

WORLD POPULATION HISTORY

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1. Introduction

In 1900, global population had reached a total of 1.6 billion, a figure achieved after approximately 200,000 years of humankind's history. Reaching such a figure represented the species' victory over many scourges such as famines, disease and plagues. At times, it must have seemed unlikely that it would survive at all. But by 2000, the figure of 1.6 billion had exactly reversed to 6.1 and, by 2008, population continued to grow to 6.7 billion. This phenomenal spurt of growth has been called many things, such as the population "explosion" or "bomb" and, in truth, it has wrought far-reaching changes in the human condition. But how did such a situation come about? What changed in the last 100 or so years compared to the previous 200,000?

For most of its existence, humankind lived the life of a hunter-gatherer, a precarious and treacherous existence. Some 10,000 years ago, there is evidence that sedentary agriculture appeared in various parts of the world, particularly in the Middle East and the domestication of farm animals followed. Such developments must have made some contribution to longer lives, but even that could be quickly wiped out by epidemics of smallpox and plague. Some estimates of life expectancy at birth have surmised that it was about 30 years in ancient Greece but we might also wonder if that were based on

burial records of the upper classes. Life tables for 18th Century Europe suggest a life span of 35 to 40 years. While such estimates are rough at best, they do illustrate the brevity of life throughout history.

	1	1000	1800	1900	2007	1900/1800	2007/1900
Africa	17	33	70	110	944	1.6	8.6
Asia	115	184	622	957	4,010	1.5	4.2
Latin America	4	9	18	64	569	3.7	8.9
North America	0	1	7	81	335	12.5	4.1
Europe	31	37	183	404	733	2.2	1.8
Oceania	1	2	3	7	35	2.7	5.2
Total	168	265	902	1,623	6,626	1.8	4.1

Table 1. World Population by Region, 1, AD – 2007 (in millions)

2. A Harsh Beginning

E.A. Wrigley has provided some unique insights into the slender thread from which life often hung. Examining parish records in the 17th Century town of Breteuil in the Beauvais area of France, he notes that, in 1693, there were 73 recorded burials but, in 1694, the figure jumped to 229, almost one quarter of the town's population. This tragedy is believed to have resulted from a sharp increase in the price of wheat due to partial crop failure. Breteuil and a neighboring town, Mouy, which suffered a similar fate were much more dependent upon the production of a single type of cereal crop than Auneuil to the south where the mortality increase was far less. In addition to the constant specter of food shortages, of course, lay the threat of plague, which is likely to have wiped out at least one-fourth of Europe's population in the 14th and 15th Centuries. Even in more modern times, early mortality was commonplace:

Abraham Lincoln's mother died when she was thirty-five and he was nine. Prior to her death she had three children; Abraham's brother died in infancy and his sister in her early twenties. Abraham's first love, Anne Rutledge, died at age nineteen. Of the four sons born to Abraham and Mary Todd Lincoln, only one survived to maturity. Clearly, a life with so many bereavements was very different from most of our lives today.

Even somewhat closer to the start of the last century, things were little better. Of four children, Joseph Stalin was the only survivor. Human history has been a true struggle to survive. From 1 A.D. to 1000, world population hardly grew at all (see Table 1.). Then, in the following 800 years, the growth rate accelerated slightly, enough for the global total to reach the first billion mark by 1800. It seemed humankind was beginning to win the battle. Although famines were still to occur, a myriad of factors contributed to a very gradual increase in life expectancy. Better roads, and, later, railroads increased trade and the exchange of foodstuffs. The most fundamental public health measures, such as the disposal of sewage and cleaner water had a considerable effect. The availability of inexpensive, washable cotton clothing was most beneficial. The last known outbreak of plague in western Europe occurred in France, in Marseilles and

Provence, in 1721-1722, killing 40,000 out of 90,000 in Marseilles alone. The life expectancy of European nobility, which was estimated to be about 34 years in the 16th Century, rose to 47 in the 19th. In the United States, male life expectancy had risen to 46 by 1900 and to 48 for females. There were certainly other setbacks to slowly increasing population growth. In Latin America, the arrival of European colonists had brought demographic disaster. The native population had no resistance to the diseases the new arrivals brought with them, such as smallpox and measles. Estimates of the effect of mortality are quite difficult, but at least one-fourth of the affected native population is thought to have perished, quite possibly far more than that.

2.1. The Mortality Revolution Begins

The seeds of modern medicine had been sown by such scientists as John Snow, a founder of epidemiology, and Robert Koch and Louis Pasteur. The development of germ theory and immunology slowly revolutionized modern medicine. Some of these advances were quite simple in nature, such as medical staff washing their hands and the end of the practice of placing patients with communicable diseases in the same wards.

The importance of the “mortality revolution” in causing the phenomenal increase in world population in the 20th century cannot be overemphasized. But the revolution occurred in two very different ways in today’s developed and developing countries. The classification of countries used here follows United Nations (UN) practice. The UN defines world regions as either “developed or developing.” The developing regions are Africa, Asia, Latin America and Oceania while the developed are Europe and North America (which does not include Mexico). Only three exceptions are made. Australia, Japan and New Zealand are classified as developed despite their location in developing regions.

3. The Demographic Transition

3.1. The Early Transition

In the developed countries of Europe and, by extension, in North America, the shift from high death rates to low ones took place over several centuries. As that occurred, the other main component of population growth, the birth rate, slowly changed as well. Urbanization and industrialization meant that fewer and fewer families lived on farms so that the need for large families diminished. In cities, large families often were seen as a financial liability. As a result, birth rates and death rates tended to decrease in parallel. See Figures 1 and 2.

Sweden is a country with an unusually long history of demographic statistics, as shown clearly in Figure 1. The death rate fluctuated rapidly in the early part of the period and, as time went on, became more and more stable, except for the global influenza epidemic of 1918 – 1919. But, over the 250 year period, the birth rate declined at much the same pace, so that the rate of natural increase (the birth rate minus the death rate) never exceeded 10 per 1,000 population, or one percent. Europe never experienced the type of population explosion such as the developing countries would in the 20th Century. Figure 2 shows clearly how that explosion took place in Mexico.

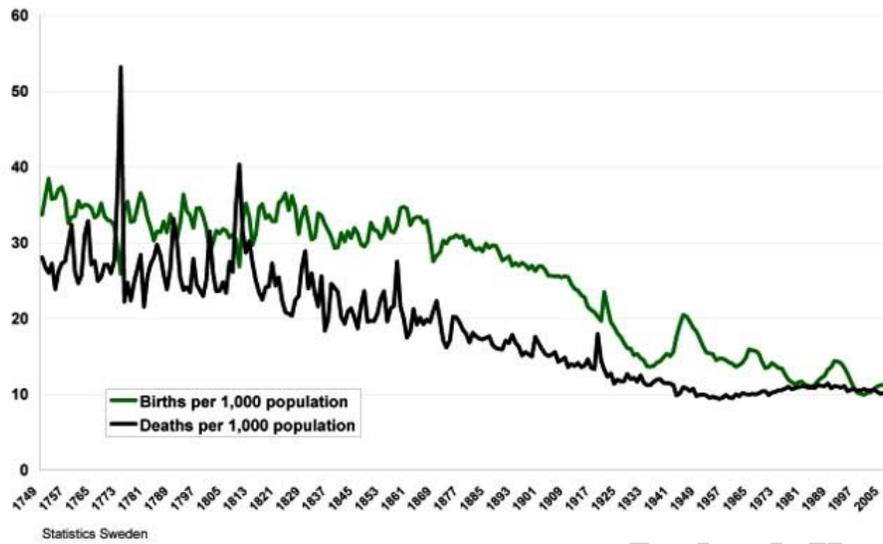


Figure 1. Birth and Death Rates, Sweden, 1749-2007.

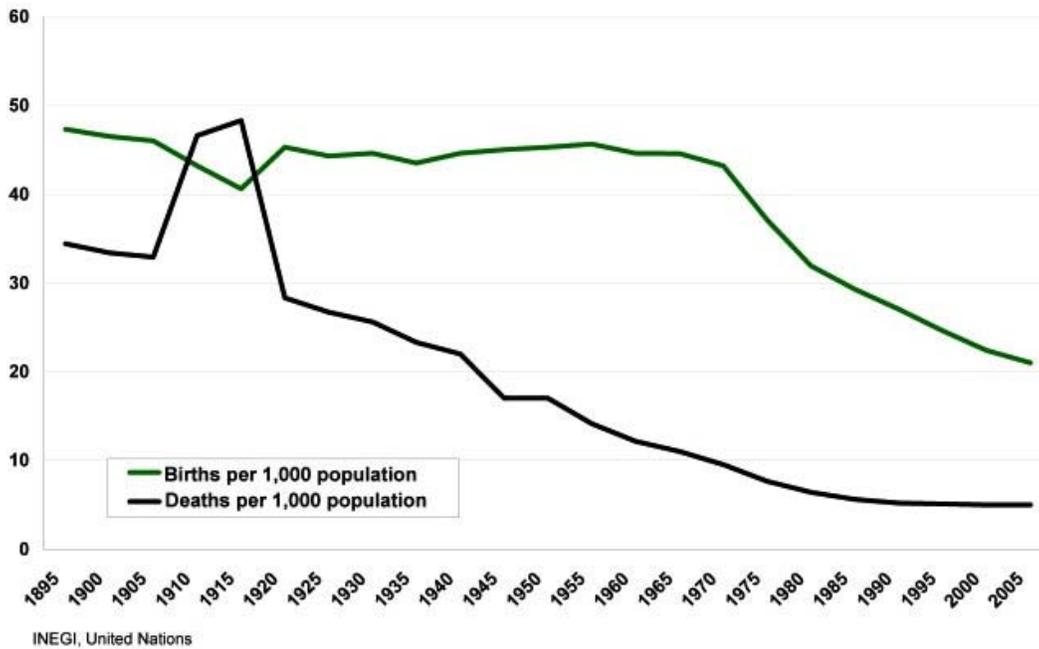


Figure 2. Birth and Death Rates, Mexico, 1895-2005.

In Mexico, death rate decline that had taken 200 years in countries such as Sweden took only 50 years. Although mortality was on the wane, society remained largely agricultural and with norms that continued to favor large families. The death rate fell but the birth rate did not. In the 1960s, Mexico’s rate of natural increase reached 30 per 1,000 population, or three percent, triple that of Sweden’s highest rate.

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Biographical Sketch

Carl Haub is a senior demographer and holds the Conrad Taeuber Chair for Population Information at PRB. He writes and speaks on population trends, consults with international and government agencies on population-related projects, and prepares the PRB's annual World Population Data Sheet.