Humans and Technology

Why you shouldn't fear the gray tsunami

Many worry that aging populations will doom the world economy and make life miserable for everyone. Here's why that's wrong.

by **David Rotman**

Aug 21, 2019

The aging of the world is happening fast. Americans 65 and older are now 16% of the population and will make up 21% by 2035. At that point, they will outnumber those under 18. In China the large numbers of people born before the one-baby policy was introduced in 1979 are swelling the ranks of older people, even as younger age groups shrink. Other countries are even older. Japan leads—more than a quarter of its population is 65 or older—but Germany, Italy, Finland, and much of the rest of the European Union aren't far behind. A quarter of the people in Europe and North America will be 65 or older by 2050.

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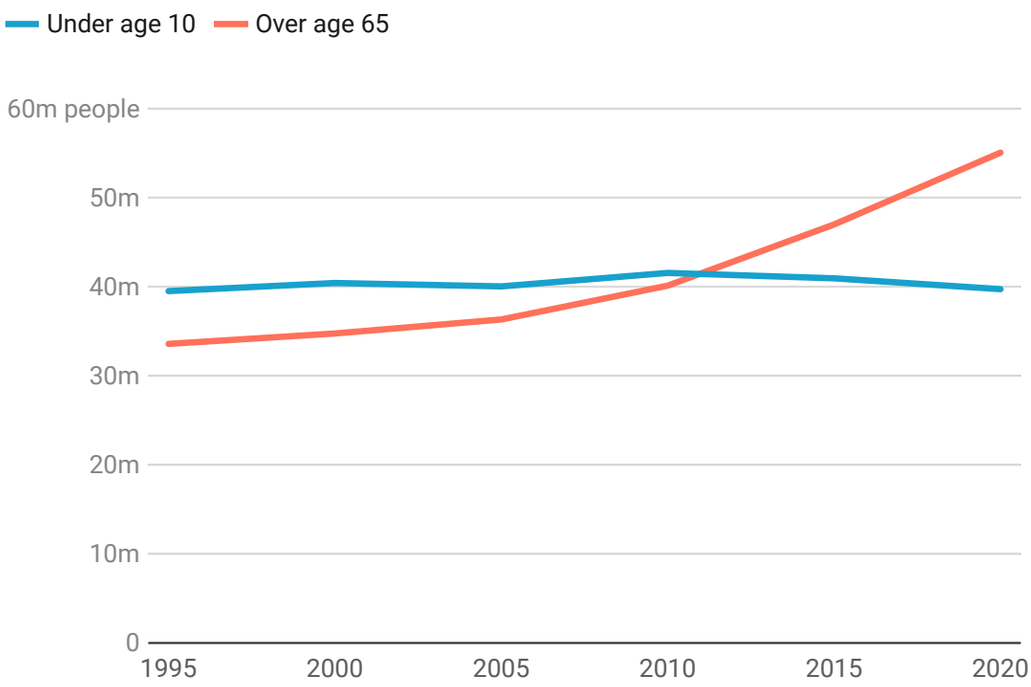
This trend is being driven by lower fertility rates (women in almost all countries are having fewer babies) and longer lives. While life expectancy has slowed its increase in some advanced countries in recent years, it continues its upward trend worldwide. A female baby born today in Japan is expected on average to live to 87.

Not only is the overall population aging; you will probably spend much more of your life being old. In 1960, if you were 65, you could expect to live to around 79. These days, you're expected to live to nearly 85. If you're already 75, you should expect to live until 87.

It's a huge shift that is changing our economy, our social and cultural values, and even the way we perceive and plan our lives.

Those 65 and older in the US now outnumber those under 10 for the first time.



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The conventional wisdom is that an aging population is toxic for economic growth. Who will do all the work? How will we pay for all those old people's medical and welfare programs? Economists like to call it the dependency ratio: the size of the working-age population relative to those too old (or too young) to have a job. And they like to show scary projections of how this demographic crisis is coming to get us.

The warnings sound ominous. The gray tsunami. The demographic cliff. The demographic time bomb. But maybe what's truly not aging well is all the fretting about an inevitable crisis.

Life expectancy has risen greatly over the years, but in the last decade it plateaued.

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Aging societies aren't worse off

The truth is that economists don't know much about how an aging population will affect us.

"There has been a productivity hit," says Nicole Maestas, an economist at Harvard. "It's big, and it's economically meaningful." She and her colleagues have calculated, on the basis of data from 1980 to 2010, that a 10% increase in the population age 60 and older has decreased growth in GDP per capita by 5.5%. It means, if the past is any lesson, that the aging US population could slow economic growth by 1.2 percentage points this decade and 0.6 percentage points in the next. Some of this will be because fewer people are working, but two-thirds of it will be because the workforce is less productive on average.

But Maestas cautions that the projections are based on historical trends and may not be accurate predictions. Her guess is that productivity has fallen as the population ages because the most skilled and experienced people have left in larger numbers, since they're more successful and wealthier and can afford to retire. If she's right, then it's not that workers become less productive as they age, but that the most productive ones stop working.

This means, Maestas says, that a big drop in productivity isn't inevitable. New technologies and business policies might keep talented people working longer. (Less happily, so might shrinking savings and disappearing retirement plans.) Teams made of both young and old people, with diverse experiences, might even be more productive. "Are we all getting less productive, and we're stuck with that?" she says. "Not necessarily."

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"Despite all the stressing about aging," says Daron Acemoglu, an MIT economist, "there is surprisingly very little evidence that aging societies are worse economically." Looking at GDP data from 1990 to 2015, Acemoglu and Boston University's Pascual Restrepo found no correlation between aging demographics and slowed economic growth. In fact, countries like South Korea, Japan, and Germany, all with rapidly aging populations, are actually doing well.

One possible reason? Automation. Countries with aging workforces have been quicker to adopt industrial robots to compensate. The resulting boost to productivity is "softening the doom and gloom around aging," says Acemoglu, who says he went into the research expecting that the impact of aging "wasn't as dark" as many suspected but was surprised by "the total lack of any evidence of negative effects from aging."

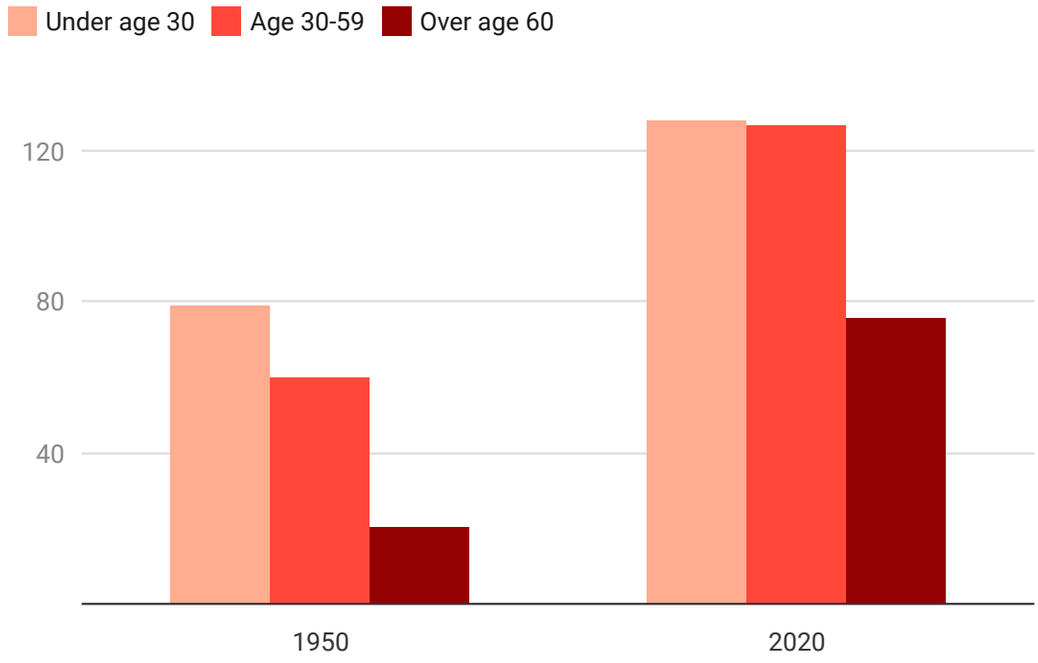
Still, Acemoglu also stresses how much remains to be learned. "We're not sufficiently prepared to know what happens when the society ages, and we don't know how to navigate it," he says.

Living better, but not longer

The increase in life expectancy over the last hundred years has been one of our great technological achievements. At the start of the 20th century, average life expectancy was around 50; by 1960 it was 70, and by 2010 it was up to nearly 80. Most of the early progress was due to keeping children healthier—in 1900 nearly one in four died before age 10. Later progress came in the treatment of things like cardiovascular disease, allowing most people to live into their 70s.

But don't expect this remarkable run to continue. Average life expectancy is leveling off and appears to be hitting a ceiling at just a little over 80. S. Jay Olshansky, at the University of Illinois at Chicago's school of public health, has been predicting this slowdown for years. He says we're near our upper limit for average life spans. "Possibly we can get it up from 80 to 85," he says, noting that already "Japan is closing in on it."

US baby boomers, those born between 1946 and 1964, are skewing the population older.



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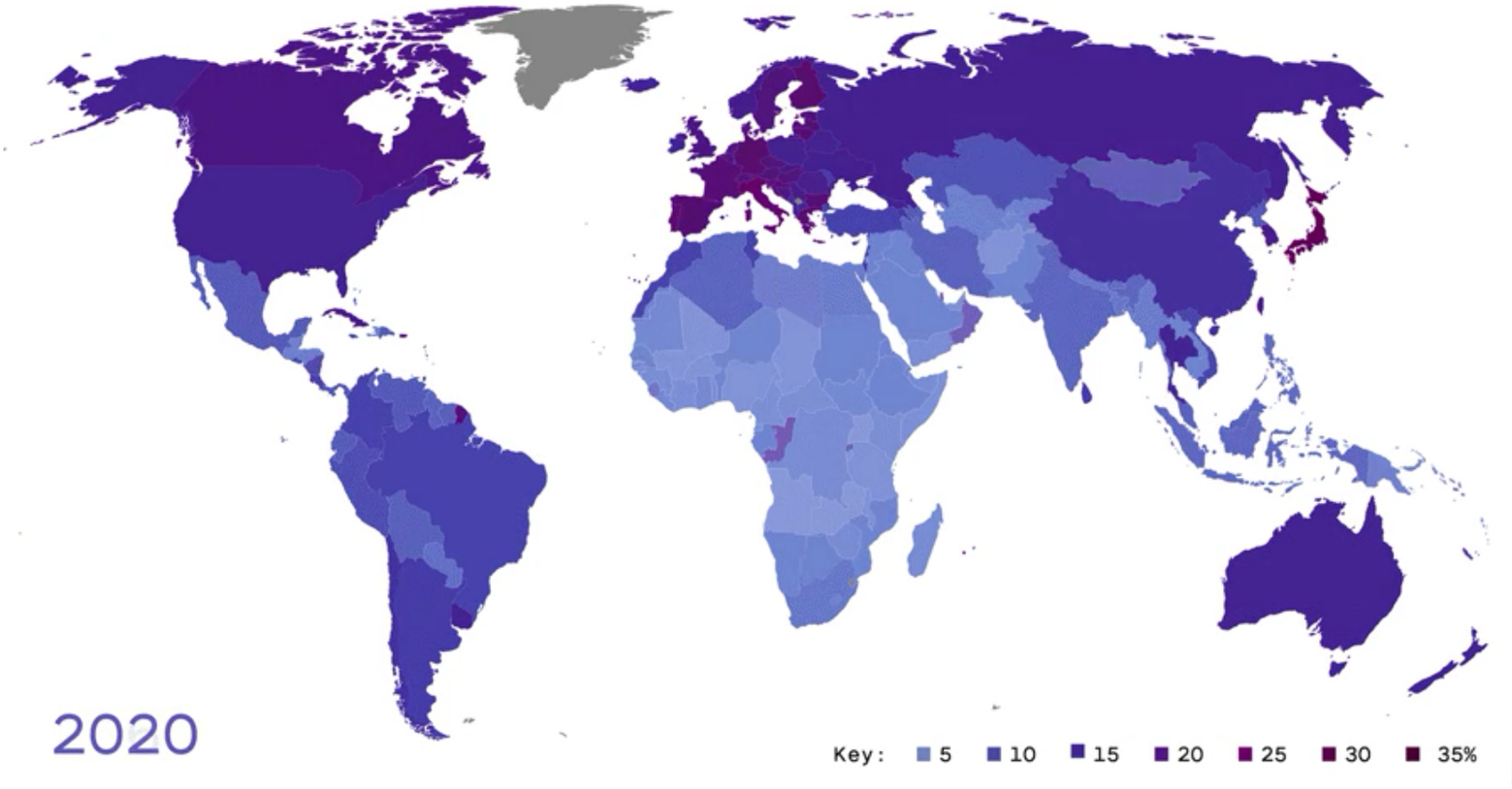
One thing we haven't been able to do is intervene to slow the aging process itself. But a first wave of promising anti-aging drugs—the result of several decades of breakthroughs in understanding the biology of aging—are being tested in humans. They won't let us live forever; they probably won't even let us live longer, Olshansky says. But they could help us stay healthier longer in old age.

For now, the hope for these molecules—which include rapamycin-like compounds that affect immune function, ones that activate proteins called sirtuins, and "senolytic" drugs that clean up damaged and aging cells—is that they can help with age-related ailments. Most ambitious, scientists are planning human tests for metformin, a longtime diabetes drug, to see if it can slow multiple age-related conditions.

In many countries, particularly in Europe and North America, people 65 or older make up an increasing percentage of the population.



SOURCE: UN WORLD POPULATION PROSPECTS 2019

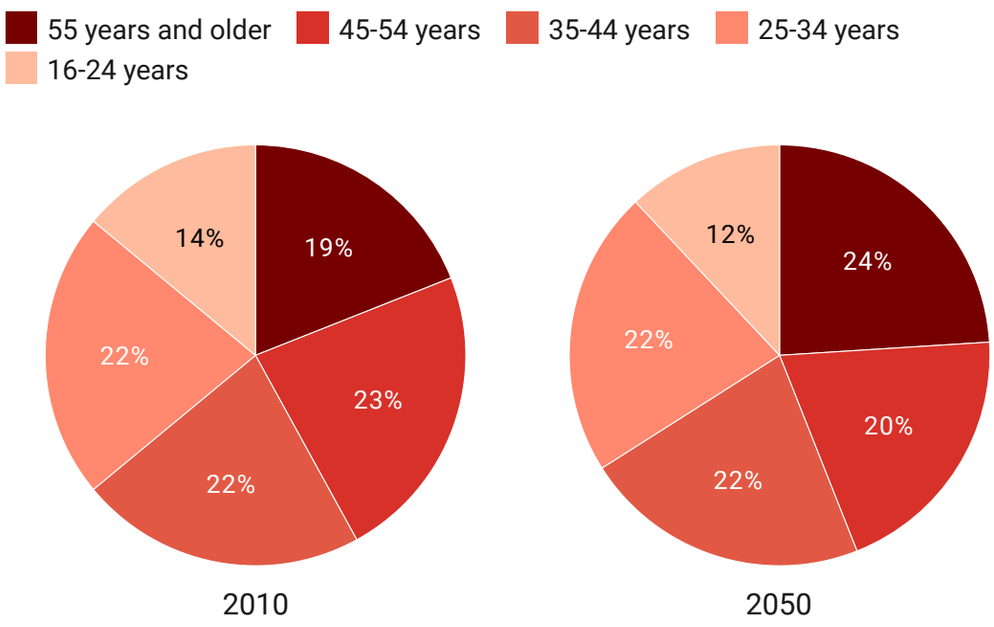
If any of them succeed, it will validate an idea that could change medicine: that it's possible to attack certain illnesses by intervening in natural aging processes—in other words, by treating aging itself in order to slow the contributing causes of disease. Scientists envision these drugs eventually helping older people as they become frail and disabled, vulnerable to one illness after another—basically, when the body begins to fall apart.

Some of these promising compounds have already dramatically extended the life span of yeast, worms, and rodents, but we're still a long way from performing such longevity tricks in humans. "The most important thing is extending the healthy life span," says Leonard Guarente, an anti-aging pioneer at MIT. "Will that extend maximum life span? The answer is unknown. Anyone that tells you they know is not telling the truth."

Claims that aging itself is a disease that can be cured are good for gaining attention and money for the research—who doesn't want to live forever? It's hard to think Silicon Valley investors like Peter Thiel and Larry Page would pour money into anti-aging research if the payoff were simply to make you less frail in your 80s. But the idea of aging as a pathology creates a misleading promise. Despite several decades' worth of exciting advances, we're still far from a "cure," and don't even really know what a cure might look like.

Beyond being scientifically disingenuous, the aging-as-a-disease crowd is promoting a dangerous message. Not only does treating aging as a disease cast a negative light on getting old, but it distracts us from the most pressing issue: How do we keep ourselves productive and healthy as we grow older?

By 2050, a quarter of US workers will be 55 or older (percentage of labor force by age).



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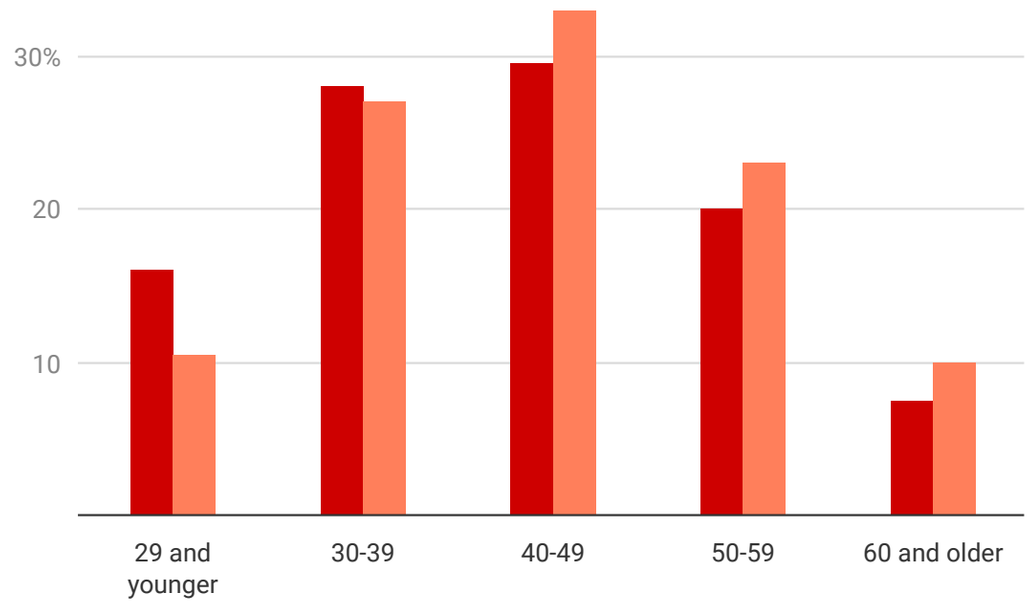
Fear of our older selves

It's been 12 years since Facebook CEO Mark Zuckerberg famously asserted that "young people are just smarter," and almost a decade since billionaire venture capitalist Vinod Khosla told an audience, “People under 35 are the people who make change happen,” adding, “People over 45 basically die in terms of new ideas.”

There are few signs that Silicon Valley is changing its tune. Multiple tech firms have faced lawsuits over age bias. In a court filing for a 60-year-old programmer not hired by Google, the complaint noted that the company’s workforce had grown from 9,500 to 28,000 people from 2007 to 2013 with a median age of 29, at a time when the US average was around 42. And Khosla himself recently doubled down on his argument, tweeting, “Experience is a bias.”

Academic research indicates that Zuckerberg and Khosla are wrong. In a rigorous study that looked at 2.7 million company founders, economists at MIT, the US Census Bureau, and Northwestern University concluded the best entrepreneurs are middle-aged. The fastest-growing startups were created by founders with an average age of 45. In a 2018 paper they found that a 50-year-old entrepreneur was nearly twice as likely to build a highly successful company as a 30-year-old. And contrary to Khosla’s tweet, it turns out that industry experience was a significant positive in predicting success.



Source: Azoulay, Jones, Kim and Miranda: HBR • Get the data • Created with Datawrapper

Blatant age bias might also explain why Silicon Valley has done such a terrible job of creating startups in biomedicine, clean energy, or other areas requiring scientific expertise and knowledge. In earlier research, one of the authors of last year's paper, Benjamin Jones, an economist at Northwestern, presented evidence that most great scientific achievements in the physical sciences and medicine come in middle age, not from the precocious young.

It's a message largely lost on Silicon Valley and its youth-fetishizing investors—it seems that billionaires are, after all, set in their ways.

Even if they don't change their ideas about aging, though, it's critical that our larger society does. "If we can't extend health spans and lower health-care costs, if we can't increase productivity and integrate older workers more effectively, and if we can't tackle the disparities that challenge so many aging communities, the costs to society will be mind-blowing," says Paul Irving, chairman of the Milken Institute Center for the Future of Aging.

A 50-year-old founder is 1.8x more likely to create a highly successful startup than a 30-year-old founder

Azoulay, Jones, Kim, Miranda; NBER

The harm won't just be economic. The financial and emotional hit to older workers unable to find a job because of bias is devastating to families and communities. And it's a pain caused by our own narrow thinking and limited imaginations. Ageism is a particularly pernicious bias because it is a fear of our own selves. We're all going to get old (if we're lucky) and die.

But while aging might be inevitable, becoming unproductive is not. We might be facing a demographic tsunami, but we don't have to be overwhelmed by it. We can take the high ground.

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