

# CHAPTER 6: HUMAN POPULATIONS

APES 2013



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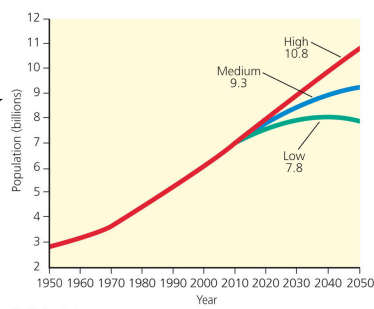
## WHY DOES HUMAN POPULATION INCREASE SO RAPIDLY?

- ❖ Humans developed the ability to expand into climate and habitat zones they are not adapted for.
- ❖ Modern agriculture allowed more people to be fed.
- ❖ Development of sanitation systems and medical advancements (antibiotics and vaccines) that control infectious disease.

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## HOW MANY PEOPLE CAN THE EARTH SUPPORT INDEFINITELY?

- ❖ Estimates range from 2 billion to 30 billion.
- ❖ Perhaps we should ask how many people is optimum for the earth
- ❖ Cultural Carrying Capacity - level that would allow most people to live in reasonable comfort and freedom without impairing future generations



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## WHAT INFLUENCES POPULATION SIZE?

❖ The obvious:

- ❖  $\text{births} > \text{deaths} = \text{population increase}$
- ❖  $\text{births} < \text{deaths} = \text{population decrease}$
- ❖  $\text{births} = \text{deaths} = \text{no change in population size}$

❖ Three factors that impact population change:

- ❖ Fertility (births)
- ❖ Mortality (deaths)
- ❖ Migration (movement)

❖  $\text{Population change} = (\text{births} + \text{immigration}) - (\text{deaths} + \text{emigration})$

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## CALCULATIONS

❖ Demographers use:

- ❖ Birth Rate (Crude Birth Rate) - number of live births per 1,000 people in a population in given year
- ❖ Death Rate (Crude Death Rate) - number of deaths per 1,000 people in a population in given year

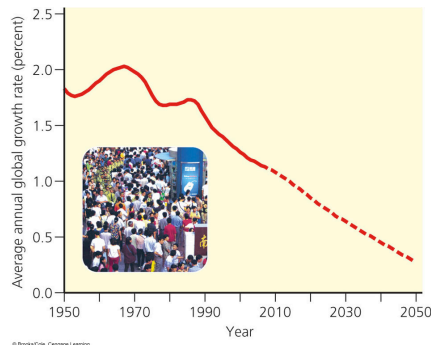
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## WORLD POPULATION GROWTH RATE

What years did the growth rate increase?

What years did the growth rate decrease?

What year will it be half of 1950 according to projections?



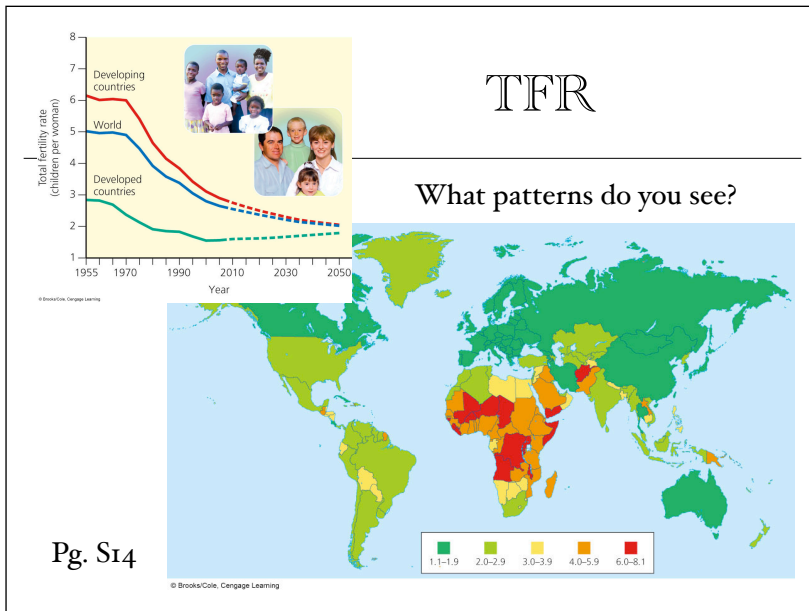
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pg. S13

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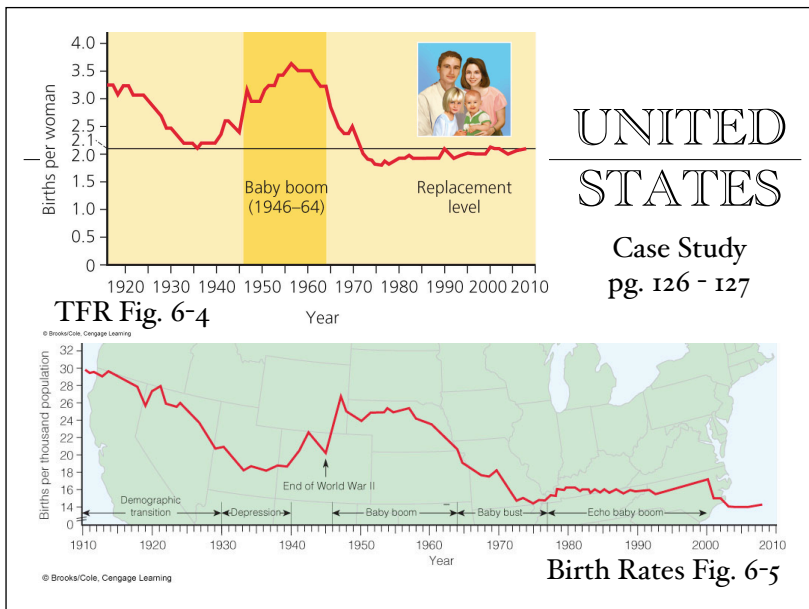
# FERTILITY RATE

- ❖ Fertility rate - number of children born to a woman during her lifetime
- ❖ Replacement-level fertility rate - average number couples must produce to replace themselves (Usually it is around 2.1, but as high as 2.5 in some developing countries. Why?)
- ❖ Total Fertility Rate (TFR) - average number of children born to women in a population during their reproductive years

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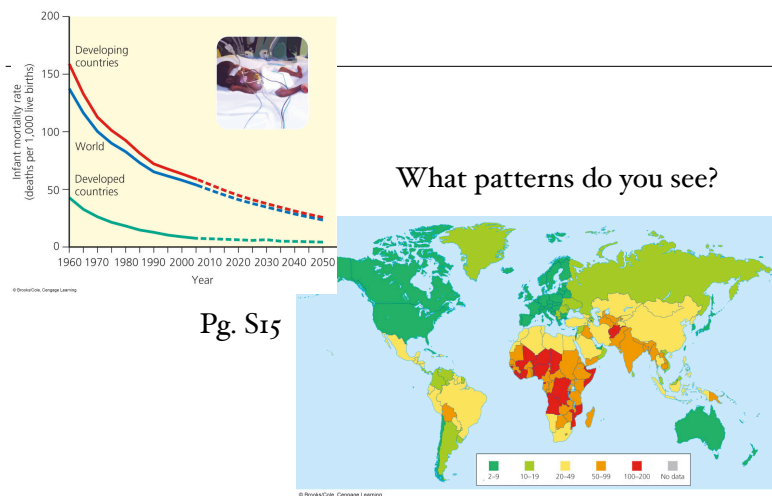
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# FACTORS THAT AFFECT BIRTH RATE

- ❖ Children in the labor force
- ❖ Cost of raising and educating children
- ❖ Availability of private and public pension systems
- ❖ Urbanization
- ❖ Educational and employment opportunities available for women
- ❖ Average age at marriage
- ❖ Availability of legal abortions
- ❖ Availability of reliable birth control
- ❖ Religious beliefs, traditions, and cultural norms
- ❖ Infant Mortality Rate - the number of children per 1,000 live births who die before one year of age

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# INFANT MORTALITY RATE



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# FACTORS THAT AFFECT DEATH RATE

- ❖ Food supplies
- ❖ Better nutrition
- ❖ Medical advances
- ❖ Sanitation
- ❖ Water safety
- ❖ Life expectancy - the average number of years a newborn infant can expect to live

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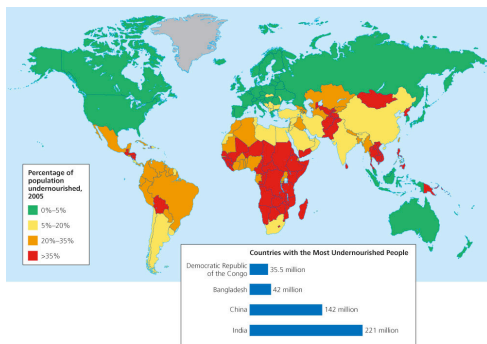
# DOUBLING TIME

- ❖ The amount of time it take for a population's size to double
- ❖ Can be estimated by using the “rule of 70”
  - ❖ doubling time =  $70 / (\text{percent growth rate})$

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# UNDERNUTRITION VS. MALNUTRITION

- ❖ Undernutrition - insufficient food
- ❖ Malnutrition - poor nutrition



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# HEALTH CARE

- ❖ U.S. spends more on health care per person than any other country
- ❖ People in 41 other countries (ex. Canada, Japan, many European countries) have higher life expectancies than people in the U.S.
- ❖ Why is this?
  - ❖ Universal health care
  - ❖ U.S. has a high adult obesity rate

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# U.S. IMMIGRATION

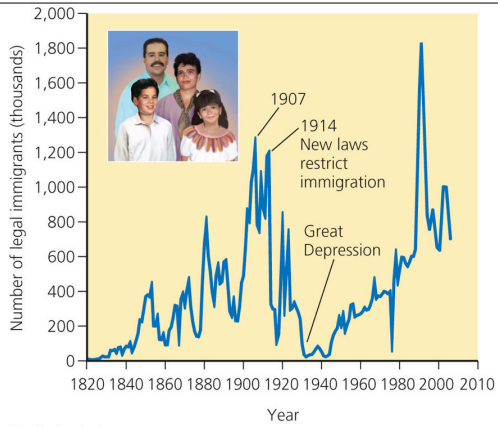
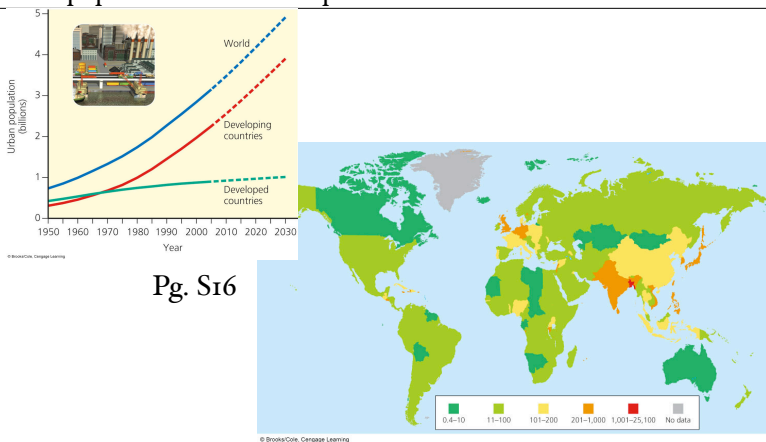


Fig. 6-7

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# POPULATION DENSITY

❖ Population density - number of organisms of a particular population found in a specific area or volume



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# AGE STRUCTURE

❖ Age structure - distribution of males and females among age groups in a population

❖ Four main types of distributions

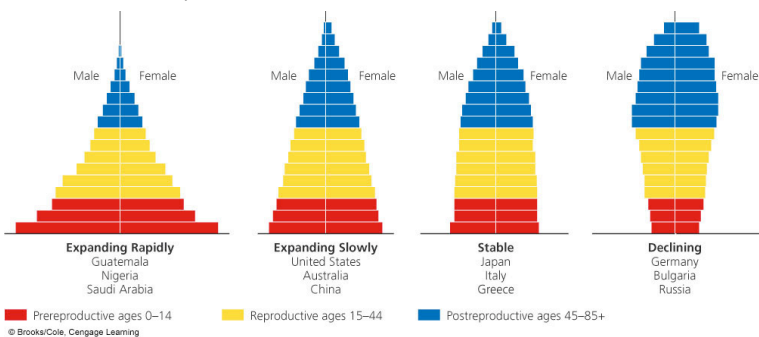
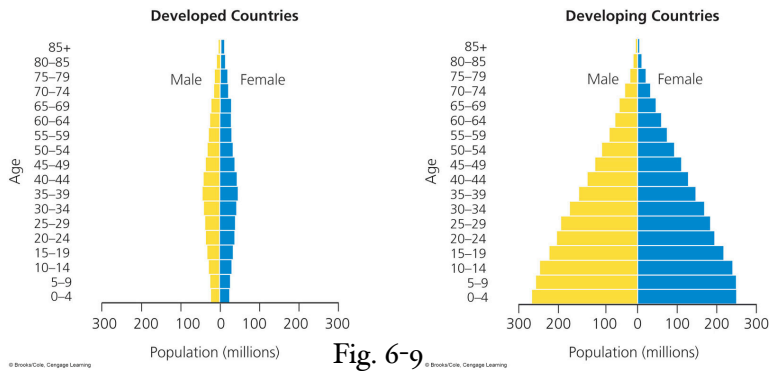


Fig. 6-8

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# OVERALL WORLD AGE STRUCTURE

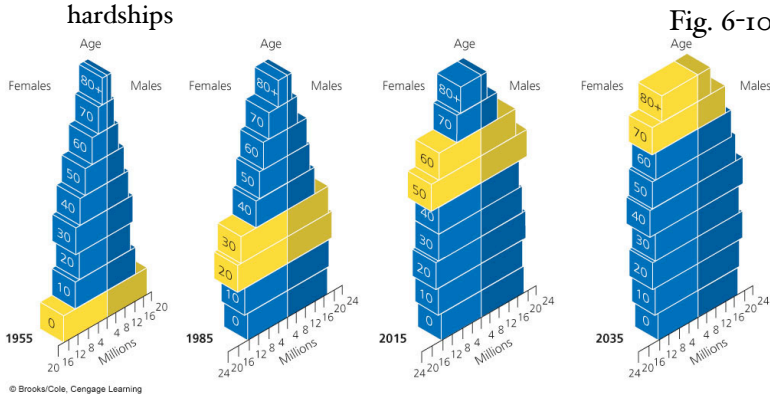
❖ What implications do these difference have?



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# ECONOMIC IMPACTS OF AGE STRUCTURE

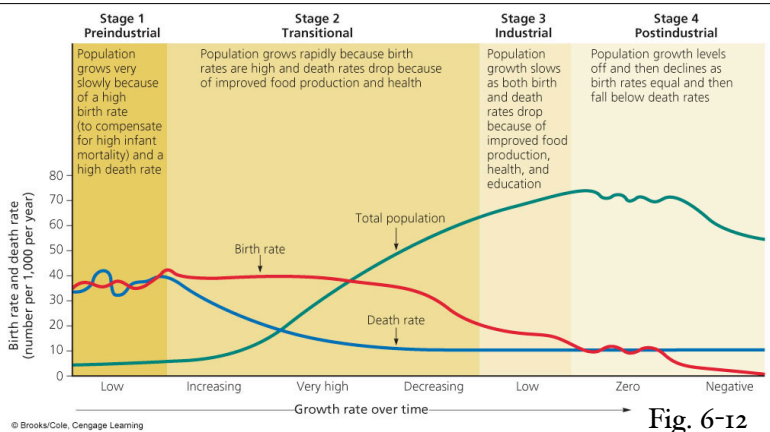
❖ Baby Boom Generation will cause economic benefits and hardships



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# DEMOGRAPHIC TRANSITION

❖ Demographic transition - As countries become more industrialized, first death rates decline and then birth rates decline. There are four stages.



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# FAMILY PLANNING

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- ❖ Women's Health Care and Birth Control major components
- ❖ According to UN, family planning is responsible for a 55% drop in TFR in developing countries.
- ❖ Other ways to reduce the TFR include reducing poverty, and elevating the social and economic status of women.

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# CHINA: ONE-CHILD POLICY

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- ❖ Reduced TFR from 5.7 to 1.6 (compare to 2.1 in United States)
- ❖ Based on necessity because of food shortages
- ❖ Skewed gender ratio (human rights issues associated with this)

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# INDIA

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- ❖ 1952 India added 5 million people
- ❖ 2008 India added 18 million people
- ❖ By 2050 its population could reach 1.76 billion
- ❖ What problems could this pose?

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