

## REMINDERS

❑ **EXAM III – Final Exam**  
**Tuesday, May 22.**  
**Covers only Part III**  
**of this course.**

Textbook chapters for exam III:  
 Selected parts of Ch. 6-12

➤ **Two required essays**  
 (10% of your grade)  
 were due Mar. 27.  
 Late penalty now applies.

❖ **Extra Credit: "Think Geographically"**  
 Essays from any five of Chapters 4-12  
 chapters or the 3<sup>rd</sup> topic from required  
 essay list plus 4 chapter essays.

- Last day to submit is May 15 but it is best to do them as you finish reading a chapter.
- Any other form of extra credit proposal must be approved by me in advance

- Extra credit may be submitted before the deadline.
- Don't wait for the night before to do it.

## GEOG 101 PART III

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### Life on Earth: Population Geography 2 Chapter 6

Prof. Anthony Grande  
 Hunter College Geography

Lecture design, content and presentation CAPG 0418  
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## Lecture Topics for Part III

- ✓ I Intro. to Human Geography
- II **Living on the Earth**
  - A. Habitat
  - B. Demography
  - C. Medical geography
  - D. Population growth
- III Economic Geography
- IV Urban Geography
- V Political Geography

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## World Population Distribution



**We need data to evaluate a population.**

1. Numbers of people.
2. Concentration of people.
3. Other data to help assess a situation (quality of life)

## Carrying Capacity and Overpopulation

- **CARRYING CAPACITY:** The ability of the land to support life.
  - ✓ It is directly related to **resource base** (food-water-shelter) which composes a **habitat**. Carrying capacity is **reached** if too many people use what is available and the **resource base** is stressed to its limit.
  - ✓ Once carrying capacity is reached, the **quality of habitat diminishes** and an area is said to be overpopulated.
- ❖ **OVERPOPULATION:** Too many people for the resource base.

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## Population Growth

Can the earth support its fast-growing population?

- Does it have the capacity to keep up with a population's demands on its resources?
- How can we tell?
- Need data.

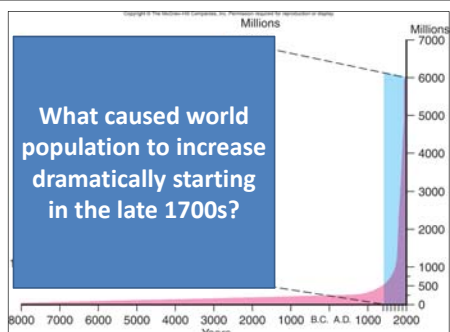
❖ **DEMOGRAPHY:** statistical study of a population.

*However, there is a problem with the data.*  
*Accuracy of national censuses varies.*

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## Historic Population Growth

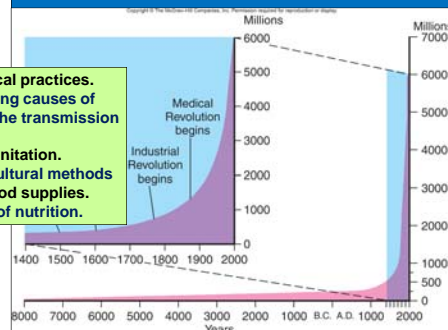
What caused world population to increase dramatically starting in the late 1700s?



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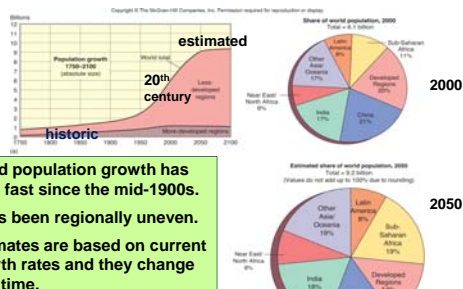
## Population J-Curve

- ✓ Better medical practices.
- ✓ Understanding causes of illness and the transmission of disease.
- ✓ Improved sanitation.
- ✓ Better agricultural methods
- ✓ Improved food supplies.
- ✓ Knowledge of nutrition.



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## Population Growth and Projections



1. World population growth has been fast since the mid-1900s.
2. It has been regionally uneven.
3. Estimates are based on current growth rates and they change over time.

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## Population Growth and Projections Population Reference Bureau (PRB)

### WORLD POPULATION DATA

TOP WORLD POPULATION RANKINGS IN 2050 WILL STACK UP DIFFERENTLY THAN IN 2016

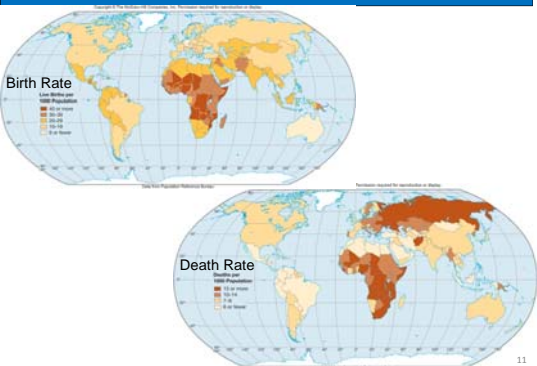
2016	2050
CHINA 1,378 MILLION	INDIA 1,708 MILLION
INDIA 1,329 MILLION	CHINA 1,344 MILLION
UNITED STATES 324 MILLION	UNITED STATES 398 MILLION
INDONESIA 259 MILLION	NIGERIA 398 MILLION
BRAZIL 206 MILLION	INDONESIA 360 MILLION
PAKISTAN 203 MILLION	PAKISTAN 344 MILLION
NIGERIA 187 MILLION	BRAZIL 226 MILLION

WORLDPOPDATA.ORG #WORLDPOPDATA

<http://www.worldpopdata.org/index.php/map>

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## Birth Rate and Death Rate



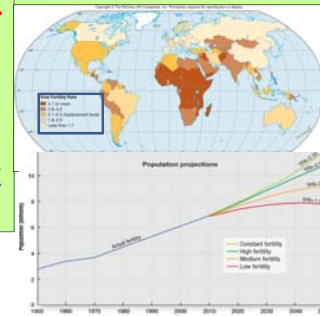
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## Total Fertility Rate

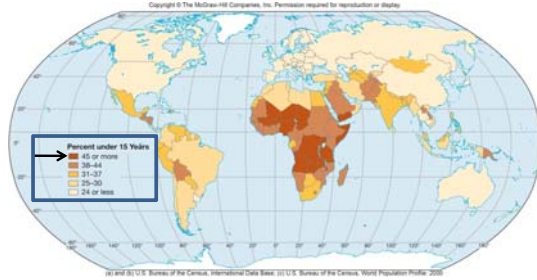
- ❖ **TFR: Total Fertility Rate.** The number of children borne by child-bearing age women. The younger and larger a population, the higher the TFR and the higher the growth potential, especially, if infant mortality rates are reduced.

<https://www.nytimes.com/2018/04/25/health/africa-infant-mortality-antibiotic.html> - Antibiotics reduce infant mortality in Africa.

- ❖ **ZPG: Zero population growth** is considered to be the **replacement rate** (statistically the number is 2.1 children/parents.)

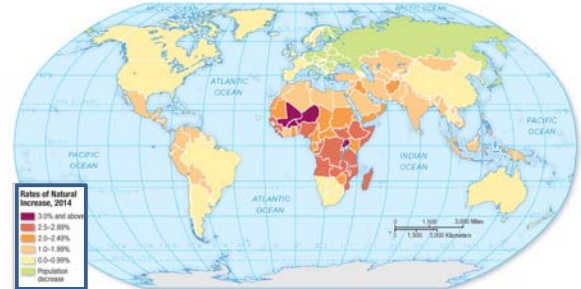


## Percent of Population UNDER 15 years of age



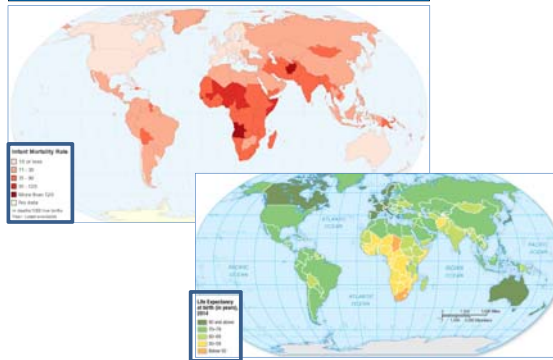
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## Annual Rate of Increase

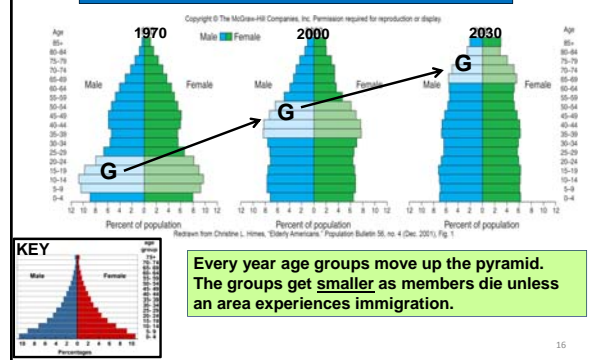


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## Life Expectancy

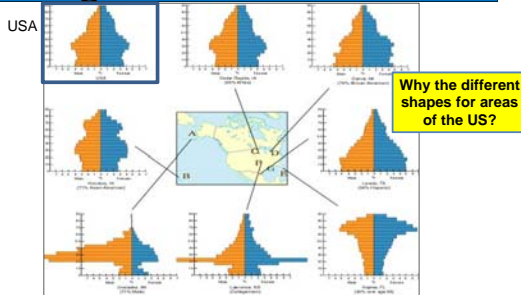


## Population Pyramid



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## Population Pyramids for Regions of the United States



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## Malthusian Theory

In 1798 Thomas Malthus postulated that unless population growth was slowed (by "self-control", war or natural disaster), its rate of growth would soon exceed the rate of food production (exceed carrying capacity).

He predicted that people would not be able to feed themselves and widespread poverty and hunger would follow.

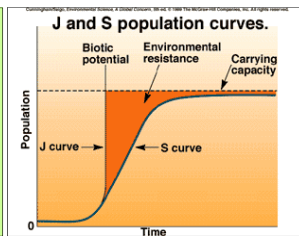
**WHY?** Because population tends to double in size quickly, while agriculture grows at a steady rate.

His prediction did not take into account new technologies that allowed people to produce more food.

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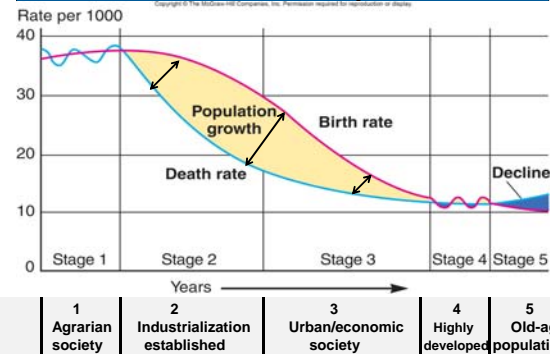
## Demographic Transition

- ❖ The J-Curve becomes an S-Curve when a population reaches carrying capacity.
- It returns to a J-Curve when new technologies allow people to live longer.

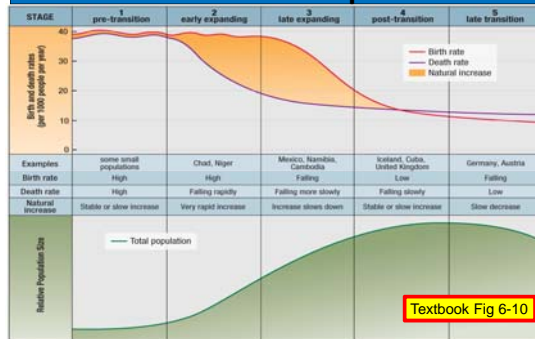


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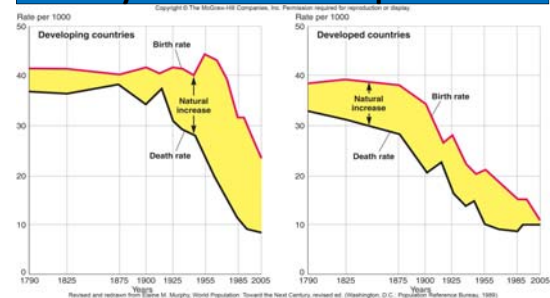
## Demographic Transition and Economic Development



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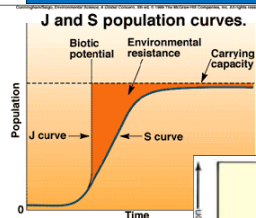


## Comparison of BR and DR by Economic Development



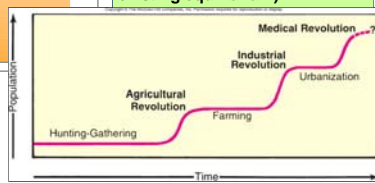
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## Homeostatic Plateaus



How long can this go on?

The J-Curve turns into an S-Curve every time something occurs to either increase or slow down the death rate (changes existing equilibrium).



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## Medical Geography

- ❖ **MEDICAL GEOGRAPHY** studies the **well-being** of people as an aspect of habitat.
  - Medical aspects are studied **spatially** (where they occur).
  - They are **correlated to conditions of site and situation** as wind direction, watershed, wells and aquifers, routes of dispersal.
- ❖ **EPIDEMIOLOGY**: the study of the causes and control of disease

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## Health and Nutrition

### Important part of the population question.

- Areas with good health and nutrition can accommodate large numbers of people.
  - ✓ They are also become **PULL** factors.
- Analysis includes:
  - Food availability (type/diet/caloric value)
  - Life expectancy/infant mortality (BR/DR/wellness)
  - Disease (susceptibility/transmission/DR/social issues)

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