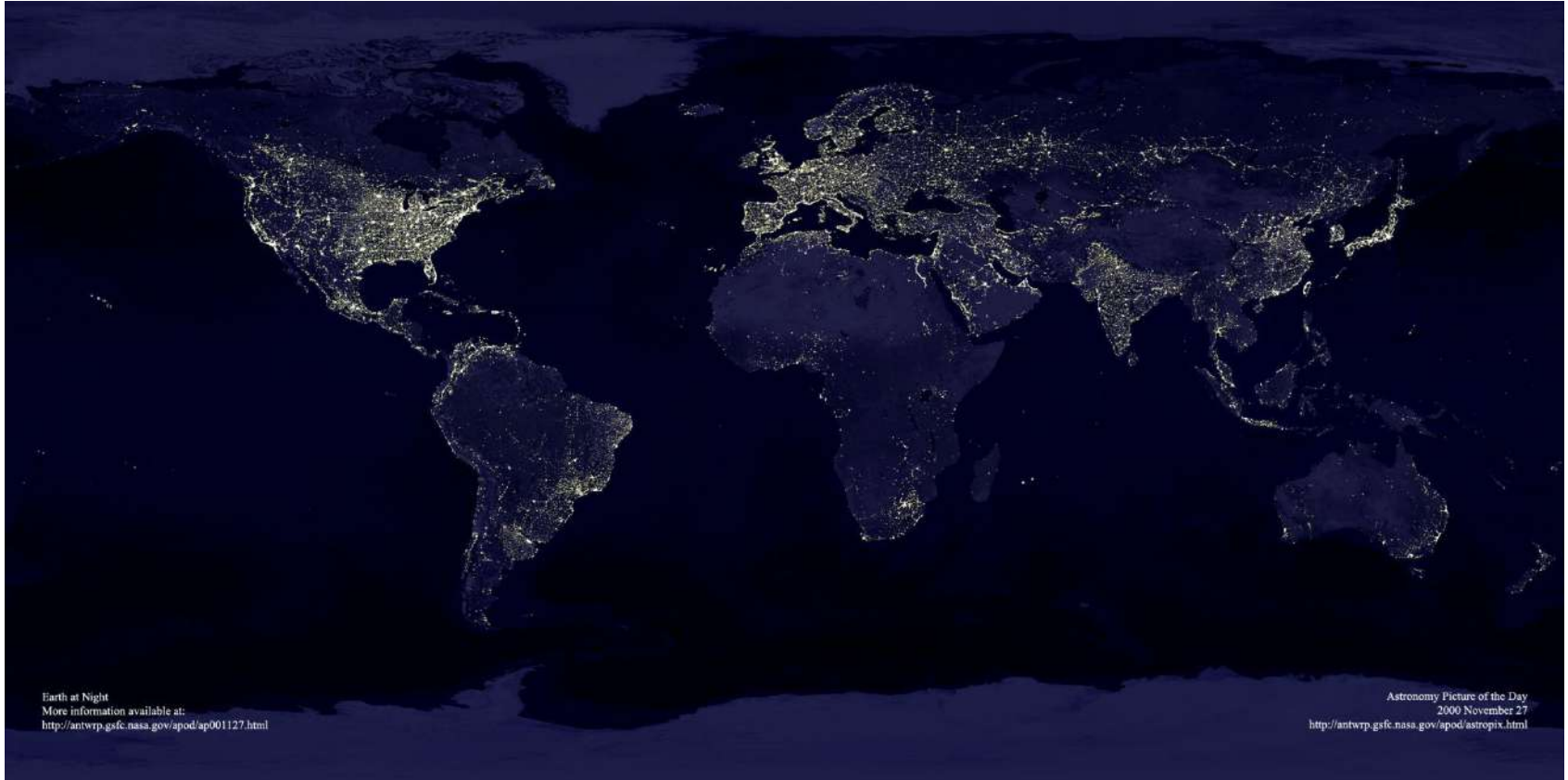


Chapter 2: Population

<http://www.youtube.com/prbnet>



Earth at Night
More information available at:
<http://antwrp.gsfc.nasa.gov/apod/ap001127.html>

Astronomy Picture of the Day
2000 November 27
<http://antwrp.gsfc.nasa.gov/apod/astropix.html>

Courtesy of NASA

Field Note:

Basic Infrastructure



© Erin Fouberg

Shanghai, China

“The words wafted in the air as my colleague and I took a minute to process them. We were in Shanghai, China, visiting with a Chinese student who had spent a semester at our small college in a town of 26,000 in rural South Dakota. My colleague had asked the student what he missed most about our small town of Aberdeen. He replied without hesitating, “Basic infrastructure.”

Key Question

Where in the world do people live and why?

WORLD POPULATION DISTRIBUTION

One dot represents
100,000 people

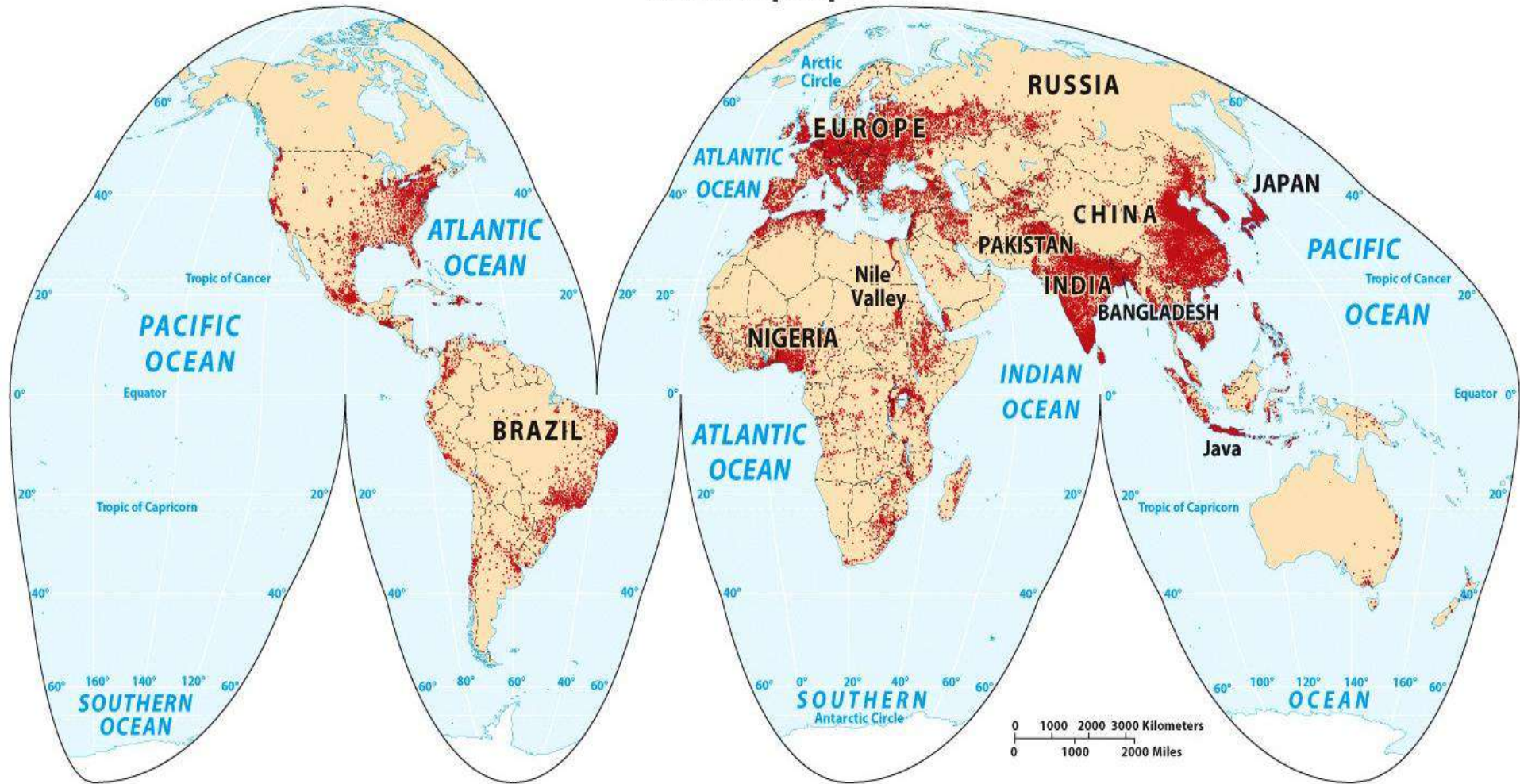
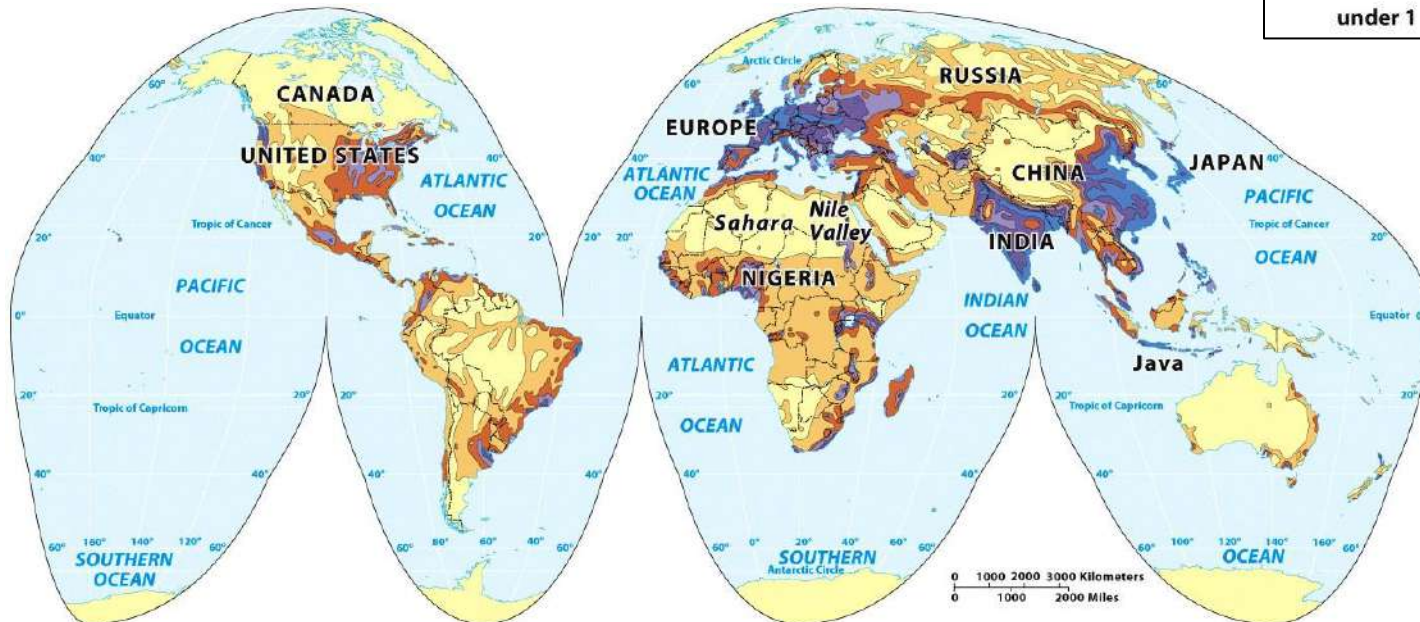
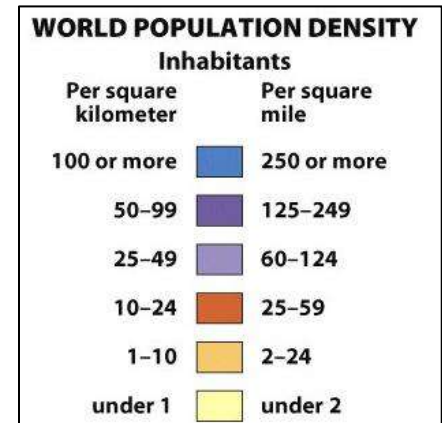


Figure 2.5

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Where in the World Do People Live and Why?

- **Population density:** a country's total population relative to land size
- Assumes an even distribution of population to the land



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Pop. Density calculation

- Total population / total land area
- Slovenia - pop= 2,000,000 land area = 7,819 square miles
- What is the arithmetic density?

Answer: $2,000,000/7819= 256$ people per square mile.

Where in the World Do People Live and Why?

Physiologic Population Density

- The number of people per unit area of agriculturally productive land
- Formula: $\text{population} / \text{amount of arable land}$



Where in the World Do People Live and Why?

- Agricultural Density: the ratio of the number of farmers to the amount of land suitable for agriculture (farmers/arable
- US is low: 1.6 farmers/kilometer
- Egypt: 251/kilo.
- More developed countries have lower ag. Densities because technology/money means bigger farms, less people needed to farm.

Field Note: Luxor, Egypt



© Alexander B. Murphy

Moving away from the river a few blocks, the land becomes sandy and wind-sculpted.



© Alexander B. Murphy

Egypt's arable lands are along the Nile River Valley.

“The contrasting character of the Egyptian landscape could not be more striking. Along the Nile River, the landscape is one of green fields, scattered trees, and modest houses, as along this stretch of the river’s west bank near Luxor. But anytime I wander away from the river, brown, wind-sculpted sand dominates the scene as far as the eye can see. Where people live and what they do is not just a product of culture; it is shaped by the physical environment as well.”

Where in the World Do People Live and Why?

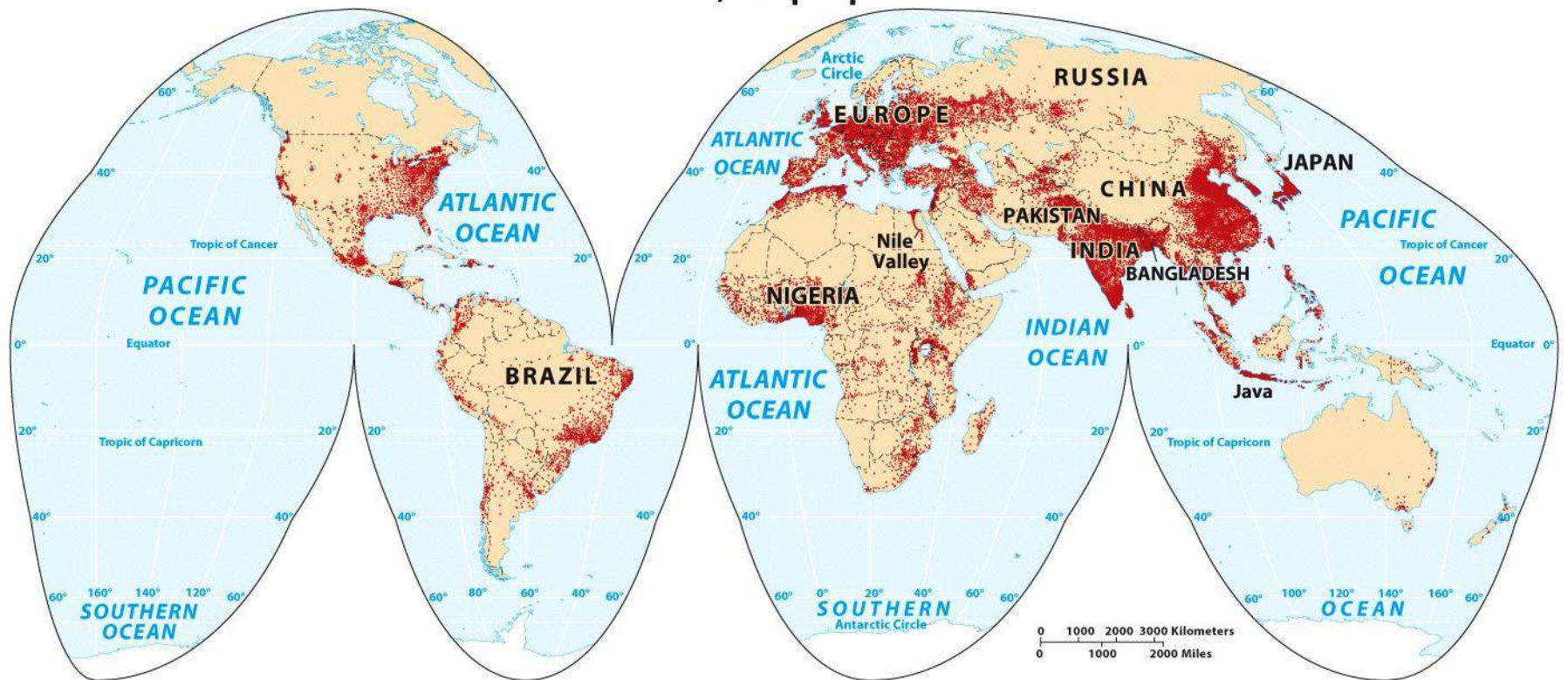
Population Distribution

- Ecumene – the portion of the earth’s surface occupied by permanent human settlements.
- Descriptions of locations on the Earth’s surface where individuals or groups (depending on the scale) live.
- Geographers often represent population distributions on **dot maps**, in which one dot represents a certain number of a population.

World Population Distribution

WORLD POPULATION DISTRIBUTION

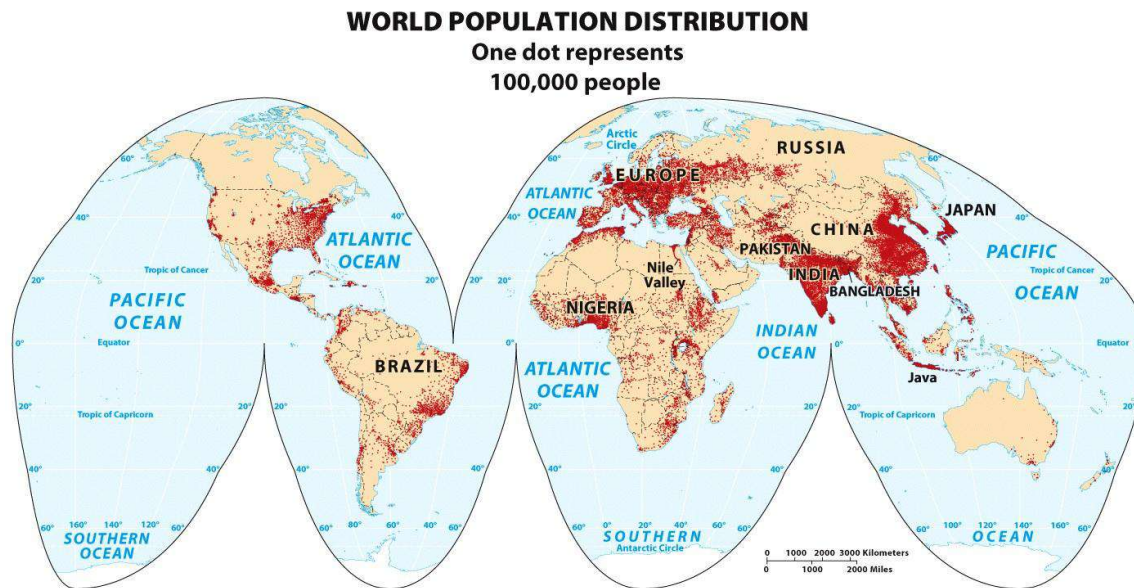
One dot represents
100,000 people



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As we discussed in the field note at the beginning of this chapter, the populations of China and India account for 40 percent of the world currently, and India is predicted to outpace China's population in the 2030s. How will Figure 2.5 look different 50 years from now? If you were updating this textbook in 50 years, where would the largest population clusters in the world be?



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Where in the World Do People Live and Why?

US census <http://www.census.org>

Reliability of Population Data

- Census: Federal government funding depends on population data.
- Political implications of under-representation of populations.
- United Nations, World Bank, and Population Reference Bureau collect data on world populations.

East Asia

- Almost 25% of world's population
- Population concentrated in Korea, Japan, China
- Over 1.3 billion people in China

China= 1,338,000 Japan=127,700,00
N. Korea= 23,900,000 S. Korea=49,100,000



South Asia

- Physical geography barriers separate population clusters

Himalaya Mountains; Indus River Valley

Confined region with rapidly growing population

- Bangladesh: 152 million people in an area the size of Iowa

Pakistan=180,800,000 India= 1,186,400,000 Nepal=28,100,000 Bhutan=700,000
Bangladesh=152,400,000 Burma=50,100,100



North America

- Megalopolis

Huge urban agglomerations; Boston, NYC, Philadelphia, Baltimore, Washington, D.C

This accounts for more than 20% of US population

Population Agglomeration: an extended city or town area comprising the built-up area of a central place (usually a municipality) and any suburbs linked by continuous urban area.

100 largest agglomerations in the world

Rank ↕	City ↕	Population ↕	Country ↕	Statistical concept ^[2] ↕
1	Tokyo	36,933,000	 Japan	Metropolitan area ^[4]
2	Delhi (National Capital Region (India))	21,935,000	 India	Urban agglomeration ^[5]
3	Mexico City	20,142,000	 Mexico	Metropolitan area (zona metropolitana)
4	New York–Newark	20,104,000	 United States	Urban agglomeration ^[6]
5	São Paulo	19,649,000	 Brazil	Metropolitan area (região metropolitana)
6	Shanghai	19,554,000	 China	Urban agglomeration ^[8]
7	Mumbai	19,422,000	 India	Urban agglomeration
8	Beijing	15,000,000	 China	Urban agglomeration ^{[8][10]}
9	Dhaka	14,930,000	 Bangladesh	Metropolitan area (megacity)
10	Kolkata	14,283,000	 India	Urban agglomeration
11	Karachi	29,500,000	 Pakistan	Urban agglomeration

Key Question

- Why Do Populations Rise and Fall in Particular Places?

Population: Rise and Fall

- Thomas Malthus: *An Essay on the Principles of Population*
- Grows faster than food supply; food grows linearly, population grows exponentially
- 1776-1834



Neo Malthusians

- Current scholars who agree with Malthus for the most part.
- Believe human suffering is more widespread than ever.
- Believe the real problem is still overpopulation.

Population Growth: World, Regional, National Scales

- Births – Deaths = Natural Increase
Does not factor immigration (in-migration) or emigration (outmigration) into the equation

Regional and National

- Crude Birth Rate (CBR)
Number of births in a year per 1000
- Crude Death Rate (CDR)
Number of deaths in a year per 1000
- Total Fertility Rate (TFR)
Average number of children born to a woman of childbearing age

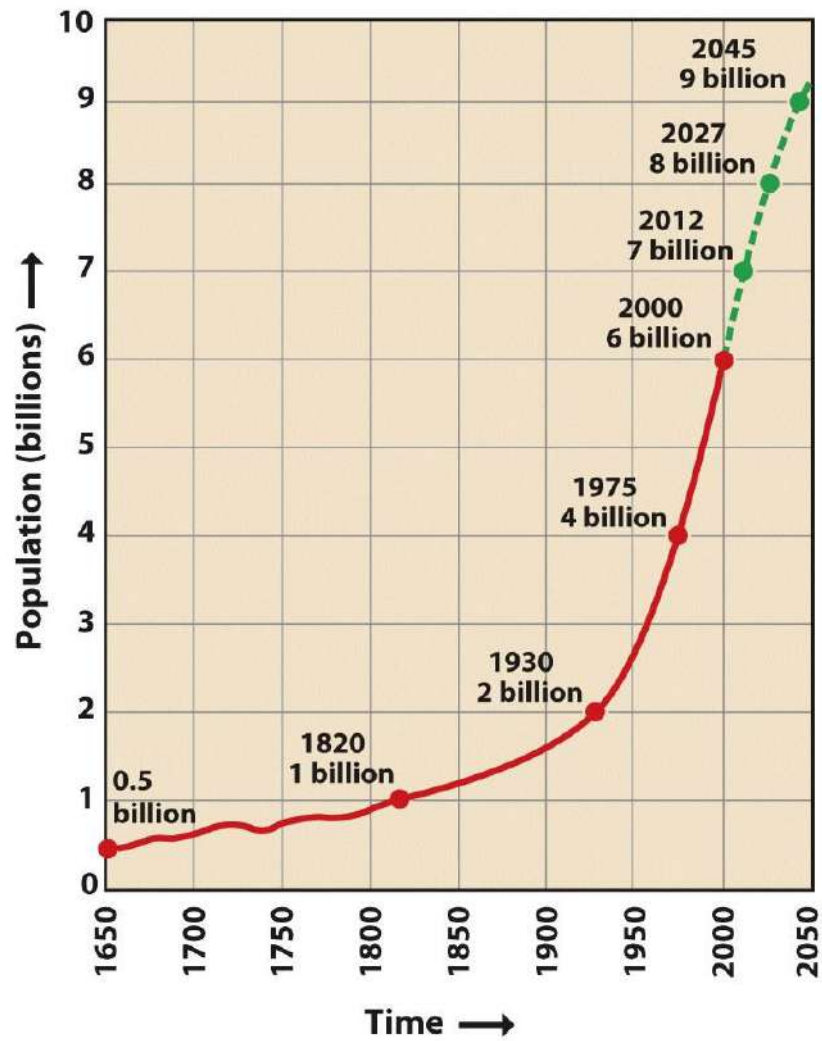
Field Note: Bordeaux, France

“My mind was on wine. I was in Bordeaux, France, walking down the street to the Bordeaux Wines Museum (Musée des Vins de Bordeaux) with a friend from the city. Having just flown from Dakar, Senegal, after spending several weeks in Subsaharan Africa, I found my current surroundings strikingly different. Observing the buildings and the people around me, I noticed that after having been among so many young children in Subsaharan Africa, the majority of the inhabitants I encountered in Bordeaux were adults. I turned to my friend and asked, “Where are all the children?” He looked around, pointed, and replied, “There goes one now!” In Bordeaux, in Paris, in all of France and the rest of Europe, there are fewer children and populations are aging.



Concept Caching:
Bordeaux, France

© Harm de Blij



Data from: US Census Bureau

Future Population Growth

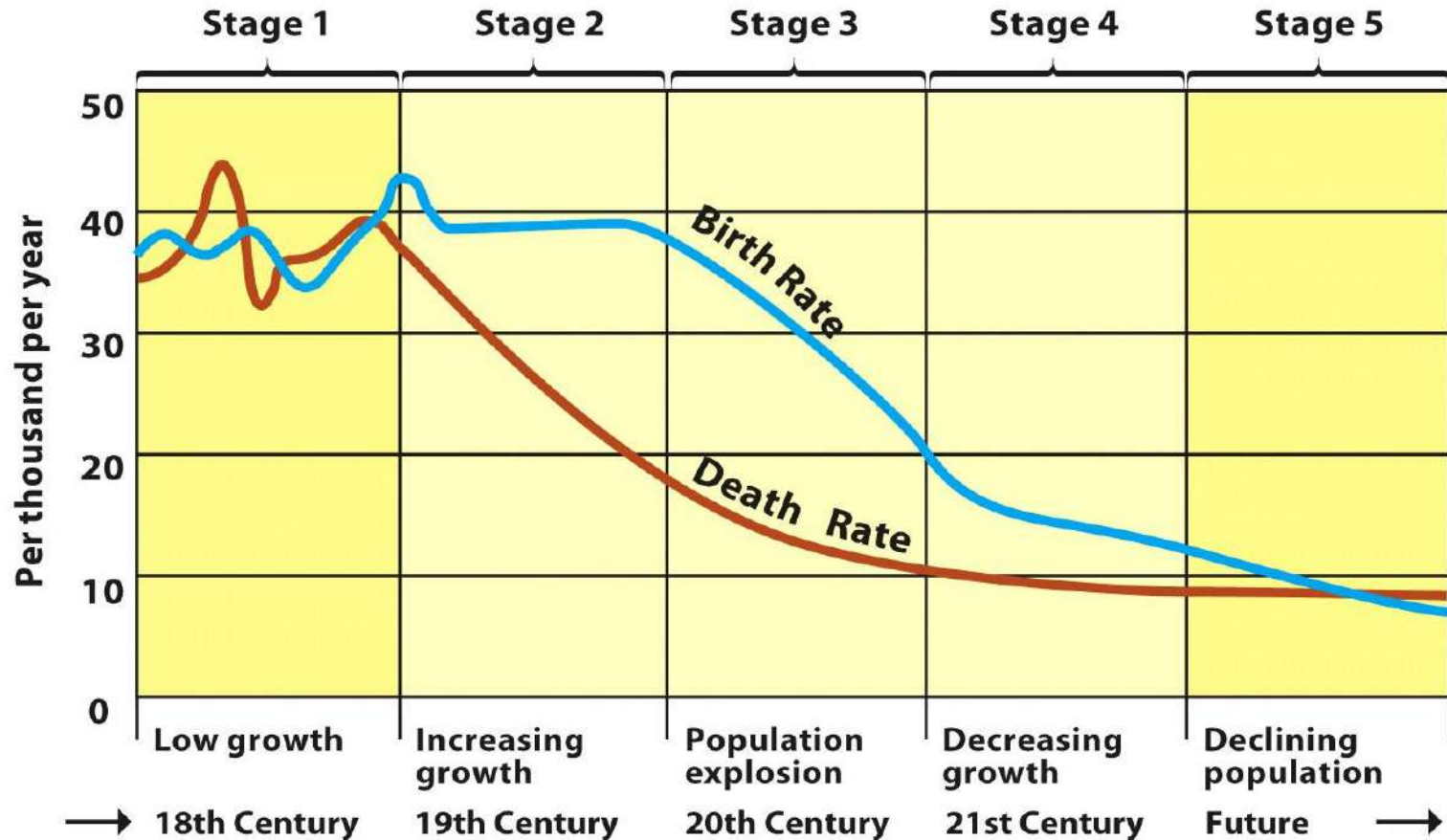
- Stationary Population Level (SPL)
The level at which a national population ceases to grow

Anticipated dates for population stabilization are often moved back

Ex. Brazil and India

The Demographic Transition

MODEL OF THE DEMOGRAPHIC CYCLE



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Demographic Transition

- Factors limiting population growth:
Famine, epidemics, plagues, wars
- Factors enhancing population growth:
Agricultural advances, Industrial
Revolution, sanitation, vaccinations

Key Question

- Why Does Population Composition Matter?

Population Composition

- The composition is the structure of a population in terms of age, sex, and other properties such as marital status and education.
- Age and sex are key indicators of population composition, and demographers and geographers use **population pyramids** to represent these traits visually.

Population Composition (cont'd)

- Young vs. elderly in any population will determine different social needs
- Geographers are concerned with both spatial distribution and population composition

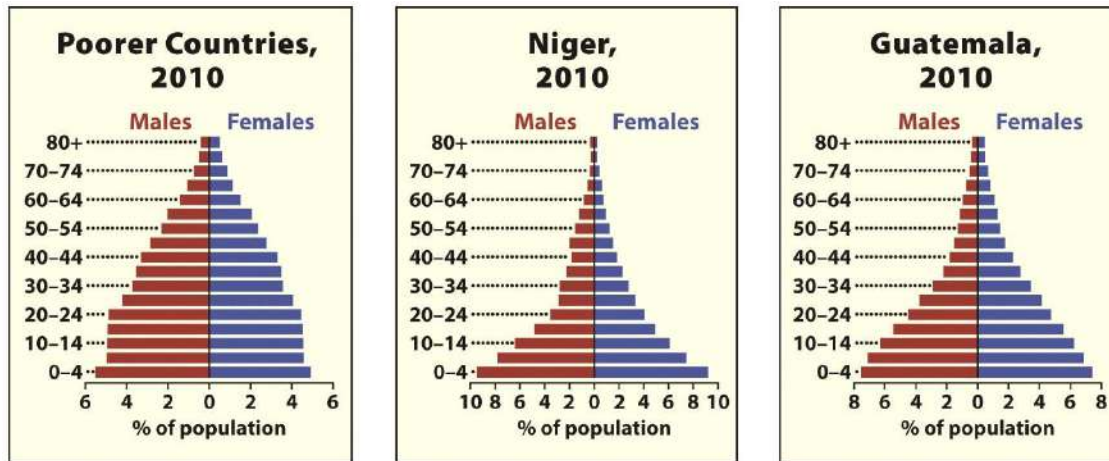


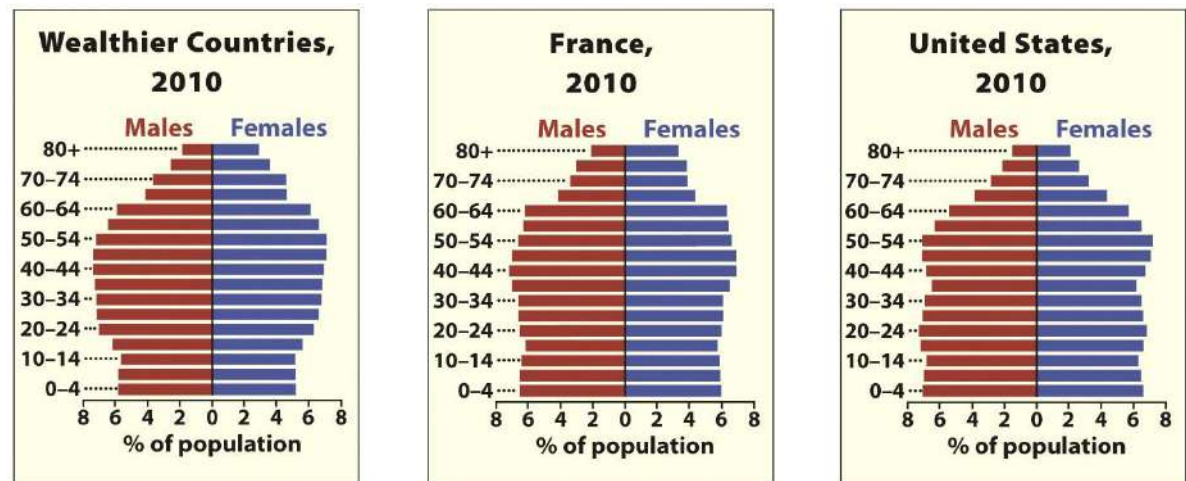
Figure 2.16
Age-Sex Population Pyramids for Countries with High Population Growth Rates.

Countries with high total fertility rates, high infant mortality rates and low life expectancies will have population pyramids with wide bases and narrow tops.

Data from: UN, World Population Prospects

Figure 2.17
Age-Sex Population Pyramids for Countries with Low Population Growth Rates.

Countries with lower total fertility rates and longer life expectancies have population pyramids shaped more uniformly throughout.



Data from: UN, World Population Prospects

Key Question

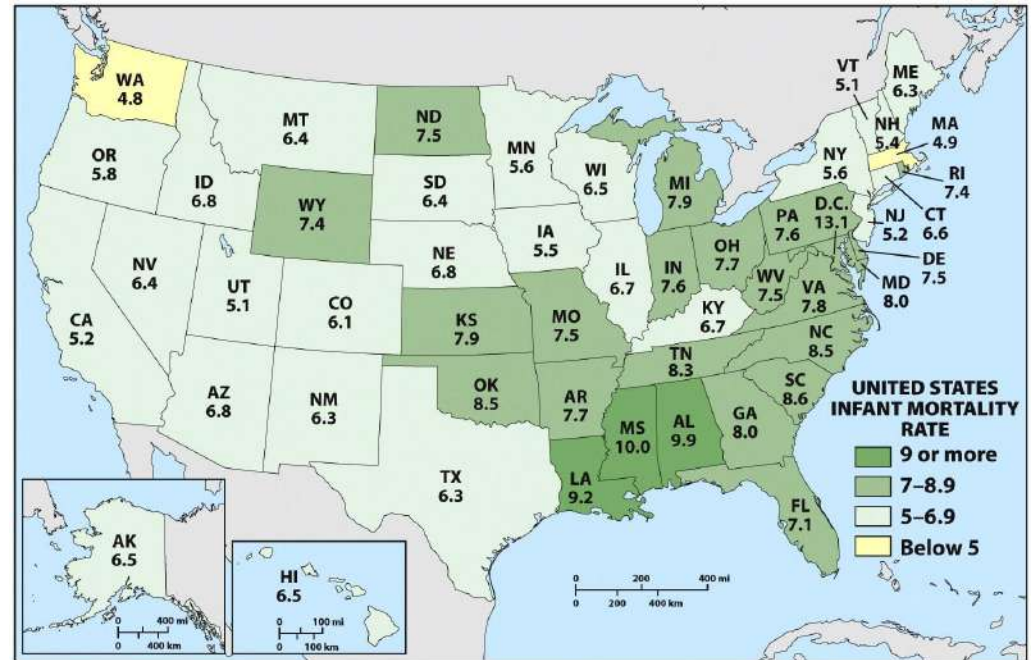
- How Does the Geography of Health Influence Population Dynamics?

Geographies of Health

- Infant Mortality
- Child Mortality
- Life Expectancy

Study **Figure 2.19**, the infant mortality rate (IMR) by state in the United States. Hypothesize why the IMR is low in some regions of the country and high in others. Shift scales in your mind, and take one state and choose one state to consider: how do you think IMR varies within this state?

What other factors are involved at this scale and this level of generalization to explain the pattern of IMRs? Use the population Internet sites listed at the end of this chapter to determine whether your hypotheses are correct.



Data from Centers for Disease Control

Influence on Health and Well-Being

- Health is closely related to location and environment
- When an outbreak of a particular disease occurs its source and diffusion are studied by specialists in medical geography
- Medical geographers study diseases, and they also use locational analysis to predict diffusion and prescribe prevention strategies

Infectious Diseases

- 65% of all diseases are infectious
- Malaria - *Vectored*
- HIV/AIDS- *Nonvectored*

Chronic and Genetic Diseases

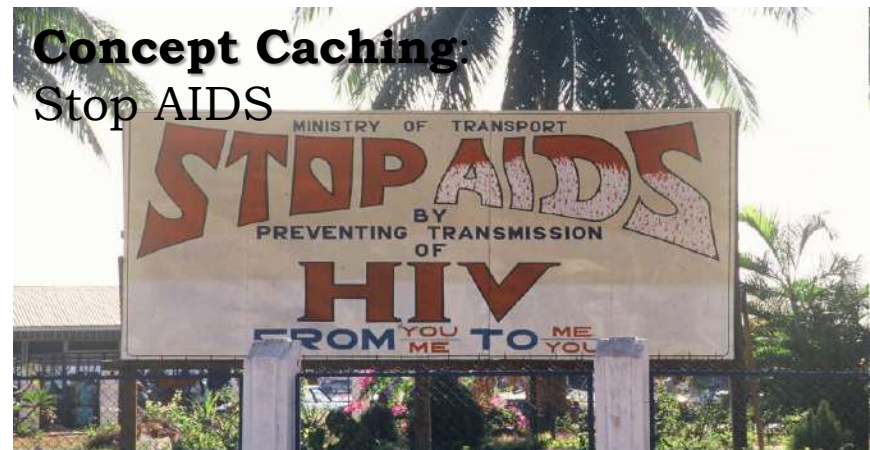
- Also called degenerative diseases
- Afflict middle and old age populations
- 100 years ago in the United States: tuberculosis, pneumonia, and heart diseases
- Today: Cancer, heart disease, stroke and accidents are the leading causes of death in the United States

Field Note: Johannesburg, South Africa

“The day was so beautiful and the children’s faces so expressive I could hardly believe I was visiting an AIDS hospice village set up for children. The Sparrow Rainbow Village on the edges of Johannesburg, South Africa, is the product of an internationally funded effort to provide children with HIV/AIDS the opportunity to spend what time they have in a clean, safe environment. Playing with the children brought home the fragility of human life and the extraordinary impacts of a modern plague that has spread relentlessly across significant parts of Sub-Saharan Africa.”



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© Barbara Weightman

Guest Field Note: Marich Village, Kenya

This drawing was done by a Pokot boy in a remote primary school in northwestern Kenya. He agreed to take part in my fieldwork some years after I had started researching young carers in Sub-Saharan Africa. Since those early interviews in Zimbabwe I have been acutely aware of young carers' invisibility—you can't tell who is a young carer just by looking at them. Indeed, invisibility is a characteristic of many aspects of the social impacts of HIV/AIDS. This young person drew himself working in the fields and taking care of cattle. African young people help with farming and herding for many reasons, but for young caregivers, assisting their sick family members in this way is especially important.



© Elsbeth Robson

Key Question

How Do Governments Affect
Population Change?

Population and Government

- **Expansive population policies:**
Encourage large families and raise the rate of natural increase

- **Eugenic population policies:**
Designed to favor one racial or cultural sector of the population over others

Population and Government (cont'd)



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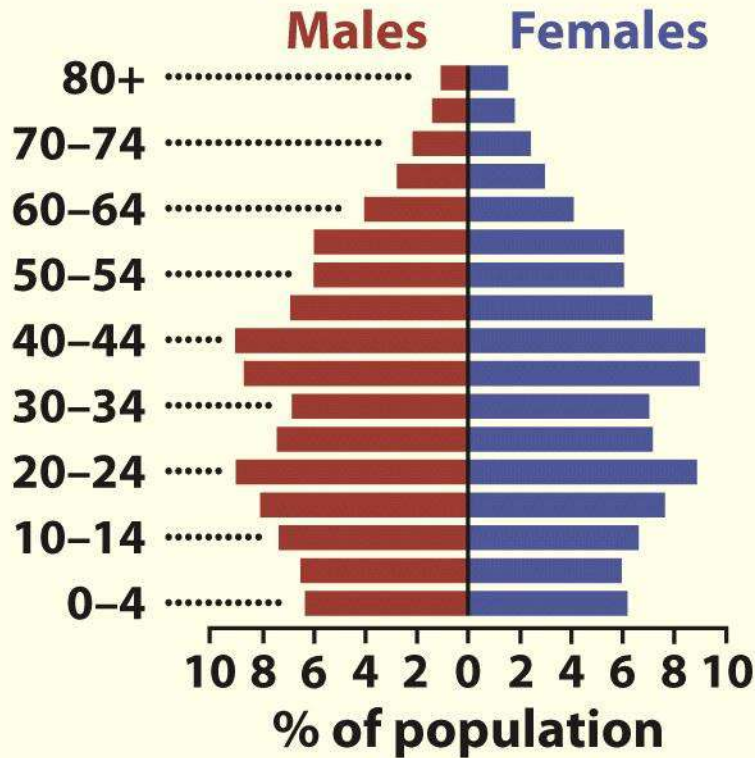
Chengdu, China

- **Restrictive population policies**
 - e.g., One-Child Policy in China
 - Limitations: Sweden
 - Contradictions: Roman Catholic doctrine

Population Pyramids, China: 2010 and 2050

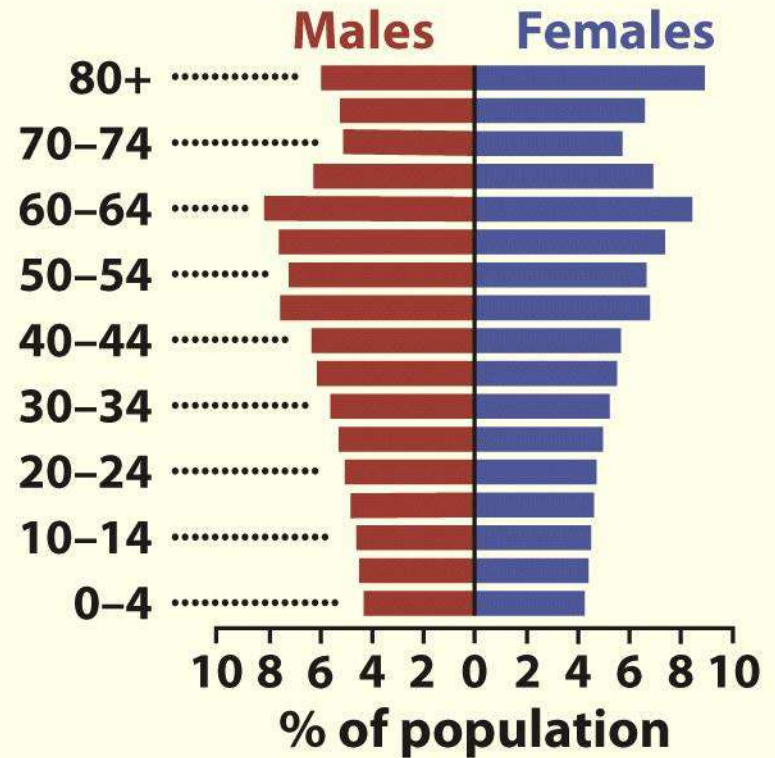
2010

Percentage



2050

Percentage



Data from: Population Reference Bureau

Additional Resources

200 Countries, 200 Years, 4 Minutes

<http://www.youtube.com/watch?v=jbkSRLYSojo>