The New Age of Much Older Age

Photo-Illustration by Evan Kafka for TIME

Everyone wants to live longer, and science is starting to make that happen. But living better will be the real challenge—and opportunity

We live in extraordinary times. And thanks to medical and scientific advances that even a generation ago would have sounded like science fiction, our lives are getting longer. An American born today has a projected average lifespan 20 full years longer than one born in 1925, and we are, as a society, growing old. For the first time in U.S. history, the number of people over 60 exceeds those under age 15.

Long life is a remarkable achievement. But our aging society presents challenges every bit as fundamental and pervasive as climate change and globalization. If we address the reality of longevity, we will avoid a crisis–and improve the quality of our lives at all ages.

Even as we look forward to more years ahead, the idea of a long life can also trigger anxiety. The unease we experience has to do with how quickly the age structure in the global population has been reshaped. In less than a century, more years were added to life expectancy than all years added across all prior millennia of evolution combined. Long-lived societies appeared so suddenly that culture–the crucible that holds science and technology along with wide-scale behavioral practices and social norms–has not caught up.

The challenge we face today is converting a world built quite literally by and for the young into a world that supports and engages populations that live to 100 years and beyond. This is no small feat. Consider, for example, that parks, transportation systems, staircases and even hospitals presume that users have both strength and stamina; suburbs across the country are built for two parents and their young children, not single people, multiple generations or elderly people who may be unable to drive. Our education system serves the needs of children and young adults and offers little more than recreation for experienced people.

Indeed, the very conception of work as a full-time endeavor ending in the early 60s is ill suited to long lives. Arguably most troubling is that we fret about ways that older people lack the qualities of younger people rather than exploit a growing new resource right before our eyes: citizens who have deep expertise, emotional balance and the motivation to make a difference.

Science and technology are the reasons for the increase in life expectancy, and looking forward, science and medicine will be responsible for how we extend life even further. But to get a handle on where we're going–the potential for a life longer than any of us can imagine–it helps to think about how we got here.

Prize-winning economist Robert Fogel and his colleague Dora Costa describe a phenomenon called "technophysio-evolution," that is, biological changes due largely to technologies that ensured a steady food supply. But this explosion wasn't limited to agriculture. Electricity was discovered and made widely available; refrigeration improved the safety of food; pasteurization and water purification contributed further to health; the systematic disposal of waste greatly reduced the spread of contagious disease; and medical science led to dramatic reductions in premature death thanks to vaccination programs that effectively wiped out lethal viruses from large parts of the developed world.

Although we were and remain little different genetically from our ancestors 10,000 years ago, the working capacity of our vital organs has improved greatly. Average body size has increased. We have grown taller, and our brains have come to process information faster.

Longer lives and the fact that we're having fewer kids, in combination, began a global process by which population pyramids–with many at the bottom and a tiny proportion of old people at the top–are being transformed into rectangles. If you're the type of person who can get chills from population statistics, these are the numbers for you. What they mean is that for the first time in history, the majority of babies born in the developed world have the opportunity to grow old.

As much as we may fancy ourselves freethinking, the crux of the longevity challenge is, quite frankly, that humans are creatures of culture. The culture that guides us today–that tells us when to get an education, marry, have children, buy a house, work and

retire–is profoundly mismatched to the length of the lives we are living. Today's culture offers little in the way of cures or even treatments for the chronic diseases that afflict older people, nor does it offer guidance about how to finance decades-long retirements. And so individuals worry they will succumb to dementia, run out of money, lose their relevance. But it needn't be so. Instead of hand-wringing about productivity falling and infirmity rising, we need to change the course, both biologically and socially, of long life.

With sufficient financial support, the potential of scientific advances is breathtaking. Biologists are beginning to understand, at a molecular level, the processes by which aging increases the risk of a whole range of diseases and, importantly, how to slow and even reverse some of these processes. The very nature of chronic, degenerative diseases is being revealed, which paves the way for therapies and possibly even cures that were scarcely imagined a generation ago.

Meanwhile, technological advances have made available devices that can compensate for a wide range of age-related problems, such as difficulties with hearing, balance and mobility, just as eyeglasses rendered presbyopia no more than a minor inconvenience more than a century ago. And with an investment in social science we can develop methods that help people better envision and plan for their futures, improve fitness, remain cognitively sharp and, in some cases, reverse diseases rooted in lifestyles.

We can apply science so that the youngest children among us today live happy and healthy lives as centenarians. In partnerships with businesses and industries, products can be developed that help people age well. Examples include cars that brake before impact, smart homes that improve the safety of occupants, mobile devices that influence behavior and financial products that allow people to effectively finance long lives.

We might also trade retirement for new models of working longer, so that parents spend more time with young children, sabbaticals become commonplace and–imagine this–workers experience periods of leisure before they reach old age.

An essential first step is to change the way we think about our suddenly longer lives.

Thirty or more extra years of life also means we can improve the way we live. To the extent that we can build a world where people arrive at old age mentally sharp, physically fit and financially secure, the problems of individual aging will recede. And finally, we can change the ongoing conversation about a crisis on the horizon to one about long life and new opportunities.

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