

REMINDE RS

➤ Part III required essays are due no later than May 13.

✓ Late penalty now applies (better than a zero!) for missing Part I and Part II essays.

✓ Must submit any missing essays by May 17, 2021 to avoid a ZERO for missing required work.

EXAM II was April 16-19. If you missed it, please contact me.

❖ Extra Credit: "Think Geographically" Essays from any five of textbook chapters

- O R -

❖ One additional **topic** from the required essay list **plus** TG chapter essays (max. 5 total).

- Last day to submit is **May 12** but it is best to do them as you finish reading a chapter.
- **Deadline** to submit a proposal for any other form of extra credit **has passed**.

✓ Don't wait for the night before to write them.

GEOG 101  
PART III

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Life on Earth:  
Population Geography 1

Chapter 6

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Hunter College Geography

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Lecture Topics for  
Part III

✓ I Intro. to Human Geography

➤ II **Life on the Earth**

- A. Habitat
- B. Demography
- C. Medical geography
- D. Population growth
- E. Biogeography/Ecology

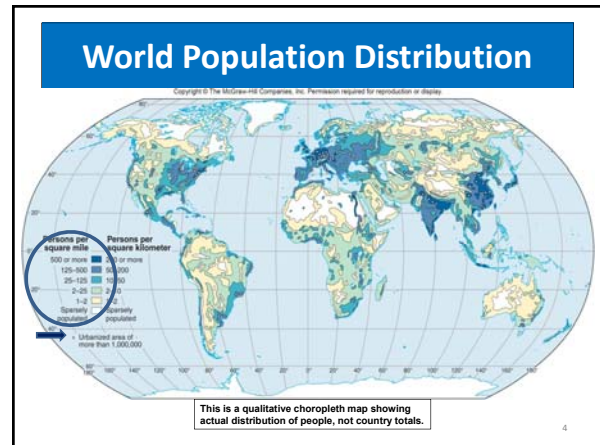
III Economic Geography

IV Urban Geography

V Political Geography

Population  
Geography

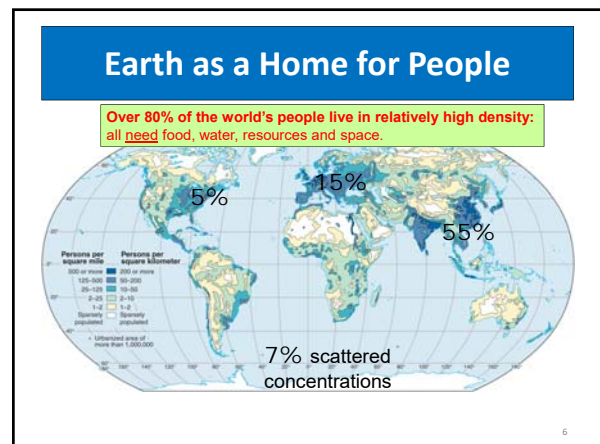
The study of people in relation to their habitat; spatially studies their distribution, make-up, movement, well-being and growth potential.

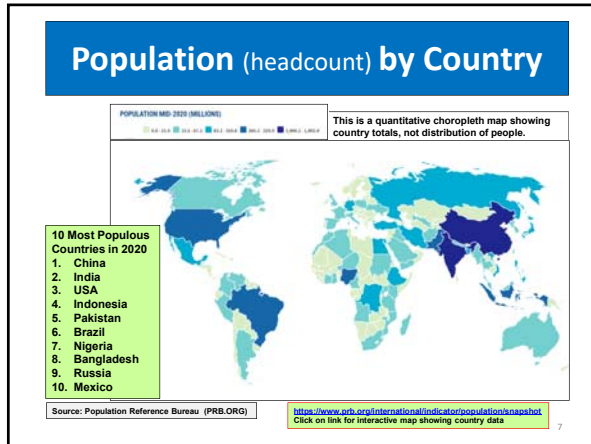


Earth as a Home for People

- **50%** of the world's people live on **5%** of the land.
- **90%** of the world's people live on **10%** of the land.
- **95%** of the world's people live on **40%** of the land.

Conversely, **60%** of the land is **virtually empty** and has only **5%** of the world's people.



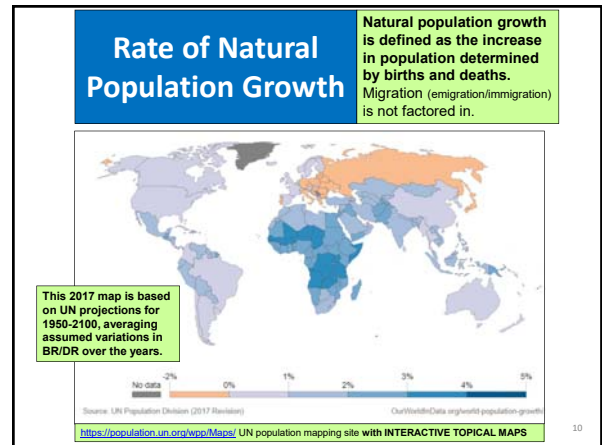
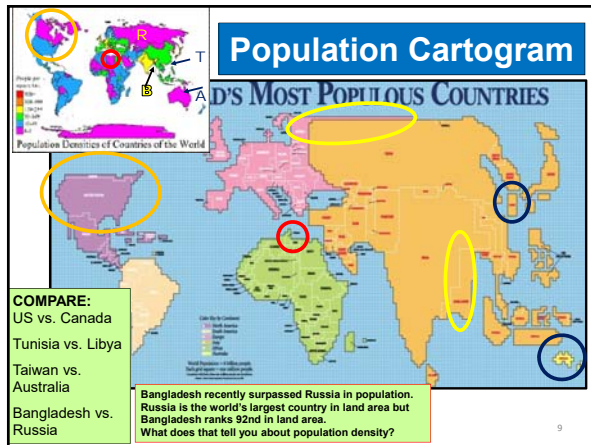


### World's 10 Largest Countries

2020 World Population: 7,794,798,739

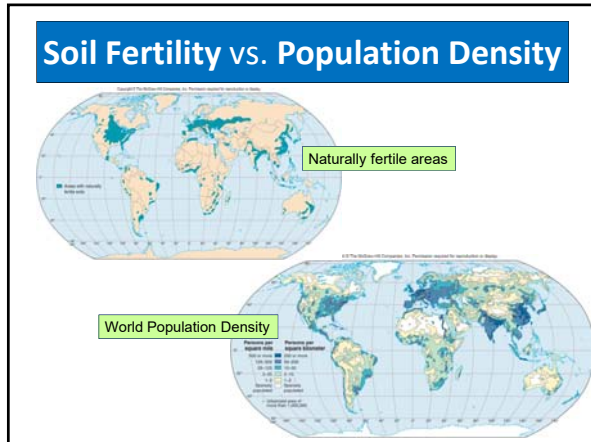
Flag	Country	2020 (Live)	2019 Population	Area	2019 Density	Growth Rate	World %	Rank
	China	1,438,317,637	1,433,783,686	9,706,961 km <sup>2</sup>	146/km <sup>2</sup>	0.39%	18.47%	1
	India	1,377,465,300	1,366,417,754	3,287,590 km <sup>2</sup>	420/km <sup>2</sup>	0.99%	17.70%	2
	United States	330,625,126	329,064,917	9,372,610 km <sup>2</sup>	35/km <sup>2</sup>	0.59%	4.25%	3
	Indonesia	272,981,233	270,625,568	1,904,569 km <sup>2</sup>	144/km <sup>2</sup>	1.07%	3.51%	4
	Pakistan	220,091,906	216,565,318	801,912 km <sup>2</sup>	250/km <sup>2</sup>	2.00%	2.83%	5
	Brazil	212,281,435	211,049,527	8,515,767 km <sup>2</sup>	25/km <sup>2</sup>	0.72%	2.73%	6
	Nigeria	205,172,147	200,963,599	923,768 km <sup>2</sup>	223/km <sup>2</sup>	2.58%	2.64%	7
	Bangladesh	164,384,989	163,046,161	147,319 km <sup>2</sup>	1,116/km <sup>2</sup>	1.01%	2.11%	8
	Russia	145,925,112	145,872,256	17,098,242 km <sup>2</sup>	9/km <sup>2</sup>	0.04%	1.87%	9
	Mexico	138,678,117	127,575,529	1,964,375 km <sup>2</sup>	66/km <sup>2</sup>	1.00%	1.69%	10

<http://worldpopulationreview.com> Interactive and live (2021) updating site



- ### Factors that Encourage Settlement and Higher Population Densities
1. Landforms (size, topography, altitude, situation)
  2. Climate
  3. Soil fertility
  4. Natural vegetation and wildlife
  5. Water supply
  6. Mineral and energy resources
  7. Absence of natural hazards (safe areas)
  8. Absence of disease and pests (healthy areas)

- ### Factors that Encourage Settlement and Higher Population Densities
1. Landforms
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  4. Natural vegetation/wildlife
  5. Water supply
  6. Mineral/energy resources
  7. Absence of natural hazards
  8. Absence of disease/pests
- ✓ All 8 are modified by levels of technology and forms of economy.  
✓ All 8 are influenced by historical circumstances and cultural parameters.



### Habitat Decisions

❖ **7.8 billion people need food, water, shelter, resources and living space + a place for their waste.**

- People have a perception of what the environment has to offer.
- They make choices; people make changes.
- They create mental images and mental maps.
- They are influenced by **push-pull-stay** factors.

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### Push-Pull-Stay Factors

- ❖ **PUSH factor:** characteristic of a region that leads to dissatisfaction; encourages movement away (**negative connotation**).
- ❖ **PULL factor:** characteristic of a region that has an attractive force, drawing migrants from other regions (**positive connotation**).
- ❖ **STAY factor:** characteristic of a region that keeps people where they are (**can either be positive or negative**).

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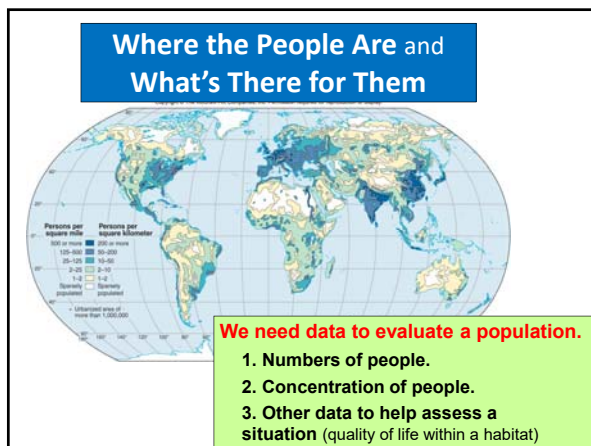
### Push-Pull-Stay

**These factors can be either real or imagined.**

**Variables (perceptions) include:**

- Distance
- Physical barriers
- Cultural factors
- Political factors
- Economic factors

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### Population Dynamics

**Things we need to know about a population:**

1. Where are they found (locations)?
2. What are their growth rates?
3. What is their density or grouping pattern?
4. What are the urban/rural ratios?
5. How do the numbers relate to an area's resource base (habitat) and will it put a strain on the area's carrying capacity (habitat quality)?

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## 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**. (The term is also applied to animal habitats.)

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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.

We slowed the death rate!

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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 and with reassessment of regional situations.

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## Population Change Data

HEADCOUNT INCREASES

2018 WORLD POPULATION DATA  
TOP 8 COUNTRIES WITH THE GREATEST PROJECTED POPULATION INCREASES BETWEEN 2018 AND 2050 (INCLUDES IN RED)

<b>308.8</b> INDIA	<b>214.7</b> NIGERIA	<b>131.6</b> CONGO, DEM. REP.	<b>106</b> PAKISTAN
<b>83.4</b> ETHIOPIA	<b>79</b> TANZANIA	<b>69.5</b> EGYPT	<b>61.6</b> UNITED STATES

HEADCOUNT DECLINES

WORLD POPULATION DATA  
TOP 8 COUNTRIES WITH THE GREATEST PROJECTED POPULATION DECREASES BETWEEN 2018 AND 2050 (INCLUDES IN RED)

<b>49.9</b> CHINA	<b>24.7</b> JAPAN	<b>9.4</b> RUSSIA	<b>7.3</b> UKRAINE
<b>4.4</b> ROMANIA	<b>4.4</b> POLAND	<b>3.7</b> GERMANY	<b>3.6</b> THAILAND

Population Reference Bureau (PRB) estimates that by 2050, India will surpass China as the world's most populous country with c. 1.67 billion people, while Nigeria will have a population larger than that of the United States.

<http://www.worldpopdata.com/index.php/map>  
interactive map and data collection

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## Where the People Are and What's There for Them

**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 within a habitat)

## Recent Past Rate of Population Change

2015-2020 average annual values in %

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## Projected Long-term (35 yrs.) Population Change

Percentage change: 2015-2050

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## World Birth Rates and Death Rates

**Birth Rate**

BIRTHS PER 1,000 POPULATION (2019)

**Death Rate**

DEATHS PER 1,000 POPULATION (2019)

**Birth rate factors tend to be cultural** (customs/belief systems/female employment/infant mortality rate) **while death rate factors tend to be circumstantial** (medical/economic/environmental/technological/age structure).

Source: Population Reference Bureau (PRB.ORG)

## Total Fertility Rate and ZPG

❖ **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 growth potential, especially, if infant mortality rates are reduced.

❖ **ZPG: Zero population growth** is considered to be the **replacement rate** (statistically the number is 2.1 children/parents). Any number higher than 2.1 leads to a population increase.

**SCENARIOS**

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

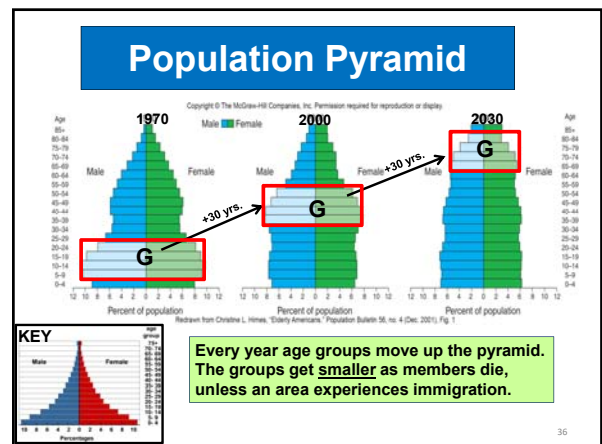
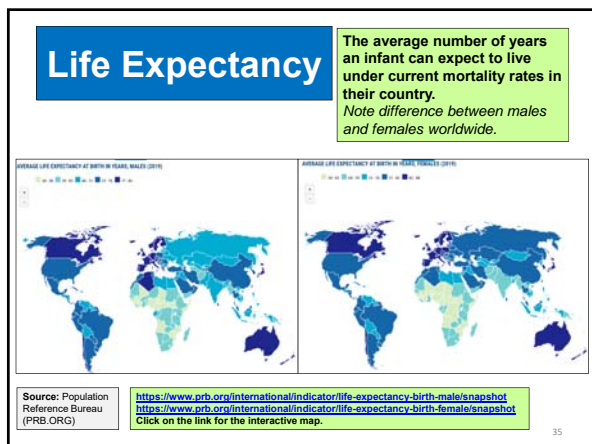
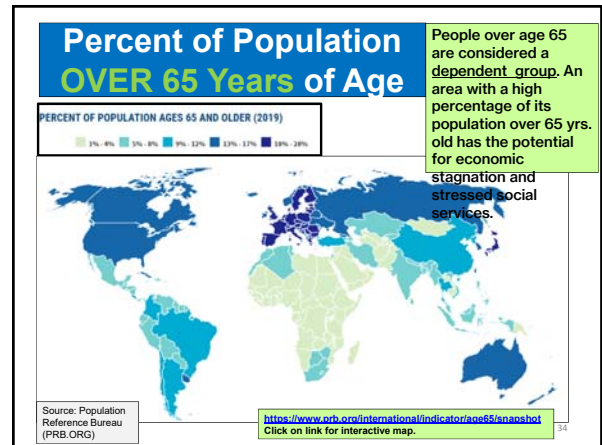
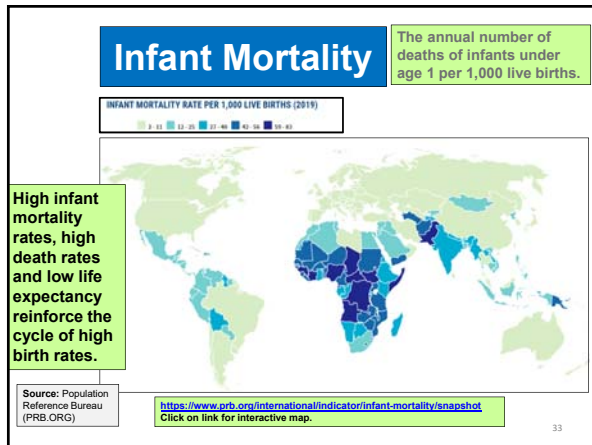
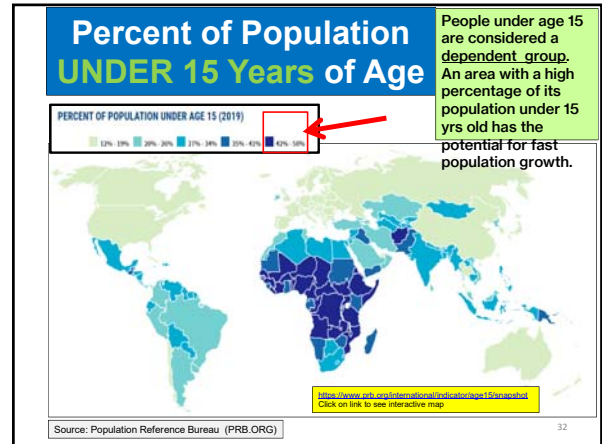
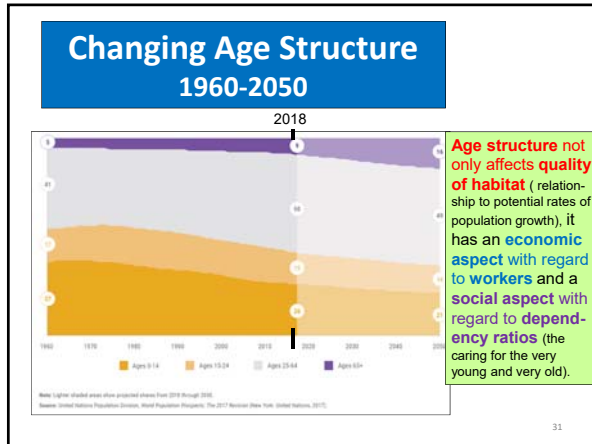
## Total Fertility Rate

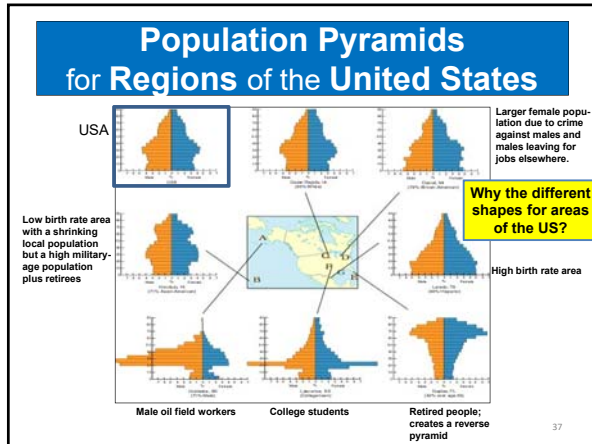
TOTAL FERTILITY RATE (2019)

2.1 children per parents is the replacement rate.

Source: Population Reference Bureau (PRB.ORG)      <https://www.prb.org/international/indicator/fertility/snapshot>  
Click the link for the interactive map

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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

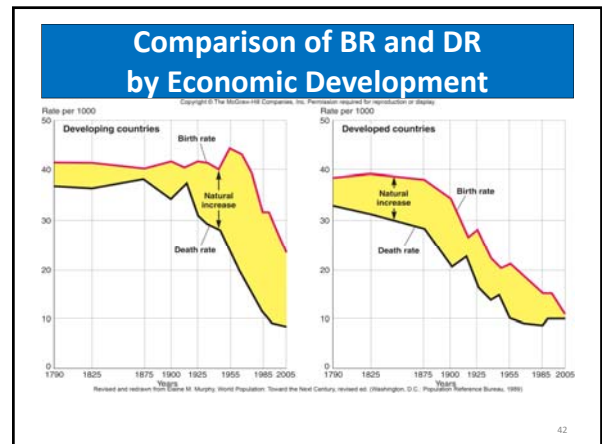
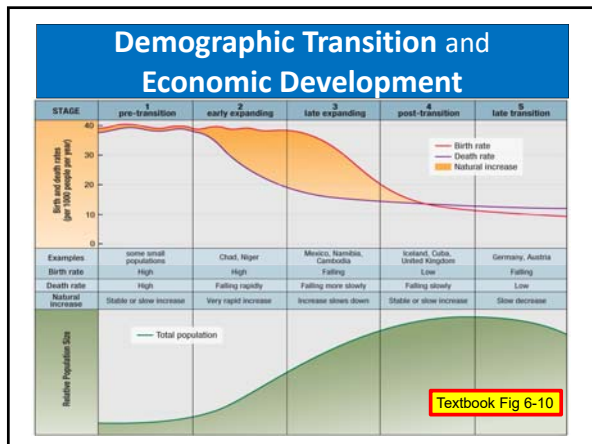
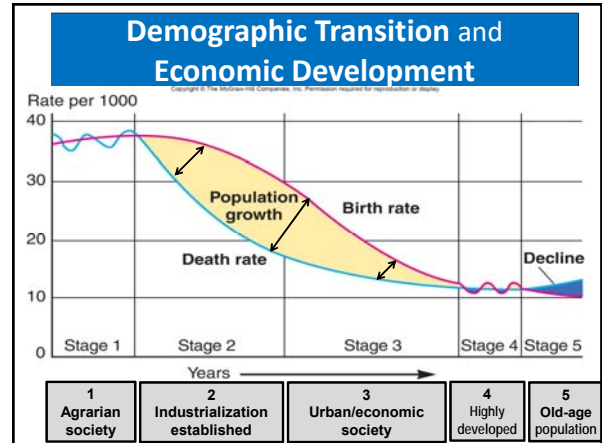
- ❖ The J-Curve becomes an S-Curve when a population reaches carrying capacity.
- It returns to a J-Curve when new technologies allow people to live longer.

**J and S population curves.**

Biotic potential    Environmental resistance    Carrying capacity

J curve    S curve

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**Homeostatic Plateaus:**  
Balance between population and resources

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

Horizontal lines equal periods of population stability.  
Vertical lines show growth.

Hunting-Gathering    Agricultural Revolution    Farming    Industrial Revolution    Urbanization    Medical Revolution

Population

Time

How long can this go on?  
What's the next magic trick?  
*Biotechnology?*

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**NEXT**

Health and Nutrition affecting Populations: Medical Geography and

An introduction to Biogeography and Ecology

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