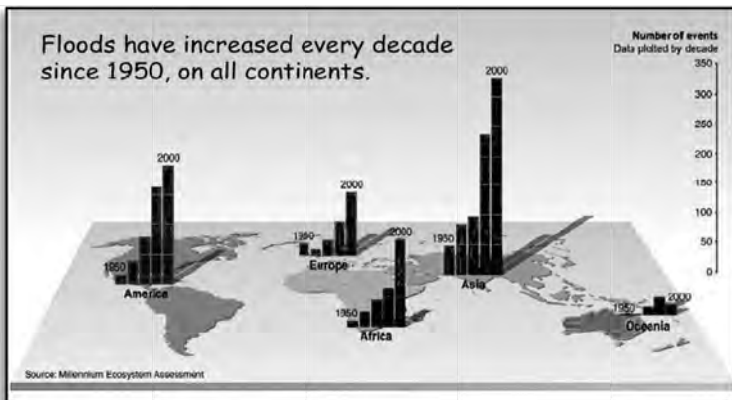




The future holds more frequent episodes of violent weather.



Indeed, it started happening a half century ago.

2

We're Not in Kansas Anymore

Does the climate news seem like a jumble of issues with few obvious connections to tie them together? People are broiling (35,000 Europeans died in the 2003 heat wave). Greenland is acting like a runaway ice-cube machine. Ski season is shrinking. Coral reefs are bleaching, sea level is rising. We experience stronger hurricanes, more wildfires, and new insects arriving in the neighborhood.

At least those things hang together under the rubric of "It's getting warmer." But our present climate change isn't a simple one-dimensional problem that can be framed as mere warming, what with floods and droughts becoming much more frequent, deserts expanding, and the like.

Then there are varied causes such as the CO₂ accumulating, the sun brightening, the ozone thinning, the methane soaring, the Gulf Stream slowing, the lower atmosphere thickening, and El Niño possibly settling in for good. All of that tipping, slipping, and flipping. Where do they fit into the big picture?



South of Japan in 2006, there were three tropical cyclones (also known as hurricanes and typhoons) at once.

My position in your chain of information is analogous to that of your primary-care doctor, reporting on the results of the tests and the analysis of the specialists, trying to put together the big picture, and helping you to understand the treatment options.

Climate involves a Rube Goldberg chain of knock-on effects, not unlike the everyday chain of events in our bodies that biologists study. Medicines typically intervene

at one link or another of a long chain or web. And so we may find a number of places to intervene in climate disease. I'll use my perspective on a century of medical progress to show why I'm optimistic that climate science will lead to effective climate medicine.

It is becoming urgent that you understand much of this because, just since the twenty-first century began, climate change seems to have jumped to the fast track. There are now swarms of summertime-only earthquakes coming from the exact places in Greenland where outlet glaciers come down to the sea and produce icebergs. When the number of quakes doubles, and then redoubles—all in only ten years—it's like feeling the ground shift under your feet.

It seems that we're not on the slow track anymore. For many of us, it was a moment like that in the *Wizard of Oz* when Dorothy says to her dog, "Toto, I've got a feeling we're not in Kansas anymore."

Anyone who reads some history, classics, or anthropology knows that past civilizations have proven fragile. But then past societies did not have very many scientists or historians, who sometimes develop a perspective on a problem that has major implications for what society must do next.

In his excellent book *Collapse: How Societies Choose to Fail or Succeed*, Jared Diamond takes us through some societies that crashed (and a few that pulled back from the brink), just as his earlier *Guns, Germs, and Steel* took us through the biogeography that helps to make a society a winner.

Many of the dozen factors that Diamond analyzed in *Collapse* are things that gradually creep onto the scene, such as overpopulation, deforestation, contamination, and the soil washing out to sea in muddy rivers. However, past societies “declined rapidly after reaching peak numbers and power, and those rapid declines must have come as a surprise and shock to their citizens.” Gradual creep makes you think in terms of a gradual decline, not the rapid collapse that Diamond reports. Creeps can suddenly turn ugly.

We are living in a house of cards and we’d better understand its vulnerabilities in order to strengthen its foundations. But a disaster of biblical proportions isn’t inevitable. There are quite a number of ways to clean up our act and then clean up the excess carbon in the air. I discuss them starting at Chapter Sixteen. If in despair, skip ahead.

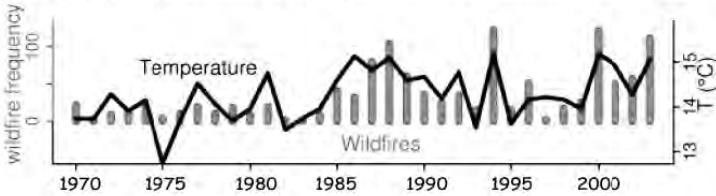
Climate change is a moral issue as well as a political one. Though we have turned a blind eye on our invisible pollution of others, the United States has risen to ethical challenges many times in the past, from abolishing slavery, to women voting, to civil rights. It would now be appropriate for the U.S. to take the lead in replacing coal-fired plants, doubling fuel efficiency for cars, and providing clean power and vehicles for the developing countries.

We must get our political leadership to pay attention before our society becomes too weak to move effectively.



Suppose that we're already seeing the consequences of global fever?
And that it's been going on for at least a half century?

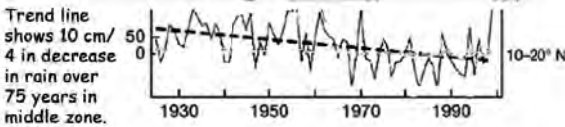
As temperature rises in the western USA, there are more fires.



Reduced Rainfall North of the Equator, 1925-1999



SOURCE: Zheng et al. Nature (26 July 2007)



Overall, the risk of sea-level rise from global warming is less at almost any given location than that from other causes, such as tectonic motions of the earth's surface.

—climate scientist (and contrarian) Richard Lindzen, 2007

If 98 doctors say my son is ill and needs medication and two say 'No, he doesn't, he is fine,' I will go with the 98. It's common sense—the same with global warming. We go with the majority, the large majority... The key thing now is that since we know this industrial age has created it, let's get our act together and do everything we can to roll it back.

—Governor Arnold Schwarzenegger of California, 2007

Essentially all of the observed climate-change phenomena are consistent with the predictions of climate science for greenhouse-gas-induced warming. No alternative "culprit" identified so far—no potential cause of climate change other than greenhouse gases—yields this "fingerprint" match.

A credible skeptic would need to explain both what the alternative cause of the observed changes is—and how it could be that greenhouse gases are not having the effects that all current scientific understanding says they should have. No skeptic has done either thing.

—climate scientist John Holdren, 2006

There is a small chance that the skeptics are right, or we might be saved by an unexpected event such as a series of volcanic eruptions severe enough to block out sunlight and so cool the Earth.

But only losers would bet their lives on such poor odds. Whatever doubts there are about future climates, there are no doubts that both greenhouse gases and temperatures are rising.

—physiologist James Lovelock, 2006

GLOBAL How to Treat Climate Change FEVER

WILLIAM H. CALVIN

THE UNIVERSITY OF CHICAGO PRESS
CHICAGO AND LONDON

Visit <http://Global-Fever.org> for additional chapters

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