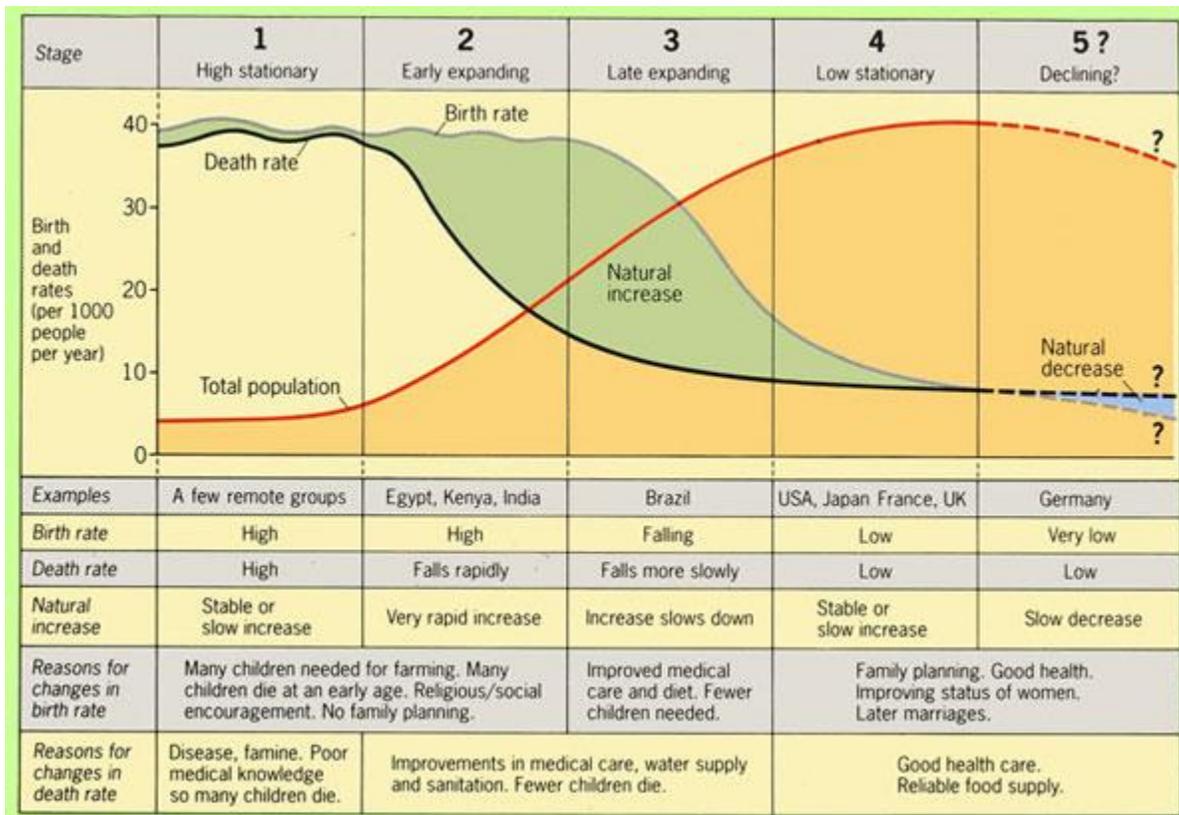Additional Demography Notes

The Demographic Transition Theory—an apparently accurate graphic depiction of population growth and change over time utilizing birth rates (fertility) and death rates (mortality) during changing stages of economic development. Here is a nice graphic of the transition:

Stage	1 High stationary	2 Early expanding	3 Late expanding	4 Low stationary	5? Declining?
Examples	A few remote groups	Egypt, Kenya, India	Brazil	USA, Japan France, UK	Germany
Birth rate	High	High	Falling	Low	Very low
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Stable or slow increase	Slow decrease
Reasons for changes in birth rate	Many children needed for farming. Many children die at an early age. Religious/social encouragement. No family planning.		Improved medical care and diet. Fewer children needed.	Family planning. Good health. Improving status of women. Later marriages.	
Reasons for changes in death rate	Disease, famine. Poor medical knowledge so many children die.	Improvements in medical care, water supply and sanitation. Fewer children die.		Good health care. Reliable food supply.	

In sum, in undeveloped/underdeveloped regions, birth rates are high but so too are death rates. Thus, population does not increase much. When death rates begin to fall due to economic development (stable food supply, advances in healing, etc.) a population boom ensues. As an economy modernizes, birth rates fall to again mirror death rates (due to a desire for smaller families, availability of birth control methods, higher costs of living, urban lifestyles, educational/career aspirations, etc.). Late modernity can even witness declining populations due to low birth rates coupled with ageing.

Birth Rates, Death Rates, and generally, Crude Rates

A "crude rate" is the rate of something per year per 1000 people already in the population. Example: A CBR (crude birth rate—or just BR) of 25 means that in a community of 1000 people (including men, women, and children), 25 babies are born into the population this year.

But…is this high or low, or what? Look at it roughly like this:

25 babies/1000 people per year=25 babies/500 women per year (since about half of all people are women) and this is equal to 25 babies/250 women aged 15-45 years of age per year (the childbearing years and about half of all women are in those ages). This is then equivalent (pay attention here!) of 750 babies born for every 250 women aged 15-45 IN THEIR LIFETIMES—since the childbearing years are aged 15-45 (30 years) so this is multiplied by the 25 births per year for a lifetime total rather than a per year total. Therefore, 750/250= 3.0 children per woman in her life! This means that a CBR is roughly equal to a TFR (total fertility rate—the number of children per woman) of 3.0. Not high, but more than modern nations. Some regions of the world have CBRs of 40-45 (the African continent) and some countries have CBRs as high as 60-65 (with a TFR of over 7!).

CDRs (or death rates) work the same way. This is simply the number of people per 1000 who die each year. Actually, the number of people over age 1 per 1000 who do. Those who die at less than a year of age are calculated as the IMR (infant mortality rate).

Here is an anomaly: The death rate in the United States is HIGHER than the death rate in some developing (or early modern) nations. How can this be? Go back to the demographic transition… As death rates fall, life expectancy increases but birth rates remain high. The bulk of population is thus, young and where life expectancy is quite high yet only a small percentage of the population has reached the LE (life expectancy), NO ONE IS REALLY OLD

ENOUGH TO DIE… a great example is Mexico… only 4% of the population over 65, with an LE of 74…very few funerals! In the U.S. the LE is 80, but the over 65 population is 16%...needless to say, more people per 1000 in the "death years"! Japan is even worse. Highest LE but highest % over 65/75/85/95 in the world. Over the next 30 years, lots of funerals.

A note on Life Expectancy (LE)

The United States does NOT have the highest LE in the world for several reasons. Here are the nations who do: Japan, Iceland, New Zealand, Denmark, Netherlands. Why?

a. All are cooler climates (prevents infectious disease)
b. All are modern nations (with good preventative care, food, and high standards of living)
c. All have homogeneous populations (the U.S. has several underclasses with lower LE)
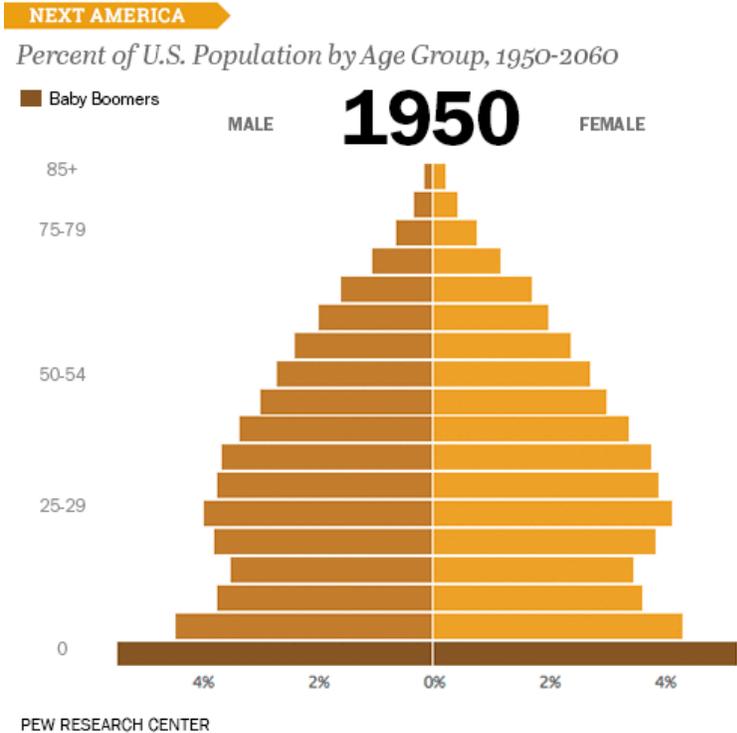d. All are surrounded all or partly by ocean (with high levels of ocean fish diets proven to increase LE)

Malthusian Inevitability

Speaking of deaths… Thomas Robert Malthus, 19th century minister, demographer, and social pessimist came to the conclusion that the world would face a demographic cataclysm as food supply would never keep pace with an ever-expanding population. He claimed food supply increases arithmetically (1→2→3→4→5) while population did so geometrically (2→4→8→16→32). The result would be that "natural checks" on the population would occur and bring numbers back into balance with nature's ability to supply. Wars, famine, disease, etc. would naturally control overpopulation… and it does! So (some sarcasm here!) no one need worry about things like global warming or lack of drinking water, etc. Nature WILL take care of it without our help! By the way (BTW) the leading cause of

human death worldwide is today and has always been (no, not cancer or heart problems)—INFECTIOUS DISEASE. From influenza to yellow fever, to parasitic diseases, to malaria, to ebola, to HIV…among many others. These are the things that limit population most.

Population Pyramids

A population pyramid is a graphic age-sex distribution of the population. They are series of bar graphs by age cohort (age groupings) that taken together and presented, provide a visible population structure which can be very telling about a population both now and into the future. Here is an example pyramid from the United States in 1950 where the beginning of the baby boom is apparent at the bottom bar:

NEXT AMERICA

Percent of U.S. Population by Age Group, 1950-2060

■ Baby Boomers
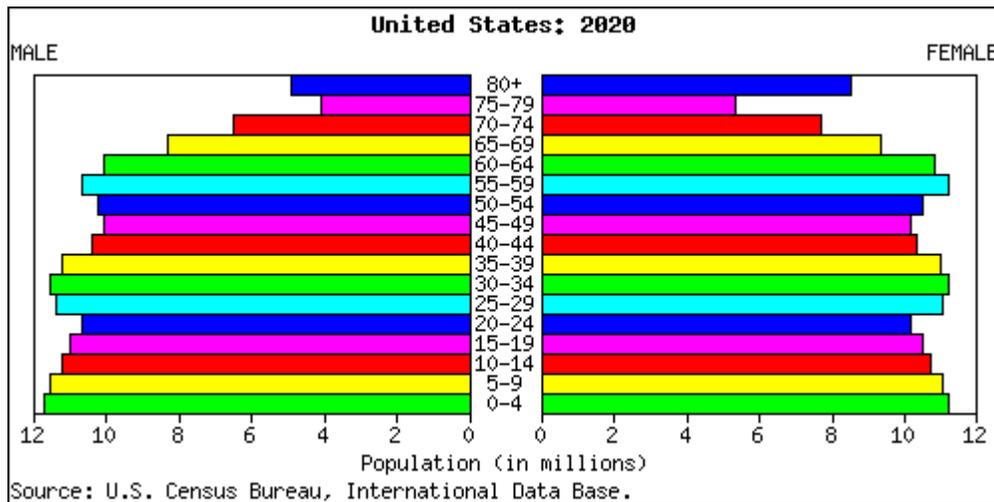
MALE **1950** FEMALE

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Here is the U.S. Pyramid from 2000, 40 years later with the Baby Boom aged 40+ years and their children producing a secondary bulge known as the ECHO EFFECT (the children of the Baby Boom):

Population Pyramid
United States, 2000
Figure 1
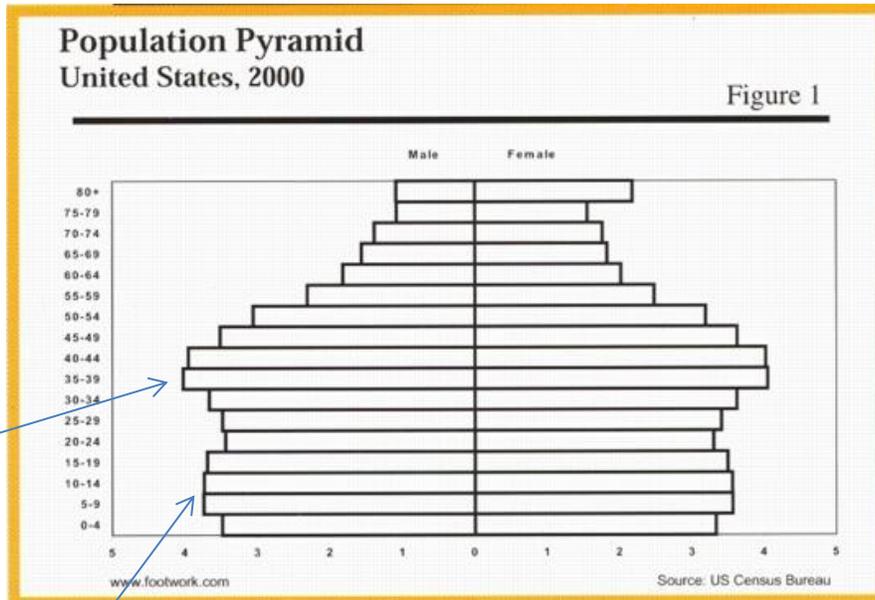
Baby Boom

Echo Effect

Here is the projected U.S. pyramid for 2020:

Almost all growth among youth (bottom bar graphs) is the result of children of new immigrants. The Baby Boom and Echo Effect are clearly seen also.

More notes to come for Exam 3 in class! Work on EXAM 3!