

Figure 2-4 Regional and world rates of natural increase, 1900-1970
Sources: U.N. *DY*, Carr-Saunders 1936.

The total world population growth rate has been rising steadily since 1900, when it was about 0.6 percent per year (Carr-Saunders 1936). Its 1970 value was about 2.1 percent per year, or 21 per 1,000 persons per year (USAID 1971). If this rate of growth were to continue unchanged, the global population would double every 33 years.

To account for the increasing rate of growth of the world's population during this century, we must look for trends in worldwide birth and death rates that are sufficiently general to account for such a global change. We have identified three such general trends: falling mortality, intermediate fertility, and the correlation of fertility with industrialization.

Falling mortality Until very recently in human history, the death rate of human populations was high and erratic. Famines and epidemics, the results of seemingly uncontrollable environmental factors, randomly checked the population growth rate. As an example of prevailing mortality conditions before this century, in the Netherlands in 1840 one-fourth of all infants born died before the age of 2.5 years; one-half

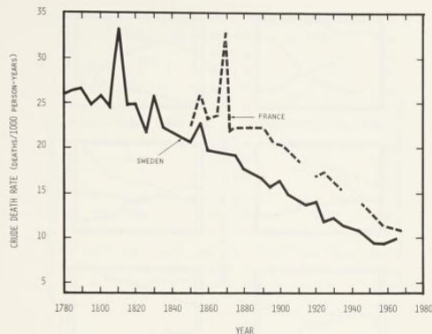


Figure 2-5 Crude death rates, Sweden and France, 1780-1965
Source: Keyfitz and Flieger 1971.

were dead by the age of 37.5 and three-fourths were dead by the age of 62.5 (Hauser 1969).

During the Industrial Revolution new technologies were gradually developed to control infectious diseases, improve nutrition, maintain a healthier environment and thus to reduce human mortality. The gradual impact of these technologies over time on the mortality rates of two Western nations is shown in Figure 2-5. The extent of this revolution in human mortality can be appreciated by comparing the statistics for the Netherlands given in the preceding paragraph with similar statistics for the same country 100 years later. In 1940, three-fourths of all infants born were expected to live to the age of 62.5 years, one-half to 72.5 and one-fourth to 82.5 (Hauser 1969).

In this century new methods of human death control have spread around the world, as indicated by the falling crude death rates and rising life expectancies illustrated in Figure 2-6.* Where social and economic conditions have permitted the introduction of improved agricultural and food distribution methods and modern medical advances, life expectancies have risen from a preindustrial average of about 30 years to an average of 70 years or more. In the nonindustrial countries this dramatic increase in life expectancy has occurred more recently and much more

*The life expectancy at birth e_0 is a better measure of true health conditions in a population than the crude death rate, which is dependent both on health conditions and on the population's age structure. The crude death rate, on the other hand, is a direct input to the calculation of the immediate population growth rate. There is no simple relationship between life expectancy and the crude death rate, but they are generally inversely correlated.