

Address to the Long Now Foundation

San Francisco, California

August 13th, 2004

By Phillip Longman

Author: The Empty Cradle: How Falling Birthrates Threaten World
Prosperity

Bernard L. Schwarz Senior Fellow
New America Foundation
Washington, DC.

It is an honor to be here...

My name is Phil Longman. As you can see, I am, like many of you here tonight, a baby boomer.

What does it mean to be a baby boomer?

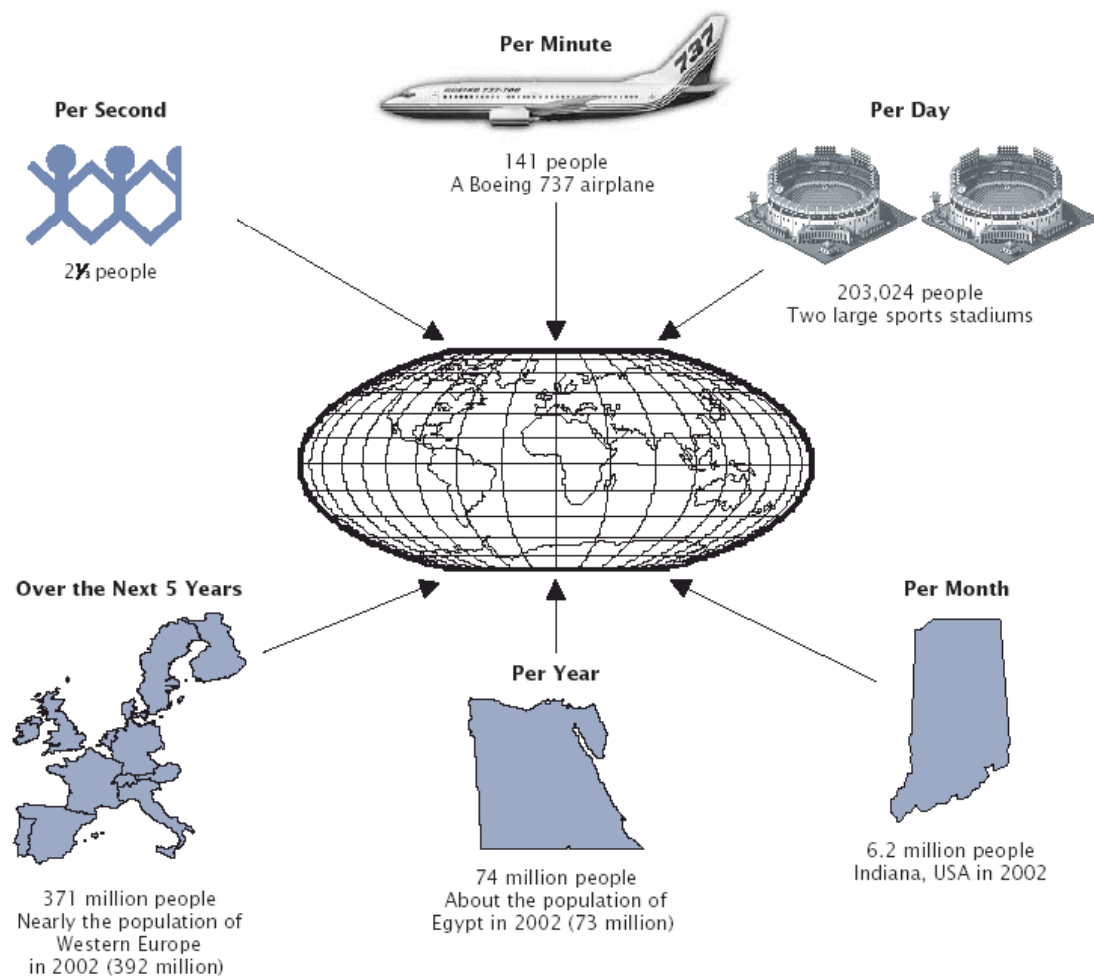
Among other things, it means you grew up during an era of explosive, and unprecedented demographic change –change that has no doubt had a profound effect on your worldview and attitudes on a broad range of issues.

Within my lifetime, world population has more than doubled.

Just since I was still in my thirties, we've added more than a billion people to planet.

(Slide 2) Today, world population is increasing by more than 74 million people a year. That's equal to the entire population of Egypt.

Net Additions to the World: 2002
In 2002, the world gained 2½ people per second.



Source: U.S. Census Bureau, International Programs Center, International Data Base and unpublished tables.

Just in the time it took me to utter that last sentence, world population increased by another 20 people.

For most of us, this phenomenon of rapid population growth deeply informs our worldviews and expectations for the future.

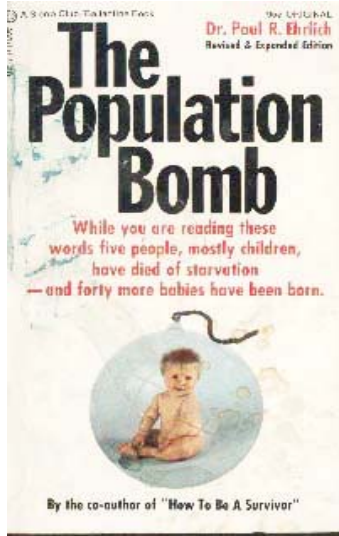
After all, baby boomers and younger American came of age when there were two competing visions of how the world might end.

The first looked like this. **(Slide 3)**



And the other was a different kind of Bomb, the Population Bomb, and millions of people around the world learned about from reading this book, by local author Paul Ehrlich. **(Slide 4)**.

Since the 1960s, fear of population growth has been a defining feature of popular culture...



“The battle to feed all of humanity is over. In the 1970’s the world will undergo famines—hundreds of millions of people are going to starve to death in spite of any crash programs embarked upon now.”

Paul R. Ehrlich, 1968

It is almost impossible to overstate how deeply fear of population growth has defined, and continues define our world.

...and of Western elite opinion



Rampant population growth is an even more dangerous and subtle threat to the world than thermonuclear war, for it is intrinsically less subject to rational safeguards, and less amenable to organized control.

--Robert S. McNamara, April 28, 1977.

(Slide 5) Here is Robert McNamara, the man who brought you the Vietnam War, and who headed up the World Bank for many years, speaking on the problem in 1977”

“Rampant population growth is an even more dangerous and subtle threat to the world than thermonuclear war, for it is intrinsically less subject to rational safeguards, and less amenable to organized control.”

Both our day-to-day experiences, and the impressions we gather from the media, repeatedly suggest that whatever quality of life we enjoy is under constant threat by population growth



Disappearing farmland in the Middle West



Rock throwing youths in the Middle East



Over-run borders



Burning rainforests



Worsening traffic



Vanishing species

(Slide 6) Today both our day-to-day experiences, and the impressions we gather from the media, repeatedly suggest that

whatever quality of life we enjoy is under constant threat by continued population growth.

Traffic grows worse every year, and urban sprawl spreads. Turn on your television these days and you're bound to see a feature on disappearing farmlands in the Middle West, or images of wild youths throwing stones somewhere in Middle East. We hear of burning rainforests, out-of-control borders, and vanishing species. With all these experience, it's no wonder that the majority of Americans, when surveyed, say they believe world population will double again within 20 years.

Indeed, fear of population growth informs nearly all the major cultural changes that have been building in the United States since the 1960s. **(Slide 7)**

Earth Day, 1970



It is no coincidence that the first Earth Day, which launched the modern environmental movement in 1970, took place just as the rate of human population growth was reaching an all time high. Nor is it surprising that just as the huge baby boom generation came of age, social attitudes that had long served to keep birth rates high began to change, including attitudes toward birth control, abortion, feminism, and homosexuality.

In another way, an assumption that population will always grow is also essential to many conservative agendas.

(Slide 8)

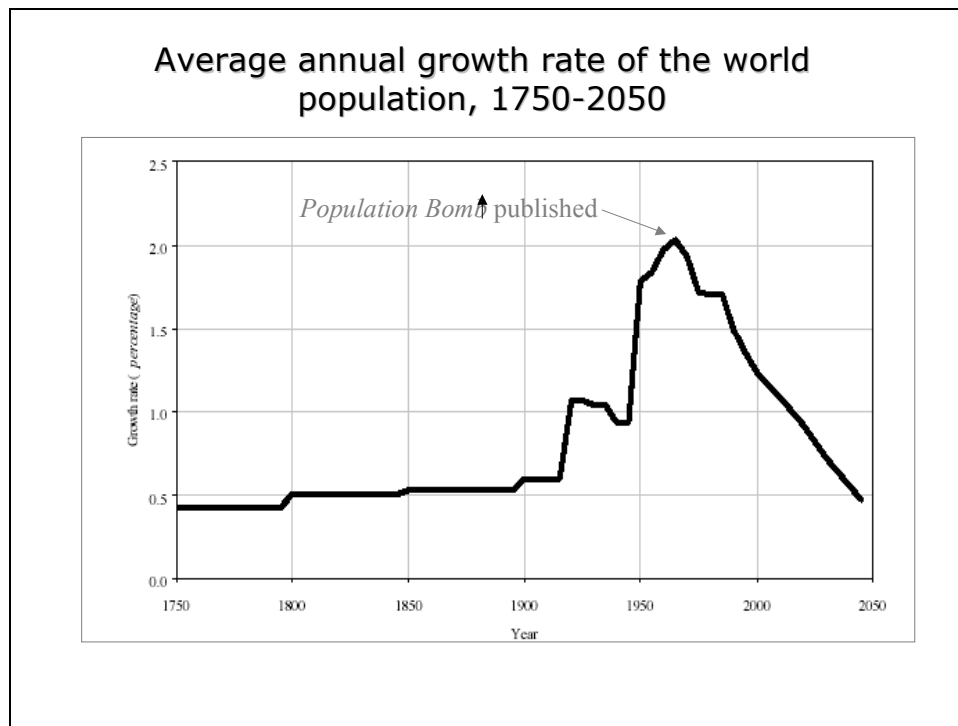
Businesses flock to areas where population is growing, such as the Sun Belt, and flee areas where it is declining, such as the Great Plains of the United States.



Businesses flock to areas where population is growing, such as the Sun Belt, and flee areas where it is declining, such as the

Great Plains of the United States. This, too, is no coincidence. Population growth is good for capitalism—maybe even essential. After all, population growth creates more demand for the products capitalists sell, and more supply of the labor they buy.

But now, here's a curious fact—the first of many I will be sharing with you tonight. **(Slide 9)**

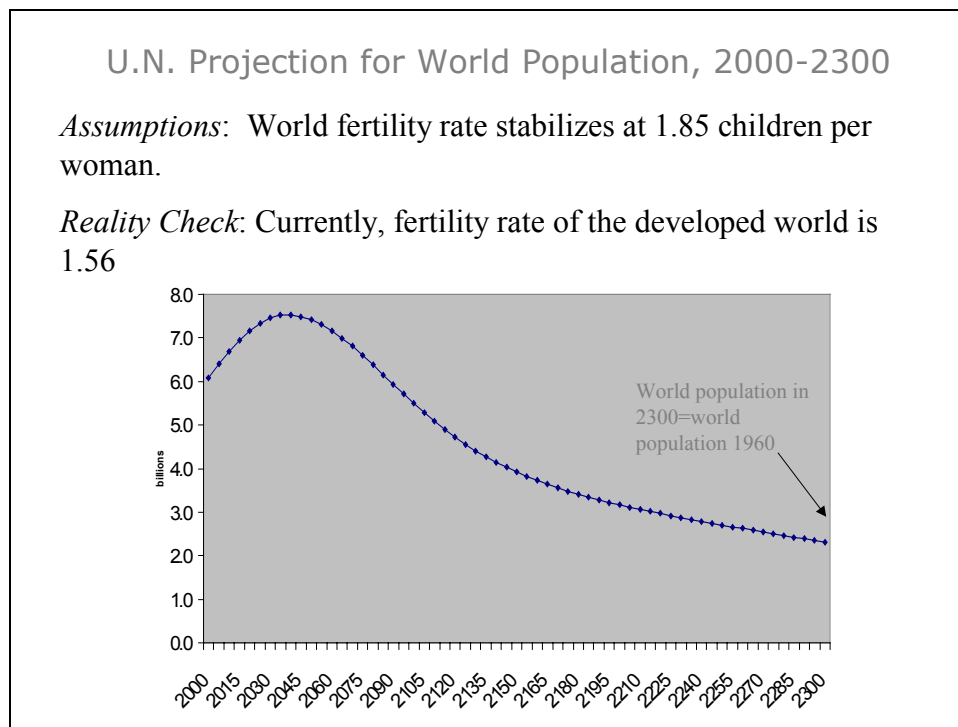


World population is still growing, but it is doing so at a slower and slower pace. Indeed the rate of population growth is now but just over half what it was in the early seventies. And

demographers everywhere see this as only the beginning of a trend that will end in depopulation around the globe.

Indeed, forecasts by the United Nations and others show that world population, currently at little over 6 billion, is unlikely to double—ever.

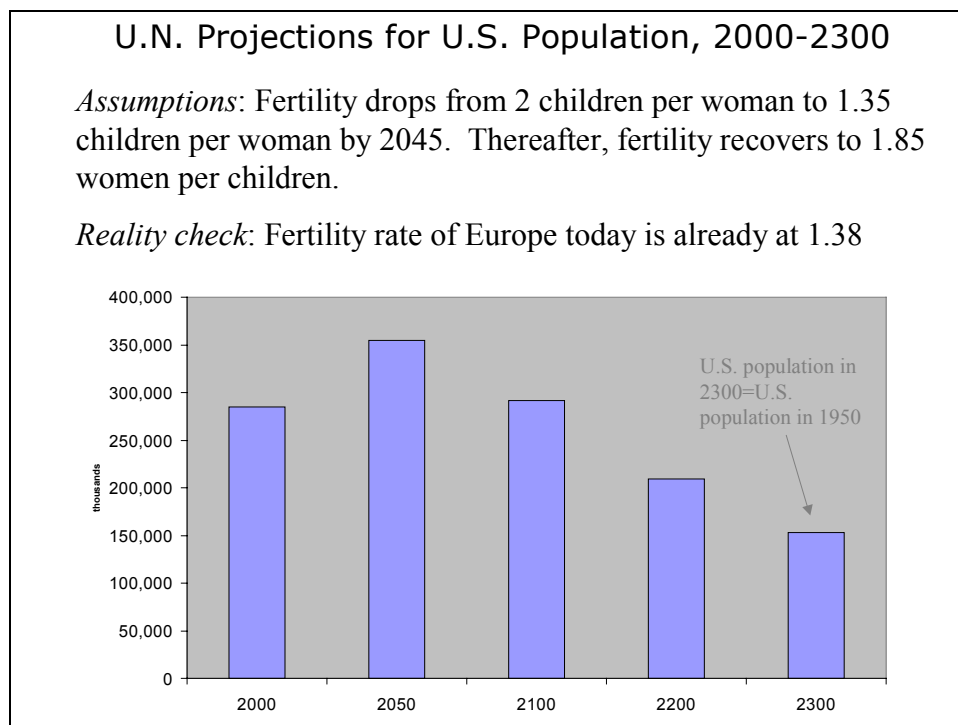
Instead, most demographers predict that human population will peak at somewhere between 8 and 9 billion, most likely within the lifetime of today's young adults, and then start shrinking. **(Slide 10)**



Here for example, is recent a projection from the United Nations for the future population. It is based on assumptions about the course of future fertility rates that are entirely

consistent with current trends. Indeed, if anything, this projection may well understate the timing and speed of world population decline. It assumes, for example, that world fertility rates will stabilize at 1.85 children per woman, which is well above the fertility rate average seen today the developed world.

(Slide 11)



Here's the outlook for the U.S. under the same scenario. As you can see, U.S. population starts shrinking after mid-century, and by 2300 has slipped back to the population level we experienced in 1950. Again, the decline could be much sharper, because these projections assume that U.S. fertility rates will

remain above the levels already seen in Europe and other developed regions.

Should we hope this comes true? I'm sure that to many people in this room and around the world, slower population growth sounds just wonderful. Less traffic, more room at the beach, less conflict over natural resources and scarce jobs, less global warming. And indeed the trend will no doubt bring will bring benefits.

But I also hope to persuade you, by the end of this talk, that people who yearn for a less crowded world should be careful what they wish for.

I will argue that the transition to a slow growing and eventually declining world population could bring many deep and challenging problems—problems that may indeed lead to a new Dark Ages.

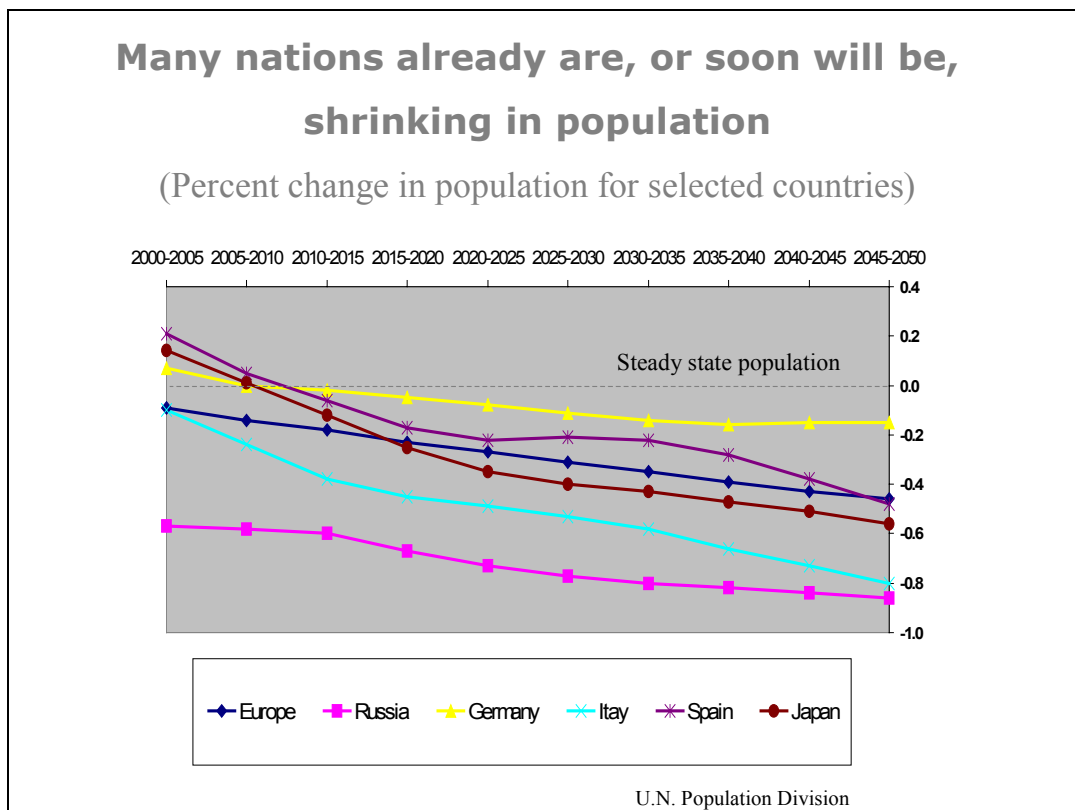
I will argue that the slowdown in population growth inevitable entails rapid population aging, not just in developing countries, but most notably in China, the Middle East, and other developing regions. An explosion in the world's elderly population, coupled with a dwindling supply of children and younger workers, threatens not only the global economy, but also the global environment.

Finally, and most controversially, I will argue that unless secular societies take measures to increase the rewards of parenthood, and to better compensate those who are involved in nurturing and educating the next generation, we—and I mean the human race here—face a future dominated by fundamentalism.

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But before we examine how all this might happen, let's dwell for a moment on the reasons demographers believe that the age of human population growth is drawing towards an end.

(Slide 12)

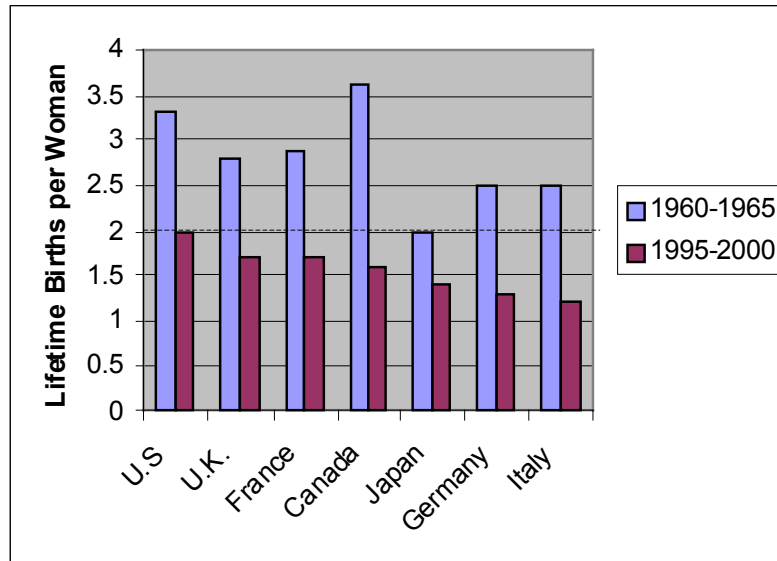


Population is already falling, or on the brink of falling, in many nations. No industrialized nation still produces enough children to sustain its population over time.

- Russia's population is already contracting by three-quarters of a million a year.
- Germany could easily lose the equivalent of the current population of East Germany over the next half-century.
- Japan's population meanwhile is expected to fall by as much as one-third—a decline equivalent to that experienced in medieval Europe during the scourges of the plague.

The reason for this is straightforward. **(Slide 13)**

**Fertility in every developed country is now beneath
"replacement rate" of 2.1. children per woman**

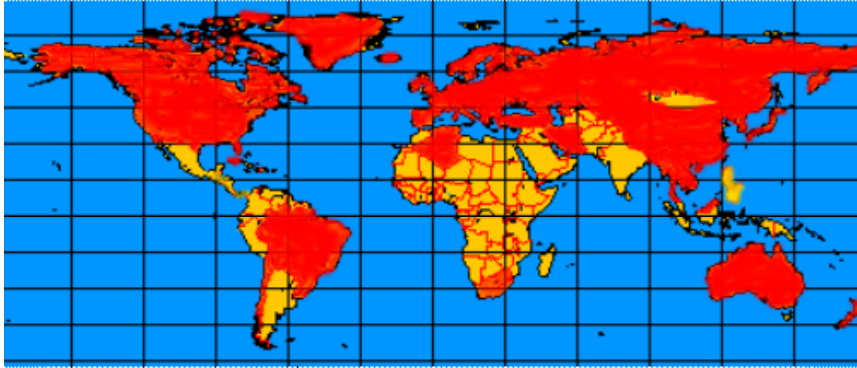


In industrialized countries, the average woman must bear 2.1 children over her lifetime to maintain population growth over time. She must bear one child to replace herself; another child to replace her partner. The additional one-tenth child is needed to replace infants and children who do not survive to reproductive age.

In no industrialized nation today is fertility high enough to prevent declining population. In countries as diverse as Italy, Japan, Spain and Korea, fertility rates are so low that population loss on the order of 30 to 50 percent per generation are in the works.

Yet what is even more surprising is the rapid decline in fertility now seen in the developing world. **(Slide 14)**

Sub-replacement fertility rates are now spreading to every corner of the globe



Red countries have fertility rates of less than 2.1 children per woman

The phenomenon of sub-replacement fertility has by now spread to every corner and continent of the globe.

Here we see, marked in red, the countries of the world that are currently producing fewer than 2.1 children per woman. This again, is the number needed to sustain population in developed nations. If we were to account for the high rates of AIDS and infant mortality found through much of sub-Saharan Africa, much of that region would also have to be counted as having below replacement fertility levels

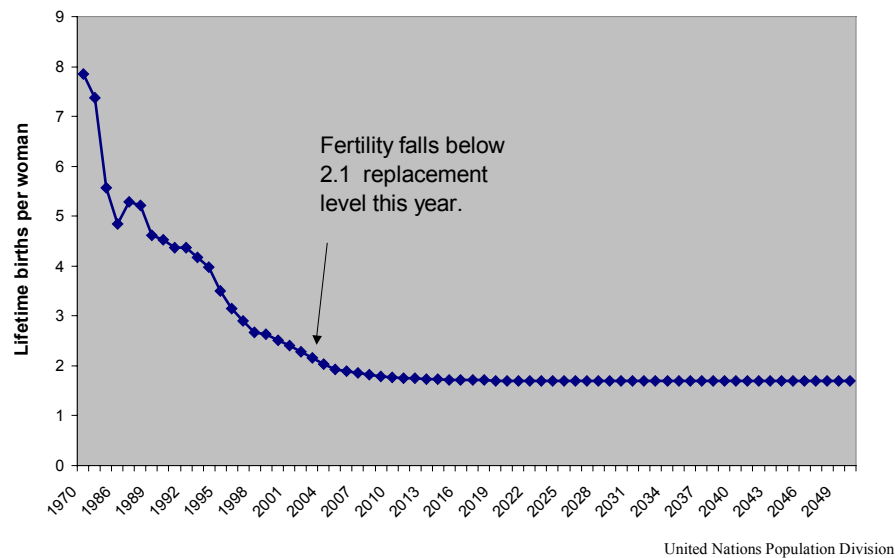
(Slide 15)

In both hemispheres of the world, in nations rich and poor, under all forms of government, in Christian, Taoist, Confucian, Hindu and especially Islamic countries, one broad social trend holds constant at the beginning of the 21st century: birthrates are falling.

Where is fertility falling the fastest? Just where most people think it is growing the most: that is, in the Middle East.

(Slide 16)

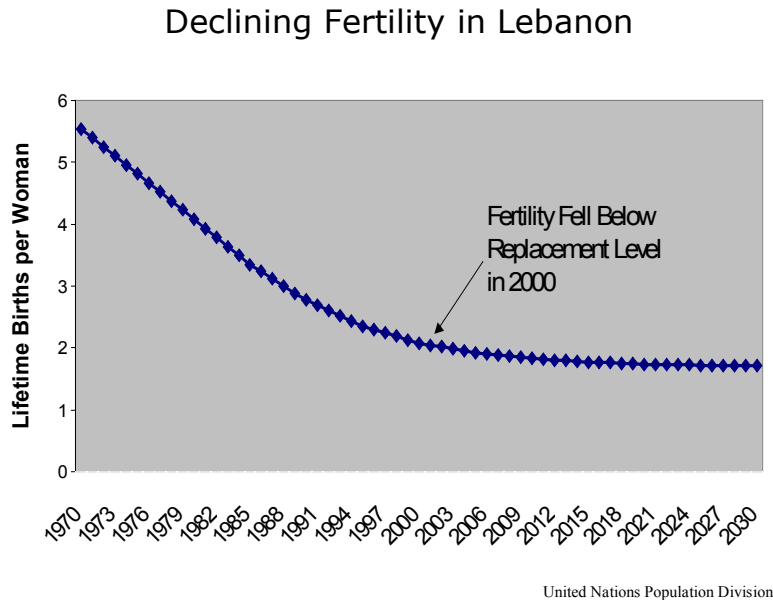
Algeria's Gathering Birth Dearth



Here, for example, is a chart showing Algeria's birth dearth. As recently as 1970, the average woman in Algeria had 8

children in her lifetime. This year, the fertility rate dropped below replacement levels.

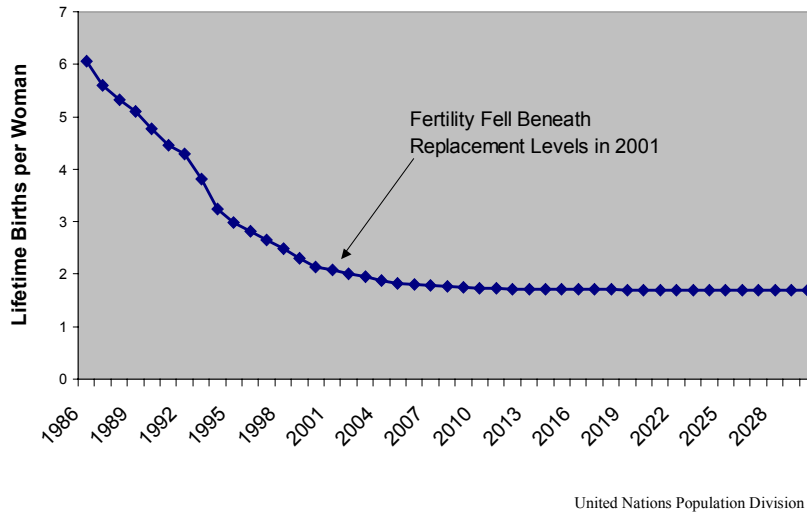
(Slide 17) Same story in Lebanon.



The Lebanese managed to produce more children during the height of their civil war than they do today. In 2000, Lebanon joined the ranks of countries no longer producing enough children to replace their population.

(Slide 18) Same story in Iran.

Iranian Baby Bust



Under the grip of a militant, Islamic clerisy, Iran has a current fertility rate of under 1.9 children per woman, which is lower than the United States.

How can this be? **(Slide 19)**

Today's youth bulges in the Middle East cause high unemployment, and also a steep drop in the number of children people feel they can afford.



Anyone who travels to the Middle East cannot help but notice the ubiquitous throngs of loitering young people leaning against walls. The phenomenon is so pronounced that there is even a new, North African slang term for these idle youth: Hittite, a play off the Arabic word for wall. Yet these Hittite are members of a distinct, and aging, Baby Boom generation. They are children of the 1980s, whose large numbers derive not from an increase in fertility rates, but from a dramatic decline in infant mortality that cannot be replicated in the future.

Much like when the American Baby Boom generation was still in its youth, their large numbers are shaking every institution of their society. But also like the Baby Boomers in the United States, they are followed by a Baby Bust generation.

In demographic terms, the Middle East is following the same path as Europe and the United States did in the 1960s and '70s, only on a more dramatic scale.

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What explains the worldwide decline in fertility? There are many factors, some of which are more important in some countries than in others. In this slide (**Slide 20**) I've listed some of the more important.

Sources of Falling Fertility

- Urbanization
- Declining infant mortality
- Contraception
- Increased education, particularly of women.
- Rising direct cost of children (college)
- Rising opportunity cost of children (mother's foregone wages)
- Delay of marriage and childbearing
- Fall in relative income between young and old
- Declining economic "return" to parenthood
- Government transfers to the elderly (Social Security)
- Decline of extended family
- Imitation of the "rich and beautiful"
- AIDS/STDS
- Female shortage

It is easy to explain why children have become scarce in developed countries. In today's advanced economies, many people are not even done with school, much less established in a career, before their fertility (or their partner's) begins to decline.

Then there is the rising cost of raising children. In the US, the direct cost of raising a middle-class child born this year through age 18, according to the Department of Agriculture, exceeds \$200,000—not including college. As women have gained new economic opportunities, the costs in the form of foregone wages and compromised careers can often be even higher.

Meanwhile, although social security systems around the world, as well as private pension plans, depend critically on the human capital created by parents, they offer the same pension benefits, and often more, to those who avoid the burdens of raising a family.

Now the developing world is experiencing the same demographic transition, only at a faster pace. With the rapid growth of megacities, half the world's population now lives in urban areas, where children offer little or no economic benefit to their parents. And like their counterparts in the industrialized world, women in the third world increasingly take jobs, if only in sweatshops, and so they, too, may lose income when they bear children.

What also seems to have a dramatic effect is the availability of television. Remember this guy? **(Slide 21)**

The Carson Effect

Answer:
Karnack the
Magnificent .

Question:
Why did the
American
Baby Boom
end in 1964?



Well it turns out the American Baby Boom ended the year he came on the air.

Seriously, though. Demographers are paying more and more attention these days to how television affects fertility, especially in the Third World

Here's an example of why the case is so compelling. Since 1975, Brazil's fertility rate has dropped by more than half to just 1.9 children per woman. This is not the result of a family planning program, since Brazil has never adopted one. Instead, studies show that births have declined from one region to the next coincident with the introduction of television.

Today, the number of hours that a Brazilian woman spends watching television predicts how many children she will have. What's on Brazilian television? Mostly domestically produced soap operas, called telenovelas. These soaps rarely address reproductive issues directly. Instead, they typically depict wealthy individuals living the high life in big cities. **(Slide 22)**

The Telenovelas Effect



The men are dashing, lustful, power-hungry and unattached. **(Slide 23)**

Images of Womanhood from Brazilian Soap Operas



Xica da Silva



Por Amor

The women are lithesome, manipulative, independent and in control of their own bodies. The few who have young children delegate their care to nannies.

The telenovelas thus reinforce a cultural message that is conveyed as well by many North American and western European cultural exports: that people with wealth and sophistication are people who have at most one or two children.

How much television affects birth rates through such messages, and how much it does so simply by changing how men and women spend their bedtime hours, we can only speculate.

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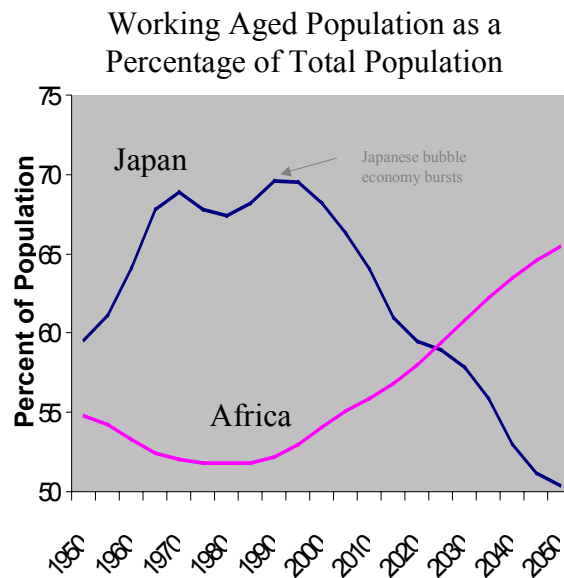
But this much is sure. There is nothing on the horizon to suggest that world's falling fertility rates are going to turn around anytime soon. Indeed, many countries, such as Italy and Spain, have already developed negative population momentum. That is to say, the supply of women of childbearing age has already shrunk so much that even if women start have more children on average, population loss is all but inevitable.

Is that a good thing?

History shows that when people in a country start to have fewer children, this often brings economic benefits, at least at first. **(Slide 24)**

The Demographic Dividend:

- Japan boomed through the end of the 1980s, so long as declining fertility was still increasing the relative size of its working-aged population.
- Meanwhile in Africa, high birth rates shrank the relative size of the working-aged population, and the economy stagnated.



Many economists believe, for example, that falling birth rates helped make possible the economic boom that occurred first in Japan, and then in many other Asian nations, beginning in the 1960s. As the relative number of children declined, so did the burden of their dependency. Meanwhile, as we can see from this slide, a larger and larger share of its population was in its prime, productive years—in contrast to Africa, where the working-aged population was shrinking in relative size during this period. Notice that Japan's long recession began just as continuously falling fertility rates at last caused its working-age population to begin shrinking in relative size.

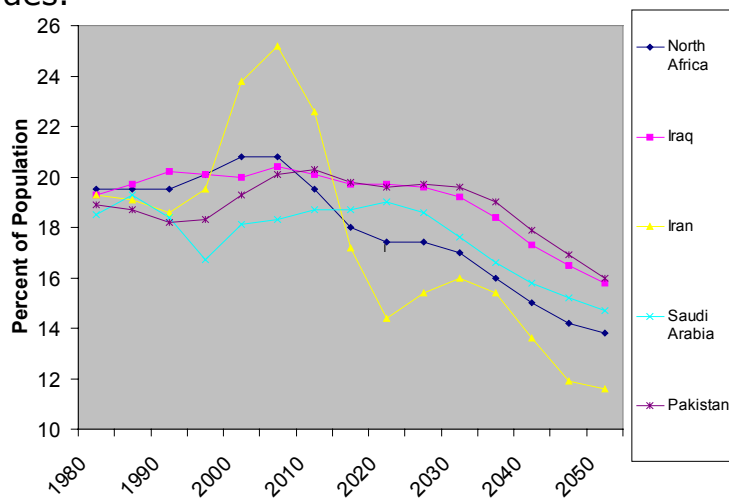
In the 1990s, the middle-aging of the U.S. population, which occurred as the Baby Boom generation aged into its prime productive year, helped enable an economic boom. Today, China's rapid industrialization is also aided by a dramatic decline in the proportion of dependent children in the population.

Over the next decade, the Middle East could benefit from a similar “demographic dividend.” In every single country of that region, birth rates fell during the 1990s, often dramatically. The resulting “middle aging” of the Middle East will ease the overall dependency ratio over the next ten to 20 years, freeing more resources for infrastructure and industrial development.

(Slide 25)

A Mellow Middle East?

Youths, age 15-24, will account for a declining share of population throughout the region in coming decades.



With young adults accounting for a declining share of the population, the appeal of radicalism may also diminish, as middle-aged people concerned with such practical issues as healthcare and retirement savings increasingly dominate Middle Eastern societies. Just as population aging in the U.S. and Europe in the 1980s was accompanied by the decline of the Weather Underground, the Red Brigades, and the Red Army Faction falling birth rates in the Middle East could produce societies far less prone to political violence.

Yet even if declining fertility rates bring a “demographic dividend,” that dividend eventually has to be repaid if the trend continues. At first there are fewer children to feed, clothe and educate, leaving more for adults to enjoy. But soon enough there are fewer productive workers as well, while there are also more and more dependent elderly. Eventually, this leaves the middle generation squeezed to support for more and more dependents.

Consider: **(Slide 26)**

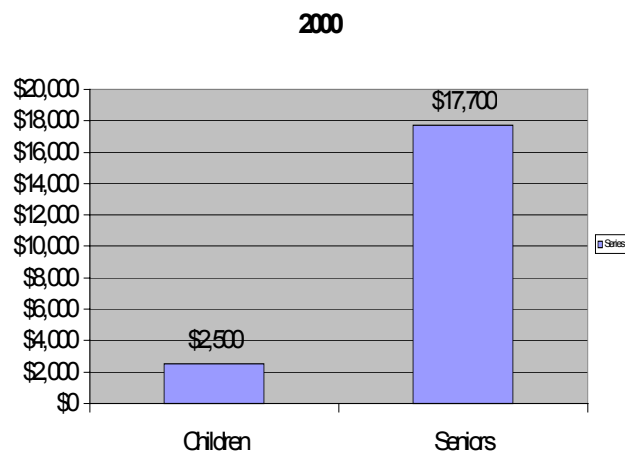
- Today, for every 100 working-aged persons in the world, there are just 67 persons of non-working age (children and the elderly), creating a dependency ratio of .67.

- By 2100, according to UN projections, there will likely be fewer children, but many more elderly, creating a dependency ratio of 1 to 1.
- By 2300, there will be 23 percent more dependents than working-aged people available to support them.

The financial consequences of this trend are compounded by the reality that the elderly consume far more government recourses than do children.

(Slide 27)

Per Capita Federal Spending on Seniors (65 and older) is seven time greater than per capita Federal spending on Children (1-17)

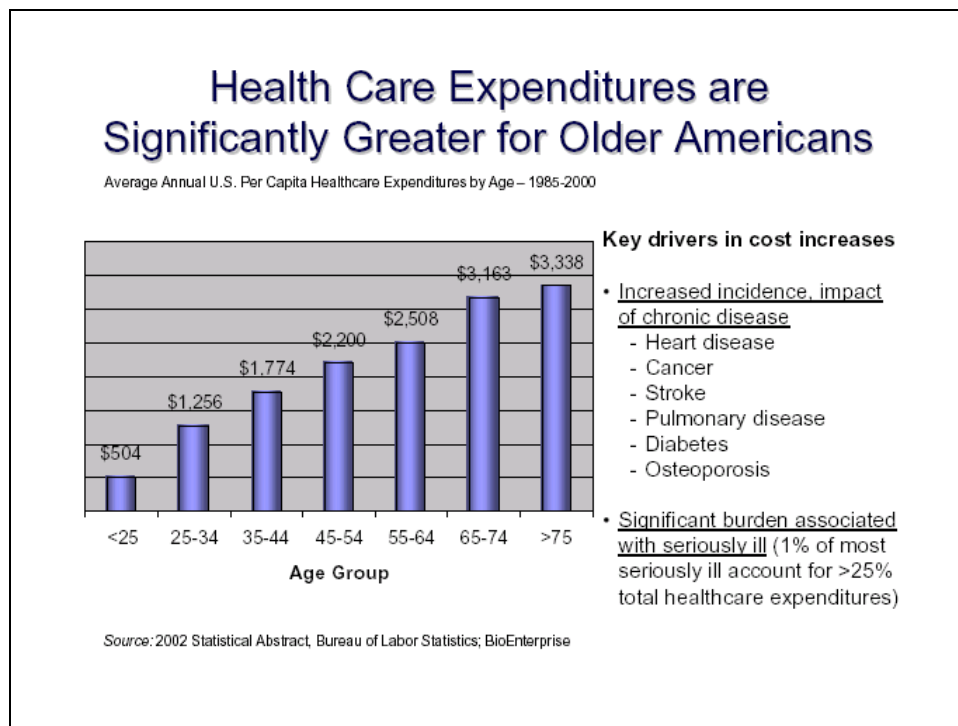


Source: Congressional Budget Office, Federal Spending on the Elderly and Children (July 27, 2000)

In the United States, persons 65 and over received 7 times more in federal spending in 2000 per person than did children under age 18. And this was before the enacted of the hugely

costly prescription drug benefit for seniors. So what happens when there are somewhat fewer children, but many more elders? Yes, we may have to spend less on education. But we will have to spend dramatically more on healthcare and pensions. At all levels of government, including locally financed public schools, we spend at least three times as much per senior as per child.

The cost of health care for the elderly is by far the greatest danger to an aging society. **(Slide 28)**

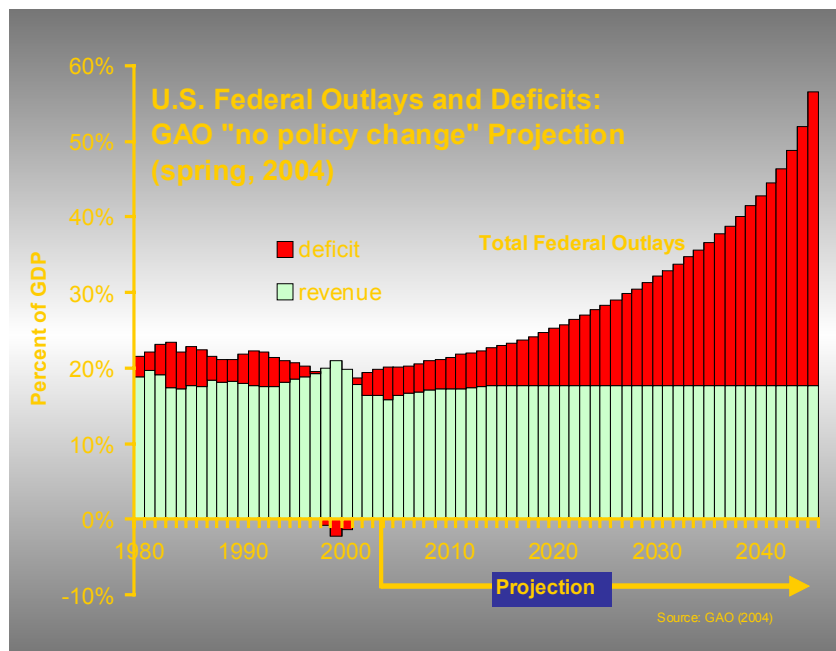


Consumption of health advances steadily with age. Moreover, because medicine does not cure aging, but only ameliorates or puts off some of its symptoms, its application leaves more and more of the elderly population with long term, chronic

conditions, like Alzheimer's, which in turn lead to demand for more health care. Then there is the tendency of aging societies to constantly expand the definition of health, so that conditions that were once seen as normal effects of aging are now re-categorized as diseases requiring medical intervention and coverage by health insurance. Call it the Viagra effect.

Even in the United States, which has a comparatively high fertility rate, population aging causes debilitating liabilities.

Population aging may mellow the tone of a society, but it also eventually place huge new strains on national budgets for pensions and healthcare, while leaving fewer resources available for other purposes, including industrial development and environmental remediation. Population aging is what drives budget projections like this, **(Slide 29)** recently issued by the General Accounting office. It shows compounding deficits for as far as the eye can, mostly caused by compounding cost of retirement benefits for aging baby boomers like myself.

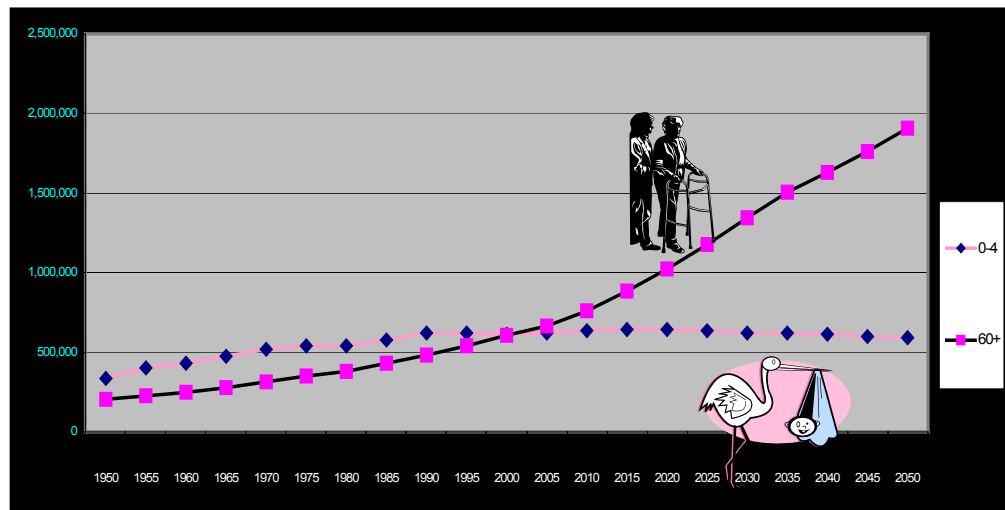


As populations age, there are fewer workers to support each retiree. That has consequences even for the environment. Aging society's will need more and more output per worker, and fast growing economies to pay their mounting debts. That means more intensive use of energy and natural resources than would otherwise be necessary. And it may mean adoption of dangerous technologies, as aging society desperately try make up for shrinking, over-taxed work forces.

Now how exactly does this population aging thing work, and what does it have to do with declining fertility? It does sound a bit paradoxical, but start by dwelling on this fact: **(Slide 30)**

From Now On, Population Growth Comes From More Elders and Middle Aged People, not From More Infants

World Population, Children age 0-4, and Elders 60+

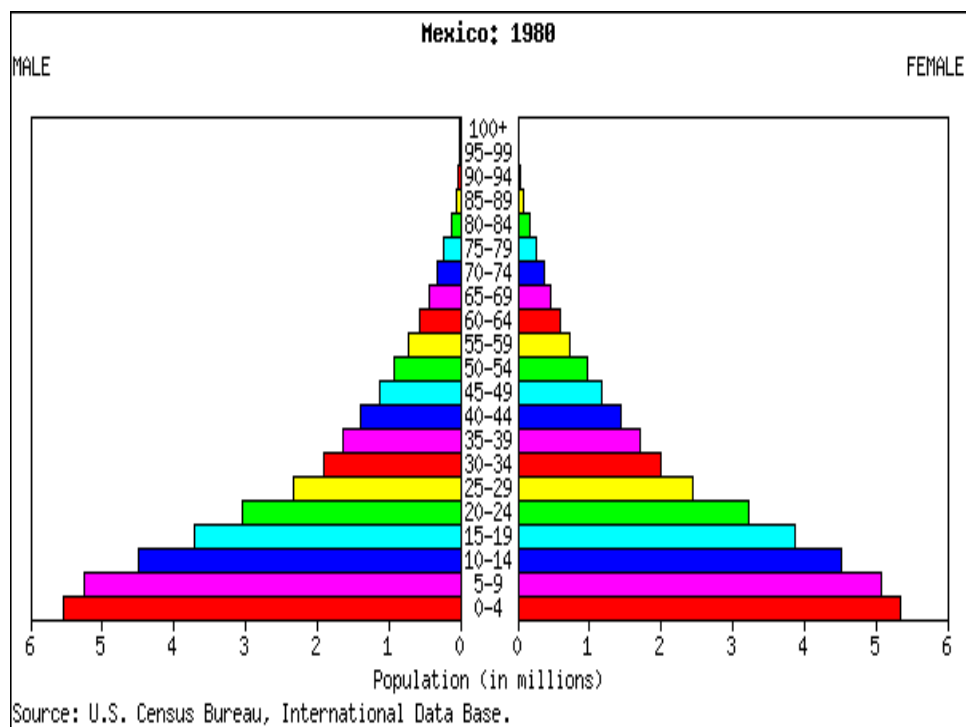


The world still faces substantial population growth, but not because of any increase in the number of people being born. Indeed the world's population of children will be in slow decline in the coming decades, as we can see from this chart. By 2050, there will be 35 million fewer children under age 4 in the world than there are today. But the population of elders will be exploding, by 1.2 billion.

Let's take a closer look at how this works, this time using the example of Mexico. Today, when Americans think of Mexico, they think of televised images of desperate, unemployed youths

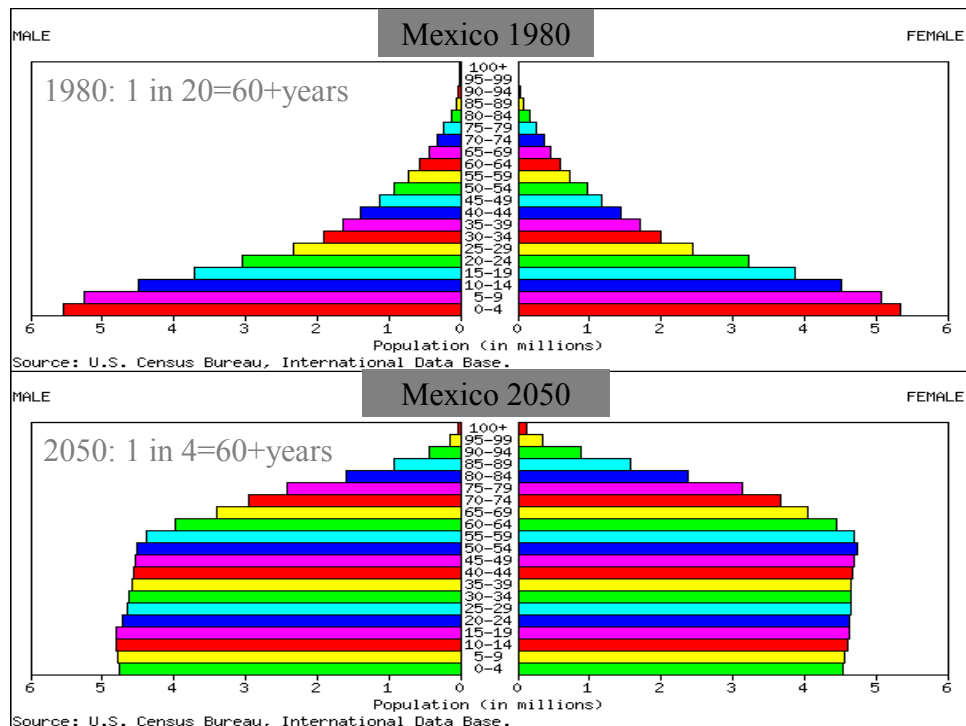
swimming the Rio Grande or slipping through border fences. Yet the fall in Mexican fertility rates has been so dramatic that the country is now aging at a far more rapid pace than the United States and is destined to do so for at least the next two generations.

Here's what that process looks like. **(Slide 31)**



Start with this illustration of what Mexico's age structure looked like in 1980. On the left we have males, the right females. At the bottom of the chart we have the youngest members of the population, and at the top, the oldest. Mexico in 1980 had a typical population structure, with infants and toddlers constituting the largest age group.

Now let's scroll into the future. (Slides 32-46) We see that Mexico's population has gone from something looking like a triangle, to something more like a rectangle, which a much higher proportion of its population concentrated at older ages. (next slide)



Specifically:

- In 1980, only about out 20 people in Mexico was over 60
- Forty five years from now, one out of four Mexican will be that old.
- Meanwhile, children under age 15 will account for just 17 percent 2050, down from 42 percent in 1980. There will be more elders than children in Mexico.

Perhaps more startling, the absolute number of children in Mexico is already falling. By mid-century, on current trends, there will be nearly 7 million fewer children in Mexico than there were in 1980. Just ten years from now, the supply of young adults in Mexico will also begin to fall. By 2050, half of Mexico's population will be over age 42, giving it a higher median age than is now expected for the U.S.

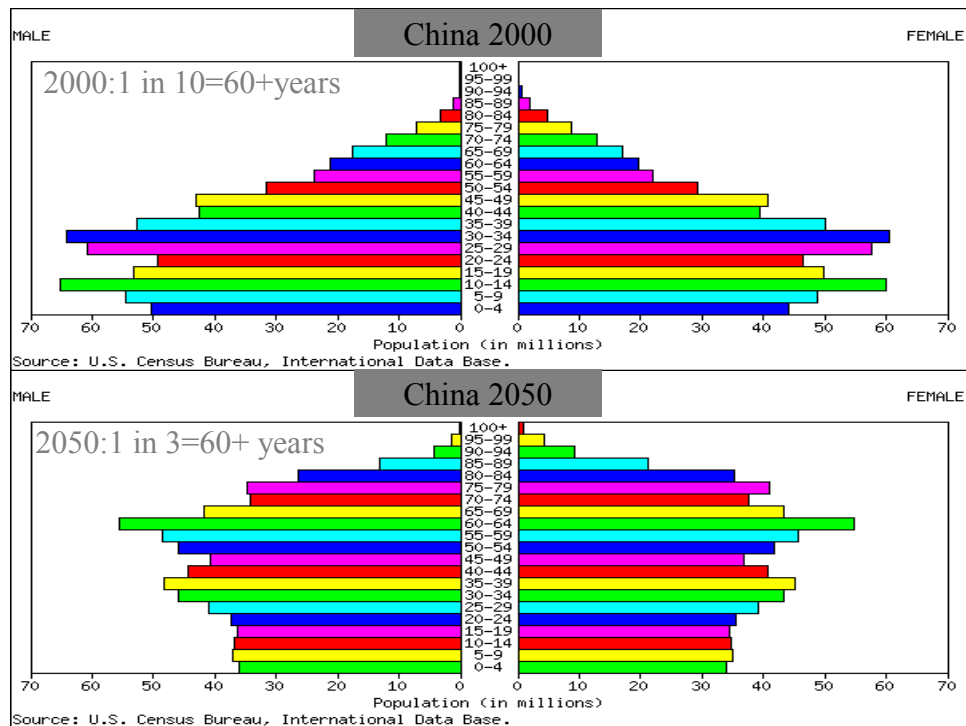
What are the implications of this trend? Well, for the United States, it means that immigration from Mexico may well disappear. If this seems overstated, consider the example of Puerto Rico. When most Americans think of Puerto Rico, they think of a sunny, over-crowded island that sends millions to immigrants to the West Side of New York or to Florida. Yet with a fertility rate well below replacement level and a median age 32, Puerto Rico no longer provides a net flow of immigrants to the mainland—this despite an open border and a lower standard of living.

For Mexico itself, the transition to lower fertility may well bring an initial demographic dividend, as it has elsewhere. But in the longer run, Mexico will bear a burden for supporting the elderly that it may well not be able to bear. Notes Mexican author, Enrique Gonzalez Tiburcio, in his book, *The Mexican*

Economy in Danger: “Picture a scenario in which almost 23 million people are over the age of 60, most of them have few descendents and many of them scant savings, no job, no retirement coverage scheme. The results can hardly be described as anything but catastrophic.”

Countries like France and Germany got a chance to get rich before they got old. Now countries like Mexico –as well as India, China and most of the Middle East—are growing old before they get rich.

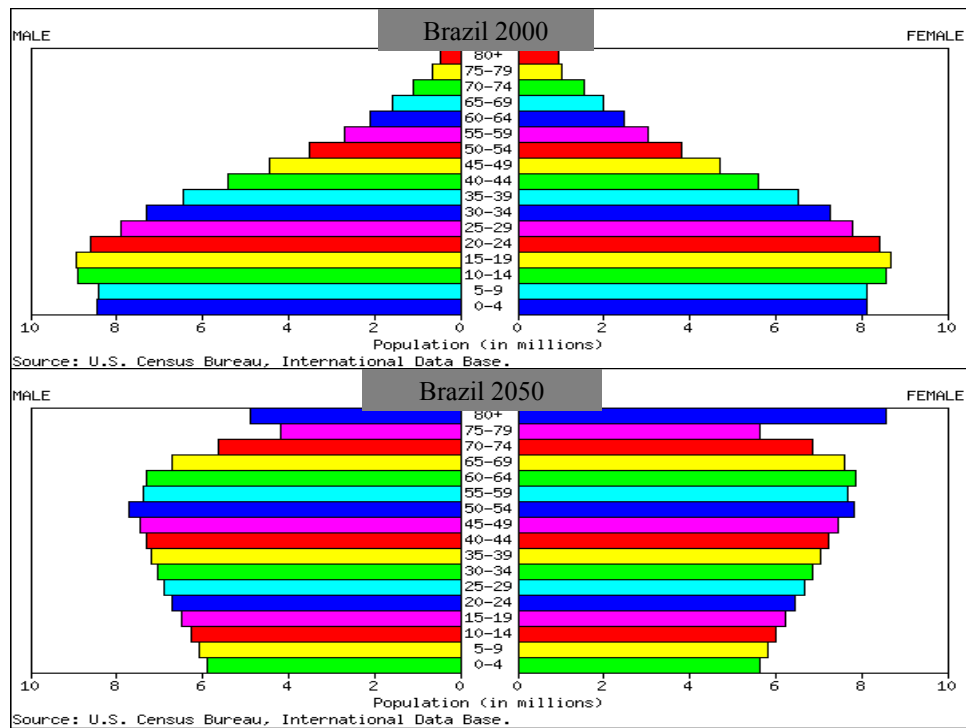
I dwell on Mexico only because it is nearby and important to us, not because it is the worse case. Take a look here at the age structure of China in 2050. **(new slide)**



By mid-century, nearly one of three people in China will be over age 60, compared to 10 percent today. By 2020 its working age population will be in absolute decline. Between 2030 and 2050, its total population will shrink by more than 50 million.

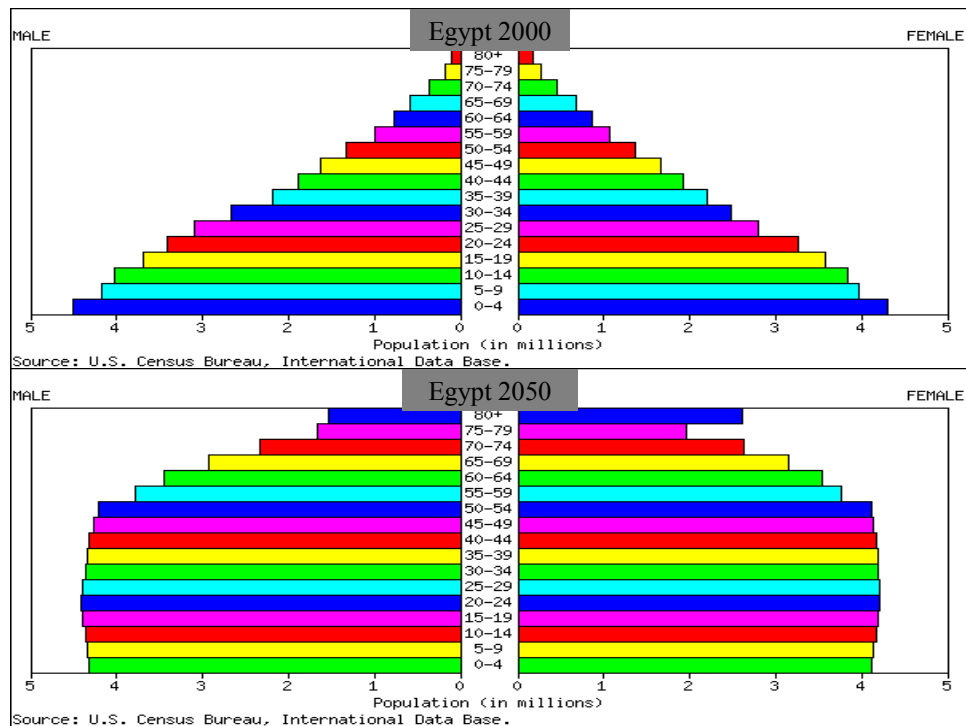
Adding to China's falling fertility is a radical imbalance between the sexes, due to selective abortion of females. Today in China, there are nearly 120 boys for every 100 women, and the trend is getting worse. The similar unnatural gender imbalance exist is South Korea, Taiwan, Hong Kong, Singapore and much of India.

Brazil's fertility collapse is also causing rapid population aging (**Slide 48**)



The last time most people bothered to look, Brazil was a youthful nation whose most pressing social problem appeared to be a growing army of glue-sniffing street urchins. But a report by the Ministry of Social Security concludes that if the government does not take urgent action, “we may be faced in the coming years with the problem of street elders without having solved the problem of street children”.

(Slide 49)

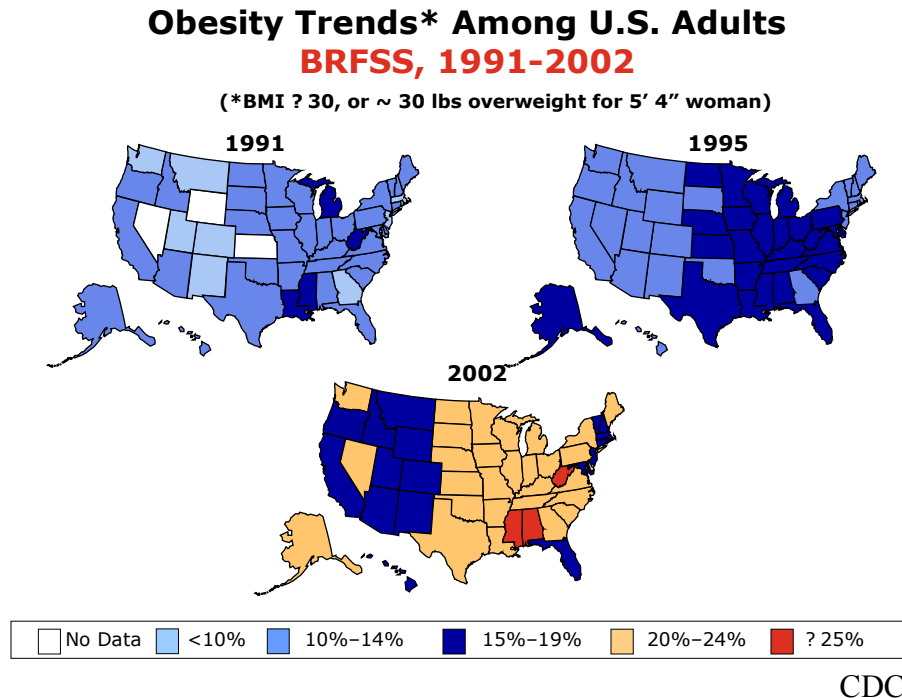


Even Egypt is going gray. In Egypt, the population of small children will begin falling within 10 years, given current fertility trends. By mid-century there will be roughly 100,000 fewer children under 5 than there are today. But the population of seniors will grow by 18.5 million.

Now a lot of people, when they learn about these trends, say there is no problem. People will just have to work longer. But that's too facile. Yes, the average age of retirement will go up. It's already going up, slightly, in the U.S. But in many countries, where manual labor is the norm, people are worn out by the time they turn sixty. And in affluent countries like the U.S., current declines in the general fitness of the population imply that a very large percentage of the next generation elders

is going to be beset by chronic conditions.

(Slide 50)



The pandemic of obesity in the US and Europe, as well as the spread of sedentary lifestyles, threaten to create a new generation of elders that will be more prone to chronic disease and disability, and more costly to support. As recently as 1991, there wasn't a single state in which 20 percent of the population was overweight. Today, there are 32. Disability rates are already rising among the young and middle aged, and gains in life expectancy have ceased among the elderly, presumably because of the increasingly lethal American lifestyle. Researchers estimate that obesity will cause a 10-20 per cent increase in the demand for nursing homes over what would

otherwise occur from mere population ageing, and a 10-15 per cent increase in the cost of Medicare.

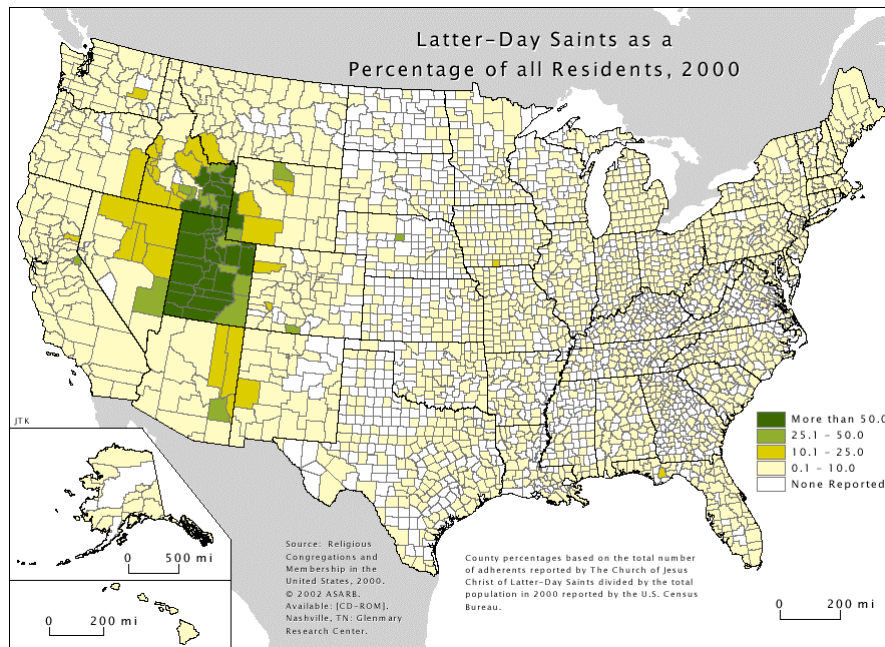
This dynamic suggests one of the many ways in which population ageing may become a vicious cycle. As the cost of supporting the elderly has risen, governments have already responded by raising taxes on younger workers, and will be compelled to do so much more often in the future. Younger workers, in turn, find not only that the economy requires them to have far higher levels of education than were demanded of their parents, but that they must also pay higher taxes to support the growing ranks of the elderly. This leaves them less able to afford children, thus causing a new cycle of population ageing.

So where will the children of the future come from? Some biologists speculate that modern human beings have created an environment in which the “fittest”, or most successful, individuals are precisely those who have few, if any, offspring. As more and more humans find themselves living under conditions in which children have become costly impediments to success, those who are well adapted to this new environment will tend not to reproduce themselves. And many others who are not so successful will imitate them. **(Slide 51)**



“If your parents never had children, chances are you won't, either.”
--Dick Cavett

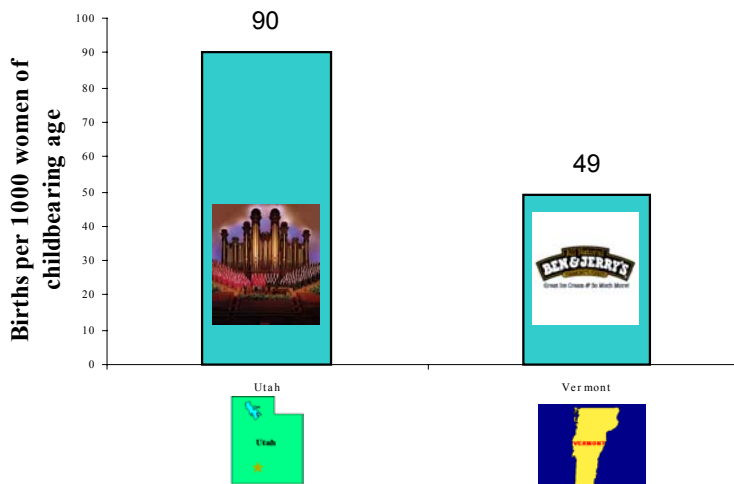
But this hardly implies extinction. Some people will still have children. They just won't be people highly motivated by material concerns or secular values. Disproportionately, the parents of the future will be people who are at odds with the modern environment – people who either “don't get” the new rules of the game that make large families a liability or who, out of religious or chauvinistic conviction, reject the game altogether. In short people like Mormons. **(Slide 52)**



In Utah, where 69 per cent of all residents are registered members of the Church of Jesus Christ of Latter-Day Saints, fertility rates are the highest in the nation. **(Slide 53)**

There is a close connection between religious conviction and fertility

Birthrates in Utah and Vermont



Utah annually produces 90 children for every 1,000 women of childbearing age. By contrast Vermont – the only state to send a socialist to Congress and the first to embrace gay unions – produces only 49.

There is a strong relationship between religious conviction and family size.

In the U.S., for example, fully 47 per cent of people who attend church weekly say that their ideal family size is three or more children. By contrast, only 27 per cent of those who seldom attend church want three or more kids

And how do suppose the blue zone states compare to the red zone states in their fertility? In states that voted for God-fearing, born-again George W. Bush, fertility is more than 9 percent higher than in states that voted for the secular, technocratic Al Gore.

So does the future belong to those who believe they are commanded by a higher power to procreate? On current trends, the answer appears to be yes. Once, demographers believed that some law of human nature would prevent fertility rates from remaining below replacement levels within any healthy population for more than brief periods. After all, don't we all

carry the genes of our Neolithic ancestors, who one way or another managed to produce enough babies to sustain the race? Yet today we can see that no law of nature ensures that human beings, living in free and developed societies, will create enough children to reproduce themselves. Japanese fertility rates have been below replacement levels since the mid-1950s, while the last time Europeans created enough children to reproduce themselves was the mid-1970s.

Current demographic trends work against modernity in another way as well. Not only is the spread of urbanization and industrialization a major cause of falling fertility, it is a major cause of so-called “diseases of affluence,” such as overeating, lack of exercise and substance abuse, which leave an ever-higher percentage of the population stricken by chronic conditions. Those who reject modernity would thus seem to have an evolutionary advantage, whether they are clean-living Mormons, or Muslims who remain committed to comparatively large families, or members of emerging sects and national movements that combine pro-natalism with anti-materialism.

How can secular societies avoid population loss and decline?
(Slide 54)



Are modern women really too distracted, or self-actuated, to have children?



The problem is not, as the pop culture often supposes or asserts, that women have become too busy, self-absorbed, or self-assertive to want kids, though some individuals of course answer to those descriptions. Instead, surveys show that American and European women now in their forties intended to produce more children than they did. Indeed, as we can see in this chart, **(Slide 55)**, if women in most European countries had produced their ideal number of children, the continent would face no prospect of population loss.

Number of children wanted by U.S and European women born in 1960, and how many they actually had.

	Number of children wanted	Completed fertility 1960 cohort
Austria 1996	2.0	1.69
Belgium 1991–92	2.1	1.84
Finland 1992	2.2	1.95
France 1994	2.3	2.10
Germany 1992	2.0	1.65
Hungary 1992–93	2.1	2.02
Italy 1995–96	2.1	1.65
Netherlands 1993	2.1	1.85
Norway 1988–89	2.2	2.09
Poland 1991	2.3	2.18
Portugal 1997	2.1	1.90
Spain 1994–95	2.2	1.75
Sweden 1992–93	2.5	2.04
Switzerland 1994–95	2.2	1.77
United States 1995	2.3	2.02

John Bongaarts is Vice President, Policy Research Division, Population Council., “The End of the Fertility Transition in the Developed World,” Working paper 152.

Today, in the United States, only four percent of adults say they will be satisfied if they never have children, according to a recent Gallup poll. And among those who have reached middle age without producing children, the vast majority express regret.

So there is a latent demand for children that is not being met. Why? The problem is that, even as modern societies demand more and more investment in human capital, this demand threatens its own supply. The clear tendency of economic development is towards a more knowledge-based, networked economy, in which decision-making and responsibility are increasingly necessary. **(Slide 56)** So children often remain economically dependent on their parents well into their own

Boomerang kids: Today, children often remain economically dependent on their parents well into their own childbearing years.



According to Census Bureau data, 12.5 percent of men, and 7.9 percent of women between the ages of 25 and 34 live with their parents—double the rate of 50 years ago.

childbearing years because it takes that long to acquire the panoply of technical skills, credentials, social understanding and personal maturity that jobs increasingly now require.

For the same reason, many couples discover that, by the time they feel they can afford children, they can no longer produce them, or must settle for just one or two.

Meanwhile, even as ageing societies become increasingly dependent on the human capital that parents provide, parents themselves get to keep less and less of the wealth they create by investing in their children. Employers make use of the skills parents endow in their children, but offer parents no

compensation. Governments also depend on parental investment to produce the next generation of taxpayers, but, with rare exceptions, give parents no greater benefits in old age than non-parents.

What can be done? Minimally, secular societies need to rethink how they go about educating young adults and integrating them into the workforce, so that tensions between work and family are reduced. Education should be a lifetime pursuit, rather than crammed into the prime reproductive years. There should also be many more opportunities for part-time and flextime employment, and such work should offer full pension benefits, as well as meaningful career paths.

Governments should also relieve parents of having to pay into social security systems. By raising and educating their children, parents have already contributed hugely to these systems by providing essential human capital. Requiring parents to contribute payroll taxes as well is not only unfair, but also imprudent for societies that are already consuming more human capital than they produce.

In the long run, however, nothing may reverse falling fertility so long as the family continues to lose its economic basis. Put alternatively, those cultures that succeed in avoid population loss and eventual extinction will be those that once again organize their economies around family enterprise—family farms or businesses in which all generations play a productive role, and have an economic incentive to invest in one another.

(Slide 57)

Is the Future Medieval?



One vision of such a future might look like this: A future once again organized around household production and kinship networks. Grandparents look out for the young, until the young are old enough to look out for them, while the middle generation heads the family enterprise as best it can. Unable to

meet its pension and healthcare promises, the state withers away, and so does the formal economy. People have children because there is no one else who is going to take care of them in old age, and because, in the new, more primitive economic order, children can once again play useful economic roles while still young.

Such a future may well have many high tech features. Just as women were once paid by the piece to weave in their cottages, we may well find more and more stay-at-home moms (and dads) busy doing customer service or data-entry work from home with their computers. Fuel cells or solar power may once again make home energy production the norm, while biotechnology allows many more families to produce their own, genetically modified food. But the essential bases of production will still be the biological family, and to that extent it will still have many medieval features, including suppression of individualism, a loss of mass production efficiency, and quite likely a return of patriarchy.

In his 1968 bestseller, *The Population Bomb*, Paul R Ehrlich warned: “The battle to feed all humanity is over. In the 1970s the world will undergo famines – hundreds of millions of people are going to starve to death in spite of any crash programs embarked upon now.” Fortunately, Ehrlich’s prediction proved

wrong, perhaps in part because so many people believed it would come true. But having averted the perils of overpopulation, the world now faces the unexpected challenge of population ageing and decline. We are in many ways blessed to have this problem instead of its opposite, but a problem it still is.