It is no accident of history that the first Earth Day, in April 1970, came so soon after color photographs of the whole earth from space were made by homesick astronauts on the Apollo 8 mission to the moon in December 1968.

Those riveting Earth photos reframed everything. For the first time humanity saw itself from outside. The visible features from space were living blue ocean, living green-brown continents, dazzling polar ice and a busy atmosphere, all set like a delicate jewel in vast immensities of hard-vacuum space. Humanity's habitat looked tiny, fragile and rare.

Suddenly humans had a planet to tend to. Planet-scale perspective on atmospheric health, ocean health and stable climate made strictly national approaches obsolete. Environmental nongovernmental organizations bloomed to set in motion mechanisms for emerging global governance.

Even more important, a new time perspective arose. Such issues as climate, biodiversity and population could be dealt with only in terms of multiple decades, even multiple centuries. Governments limited to next-election thinking had no way to grasp environmental issues. Corporations limited to next-quarter perspective were similarly blinded. Both blundered environmentally because they could not operate on a planetary time scale. Ecological problems were thought unsolvable because they could not be solved in a year or two.

That's changing. Environmentalism is teaching the world's citizens, governments and corporations to think long term--to realize that lag times and lead times in the dynamics of atmosphere and climate are decades long, and to think of forests, oceans and aquifers as "multigeneration equity." It turns out that environmental problems are solvable. It's just that it takes focused effort over a decade or three to move toward solutions, and the solutions sometimes take centuries. Environmentalism teaches patience.

Patience, I believe, is a core competency of a healthy civilization. I propose that it is useful and realistic to think of a civilization as operating at a number of different paces at the same time. Fashion and commerce change quickly, as they should. Nature and culture change slowly, as they should. Infrastructure and governance move along at middling rates of change.

Because we understandably pay most attention to the fast-changing elements, we forget that the real power lies in the domains of deep, slow change. Nature and culture define the limits of what's possible for the
quicker elements, and they provide the base of continuity for the whole game. While fashion and commerce "learn" quickly, governance and culture integrate lessons steadily and "remember." The combination of quick learning and deep remembering makes a civilization strong against shocks and profoundly adaptable. Blending in with the pace of natural systems engages the power of their resilience.

Back in the 20th century, Russia showed what happens when the differing paces of change are not honored. The Soviet Revolution of 1917 transformed governance at fashion pace, and then everything was run at infrastructure pace--Five-Year Plans. Commerce was slowed to a crawl, and fashion came to what seemed like a dead stop. Deep-seated culture was forced to pretend that it was changing at the pace of the plans, and nature dropped right out of the picture. When the system inevitably broke, there was little robustness left in the culture, scant adaptivity left in commerce, and the Russian environment was a poisoned wreck.

A sound environmentalism doesn't try to slow commerce, but it must act to prevent commerce from violating the pace of nature (or, for that matter, of culture). The destruction of the cod fishery in the northwestern Atlantic was the work of commerce unfettered by intelligent governance. Governments like Canada’s kept trying to protect the jobs of fishermen without listening to what was well known at a cultural level in the fishing communities--that the size of the fish and the catch was shrinking steadily. The alarmed environmental scientists on the scene were ignored. Next time perhaps they won't be. The demise of the fishery was an economic disaster.

Science, along with such technology as Earth satellites, gave us the necessary long-term perspective on the harmful environmental trends under way. Goaded by environmental organizations, the various bodies of governance are gradually learning how to respond--with sustained, alert, patient action.

Future historians may note that in the same period that technology acceleration was driving the world to operate on fleeting “Internet time,” environmentalists were teaching the world the long-term foresight and long-term responsibility of biosphere time. Just when technology was busy making us smarter, environmental awareness began to make us wiser.

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