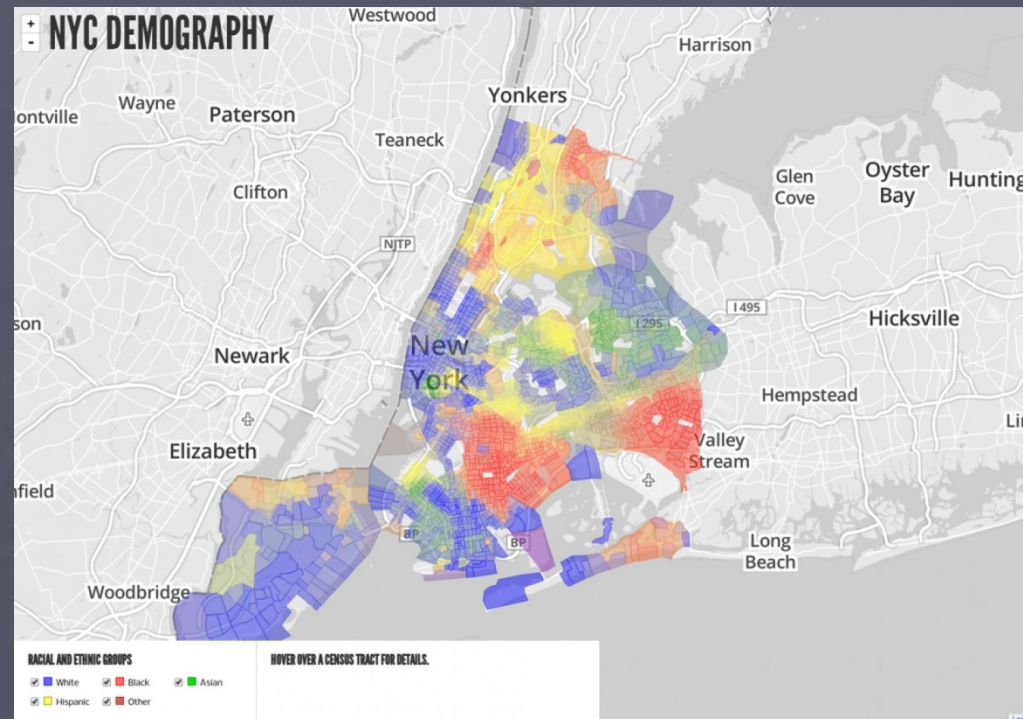


# A Geographic Approach to Population



# Demography

- The study of population characteristics
  - Looks at spatial distributions of people by age, gender, occupation, fertility, health, etc...



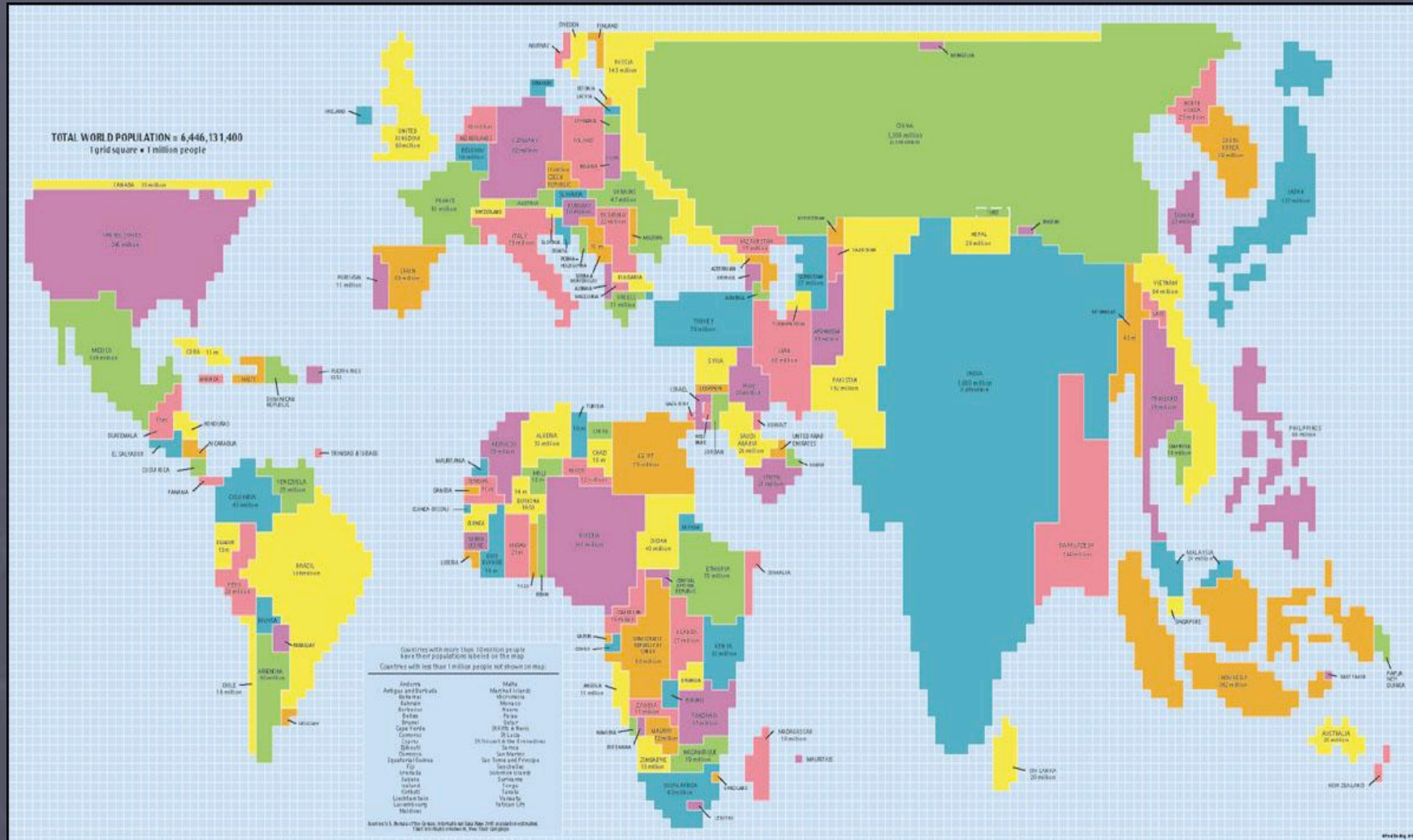
# Population

- The number of people within a given geographic area





# Mapping Data – Population Cartogram Map



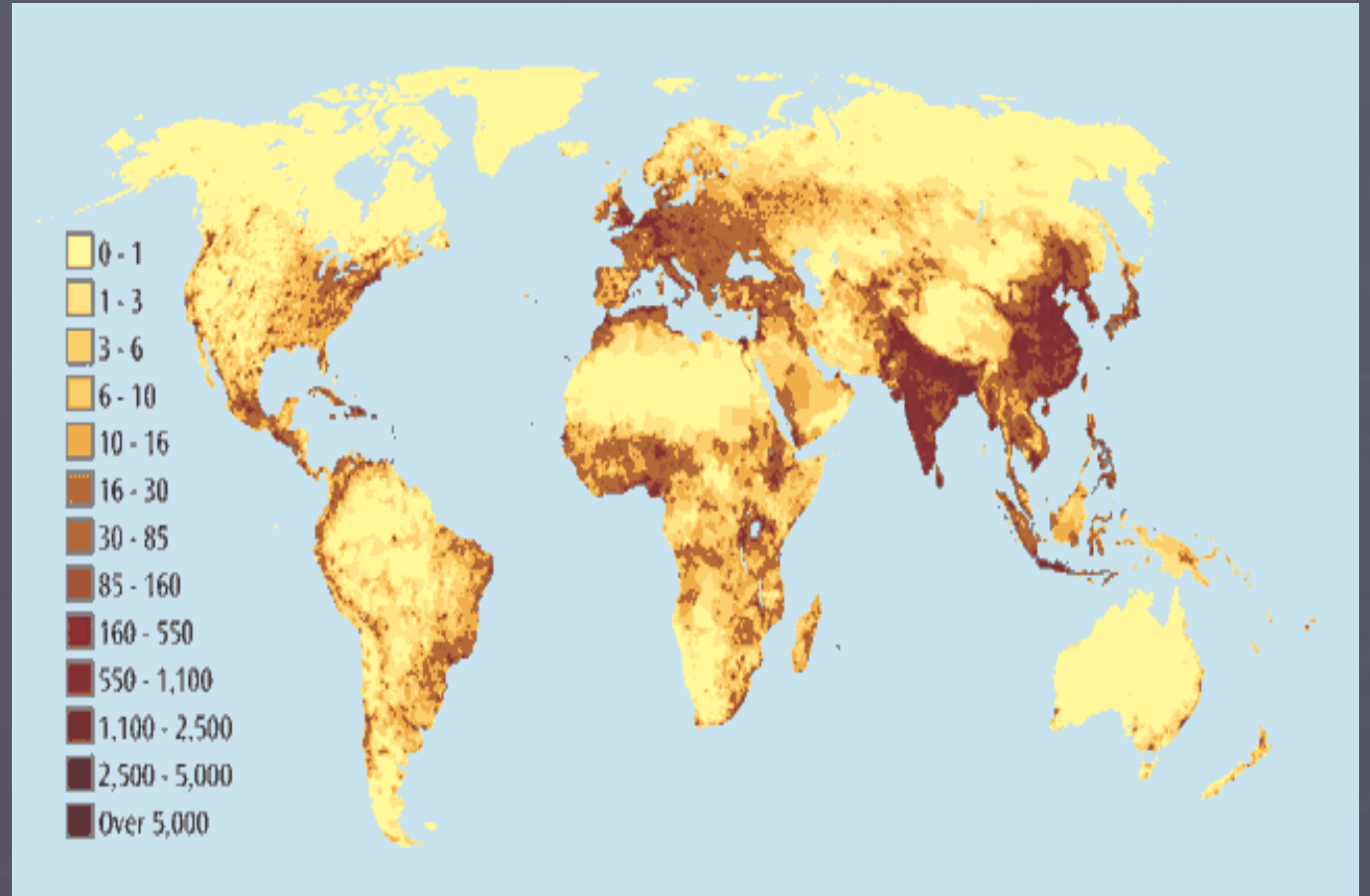


# Population Indicators

- Total Fertility Rate – The average number of a babies a woman will have during her life
- Crude Birth Rate (CBR) – The average number of births per year for every 1,000 people
- Crude Death Rate (CDR) - The average number of births per year for every 1,000 people
- Natural Increase Rate (NIR) – Calculated by comparing CBR to CDR to determine how quickly, if at all, the population is growing
- Life Expectancy – Average number of years someone from the area will live

# Population Density

- The amount of people in a given area.
- Key indicator in helping determine potential stresses on resources
  - Nebraska about 24 people/square mile
  - Alaska about 1.2 people per square mile & Washington D.C. about 11,000/square mile



# Physiological Density

- The amount of people divided by the amount of arable land
  - Ex. USA is 445 per square mile, Egypt is 6,682 per square mile
- The higher the physiological density the greater the pressure the people put on the land to produce food





# Agricultural Density

- Is the ratio of the number of farmers to the amount of arable land
  - USA has 2 farmers per square kilometer, China is 145 farmers per square kilometer



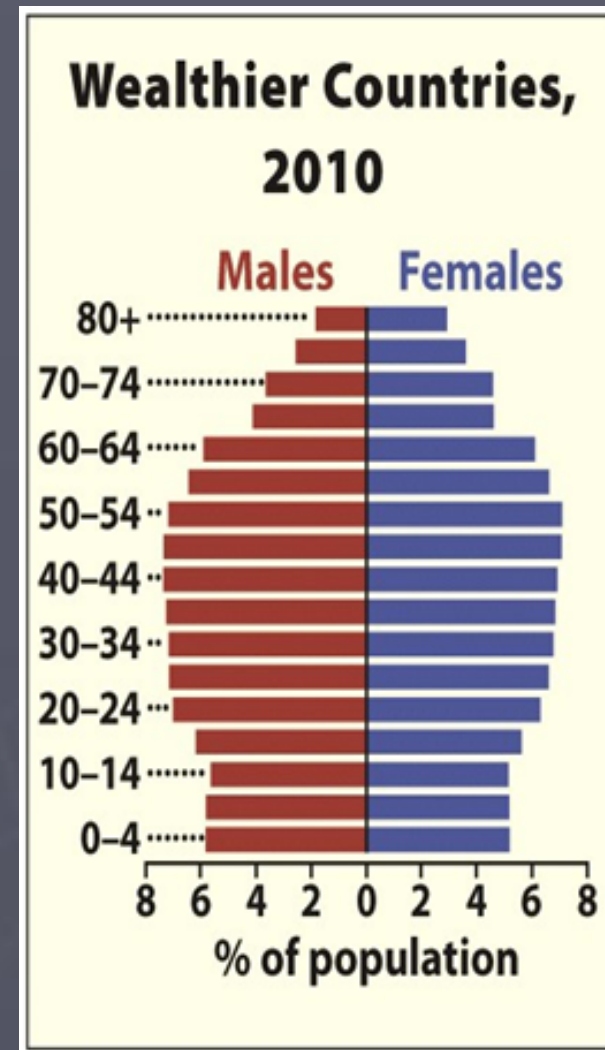
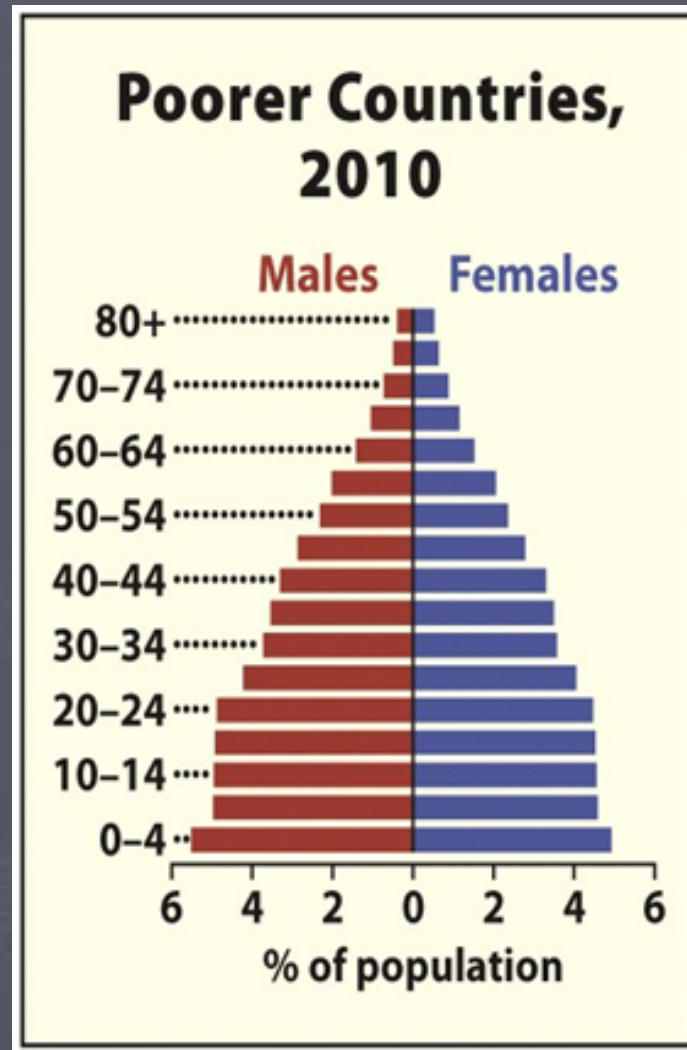
# Overpopulation

- Refers to the over-exertion of resources given a population's need in a specific area.





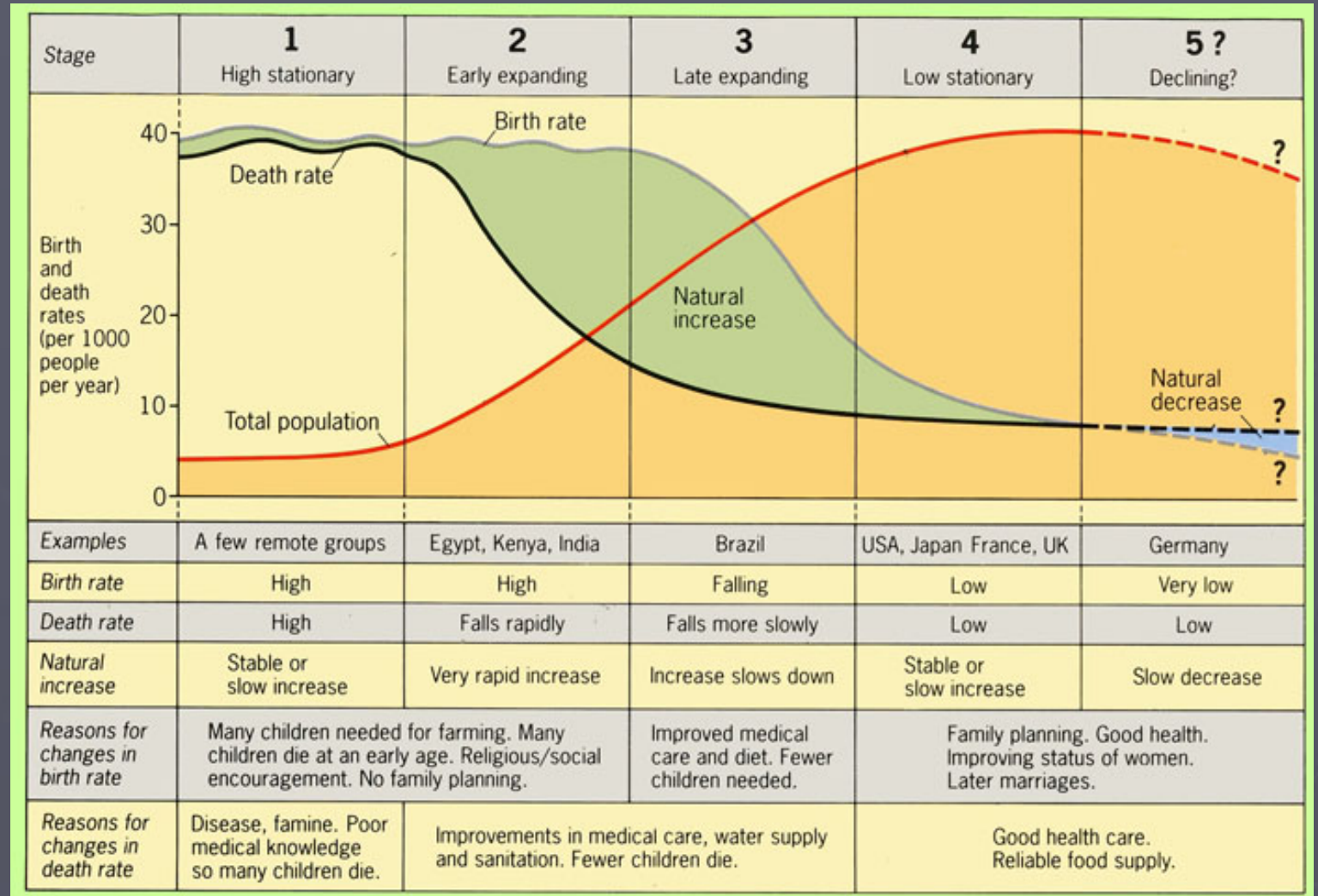
# Mapping Data – Population Pyramids



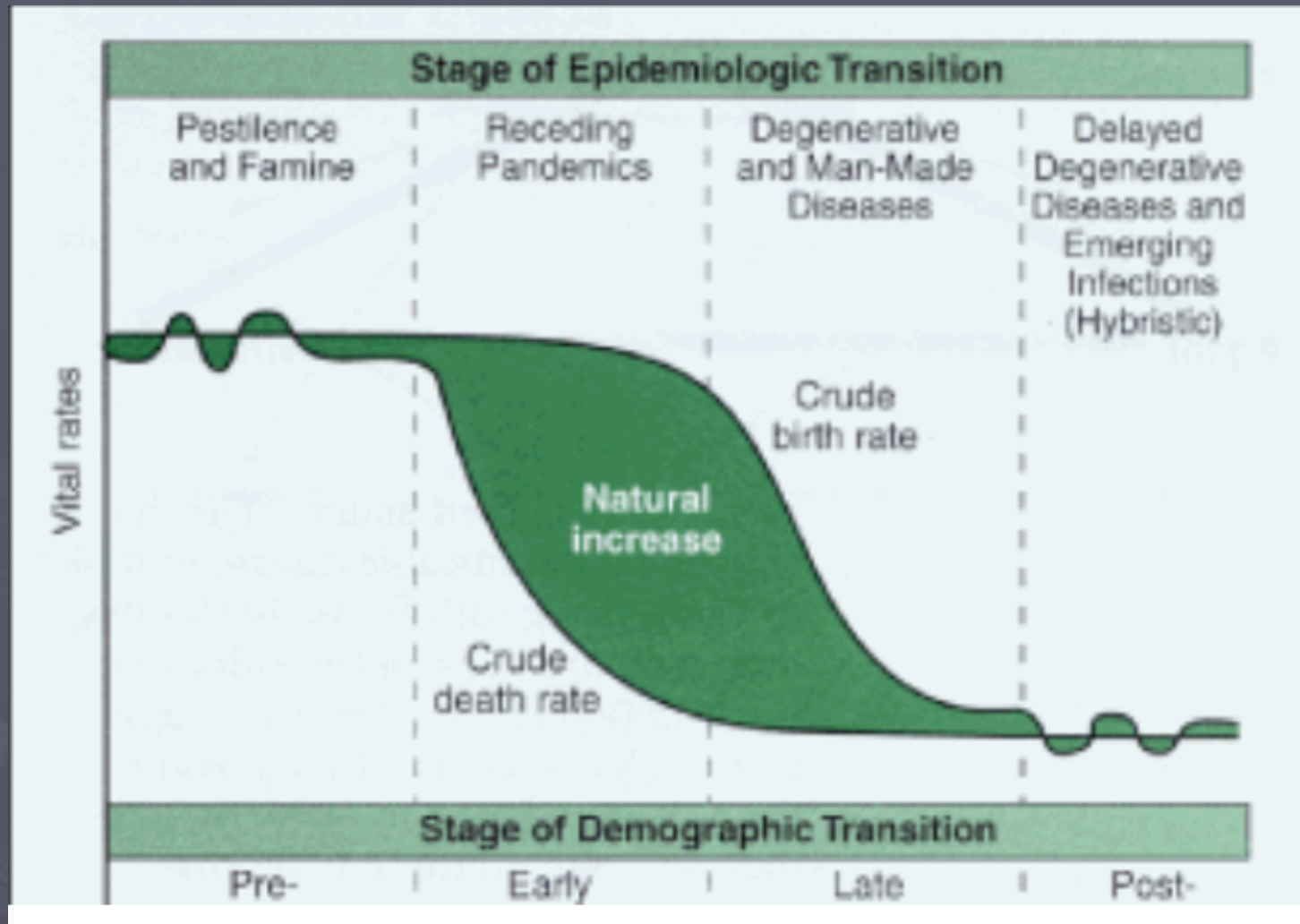


# The Demographic Transition Model

- Uses Crude Birth Rate and Crude Death Rate to calculate population growth at different stages of development



# Epidemiologic Transition Model



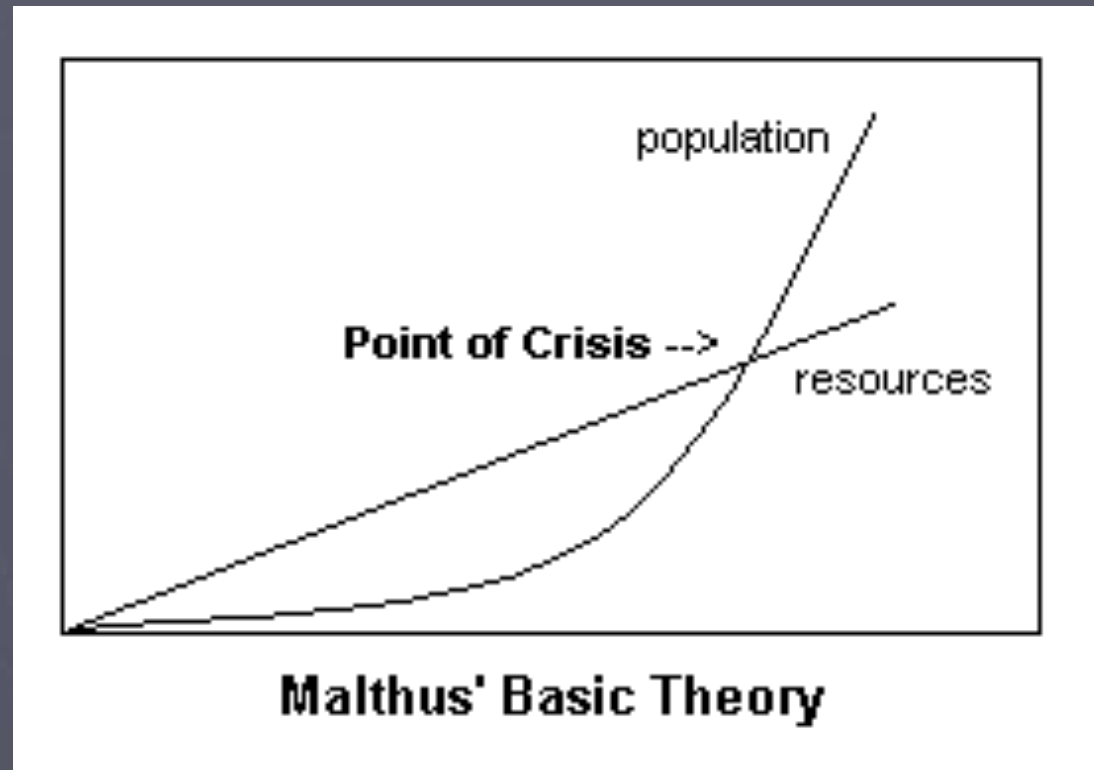
# Thomas Malthus (1766 – 1834)

- English Economist
  - 1766-1834
  - Considered to be father of Demographics
  - Made observations of England's working class during industrial revolution



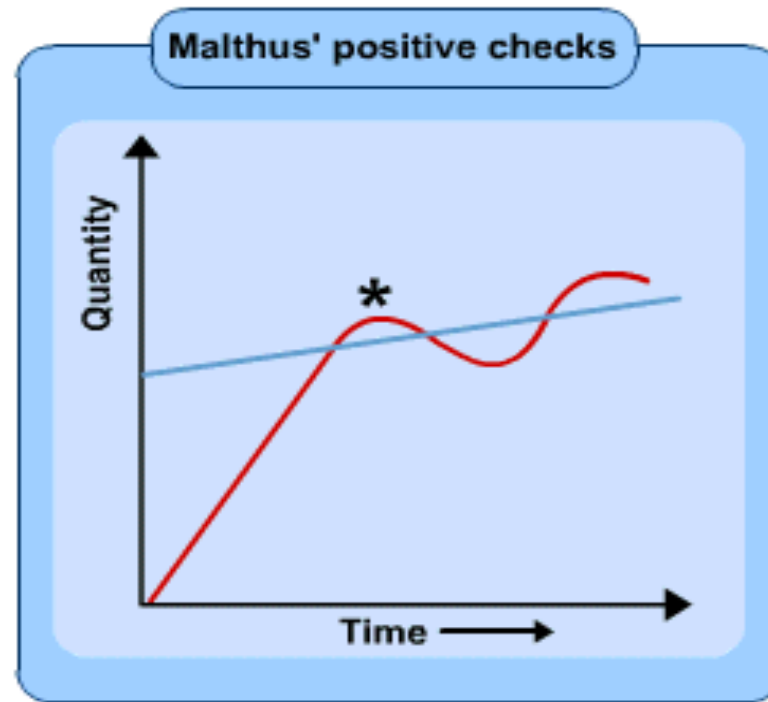


# Population vs. Resources



- For stages 1-3 resources exceed population, then as population exceed resources this leads to “misery”

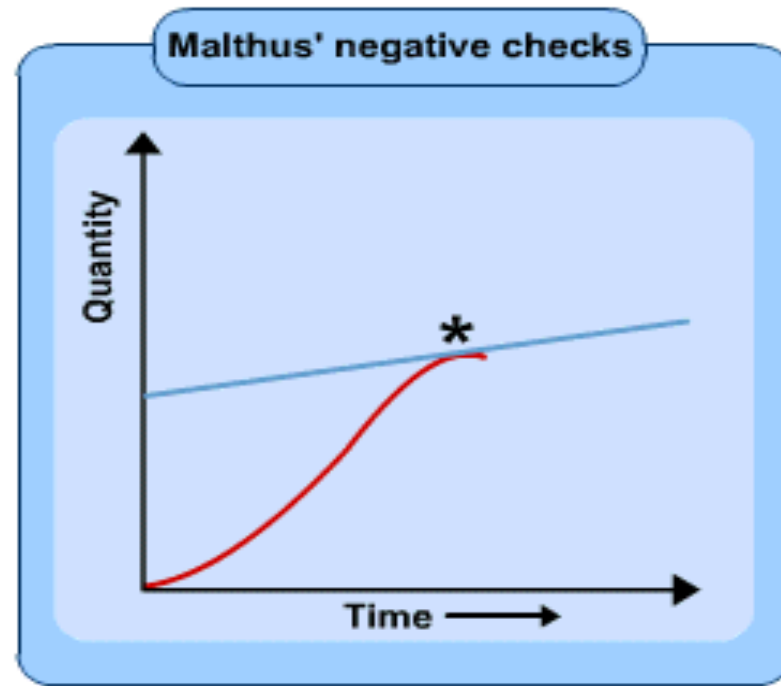
# Positive Checks



**\* Population exceeds food supply and is kept in check by war, famine, or disease. It then drops below the food supply. As the population recovers, so the cycle continues.**

\* Red line is population, blue line is food production

# Negative Checks



**\* Here, as population starts to approach the limits of the food supply, so growth slows. Malthus says this slowing is caused by delayed marriage.**

\* Red line is population, blue line is food production



# Neo-Malthusians

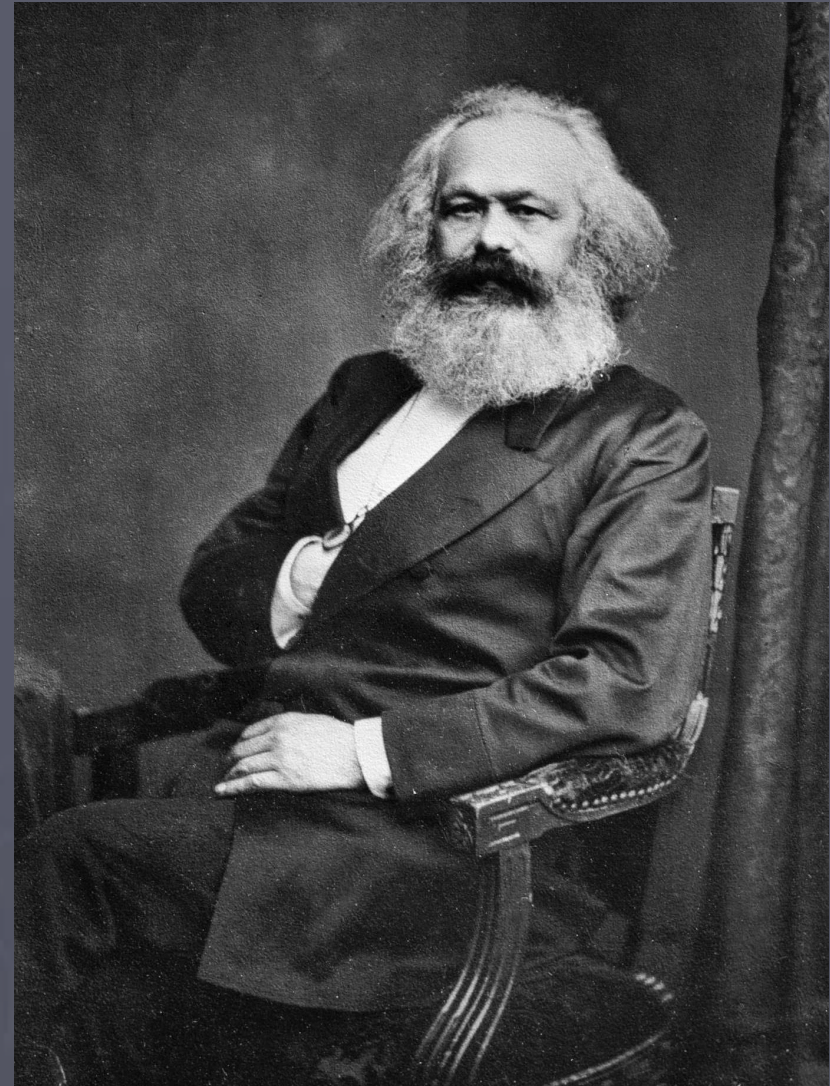
2. Neo-Malthusians Robert Kaplan and Thomas Fraser expanded Malthus' ideas to more than just food, but to also include energy resources

- Argue wars and civil violence will increase as food, clean air, fuel, and suitable farmland become more scarce



# Marxian Demographics

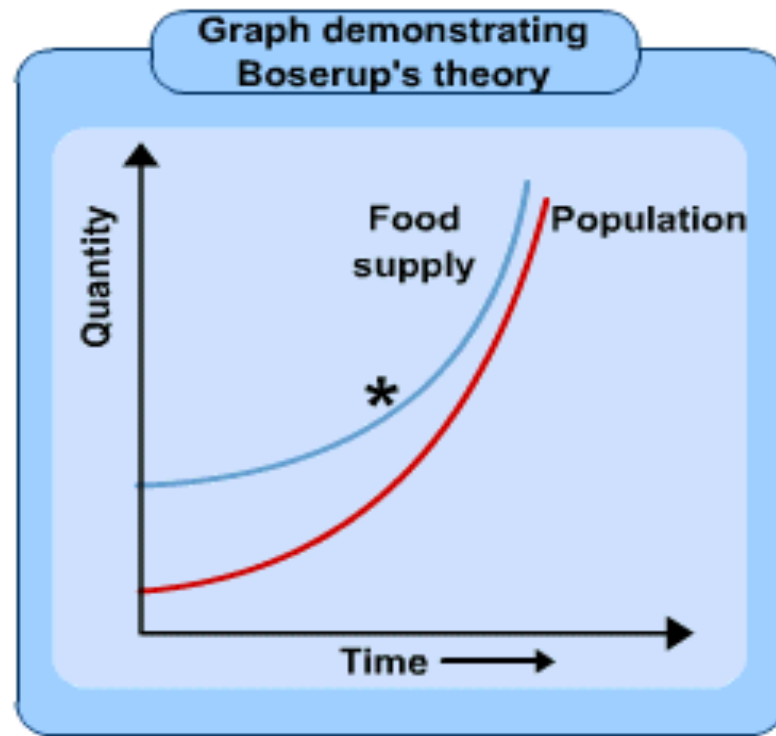
- Analyzes population characteristics and recognizes importance of inequality
- Divides society into the “haves” and the “have nots”
  - Disparity in distribution of resources. “Haves” comprise much smaller percentage of population but control majority of resources



# 20<sup>th</sup> Century Thought

- Esther Boserup
  - Optimistic view of population growth
    - As population approached crisis the world would respond with assistance spawning economic growth and new technologies
- Julian Simon
  - Population growth spurs economic development
    - More people means more ideas

# Boserup's Theory



\* Boserup argues that as the population approaches the limits of the food supply, that food supply increases as new technology improves yields.