

How Many People Have Ever Lived on Earth?

by Carl Haub

“How Many People Have Ever Lived on Earth?” is the most requested PT article. It first appeared in February 1995.

The question of how many people have ever lived on Earth is a perennial one among information calls to PRB. One reason the question keeps coming up is that somewhere, at some time back in the 1970s, a now-forgotten writer made the statement that 75 percent of the people who had ever been born were alive at that moment.

This factoid has had a long shelf life, even though a bit of reflection would show how unlikely it is. For this “estimate” to be true would mean either that births in the 20th century far, far outnumbered those in the past or that there were an extraordinary number of extremely old people living in the 1970s.

If this estimate were true, it would indeed make an impressive case for the rapid pace of population growth in this century. But if we judge the idea that three-fourths of people who ever lived are alive today to be a ridiculous statement, have demographers come up with a better estimate? What might be a reasonable estimate of the actual percentage?

Any such exercise can be only a highly speculative enterprise, to be undertaken with far less seriousness than most demographic inquiries. Nonetheless, it is a somewhat intriguing idea that can be approached on at least a semi-scientific basis.

And semi-scientific it must be, because there are, of course, absolutely no demographic data available for 99 percent of the span of the human stay on Earth. Still, with some speculation concerning prehistoric populations, we can at least approach a guesstimate of this elusive number.

Prehistory and History

Any estimate of the total number of people who have ever been born will depend basically on two factors: (1) the length of time humans are thought to have been on Earth and (2) the average size of the human population at different periods.

Fixing a time when the human race actually came into existence is not a straightforward matter. Various ancestors of *Homo sapiens* seem to have appeared at least as early as 700,000 B.C. Hominids walked the Earth as early as several million years ago. According to the United Nations’ *Determinants and Consequences of Population Trends*, modern *Homo sapiens* may have appeared about 50,000 B.C. This long period of 50,000 years holds the key to the question of how many people have ever been born.

At the dawn of agriculture, about 8000 B.C., the population of the world was somewhere on the order of 5 million. (Very rough figures are given in the table on page 4; these are averages of an estimate of ranges given by the United Nations and other sources.) The slow growth of population over the 8,000-year period, from an estimated 5 million to 300 million in 1 A.D., results in a very low growth rate—only 0.0512 percent per year. It is difficult to come up with an average world population size over this period. In all likelihood, human populations in different regions grew or declined in response to famines, the vagaries of animal herds, hostilities, and changing weather and climatic conditions.

In any case, life was short. Life expectancy at birth probably averaged only about 10 years for most of human history. Estimates of average life expectancy in Iron Age France have been put at only 10 or 12 years. Under these conditions, the birth rate would have to be about 80 per 1,000 people just for the species to survive. Today, a high birth rate would be about 45 to 50 per 1,000 population, observed in only a few countries of Africa and in several Middle Eastern states that have young populations.

Our birth rate assumption will greatly affect the estimate of the number of people ever born. Infant mortality in the human race’s earliest days is thought to have been very high—perhaps 500 infant deaths per 1,000 births, or even higher. Children were probably an economic liability among hunter-gatherer societies, a fact that is likely to have led to the practice of infanticide. Under these circumstances, a disproportionately

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A Semi-Scientific Population Estimate *Continued from page 3*

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Year	Population	Births per 1,000	Births Between Benchmarks
50,000 B.C.	2	—	—
8000 B.C.	5,000,000	80	1,137,789,769
1 A.D.	300,000,000	80	46,025,332,354
1200	450,000,000	60	26,591,343,000
1650	500,000,000	60	12,782,002,453
1750	795,000,000	50	3,171,931,513
1850	1,265,000,000	40	4,046,240,009
1900	1,656,000,000	40	2,900,237,856
1950	2,516,000,000	31-38	3,390,198,215
1995	5,760,000,000	31	5,427,305,000
2002	6,215,000,000	23	983,987,500
Number who have ever been born			106,456,367,669
World population in mid-2002			6,215,000,000
Percent of those ever born who are living in 2002			5.8

Source: Population Reference Bureau estimates.

large number of births would be required to maintain population growth, and that would raise our estimated number of the “ever born.”

By 1 A.D., the world may have held about 300 million people. One estimate of the population of the Roman Empire, from Spain to Asia Minor, in 14 A.D., is 45 million. However, other historians set the figure twice as high, suggesting how imprecise population estimates of early historical periods can be.

By 1650, world population rose to about 500 million, not a large increase over the 1 A.D. estimate. The average annual rate of growth was actually lower from 1 A.D. to 1650 than the rate suggested above for the 8000 B.C. to 1 A.D. period. One reason for this abnormally slow growth was the Black Death. This dreaded scourge was not limited to 14th-century Europe. The epidemic may have begun about 542 A.D. in western Asia, spreading from there. It is believed that half the Byzantine Empire was destroyed in the sixth century, a total of 100 million deaths. Such large fluctuations in population size over long periods greatly compound the difficulty of estimating the number of people who have ever lived.

By 1800, however, world population had passed the 1 billion mark, and it has continued to grow since then to the current 6 billion.

Guesstimates

Guesstimating the number of people ever born, then, requires selecting population sizes for dif-

ferent points from antiquity to the present and applying assumed birth rates to each period (see table). We start at the very, very beginning—with just two people (a minimalist approach!).

One complicating factor is the pattern of population growth. Did it rise to some level and then fluctuate wildly in response to famines and changes in climate? Or did it grow at a constant rate from one point to another? We cannot know the answers to these questions, although paleontologists have produced a variety of theories. For the purposes of this exercise, it was assumed that a constant growth rate applied to each period up to modern times. Birth rates were set at 80 per 1,000 per year through 1 A.D. and at 60 per 1,000 from 2 A.D. to 1750. Rates then declined to the low 30s by the modern period. (For a brief bibliography of sources consulted in the course of this alchemy, see “For More Information.”)

This semi-scientific approach yields an estimate of about 106 billion births since the dawn of the human race. Clearly, the period 8000 B.C. to 1 A.D. is key to the magnitude of our number, but, unfortunately, little is known about that era. Some readers may disagree with some aspects—or perhaps nearly all aspects—of the table, but at least it offers one approach to this elusive issue. If we were to make any guess at all, it might be that our method underestimates the number of births to some degree. The assumption of constant population growth in the earlier period may underestimate the average population size at the time. And, of course, pushing the date of humanity’s arrival on the planet before 50,000 B.C. would also raise the number, although perhaps not by terribly much.

So, our estimate here is that about 5.8 percent of all people ever born are alive today. That’s actually a fairly large percentage when you think about it. ■

For More Information:

Nathan Keyfitz, *Applied Mathematical Demography* (New York: John Wiley and Sons, 1976).

Judah Matras, *Population and Societies* (Englewood Cliffs, NJ: Prentice-Hall, 1973).

Colin McEvedy and Richard Jones, *Atlas of World Population History* (New York: Facts on File, 1978).

United Nations, *Determinants and Consequences of Population Trends* (New York: United Nations, 1973).

United Nations, *World Population Prospects as Assessed in 1963* (New York: United Nations, 1966).

United Nations, *World Population Prospects: The 2000 Revision* (New York: United Nations, 2001).

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