Be Fruitful & Multiply? - Conservation

By David Malakoff

Illustration by Istvan Banyai

People were starving to death in a suburban parking lot wedged between a busy supermarket and a sit-down restaurant.

It was October 1969 in Hayward, California. About 100 young activists—dubbed “anti-population protesters” by reporters—were staging a “starve-in” to dramatize the perils of overpopulation. Just the year before, Stanford University ecologist Paul Ehrlich and his wife Anne had published *The Population Bomb*, a bestseller warning that the planet faced too many people consuming too much. Now, one of Ehrlich’s former students, a creative type named Stewart Brand, was organizing the faux-famine to carry his mentor’s message to the streets. “Are you ready to die?” asked a sign posted by the activists, who pledged to fast for a week in a makeshift enclosure christened “Lifeboat Earth.”

Fast-forward 40 years and Brand—who went on to create the influential *Whole Earth Catalog* and to pioneer online communities—has made something of an about-face. Now, he’s worried that Lifeboat Earth could ultimately end up with too few people to stay afloat. About half of the planet’s people now produce too few children to replace themselves. Russia alone has lost nearly five percent of its population since 1993, with no end in sight.

In a provocative new book*, Brand warns that this sort of plummeting birthrate could be “terrible news for the environment,” since the trend could sow social and economic chaos. And he’s not the only one worried. For decades, the leaders of baby-poor nations have struggled to reverse the decline—with little success.

Some new—and controversial—research, however, could ease fears of a pending population implosion. In August, demographers revealed that birth rates in the wealthiest nations are rising again, reversing declines once deemed irreversible. One scholar said the surprising news opened an exciting “new chapter” in the planet’s population story. And *The Economist* gushed that the baby boomlet could herald “the environmentalist’s nirvana of uncoerced zero population growth.”

Wait a second, you say? Fewer babies bad for the planet? More people create a green nirvana? It’s enough to make a population bomber’s head spin.

The seeming contradictions, however, reflect some shifting and increasingly nuanced views of population growth that have emerged over the past 40 years. Some scholars are challenging conventional notions about the environmental impact of more people and embracing some seemingly counterintuitive solutions, such as bigger cities. Others say that fixating on forecasts of total global population—now projected to be 7.8 billion to 10.8 billion by 2050—is a bad idea. “Sheer numbers do not tell the whole story,” argue demographers George Martine and José Miguel Guzman. “A world population of 7.8 billion could actually inflict greater damage on the global environment than one with 10.8 billion.”

Such ideas are bound to “make some environmentalists uncomfortable,” Stewart Brand says. But he believes “the core environmentalist panic about overpopulation is

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quietly being undermined, but the news hasn’t gotten around.”

Well before Brand and his crowd were smoking dope and starving in a suburban parking lot, a quieter and more-academic revolution was taking place among demographers.

After World War II, the nascent United Nations asked a Princeton University demographer named Frank Notestein to launch a broad study of population trends. As Notestein crunched the numbers, he noticed something that had also intrigued a few researchers before him: As people got richer and more urbanized, they tended to have fewer babies. Indeed, at some point, richer people stopped having enough babies to replace themselves, leading to shrinking populations.

In a 1945 treatise, Notestein dubbed this phenomenon “the demographic transition”—and ever since, it has shaped how we think about population growth. The concept, for instance, has forced modern demographers to pare back some of the highest estimates of peak populations (which have ranged up to 15 billion) because economic growth has outpaced expectations, putting downward pressure on reproduction.

“I wish I had realized that the professional demographers were really rolling their eyes at all of our frantic heaving around,” Brand says now. “They were essentially right about the impact of the demographic transition.”

Today some 60 nations, accounting for about half of the world’s population, have “transitioned” and no longer produce enough children to stave off population declines without immigration. In some countries, birthrates have dropped to just 1.2 children per woman—far below the “magic number” of 2.1 needed to keep a population stable. Most are wealthier nations such as Italy (1.2), the United States (about 2.0) and Russia (1.1). But some aren’t, such as heavily Catholic Mexico (2.0) and Brazil (1.3); even China’s birthrate has dropped to about 1.7. In the nations with the lowest birthrates, population declines could be shockingly rapid. Brazil’s birthrate of 1.3, for instance, could ultimately mean its population will be cut in half in just 45 years—and then in half again within the next 45 years.

This may seem like cause for environmental celebration, but not everyone is letting their guard down—at least not yet. Shrinking populations can mean there aren’t enough young workers to sustain a vibrant economy or pay for social welfare programs that support the poor and the elderly and help tamp down political instability. Low birthrates “could mean perpetual economic crisis, which would be terrible news for the environment,” Brand notes. “In an economic crisis, there is neither money nor attention for responsible stewardship. There is no long-term thinking or action. Wars become more likely, and wars are deadly for the environment.”

To avoid that scenario, many barren nations are experimenting with “pro-baby” policies. France, for instance, provides free daycare and cash bonuses to willing parents. And Australia launched a “three-child” campaign: “One for mum, one for dad, and one for the country.”

So far, however, they haven’t made much of a dent in the overall trend. Most pro-birth policies have failed to push fertility rates above 2.1. And as a startling new paper in Nature suggests, those political leaders (and Australian ad-copy writers) may be up against far larger forces than they ever imagined. (1)

Indeed, those forces may throw yet another unexpected curve into the human population trajectory. In August of this year, the Nature study revealed that in 18 of the wealthiest nations—including the United States, Germany, and
France—birthrates appear to have mysteriously started climbing again after decades of decline. The unexpected reversal provides a different outlook for the twenty-first century, conclude the authors, led by demographer Mikko Myrskylä of the University of Pennsylvania.

Myrskylä’s team looked at how two factors influencing population changed in more than 100 nations between 1975 and 2005. One was “total fertility”—the number of children a woman living in a particular nation was expected to have. The other was a human development index (HDI) score developed by the United Nations. The HDI combines per capita GDP, education, and life expectancy to measure how developed a given country is. Scores fall between zero and one; higher scores signal higher levels of development.

Myrskylä’s study found that, in 1975, development scores were rising in many nations—and birthrates were falling—but no nation was very close to an HDI of 1.0. By 2005, however, several dozen nations were closing in on that perfect development score. And, surprisingly, in many of those with the highest scores (above 0.9), birthrates had started rising, putting a fishhook into what had been a sharply descending curve. There were a few exceptions, such as Canada, Japan, and Korea, where cultural or other factors may be holding down birthrates. But the bottom line, Myrskylä’s research suggests, is that wealthy nations need not necessarily fear rapid, destabilizing population implosions.

The Economist reacted to the news with typical boldness in a story headlined “The best of all possible worlds?” While it is too early to know exactly where the upward population curve in highly developed countries is headed, The Economist envisioned a kind of demographic paradise in which a fertility rate of 2.1 produces a stable workforce that could support civil society and spin off enough wealth to pay for environmental protection.

Professional head-counters were more measured but nevertheless excited. The study had made a “fundamental contribution” by “opening a new chapter on our understanding of fertility transitions,” blogged Stanford University anthropologist and demographer James Holland Jones. Others quickly cited the study in declaring an end to “lowest-low fertility.” A few scholars, however, are skeptical. Mark Lauer, an independent statistician, has posted an animated analysis (stubbornmule.net) that concludes the reversal is a statistical illusion. It could take years to settle the debate.

In the meantime, Hans-Peter Kohler, one of the study’s authors, says it is important to keep some caveats in mind. Even with the uptick, for example, birthrates in most wealthy nations remain below the 2.1 replacement threshold. As a result, the demographic reversal “will not make a big difference for total global population—it will continue to be driven by growth in developing nations.”

Some experts have dubbed this phenomenon “the demographic divide.” In the richer, developed nations of the north, populations are generally getting older and stagnant; in the poorer, developing south, however, they are getting younger and still growing, although more slowly.

This variation means that estimates of gross world population are, in some ways, just big useless numbers. What’s probably more important from an environmental perspective is understanding how regional or national populations are shifting—and where people live, how age and sex shape their behavior, and how much they consume.
Sheer numbers do not tell the whole story, demographers George Martine and José Miguel Guzman of the United Nations Population Fund argue in a recent collection of essays, *Rethinking Development in a Carbon-Constrained World.* (2) It is “unrealistic,” for instance, to believe that problems such as climate change and habitat loss “could be easily resolved simply with massive family-planning programs in the poorer countries.”

In the climate arena, for instance, focusing on overall population has little value, argues David Satterthwaite, Senior Fellow at the International Institute for Environment and Development in London. “There is and will be little connection between population growth and emissions growth,” he argues in a recent paper in *Environment and Urbanization,* “if most of the growth in the world’s population is among low-income households in low-income nations who never ‘get out of poverty.’” (3) Perhaps one-sixth of the world’s population is so poor, he notes, that it makes virtually no contribution to global greenhouse-gas emissions. In contrast, the wealthiest 20 percent accounts for the vast majority of new emissions, in large part because it consumes massive quantities of fossil fuel.

These consumption patterns could change in unexpected ways, however, as wealthier countries age and poorer nations urbanize—complexities that researchers are just beginning to appreciate. Some recent research, for instance, suggests that the rapid aging of populations in developed nations could significantly reduce average long-term emissions, since older people tend to live in smaller spaces and travel less. In contrast, changes in family structure—such as moving out of multifamily compounds or migrating away from the farm to the city—could boost emissions in even the poorest nations. Other researchers are looking at how men and women differ in their consumption patterns and environmental impacts.

Environmentalists may also have to reconsider their traditional hostility to the growth of cities, some researchers say. “Paradoxically, cities also hold our best chance for a sustainable future,” Martine and Guzman argue. Not only do they tend to promote lower birthrates, but “if well designed and administered, the compactness and economies of scale of cities can reduce per capita costs, reduce energy demand, and minimize pressures on surrounding land and natural resources.” By some estimates, for instance, Tokyo with its 12.7 million people but superior mass transit system actually produces less carbon dioxide (the major warming gas) than San Diego, which has one-tenth the population but more car use. Other experts note that cities also tend to produce wealth that can be plowed into everything from clean energy technologies to land and biodiversity preservation.

Martine and Guzman argue that such complexities mean we can no longer view population growth “as a simple issue of the pressure of numbers against resources.” Solutions, they and others say, will require humanity to address overconsumption in some places—and overpopulation in others.

Brand, for his part, tips his hat to Paul Ehrlich “for one of the great self-defeating prophecies in history.” He believes “greens can take a bow for dramatizing the importance of population early and for promoting the education, birth-control techniques, and prosperity that helped reduce birthrates worldwide.” Even so, he’s a realist. World population will grow by some 3 billion people over the next 40 years, mostly in the developing world, and he acknowledges that this poses “an enormously complex challenge.”

Yet if Brand were to stage Lifeboat Earth again today, it would be hard to imagine what it would look like or what the sound bite might say. Perhaps that’s a good thing. As the Nobel Prize–winning development expert Amartya Sen put it, “There is a danger that in the confrontation between apocalyptic pessimism, on the one hand, and a dismissive smugness, on the other, a genuine understanding of the nature of the population problem may be lost.”

Literature Cited:


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