

Our Origins Are Our Destiny

Video transcript

[TedxIndianaUniversity logo and words appear: ALL TOO HUMAN]

[Image of Bob Walker and words appear: BOBWALKER]

[IUSA, IU Grand Challenges, Hutton Honors College, Indiana University Foundation logos and words appear: IU Research]

Bob Walker speaks: Auguste Comte, widely regarded as the father of sociology,

[PowerPoint slide appears: Image of Auguste Comte]

once proclaimed that demography is destiny. Demography may not be destiny, but population matters. Indeed, population trends have played and continued to play a critical role in the shaping of human destiny.

[PowerPoint slide appears: Image of the evolution of *Homo sapiens*]

Scientists believe that modern humans, *Homo sapiens*, evolved and were born about 250,000 years ago in Africa's Great Rift Valley, and it was there for most of our existence that we raised our children, we survived as hunters and gatherers. We lived in small, kinship groups of about 100 or 200 people, and when a kinship group grew too large, or food too scarce, the group would splinter, and one group would go off in search of new food.

[PowerPoint slide appears: Image of Africa's Great Rift Valley]

This is where we started, but as a result of the process of division and migration, about 70,000 years ago, the first modern humans left Africa, and they departed for Asia and Europe. When they arrived in Asia and Europe, they found themselves in competition with our distant human relatives, the Neanderthals in Europe and *Homo erectus* in Asia.

Humanity was on the move. 50,000 years ago, the first modern humans arrived in Australia. 15,000 years ago, the first humans crossed over into North America, and in a matter of just a couple thousand years, they reached the southernmost point of South America. In evolutionary terms, we were the fittest of the fit, the rock stars of the Stone Ages.

[PowerPoint slide appears: Image of desert dunes as sun rises]

We could traverse deserts.

[PowerPoint slide appears: Image of mountains]

We could climb mountains.

[PowerPoint slide appears: Image of river flowing through boulders]

We could ford rivers. There was no stopping us. 12,000 years ago, at the end of the last ice age, we were a global presence, and if we could go back in time to that period, 12,000 years ago, and travel around the Earth, say at an altitude of 10,000, 20,000 feet, you would find no traces of humanity, because we were still living in those small kinship groups. We were still hunters and gatherers, and there were no pyramids, no cities, no great monuments. We were just simply there living in harmony with nature, but in many parts of the world at that time, there was not enough food.

Necessity is the mother of invention, and we hungry *Homo sapiens* came up with the mother of all inventions. Agriculture.

[PowerPoint slide appears: Image of river winding through lush green vegetation]

This is what the world looked like before the Neolithic revolution. Pristine and clean. Then everything changed with the Neolithic revolution. The most important change was that we could accumulate for the first time in our history large food surpluses, and those small kinship groups could not protect the food surpluses and the farms. Kinship groups gave way to fortified cities, and these fortified cities changed everything, including the fact when they came in competition for resources, it led to organized warfare and armies. This same competition between these fortified cities and city-states led to a revolution, really, in how we did it.

[PowerPoint slide appears: Map of The Fertile Crescent]

Right here in the Fertile Crescent, between the Nile and the Tigris Rivers, the first great civilizations arose as a result of the farming, and our ability to produce food.

[PowerPoint slide appears: Image of the Great Sphinx guarding Egyptian pyramids]

Fortified cities led to these great civilizations.

The civilizations were from Sumeria, to Egypt, to India, to China, and beyond, but these early civilizations fell, population still grew. New civilizations arose,

including the ancient classical Greeks. They found that the stony soil of the Greek isles and the Peloponnesian Peninsula did not produce enough food for an expanding population, so they set sail looking for fertile lands, and they settled in North Africa, in Sicily, and in the Italian Peninsula, and population continued to grow.

[PowerPoint slide appears: Aerial image of the ancient city of Rome]

By the first century A.D., at the time of the Roman Empire, world population ... This is the ancient city of Rome. World population had risen to 300 million. Remember we were at five million? Now we're at 300 million, and population continued to grow because agriculture continued to expand. By 1800, we reached a landmark in two respects. First, population reached for the first time the one billion mark.

[PowerPoint slide appears: Image of smokestacks and factories during the industrial revolution]

And it came at a time of the Industrial Revolution, and the Industrial Revolution, like the agricultural or Neolithic revolution, was transformative.

It raised substantially standards of living in the world, but it also dramatically increased our impact on the planet. By 1900, the population was 1.6 billion, and thanks to advances in medicine, in nutrition, and in agriculture, population by 1999 rose to six billion. Population in the twentieth century nearly quadrupled, but during that time period, fertility rates actually worldwide dropped. Slowly at first, but then it picked up critical momentum with the introduction of the pill.

[PowerPoint slide appears: Image of a pair of cupped hands holding a variety of multi-colored pills of various sizes and shapes]

In 1950, women had on average five children. Today, they have an average two and a half children, but despite the decline in fertility, population is still rising, and the reason why is there's a very large, the largest generation ever of young people entering their prime reproductive years, so population is still growing. Five years ago, world population reached seven billion, and next year, it reaches 7.5 billion. If fertility rates were to remain constant, world population by the end of this century could be 27 billion.

Fertility rates will continue to decline. Demographers currently project that world population will reach 10 billion by mid-century, and that by the end of the century, we'll top out at 11 billion. The last hundred years has been what we call the demographic transition, historic and unprecedented. We moved from high fertility and high mortality down to low fertility and low mortality. That transition has not been uniform. There is today what demographers call a

demographic divide in the world, between countries that have moved to low fertility and countries that remain at high fertility. What does this mean for human destiny? What does it mean for us? Let's start looking at Europe, North America, East Asia, and those parts of the world, other parts of the world, where women on average today have two children or less.

[PowerPoint slide appears: Image of smoke stacks belching smoke surrounded by a sea of trash]

The first thing that should come to mind is it's good for the planet. Fewer people consuming fewer resources means fewer carbon emissions. That's important.

[PowerPoint slide appears: Image of smoke rising out of a forested jungle, destroying the vegetation]

It also means less environmental degradation.

[PowerPoint slide: Image of a glacier melting into the sea]

And it means that there's less pressure on our shrinking ecological assets, our forests, our wetlands, our coral reefs, our lakes, our rivers, our glaciers, and that's a good thing. In addition to that, and this may surprise you, the population, stabilization, and decline that we see going on in emerging economies is a good thing. Yes, there are challenges to be sure to be associated with an aging population. Social Security and Medicare, for example, but economists also tell us that there is a silver lining here, and the silver lining is this, that as population declines, or stabilizes, we get a shrinking labor force. A shrinking labor force will actually help to boost real wages because in a tight labor market, that's what happens. Real wages rise, and that will help to reduce economic inequality in the world, certainly in the advanced and developing economies.

There's another reason why it's important, and that is that it will help to keep unemployment rates low. Think about it.

A tight labor market, experts warn that about half the jobs in the United States today could be in the near future eliminated by automation, including automated cars.

[PowerPoint slide appears: Image of Google automated car]

What about the other side of that demographic divide, where fertility rates are still high? Population growth is a challenge multiplier.

[PowerPoint slide appears: Image of wilting corn stalks under gray stormy skies]

In the last 20 years, the world has seen some very significant progress in reducing severe poverty, and less so with respect to hunger, but even there we've made some progress. The vast majority of that progress has occurred in countries with low fertility. In countries with high fertility, progress has been elusive. Let me give you an example.

[PowerPoint slide appears: Image of straw huts in a barren, arid area of Niger]

Niger. Niger is a country in West Africa. It happens to be one of the very poorest countries in the world, and is also an arid country, and subject to severe drought, and heavily dependent on external food aid for its survival.

Here's the demographic challenge. Women in Niger today have on average six to seven children. That's what's been done for centuries, but today children in Niger, thankfully, now live to adulthood for the most part. Now mortality's been reduced. Here's what happens demographically. In 1951, the year that I was born, the population of Niger was 2.5 million. Today, it's 20 million, and by mid-century, in 34 years, it will be 70 million. Demographers project even with declining fertility rates, that by the end of this century, Niger will have 200 million people. Unless fertility rates drop faster than anticipated, we will never win the fight against hunger and poverty in Niger. Niger is not alone. There are many other countries. Somalia, South Sudan, Afghanistan, Yemen, Democratic Republic of Congo. It's a long list, but here is the important thing to remember. If in these countries, girls receive the same education as boys, if child-marriage practices are eliminated, and if we can empower girls and women and give them access to family planning, fertility rates in these countries will fall far faster than anticipated.

We can and still will declare victory eventually against hunger and severe poverty. If we can at the same time keep fertility rates low here in the emerging and developed economies, we can reduce the stress on our shrinking environmental assets. Maybe even in the long term, we can, as our ancient ancestors did, live in harmony with nature. There are some leading scientists who are concerned, including Stephen Hawking,

[PowerPoint slide appears: Image of Stephen Hawking]

who are concerned that we are on the path to extinction. The fear is that because of rising population growth and increasing consumption of resources, that this will lead to ecological ruin, and to war, and to conflict. Demographic trends are not destiny, and if we can complete sooner than expected the

demographic transition that began 100 years ago, there is indeed still time and still hope for humanity.

[PowerPoint slide appears: Image of a person with arms outstretched standing on the edge of a rocky coastline overlooking the sea as the sun sets]

We can look forward to a future of peace, prosperity, and most importantly, a sustainable world. Thank you very much.

[Audience claps and Bob Walker exits stage]

[Logo words appear: ALL TOO HUMAN]

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