

**John de Graaf**

### **Why It Is Urgent to Create a New Development Paradigm**

The late, great environmentalist David Brower, who turned the Sierra Club from a tiny California hiking society into America's most powerful conservation organization, used to give what he called his "sermon," as part of his many speeches.

He compressed the age of the earth, estimated by scientists at some 4.6 billion years, into seven days, the Biblical week of creation, if you will. When you do this, a day represents about 650 million years, an hour, 27 million, a minute, about 450,000 years, and a second, 7,500.

On Sunday morning, the earth congeals from cosmic gases. In the next few hours, land masses and oceans begin to form, and by Tuesday afternoon, the first tiny "proto-cells," of life emerge, probably from scalding primordial vents in the bottom of the oceans. In the next few days, life forms become larger, more complex and more wondrous.

Before dawn on the last day—Saturday—trilobites and other strangely-shaped creatures swim by the millions in the Cambrian seas. Half a billion years later, in real time, we will be amazed by their fossils, scattered about the globe.

Around the middle of that very last day of the week, those gargantuans, the Great Reptiles, some mild, some menacing, thunder across the land and fill the sky. The dinosaurs enjoy a long run, commanding Earth's stage for more than four hours, until a monstrous meteorite, landing in the Gulf of Mexico, makes the climate too cold, and ends their reign.

By the late afternoon and evening on Saturday, mammals, furry, warm-blooded and able to withstand a colder world, flourish and evolve, until, a few minutes before midnight, on that final night of the week, Homo sapiens walks erect on two legs, learns to speak, use fire and create increasingly complex forms of organization.

Only about 10,000 years ago in real time, less than two seconds before midnight in our metaphor, humans develop agriculture and start building cities. At a third of a second before midnight, Buddha is born; at a quarter of a second, Christ.

Only a thirtieth of a second before midnight, we launch the Industrial Revolution, and after World War II, perhaps a hundredth of a second before midnight in our week of creation—again, on the final night—the age of consumerism begins, the age of stuff.

In that hundredth of a second, Brower and others have pointed out, we have managed to consume more resources than did all human beings all together in all of previous history. We have diminished our soil, fisheries, fossil fuels and who knows what other resources, by half. We have caused the extinction of countless other species, and we have changed the climate.

Think about it; try to grasp in your mind what it means that we have done all of this in this blink of the geological eye.

There are people, Brower went on to say, who believe that what we have been doing for that last one-hundredth of a second can go on indefinitely. If they even think about the issue, they believe, without evidence, that science and new technologies will allow our continued hyper-exploitation of the planet's resources.

They are considered normal, reasonable, intelligent people—indeed, they run our corporations and our governments. But in reality, they are stark, raving...mad. They are as Frankenstein's run amok. It will be hard to change their minds, hard to change our practices, but not nearly as hard as it would be to change the laws of physics. We can't grow on like this.