resource depletion and, most of all, ecological degradation, it will "risk entering a downward and self-reinforcing spiral of crisis and decay."

It was a call to the world -- particularly the rich world -- to focus its attention, energy and creative research on finding smart solutions, on closing the ingenuity gap, lest "we . . . lose control of our destiny and become hapless, frenetic puppets."

Pundits labelled him a doomsayer, a Jeremiah. He was accused of trend-speak and peddling a catchy "Big Idea." In the meantime, al-Qaeda flew passenger planes into buildings and the Greenland ice cap melted at 200 cubic kilometres a year.

And Prof. Homer-Dixon's son, Ben, his first child, now 19 months old, was born.

Prof. Homer-Dixon, who grew up beside exquisitely beautiful Prospect Lake 18 kilometres north of Victoria and now lives with his family near the picturesque rural Southern Ontario town of Fergus, thinks a great deal about the world Ben will inherit.

His new book, *The Upside of Down: Catastrophe, Creativity and the Renewal of Civilization*, takes as a given -- as the title implies -- that the ingenuity gap isn't going to be closed in time to spare humanity great shocks.

Systems have become too fragile, too lacking in resilience to deal with what he calls the tectonic stresses accumulating deep beneath the surface of human societies, most of them connected to the abuse of nature.

"But there's a big 'but' there," he says, "because I've also recognized that sometimes the best avenue or route to generate creativity, to close the ingenuity gap, is to go through a crisis of some kind. And this is my concept of *catagenesis*, rebirth through breakdown, or creativity through breakdown."

Prof. Homer-Dixon proposes these steps toward a new phoenix-rising-from-the-ashes world:

- Reduce the force of underlying stresses, to reduce in turn the risk of cascading multiple catastrophes;
- Build more resilience and self-reliance into human systems that have become too rigid, too centralized and too tightly coupled to withstand shocks;
- Develop what he calls a "prospective mind" to engage with a new world of surprise, uncertainty and risk;
- Find courage for governments (like the cowardly lion in *The Wizard of Oz*) to legislate rules for the common good -- because they aren't going to come from anywhere else;
- Study "open-source democracy" concepts, such as the Internet's Wikipedia, as models for super-creative, problem-solving organizations.

In his publisher's downtown Toronto offices, Prof. Homer-Dixon talked about his new book and how his thoughts are unfolding.

Michael Valpy: When we were talking earlier, and I was trying to get an understanding of how severe these breakdowns you foresee might be, you said, "Don't use the word cataclysm." And yet at another point you said, "Well, we're going to lose some coastline . . ."

Thomas Homer-Dixon: I guess cataclysm is in the eye of the beholder to a certain extent. But one thing I do try to say in the book is that I distinguish between "collapse," as used by someone like [U.S. evolutionary biologist] Jared Diamond, and what I call breakdown. For me, "collapse," as I define it in the book, is so catastrophic that the opportunities for recovery -- the potential for rebuilding on what is left behind and regenerating something new -- are really degraded.

I distinguish between the two poles of the debate up to this point. And really the debate has consisted of two positions. One is that we can organize ourselves with the new sustainable economies and new technologies so that we can solve these problems without an enormous amount of disruptions to our societies. That's the optimistic pole. And the pessimistic pole is catastrophe, the Jared Diamond collapse.

And I'm suggesting there's an enormous number of possibilities in between those two poles. And some of those possibilities, if we're lucky, we may be able to exploit for renewing ourselves. What they're going to look like is almost impossible to say. We have some idea. We can come up with scenarios and things, but that kind of prediction is very difficult. But I do think, all the same, we can prepare for the possibility of major disruptions in the future, even though we don't know exactly what is going to take place. . . .

At the end of the book, I have this conversation with myself about the nature of values, and this is something I think is really important.

There are three kinds of values: utilitarian values, which are basically simple likes and dislikes; moral values, which are about distribution of wealth and power between groups and basically fairness with people; and then the third level is spiritual values, or existential values, that relate to what our position is in the cosmos, what the meaning of life is. You'll notice in the book that the issue of meaningfulness comes up over and over again. . . . Ultimately the place where have to start in fixing our problems is with our values.

What do we consider to be the good life? What kind of world do we want for our children? We're not having that conversation. Until we have that conversation properly, we're not going to be able to deal with things like climate change.

MV: What gets us to having that conversation?

TH-D: You know what? In my conversations with people the last half-dozen years after *The Ingenuity Gap* -- and I've spoken all across this country, to tens of thousands of people, and in the United States too, and to a certain extent in Europe -- time and time again in question period when we're talking about this issue, it comes down to values. People want to have a conversation about these things.

But where do we go? You ask these questions about existential values -- and I think in many ways they're the largest and most important starting point for a values discussion of any kind -- and by the time you're 10, you're told you shouldn't be asking them. If you go to a religious institution, if you go in the door of your mosque or synagogue or church, you're not given the space to think. You're just told what to think; you're given a creed. So it's like that muscle [of questioning existential values] is completely atrophied.

And one of the things I allude to at the end of the book is that to strengthen that muscle. . . . I see an open-source democratic environment as a way of providing a forum, a sort of an agora, in which we could begin that conversation. Because it's really late and it's really desperate.

The institutional architecture of decision-making and problem-solving is really important. Our current democratic institutions took centuries to evolve and actually they're quite complicated and quite arbitrary in a lot of respects. They worked well for a long time. I don't think they're working very well any more.

And the institutions we've developed within an Internet-based, open-source democracy or problem-solving system can be quite complicated too.

It's interesting to watch, for example, Wikipedia [the huge, popular Internet encyclopedia assembled entirely by volunteer contributions]. It's interesting to watch how they've had a very steep learning curve of how to do this right -- as more and more people come into the system -- to make sure that it continues to be a functional process.

Lots and lots of tweaking, lots of special bells and whistles to make sure that, you know, angry people are taken off to one side so that they can have their conversation without disrupting the core, that experts have a special [arrangement]. . . . There's all kinds of things you can do to work out the details.

If somebody had said 10 years ago that you're going to have an encyclopedia generated by a volunteer process involving tens of thousands if not hundreds of thousands of people, with four million entries in the English language, where any entry can be changed by anybody at any time that's going to produce an outcome with scientific entries that according to the journal Nature are as good as the Encyclopedia Britannica -- people would have declared that that's ridiculous, that it's impossible.

MV: What has all that taught you?

TH-D: I think that it's a quite profound social innovation, one of the most interesting that we've seen in decades.

We have been convinced by neoclassical economists that human beings are profoundly egocentric, individualistic, selfish -- and what we're finding in a Wikipedia environment is that lots of people will do the stuff without any name recognition at all.

I mean you dig down and you can find out who made this particular entry and what the conversation was, but not off the top -- they don't have bylines, and in any substantial entry there might be hundreds of contributions from different people who are adding different bits of information. . . . So there's the remarkable willingness of people not only to volunteer, but to collaborate in problem solving.

Now, I'm a fan of individualism. I'm a fan of markets. Markets are a problem-solving institution that work very well in certain circumstances. But there's obviously this other possibility that Wikipedia is demonstrating, more collaborative and volunteeristic and less egocentric. And I would like to see what we can do with that, take it out for a spin and apply it to some really tough problems. Some of the really desperate ones we've got.

Here in the world where we're facing perhaps the biggest challenges the human species has ever faced, we actually suddenly have this technology, a worldwide-network technology, where we can basically all have a conversation together. It's the infrastructure for a species-wide democracy. And instead what we've got is a kind of electronic cacophony with everybody blogging narcissistically at each other. We can do better than this.

MV: I don't find this conversation about values taking place in my democratic Parliament or other legislatures. Why not?

TH-D: I don't know. And it gets us to a conversation about the failure of our institutions. A substantial two-thirds of my book is about how serious our situation is, because I want to make that case very clear. When people say we're heading for breakdown, it comes across as kind of whacko Doomsday. So I spend a fair amount of time in the book just making a solid, well-researched case that we've got serious trouble. And I don't see that sense of urgency reflected in our political institutions.

MV: Why?

TH-D: In a larger way, I would say this is an example of what I call negative emergence. We're actually stupider as a whole than we are as individuals.

MV: Why?

TH-D: Well, this is an interesting thing that needs to be examined. There have been two books, *Smart Mobs* [by Howard Rheingold] and *The Wisdom of Crowds* [by James Surowiecki], that have made the point that often large numbers of people together can be very, very smart. But I think our political institutions in Western society and just about anywhere in the world, our formal political institutions, are actually producing decisions that are radically sub-optimal.

I could spend some time trying to unpack why that's the case -- some of it's got to do with four-year election cycles, some of it's got to do with the fact of a delegated representation system where we hand problems over to our MPs and then we don't think about them any more.

So there's no responsibility on us, even though we have this enormous new technological power and analytical power at our disposal and we can gum up the system with all our protests and everything -- we actually don't have any more responsibility to learn about any of the issues. We want those guys [MPs] to solve them.

Interestingly enough, politicians have the functional role now of being the butt of all criticism. That seems to be their principal role in our society. It's not actually to solve our problems, but to be the people we can yell at when things don't go right.

MV: That's scary.

TH-D: Yeah, I think it is, and it's indicative of a systemic failure. We don't participate, especially young people. In the rankings of public respect for professions that you see occasionally, politicians and civil servants come out close to the bottom.

But this [professional public life] should be considered a noble enterprise. We want our best people, our best and brightest, our most thoughtful people to be going into public service. Instead we treat them like trash. And that to me is a reflection of larger systemic failure.

So this is partly an argument about how we should try something different, something in a sense that's a parallel problem-solving system -- not a government, not a state, but a parallel problem-solving system which would help generate solutions but also think through ways of re-engaging the state . . . of trying to figure out what role the state plays, how the state can operate, how it can be legitimate, how it can have moral authority in the eyes of the citizens.

MV: Do you see enough signs in the broader civil society that gives you confidence?

TH-D: I want to expand on my point about negative emergence. The idea here is that there are some social arrangements where the whole of the group is smarter than any one individual. Our current political systems seem to have created a decision-making whole that actually in many ways is stupider than any one individual.

I find commonly in my conversations with people, even people with whom I have a strong ideological disagreement, that actually there's a lot of wisdom there, there's a lot to respect. And yet you get us all together collectively, and you look at something like what we're doing with our carbon-dioxide output, and we're acting about as smart as protozoa. We're pooping up our environment and poisoning ourselves.

So we need to convert that negative emergence into positive emergence, we need to create a whole that's smarter than this, and we know that's possible, because we know that markets do exactly that kind of thing.

There are circumstances in which you can get a larger outcome from the whole that's better than any one individual could have created by themselves. And that's the larger challenge in terms of problem-solving.

That's going to be the focus of my research for the next decade or so, to try and actually think through how this would work.

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EXCERPT: What will we leave behind?

"Target: Saudi oil industry," the headline read.

It was the evening of Monday, May 31, 2004. My short flight from Amman, Jordan, to Beirut, Lebanon, had reached cruising altitude, and I'd just opened my copy of the day's International Herald Tribune. Twenty-two people had died as government commandos stormed a luxury residential compound that had been seized by militant gunmen in the city of Khobar in oil-rich, eastern Saudi Arabia.

I flipped through the paper. Four American soldiers had been killed by a land mine as the southern part of Afghanistan erupted in violence. An assassination of a cleric had touched off Sunni-Shiite riots in Karachi. American forces were again fighting a radical Shiite militia in Najaf, Iraq. And in southeastern Haiti, tens of thousands of villagers were huddled together in the open after floods destroyed their homes . . . one of the worst natural disasters in Caribbean history.

Just the everyday crises of a turbulent world? Or were these events the kind of early foreshocks we should expect from a planet under extreme stress?

I was on my way to visit the great Roman ruins in Baalbek, a town in the Bekaa Valley of eastern Lebanon. Many archeologists and historians of Roman antiquity believe that the construction of the Baalbek temples was the apogee of Roman engineering.

As my flight descended into Beirut, I realized that the trip was more than another chance to marvel at the Roman empire's prowess with rock. The contrast between ancient Rome and modern Lebanon could tell a larger story -- a story about, once again, the links between energy, social complexity and political stability.

Every shred of my intuition told me that humankind is approaching a monumental shift in its trajectory and prospects and also in the mental tools through which it sees, understands and copes with its problems.

A similar shift has happened before. Between 900 and 200 BC, a revolutionary transformation of ideas occurred simultaneously in civilizations across Eurasia, from China to Greece. This "Axial Age," as the German existential philosopher Karl Jaspers famously labelled it, produced new categories and cosmologies to guide people's thought, self-understanding and religious and ethical views.

In Jaspers's opinion, those of us alive today are the direct heirs of this transformation; we still think using fundamental categories and assumptions that emerged over two millennia ago.

Could we be, I wondered, on the cusp of a new Axial Age -- a transformation, simultaneously around the world, of the deepest principles guiding humankind's diverse civilizations? And if it occurs, what might it look like?

More important, what would I want to come from this transformation?

In planning for renewal after breakdown -- for catagenesis -- we need to have some idea of where we want to go in the future, even if it's just an ideal goal that we know we can only partly achieve. And to figure out what our goal is, we need to be clear-headed about our values.

We finally arrived at Baalbek. The main street was lined with electricity poles decorated with Hezbollah flags, behind which stood dreary low-rise concrete buildings. After passing a traffic island occupied by a large model of Jerusalem's al-Aqsa Mosque, we pulled up in front of the Palmyra Hotel. I stepped out of the car into a bizarre jumble of times and cultures.

There before me was one of the world's greatest archeological marvels -- the temples of Baalbek. An hour later, I was making my way up the remains of the monumental staircase that led to the forecourt of the Temple of Jupiter. And this time, despite the fact that I'd now seen many examples of extraordinary Roman engineering, I found my imagination and comprehension pushed to their limits, as I tried to conceive how mere muscles could have built stone buildings of such size, complexity and elegance.

I was willing to accept the archeologists' claim that the Romans had put the rocks here, but as I stood looking up at them in awe, I did wonder about something else -- about the values that would drive people to invest energy in such a task.

What would possess the Romans to build the largest temple complex in the empire at a remote junction along a trading route in a distant part of Syria? What kind of existential values -- what kind of understanding of one's purpose in life and spiritual place in the cosmos -- would motivate cutting and moving these rocks? The project must have sucked wealth -- and, in the final analysis, energy -- from across the empire.

A civilization's values powerfully influence what form the civilization takes as well as what kind of evidence of its existence it leaves behind. For the Romans, this evidence is mostly in rock. Barring a staggering earthquake, the rocks of the temple foundation -- three in particular, called the "trilithon," weigh 800 tonnes each -- will likely stay exactly where they are for millions of years. Who or what would bother, or have the energy, to move them?

I asked myself what kind of long-lasting evidence today's planetary civilization would leave behind -- with its overriding values of material growth, production and consumption. My immediate answer wasn't a happy one. Because little of our modern construction will have the durability of ancient rock buildings, the main evidence of our existence on the planet will probably be damage to Earth's life and environment. A hothouse climate and a 25-to-50-per-cent decline in the number of species on the planet could last for millions of years, just like the trilithon.

Our values must be compatible with the exigencies of the natural world we live in and depend on. They must implicitly recognize the laws of thermodynamics, energy's role in our survival, the dangers of certain kinds of connectivity, and the non-linear behaviour of natural systems like the climate. The endless material growth of our economies is fundamentally inconsistent with these physical facts of life. Period. End of story. And a value system that makes endless growth the primary source of our social stability and spiritual well-being will destroy us.

Our current values serve the interests of today's political and economic elites, and so are aggressively defended by these elites. Growth, even in already obscenely rich societies, is sacrosanct. This central value won't really change until it's discredited by some kind of major shock, which probably means some kind of system breakdown. Then, alternative values that are centred on the idea of resilience might flower, not just at the fringes of our societies but also at their core.

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