

BIG BOOM THEORY

DON'T LOOK NOW, BUT WE'RE LIVING IN A PERIOD OF EXTRAORDINARY CHANGE

BY BILL MCKIBBEN

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Here's the question: Will the world that comes next look more or less like the one we're used to, with modifications designed to, say, keep economic bubbles from inflating or mortgages from turning into weapons of mass destruction? Or will it be really different, an abrupt break with the decades we've known since World War II?

The odds are always against rapid change—the world happens slowly—but in this case I think the odds are wrong. And the reasons have less to do with our flood of economic woes

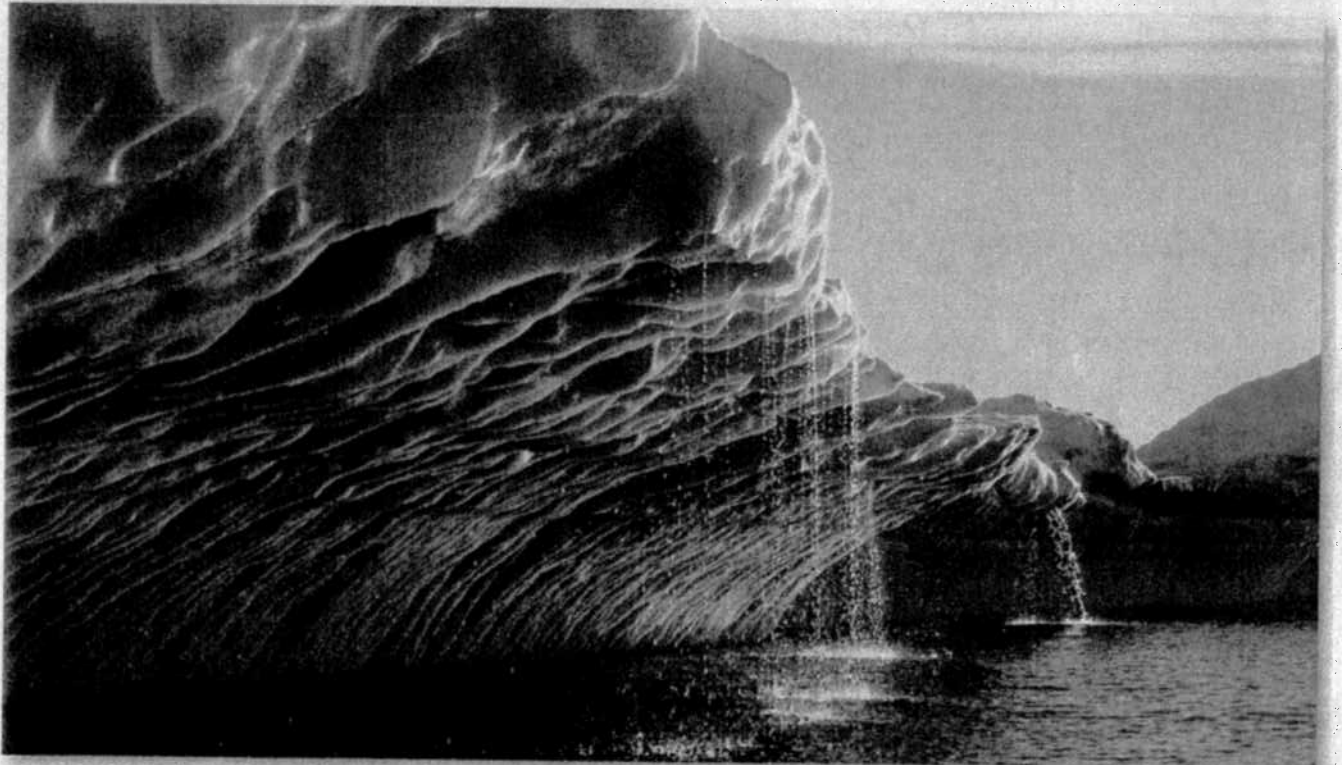
ing fossil fuel, so we would need four more Saudi Arabias just to keep burning oil at the same rate through 2030, never mind the growing demand from

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all those Indians and Chinese who would like to drive too.

it was the background for the human drama. It will soon be the foreground, and much of the drama will be in our scrambling to limit the damage by shutting off the carbon that drives the process. We would need to shut down our coal-fired power plants by 2030 to have a decent chance, but they provide half of America's power, and China opens a new plant every few weeks.

I think those forces—a kind of ecological debt far more troubling than the economic debt with which we're now grappling—will reshape the world in fundamental fashion. For instance,



A melting glacier in Greenland: For the first time we're starting to run into limits imposed by climate change.

than with deeper currents obscured by the flotsam tossing on the surface. Two things in particular will determine the future:

First, we're starting to run out of the oil that has powered our economy for 150 years. When the International Energy Agency announced last November that the rate of production in our major fields will be declining seven percent annually for the foreseeable future, it was breathtaking. We are flesh-colored devices for consum-

Second, we're starting to run into the limits imposed by climate change, which is the single biggest thing humans have done. So far we've raised the temperature of the planet about one degree. This has been enough to set the arctic melting, deserts spreading, oceans rising. The best guess for this century unless we act with incredible speed: another nine degrees Fahrenheit or so—in other words, a completely different physical world. We have never had to think much about the physical world;

without cheap fossil fuel, the logic of endless globalization gets less obvious. On the East Coast each calorie of supermarket lettuce we consume requires about 70 calories of fossil-fuel energy to grow and transport. That's not a ratio to boast about—forget the olive oil in the dressing; that salad, and indeed our whole national menu, has been marinating in crude oil.

But with new economies come new attitudes. The local farmers market is the fastest-growing part of our food

economy, which is great news for the environment, but it's also good news for the neighborhood: The average shopper at the farmers market has 10 times as many conversations as at the supermarket. The hyperindividualism that has

In general the world will move toward the local. But given our current global trouble, we can't turn our back on international action. At 350.org, for instance, we're coordinating a last-ditch global drive to push for a powerful new

air. We're already at 387, which is why the arctic is melting. Which is why we're in an emergency.

On the other side of emergencies, things look different. You may survive the heart attack, but you live differently



Farmers markets (left) are one way to reduce carbon dioxide, since less fuel is spent in transporting food. **Long gas lines in India** (right) will only increase in the coming years. Growing demand for energy will force us to address the ecological consequences of our fossil-fuel-based economies.



marked postwar American culture, and left us remarkably unsatisfied, will start to break down in the face of the new reality. Right now our economy is calibrated to ensure you never need your neighbor for anything. This will change.

treaty on carbon emissions later this year. It's essentially conservative; the scientists tell us that if we want to preserve a world anything like the one we've known, 350 parts per million of carbon dioxide is as much as we can have in the

from then on. This strange stretch we're living through isn't a cold—it's a stroke. It will have consequences.

Bill McKibben is author of Deep Economy and co-founder of 350.org.

GLOBAL WARMING: TRUTH AND CONSEQUENCES

As members of Congress debate cap-and-trade legislation to rein in greenhouse gas emissions, the magnitude of the problem seems lost on them. Here's what awaits us as temperatures rise.

A global increase of up to three degrees Fahrenheit

- Higher ocean temperatures "bleach" coral, imperiling the survival of reefs and thus threatening marine biodiversity.
- Increased temperatures exacerbate droughts in the Great Plains, leading to possible dust bowl conditions in Nebraska, Oklahoma and other states in the region.

An increase of three to six degrees

- Increased ocean acidity threatens plankton, the foundation of the marine food chain.
- Europe faces regular heat waves similar to the one in 2003 that killed 30,000.
- Storms temporarily flood the New York metropolitan area.
- Melted snowpacks decrease the water supply in California by up to 75 percent.
- Drying Amazon basin accelerates problems.

An increase of six to nine degrees

- Between 40 percent and 70 percent of all species have become extinct.
- Southern Europe, the Middle East and northern Africa are uninhabitable to humans.
- London experiences summer highs of 105 degrees.
- Permafrost in Siberia melts, releasing huge amounts of methane, a powerful greenhouse gas, which further speeds warming effects.

An increase of more than nine degrees

- Widespread desert conditions and coastal flooding limit human habitation to highland areas and poles.
- With up to 90 percent of all species gone and most marine life dead, Earth faces the worst mass extinctions since those of the Permian-Triassic period 250 million years ago.

—Brian Cook

