## Setting the Stage: A Generation of Centenarians?

Most people alive today in Germany, Italy, Japan, and the United States will probably live through most of the twenty-first century. Half of the girls born today in Minneapolis, Tokyo, Bologna, and Berlin will probably celebrate the dawn of the twenty-second century as centenarians. Boys are disadvantaged, but half of the males born today in the postindustrial world will probably survive to age 95.

These are the most important but least discussed facts about the demography of longevity. Very long lives are not the distant privilege of future generations. Very long lives are the probable destiny of most people alive today. For everyone in his or her thirties and younger, especially children, lifespans of 95 or 100 years will be common.

Suppose when you are young you know you will probably live to be 100. How will you want to spend your life? You probably want a broad education—science and literature, history, music, and art—because you want to stay productive and amused for a long time. You probably do not want your life divided into three blocks—spending your first 25 years studying hard to be educated, the next 35 years working hard to earn a living, and the final 40 years in enforced leisure.

Instead, you probably want to mix education, work, and leisure over the course of your life. Then, you have time for your children when they are young and need you and want to see you. A few years later you will have time to reorient your knowledge and start a different career. You probably value this mix of education, work, and leisure even if—indeed, especially because—it means that you leave the house and go to work, at least part

James Vaupel is executive director of the Max Planck Institute for Demographic Research in Rostock, Germany. He is also a member of the U.S. National Advisory Council on Aging.

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time, when you are in your seventies and eighties. Many people in the United States and Japan already work past age 60 or 70.

People will want to work longer for two reasons. First, most of our children will be much healthier when they reach age 70 or 80 than we are today. Indeed, every successive generation is becoming healthier at older ages. They will live to age 95 or 100 because they will be so healthy and active at age 80. Second, people will want to work later in life so that they do not have to work so hard earlier in life. We all must contribute something to get the world's work done, but we do not have to jam our contribution into that period of life when our children need us.

Most of the people alive today in Japan, as well as in China, in the United States as well as in Mexico, in Italy as well as in Turkey, will probably still be alive half a century from now, in 2050. Public policies to address the new demography of longevity should be far sighted and long term—policies that will work not just today but decades from today. In particular, they should be designed to respond to the new needs of people who will probably live a very long time.

I say "probably" because there is a lot of uncertainty about death. On the one hand, biochemical warfare, epidemics worse than AIDS, nuclear terrorism, and environmental collapse could make life nasty, brutal, and short. On the other hand, the biological and biomedical sciences appear to be poised today just as the physical and engineering sciences were a century ago. The twentieth century brought us cars, airplanes and rockets, telephones, television, computers, and the Internet. The twenty-first century may well bring us cures for cancer, stroke, and Alzheimer's, genetic engineering, and perhaps even deep understanding of the aging process. Then our babies may live not 100 years, but 120 years, 150 years, or perhaps indefinitely. Perhaps every decade that you live will produce a decade of new biology, letting you live another decade. This is possible—improbable, but possible.

If so, the world's population is going to become a lot bigger—unless the number of births correspondingly declines. Birth rates are already very low in Japan, Italy, Spain, Germany, and some other developed countries. In several more of these countries—although not in the United States—the prospects are that national population is about to decline dramatically. If birth rates stay low and immigration is also low, Italy's population, for example, could be 10 million at the end of the twenty-first century, a fifth of the population today. It appears likely that sometime in this century—perhaps as early as 2030, more probably around 2050 or 2060—the population of the world will peak at between 8 and 10 billion and then start to decline. Unless, that is, mortality falls dramatically, immigration rises, or fertility rates increase.

Fertility rates are particularly hard to predict. My own informal research reveals that half of demographers think that the very low birthrates of Japan, Italy, and Germany are a transient phenomenon and that birthrates will rise within a decade or two to levels approaching 2 children per woman. But the other half of the demographers think that low fertility rates, at levels between an average of 1 and 1.5 children per woman, are likely to be a pattern for many decades. Whether fertility rates are low or very low depends on people's desire for children and on social norms and conditions. By providing day care, flexible labor markets, and opportunities for parents to spend time with their young children, policymakers may possibly encourage higher fertility rates and simultaneously improve life for younger working men and women.

The longer people live and the fewer babies they have, the greater their average age will be. Half the people in Japan, Germany, and Italy may be older than age 50 in 2050. If the one-child policy were still strictly enforced, the population of China would be approximately a billion in 2050. Half of those billion would be older than 60, and 400 million would be older than 65. To keep the over-60 population to one quarter of the There is an easy way to solve the problem of "too many elderly." Raise the definition.

total, Chinese policymakers would have to allow, and perhaps even encourage births, for the population to increase to 2 billion.

There is an easy way to solve the problem of "too many elderly." Just raise the definition of "elderly." If most 70 year olds today are as healthy as most 60 year olds used to be, why not allow and encourage people to work to age 70? And if in the future 80 year olds are as healthy as 70 year olds or even 60 year olds are today, why not allow and encourage them to work to age 80?

There is no doubt that the new demography of oldest-old lifespans and lowest-low fertility rates is going to drive policy in the twenty-first century. The age distribution of populations will shift from hordes of children to crowds of the elderly. Families used to be horizontal—people had many cousins but few living grandparents. In the future, families will be vertical, with few cousins but with four or even five generations living contemporaneously.

People will think about their lives in a very different way. It used to be that the length of a person's life was highly uncertain. In the future, unless catastrophe strikes, people in Japan, Italy, Germany, and the United States will be able to count on living to age 80 or 90 and to have a good shot at making it to age 100. They will be healthier and wealthier than we are. The probability of having long life, health, and wealth will radically change the way people think about their lives and their plans for how to spend their time.

Sometimes population aging is viewed as a problem, even a crisis. Clearly, long, healthy life is one of the crowning glories of our civilization. The problem is not that people will survive long enough to enjoy their grandchildren

Public policies to address longevity should be far sighted and long term. and great-grandchildren. The problem is outmoded policies based on outdated thinking. This is one of the rare situations in which tinkering will not work. Radical new perspectives are needed based on demographic realities.

History is determined by population forces, and democracies are governed by demography. In the long run, most of the people alive today in the postindustrial

world will still be alive in the years to come. Policymakers need to understand the social and personal implications of the new demography of long lives and low fertility rates if they are going to design long-term, sustainable policies that respond to people's emerging needs and interests.