Unit 1: Geography, It's Nature and Perspective

Coach T

How does the way geographers look at the world differ from that of other scientist?

- ➔ **Geography looks at the world from a SPATIAL PERSPECTIVE**
  - **Considers the arrangement of the phenomena being studied across the Earth's surface.**
  - **Location, distance, direction, patterns, and interconnection**
- ➔ **Questions about Spatial Distribution**
  - **Why are things where they are?**
  - **Why are thing distributed the way they are?**
  - **What is changing the pattern of distribution?**

Geography

- One of the oldest fields of study
- Name comes from Greek
  - The idea of studying, or writing about (-graphy)
  - With the idea of earth (geo-)
- **Physical geography**
  - Study of spatial characteristics of various elements of the physical environment
- **Human geography**
  - Study of spatial characteristics of humans and human activities
  - Subfields: population, culture, economics, urban areas, and politics

History of Geography

- ➔ **Greeks and Romans were the first in Western Eurasia to formalize the study of geography**
  - ◆ ***Iliad and Odyssey***
  - ◆ **Aristotle: observed how the earth influenced human behavior**
  - ◆ **Eratosthenes: coined the term *Geography***
- ➔ **Age of Exploration**
  - ◆ **Columbus**
  - ◆ **Gerardus Mercator: Created map for sailors and it's still used widely today**
- ➔ **Recent**
  - ◆ **Carl Sauer (1889-1975): expanded the focus of geography to include human activity**

Five Themes of Geography

#1 Place

Place

The theme **Place** answers the question:

"What is it like there?"

- A place is often known by its own special characteristics.
  - Characteristics are special traits or qualities that a place can have.
- Types of characteristics for Place:
  - Human
  - Physical

#1 Place

- ➔ **Group of places in the same area that share characteristics form a <u>REGION</u>**
- ➔ **<u>Site</u>**
  - ◆ **Characteristics at the immediate location**
  - ◆ **Soil type, climate, labor force, and human structures**
- ➔ **<u>Situation</u>**
  - ◆ **Location of a place relative to its surroundings and other places**
  - ◆ **Helps us understand the importance of a location**

#1 Place

- **Sense of Place**
  - People perceive characteristics of places in different ways
  - If a place inspires no emotional ties it has placelessness
- **Toponyms**
  - Place names

Human Characteristics	Physical Characteristics
• Main customs, languages, and beliefs • Traditions and holidays • Clothing ideas • Political views	• Mountains, plains • Ocean, rivers, and lakes • Climate • Animals

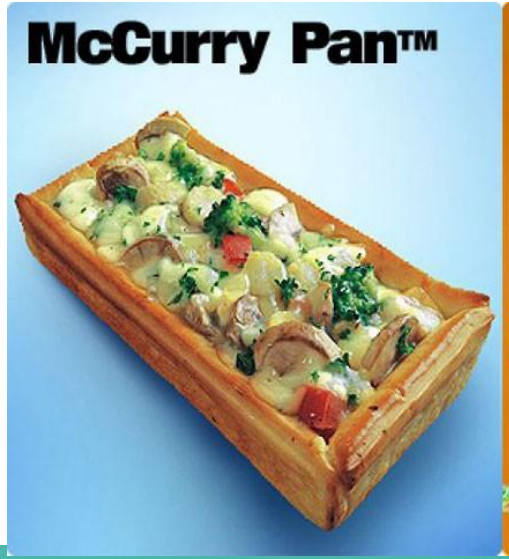
Globalization

This is a set of processes that are increasing interactions, deepening relationships, and accelerating interdependence across national borders.

Good or bad?

#1 Place

- **Local Diversity**
  - **As the world becomes more globalized it has also become more diverse**
  - **Many people search for ways to express their unique cultural traditions and identity as a reaction to globalization.**



#2 Location

Location

The theme of **Location** answers the question:
"Where is it?"

It describes where a place is on Earth. There are two kinds of location:

Absolute location:

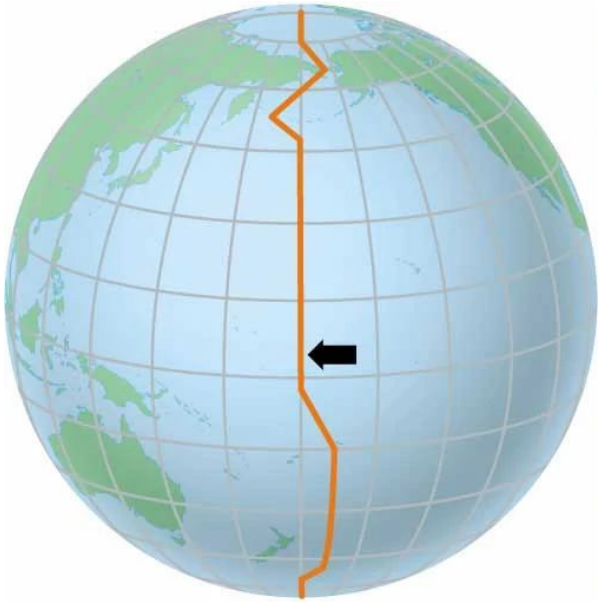
- The exact location of a place on Earth.

Relative location:

- Location of a place when compared to other places.

#2 Location

- **Absolute Location**
  - Exact location of a place on Earth
- **Latitude and Longitude**
  - Latitude: horizontal parallels drawn around the globe,
    - measures north and south
  - Longitude: vertical meridians around the globe,
    - measures east and west
- **International Date Line**
  - Calendar date changes when you cross
  - Adjusted to go around islands



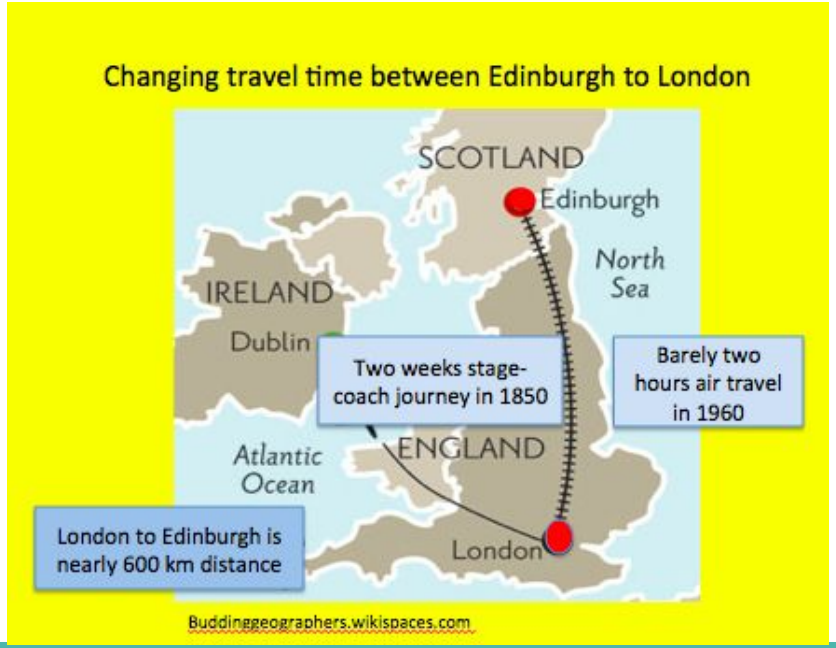
Jerry Malone

#3 Movement

- ➔ **Density is the number of things—which could be people, animals, plants, or objects—in a certain area. The frequency something occurs**
  - ◆ **Types: arithmetic, physiological, agricultural, and housing**
- ➔ **Distribution is the way a phenomenon is spread out over an area**
  - ◆ **Linear, circular, geometric, and random phenomena**
- ➔ **Matching patterns of distributions is called Spatial Association**
  - ◆ **Just because they are similar doesn't mean one leads to the other**

#3 Movement

- ➔ **Space-Time Compression**
  - ◆ **Reduction in time it takes to get to a location because of a change in technology**
- ➔ **Proximity**
  - ◆ **Closeness to important features**

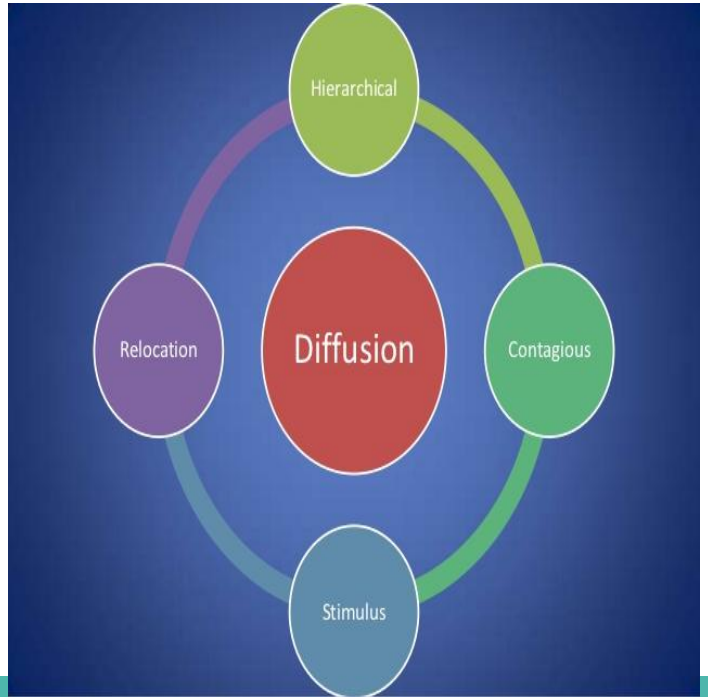


#3 Movement

- ➔ Movement helps us understand how we connect with, and depend on, other regions, cultures and people.
  - How people, goods, and ideas move from place to place
- ➔ Connectivity: directness of routes linking pairs of locations
- ➔ Accessibility: the relative ease with which a location may be reached

#3 Movement

- ➔ **Hearth: place which an innovation or cultural change originates**
- ➔ **Diffusion: process by which a characteristic spreads over time**
  - **Relocation Diffusion**
  - **Contagious Diffusion**
  - **Hierarchical Diffusion**
  - **Stimulus Diffusion**

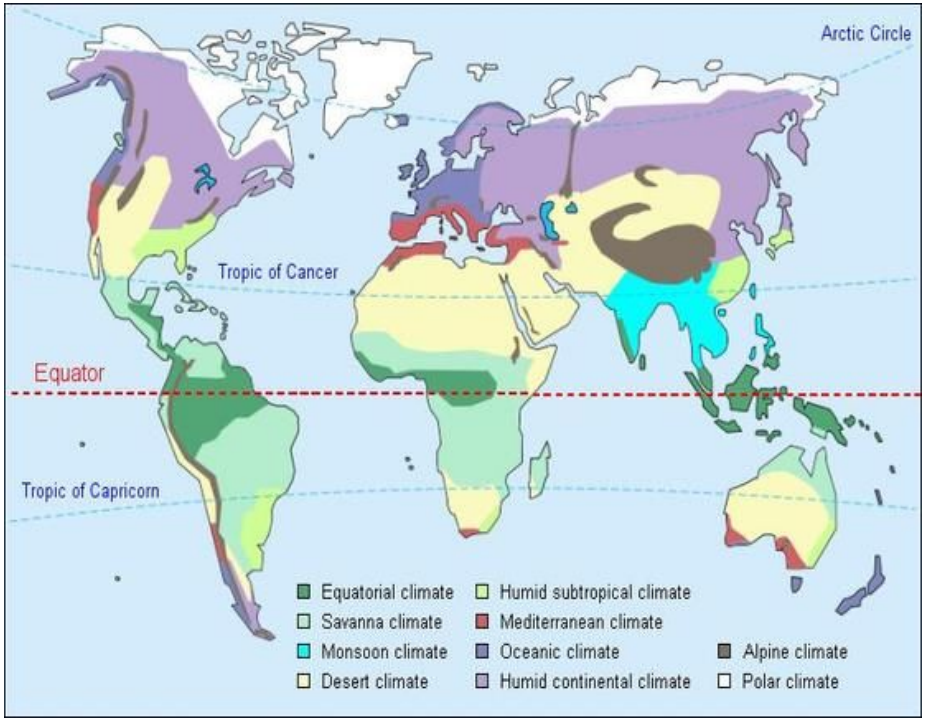


#4 Human-Environmental Interaction

- ➔ How people interact with their environment
- ➔ There are consequences and benefits to the actions we take
- ➔ People _____ their environment
  - ◆ Depend on
  - ◆ Adapt to
  - ◆ Modify

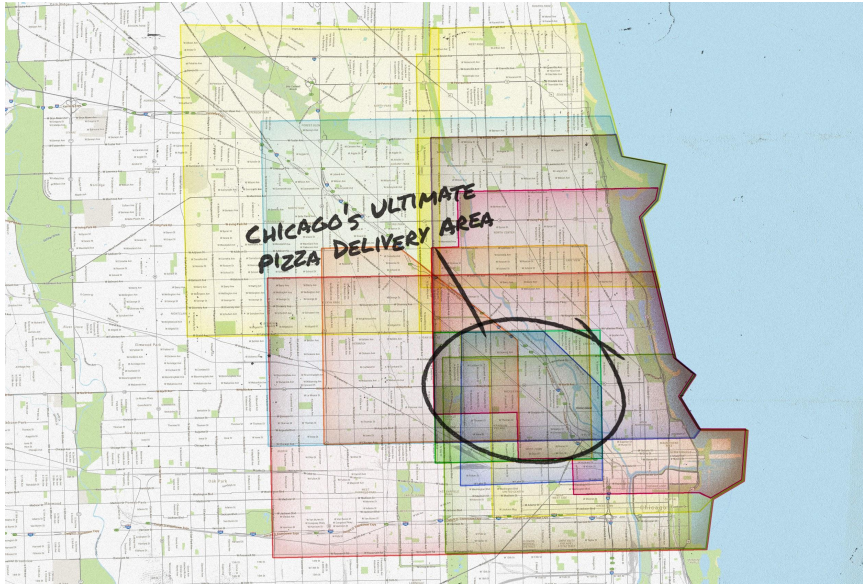
#4 Human-Environmental Interaction

- ➔ <u>Cultural Ecology</u> is the study of how humans adapt to the environment
- ➔ The belief that landforms and climate are the most powerful forces in shaping human behavior and society is known as <u>Environmental Determinism</u>
- ➔ <u>Possibilism</u>
  - ◆ Acknowledges the limits of the natural environment and focuses more on the role of human culture



#5 Region

- ➔ Earth's land divided into section based on characteristics
- ➔ <u>Formal Regions</u> (Uniform regions)
  - ◆ United by one or more trait (physical, cultural, and/or economic)
- ➔ <u>Functional Regions</u>
  - ◆ Organized around a focal point and defined by an activity that occurs across the region



#5 Region

➔ **Perceptual Regions**

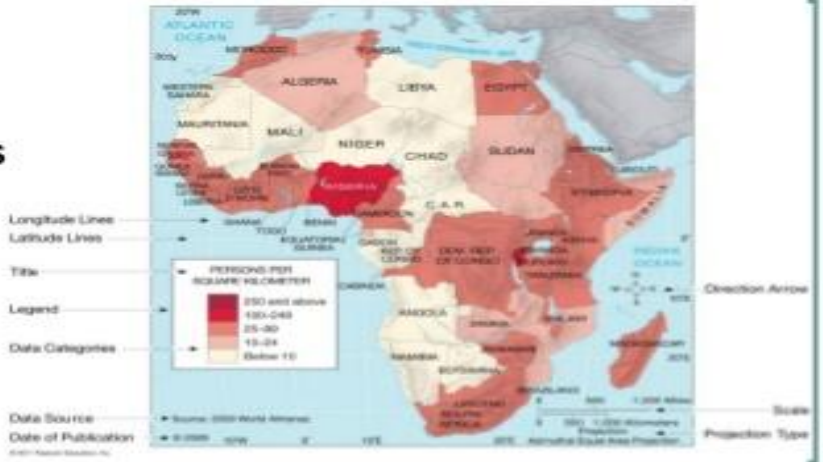
- **Defined by an informal sense of place that people give them**

Maps

25 Maps That Will Change the Way You See the World

Map Essentials

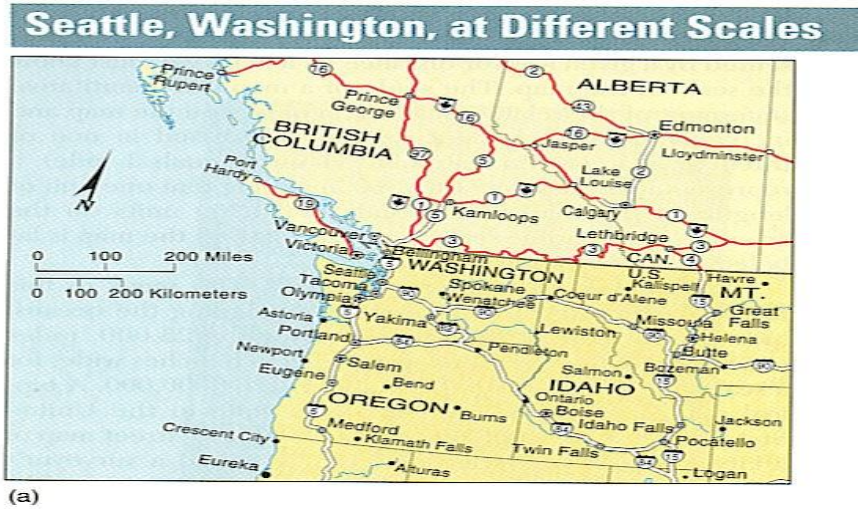
- Map essentials help with interpretation:
  - Title – content, purpose, area
  - Date – time span of data
  - Legend – explanation of symbols
  - Scale – relationships between
  - the map and reality
  - Direction – north arrow or
  - geographic grid
  - Location – grid or coordinates
  - Data Source – for thematic maps
  - Map Projection – type of projection



© 2011 Pearson Education, Inc.

Scale

- **Small Scale**
  - Shows a large area on the earth
  - such as 1/1,000,000
- **Large Scale**
  - Shows a small area on the earth
  - such as 1/25,000 or 1/1,000



Maps vs. Globes

Maps

- Pros
  - Can be folded up, transported easily
  - Can focus on a specific area
- Cons
  - Not as accurate as globes, flat maps have distortions

Globes

- Pros
  - Represents features of the Earth more accurately than maps
- Cons
  - Not practical for travelers to carry around
  - Often have less detailed information than maps

Reference Maps

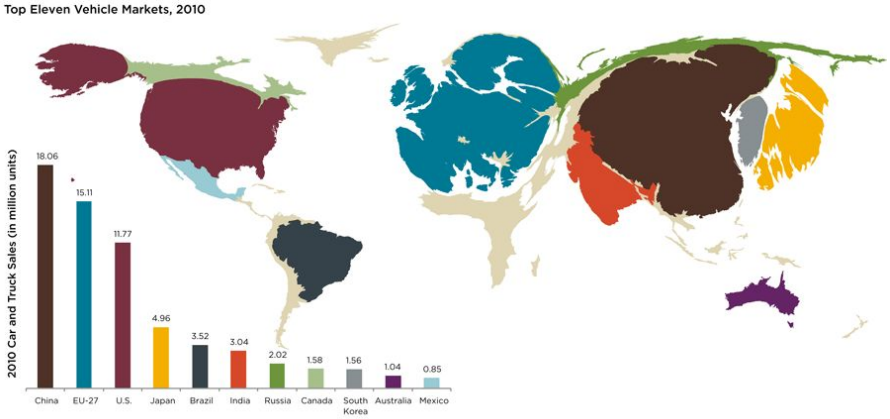
- Maps made for people to refer to for general information about places
- Types
  - Political
  - Physical
  - Road
  - Locator

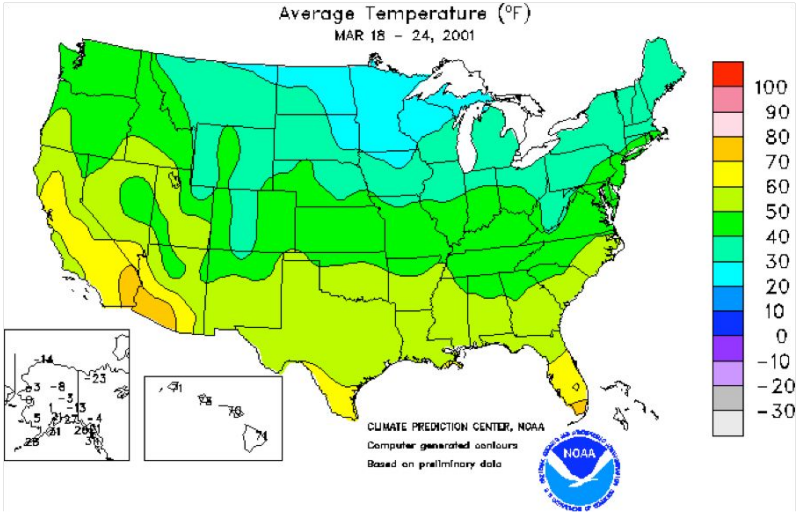
Reference Maps

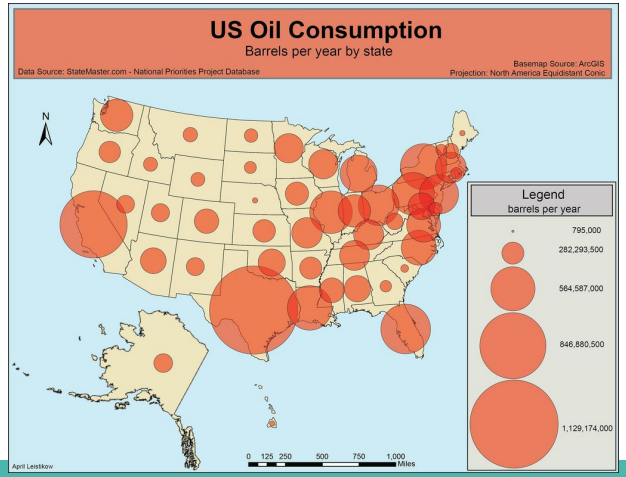
Thematic Maps

- ➔ Maps that emphasize a particular theme or specific topic
- ➔ Types
  - Cartogram - distorts the shapes and sizes of countries or other political regions to represent the frequency or intensity of a particular phenomena
  - Choropleth - uses tones or colors to represent spatial data as average values per unit area
  - Dot Distribution - dots are used to demonstrate the frequency or intensity of a particular phenomena
  - Isoline - displays lines that connect points of equal value often used for weather or elevation
  - Graduated (Proportional) Symbol - size of a symbol varies depending on the frequency of the variable being studied

Thematic Maps







Map Projections

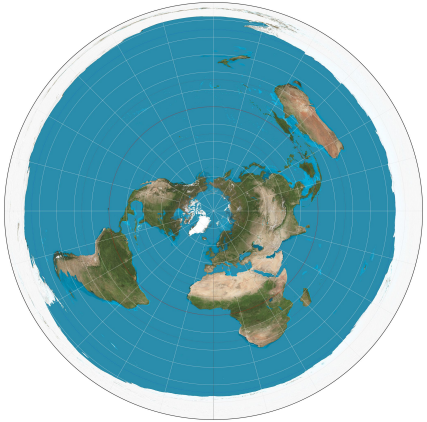
Why All World Maps Are Wrong

Types of Distortions

Shape

- If a map preserves shape, then feature outlines (like country boundaries) look the same on the map as they do on the earth. *A map that preserves shape is **conformal**.*
  - ***A conformal map distorts area—most features are depicted too large or too small (i.e. Mercator/ Conformal Cylindrical!)***

Types of Distortions



Distance

- *An **equidistant** map is one that **preserves true scale** for all straight lines passing through a **single, specified point**.*
- For example, in an equidistant map centered on Redlands, California, a linear measurement from Redlands to any other point on the map would be correct

Types of Distortions

Direction

Direction, or ***azimuth***, is measured in degrees of angle from north. An ***azimuthal projection*** is one that **preserves direction** for all straight lines passing through a single, specified point

Area

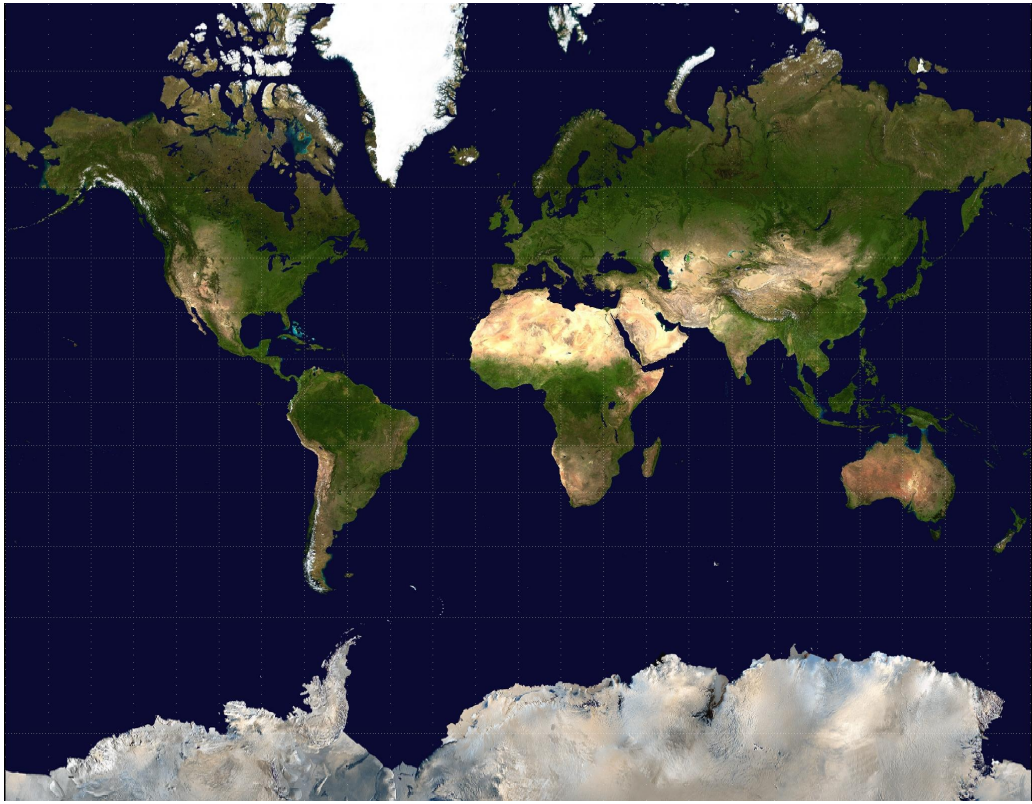
If a map preserves area, then the size of a feature on a map is the same relative to its size on the earth. For example, on an ***equal-area*** world map, Norway takes up the same percentage of map space that actual Norway takes up on the earth.

Scale

Scale is the ***relationship*** between a distance portrayed on a map and the same distance on the Earth.

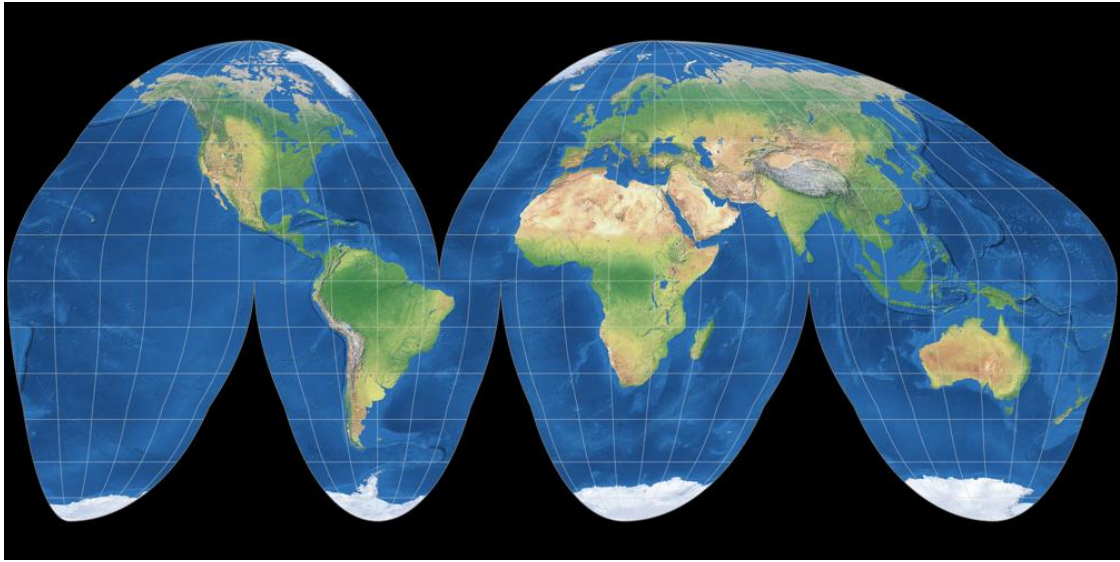
Mercator Projection

- ➔ Accurate depiction of direction and size near the equator
- ➔ Distorts size at the poles



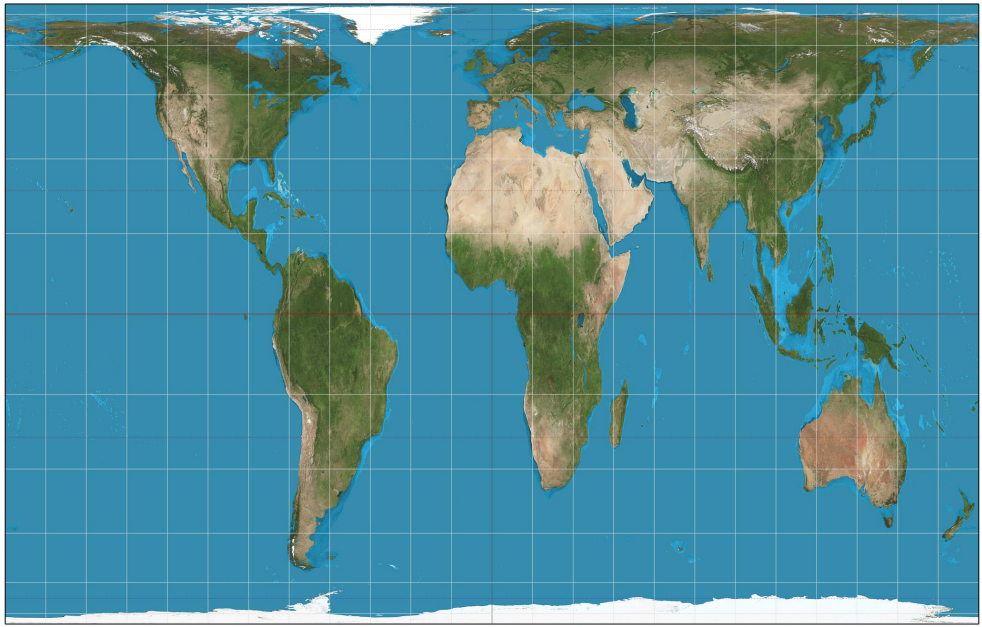
Goode's Projection

- ➔ Accurate depiction of size
- ➔ Inaccurate distance
- ➔ Distorts Antarctica



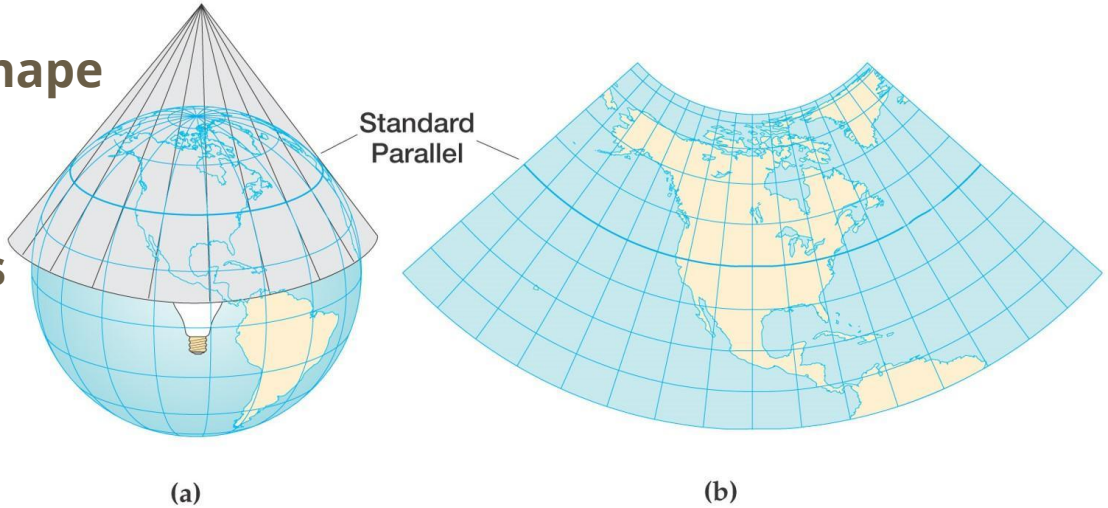
Gall Peters Projection

- ➔ Corrects the distortion of the Mercator projection
- ➔ Accepted by several UN nations



Conical Projection

- ➔ Shows accurate size and shape
- ➔ Latitude lines are curved
- ➔ Direction is not constant
- ➔ Good for general use maps

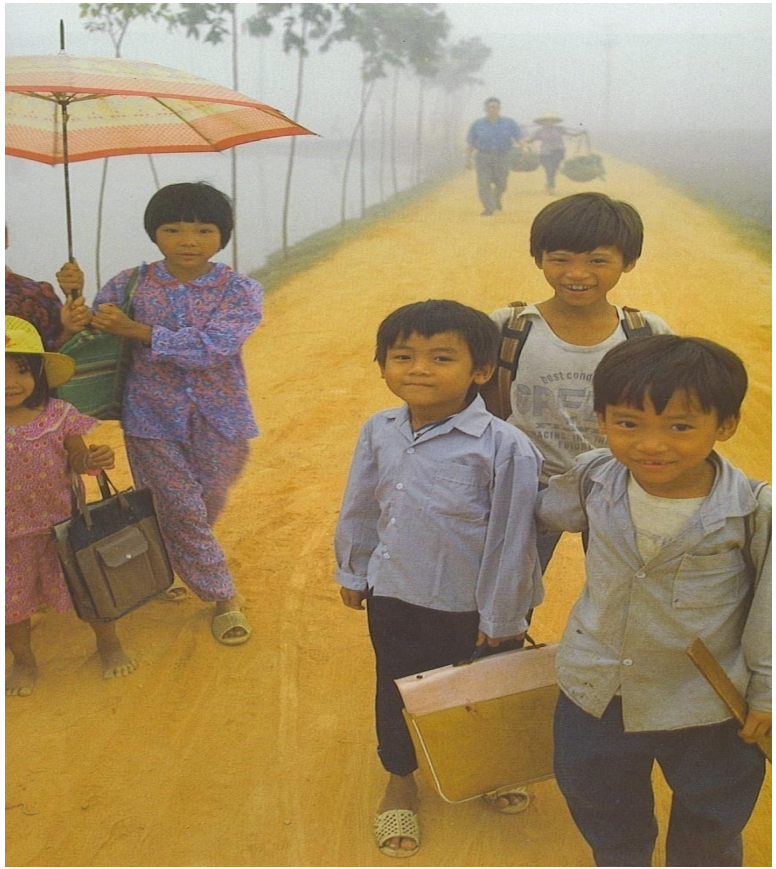


Copyright © 2005 Pearson Prentice Hall, Inc.

Culture

Culture

- **Culture:** man-made part of the environment.
- **Cultural trait**: single attribute of a culture (chopsticks).
- **Cultural region**: portion of the earth occupied by people who share cultural traits such as religions, languages, political organizations, etc.
- **Cultural realm**: large segment of the earth with uniformity in cultural characteristics such as “Latin America”



- **Acculturation**: immigrant populations take on enough of the values, attitudes and customs of the receiving society to function economically and socially.
- **Assimilation**: complete blending with the host culture and the loss of most, if not all, previous distinctive ethnic traits.
- **Syncretism**: process of fusing the immigrant culture with the native or adjacent culture. (Tex-Mex cuisine in the Southwest).
- **Cultural convergence**: sharing of technologies, cultural traits and artifacts among widely separated societies.

Acculturation Continuum

Retention of values and beliefs from one's own culture

Adoption of mainstream society's values and beliefs

UNACCULTURATED

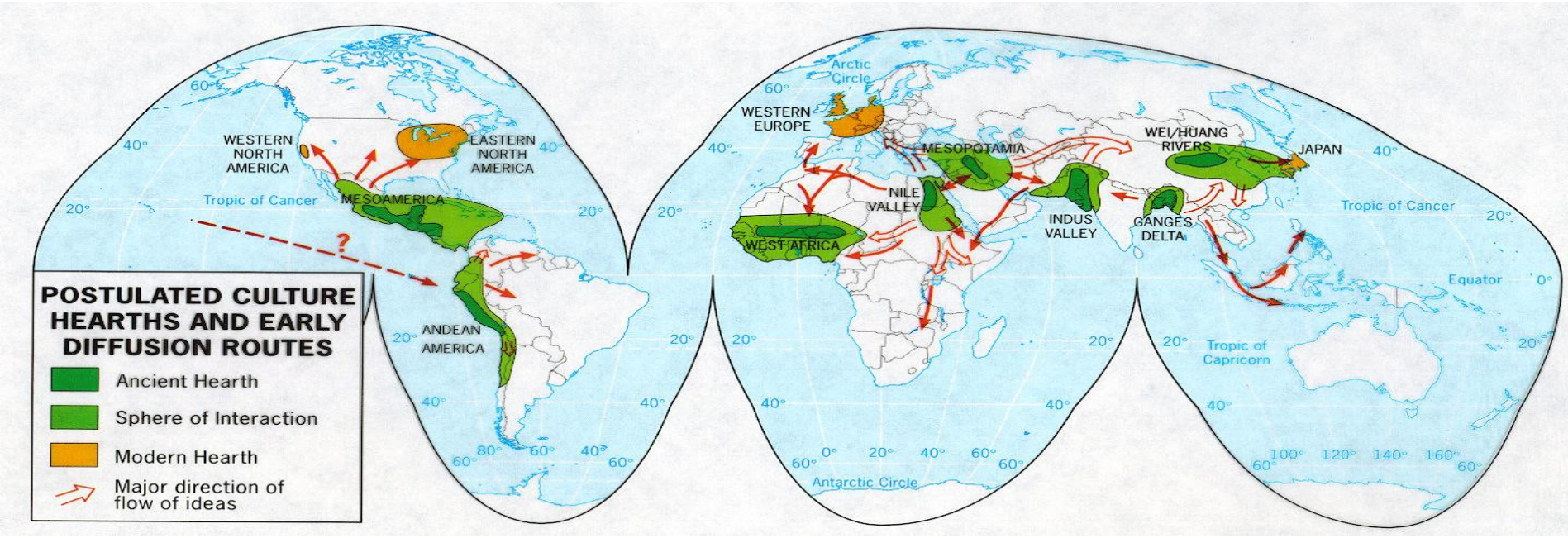
BILINGUAL/BICULTURAL

ACCULTURATED

© VJ Periyakoil, MD http://geriatrics.stanford.edu

PHOTOGRAPH BY U.S. ARMY SIGNAL CORPS,
COURTESY OF THE ARIZONA HISTRICAL FOUNDATION

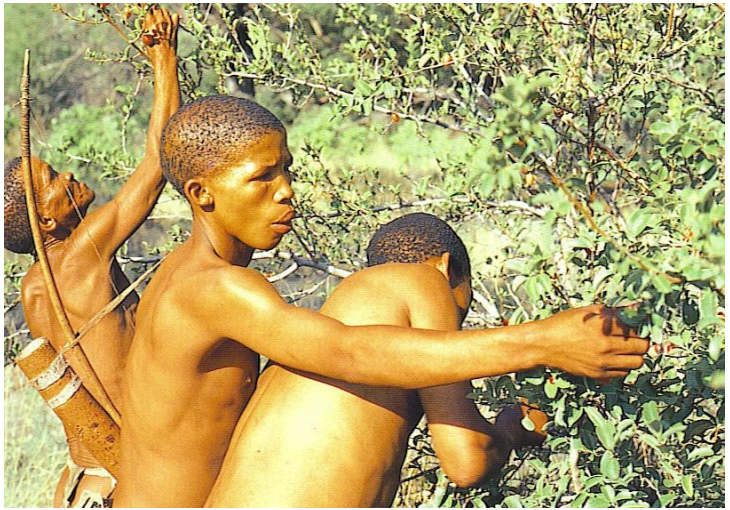
Assimilation... in this case forced. Assimilation in almost all cases involves some level of **coercion**.



- **Cultural Hearth:** centers of innovation and invention, the center or cradle of a culture.

- **Cultural perceptions**: like perceptual regions, many intangible elements define a region's personality.
- Consider the South as a Cultural Region;
  - Houses with porches
  - Foods like grits, greens and cornbread.
  - Drawl or dialects like Cajun.
  - Southern Baptist-Bible Belt
  - Slow pace of life and courtesy, hospitality.

- **Sequent Occupance**-refers to the process by which a **landscape is gradually transformed by a succession of occupying populations.**
- First coined by American geographer Derwent Whittlesey in 1929.
- He discussed the evolutionary and dynamic nature of the landscape as ***shaped by successive cultures and populations***.



As the demographics of a society change with economic and technological development, so does the landscape.

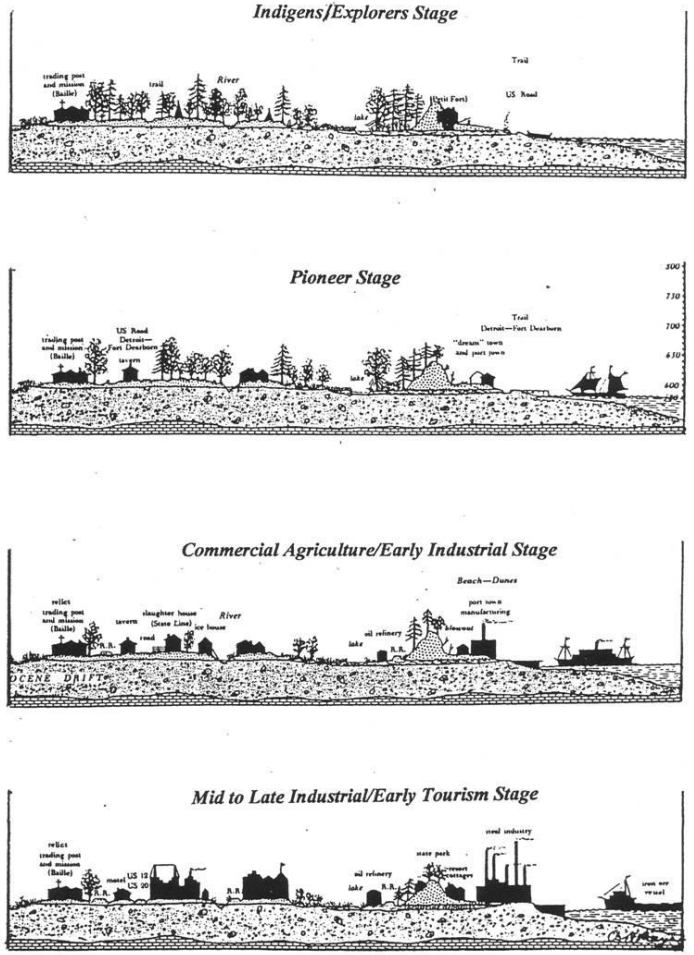


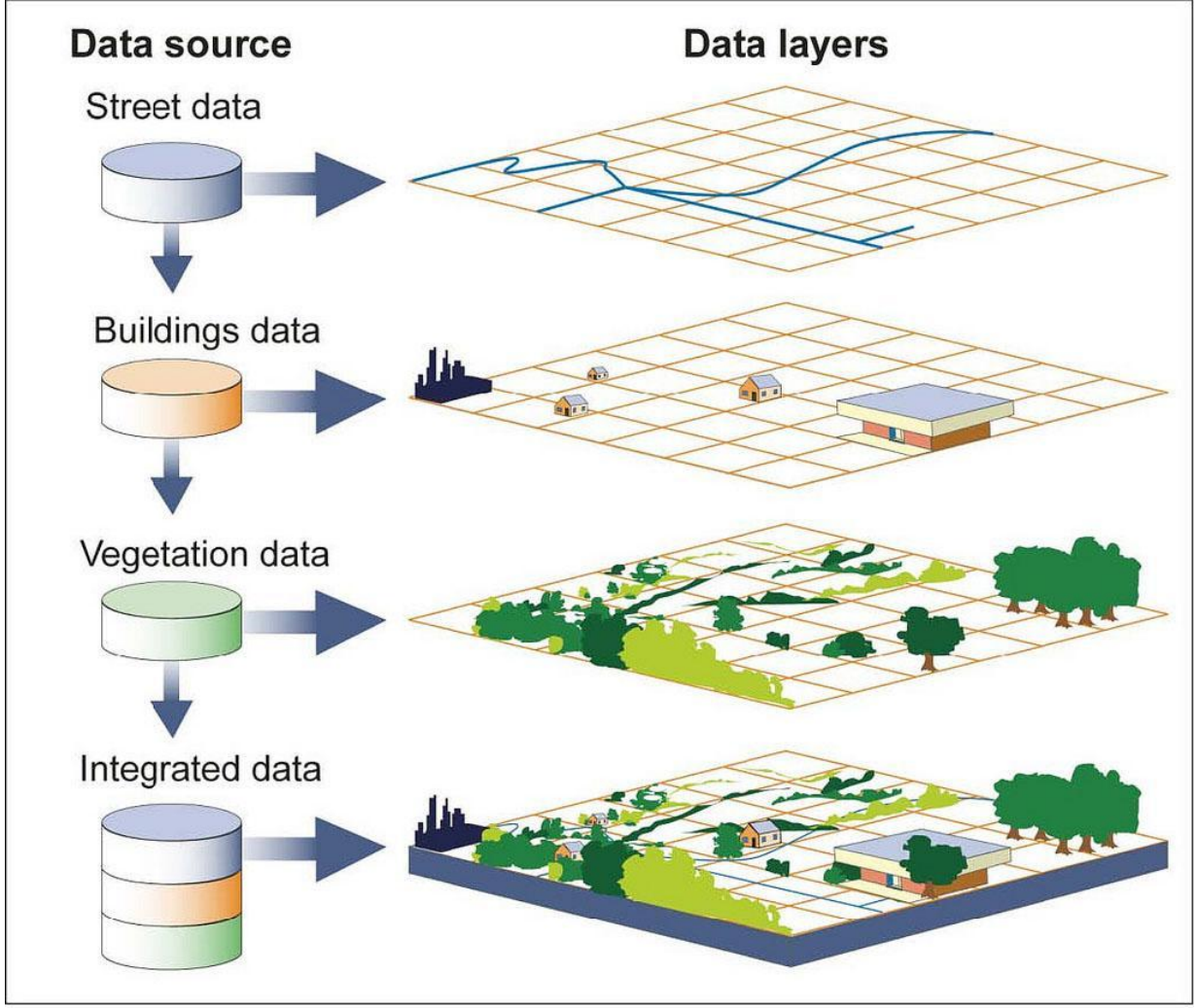
Figure 2. The Sequent Occupance of a Developing Tract of Land (Meyer and Strietelmeier 1963, 789)

GIS, GPS, and Remote Sensing

GIS – Geographic Information System

-*Computer system* for capturing, storing, checking, and displaying data related to positions on Earth's surface.
-GIS shows *different kinds of data on one map*, (*Streets, buildings, vegetation*, etc)
-Enables people to more easily see, analyze, and understand patterns and relationships

(The Entire Locational Data Sy


Data source
Data layers
Street data
Buildings data
Vegetation data
Integrated data

Source: GAO.

APPLICATION?

There are both obvious and innumerable uses for this data system.

- Environmental groups (potential sources of pollution & their effects); fossil fuel companies (exploration); healthcare (placement of facilities), and on, and on, and on...

Global Positioning System (GPS)

Network of satellites and receiving devices used to determine the location of something on Earth

GPS Receivers provide location in ***latitude, longitude, and altitude***. They also provide the accurate time.

(communicating/reading the data)

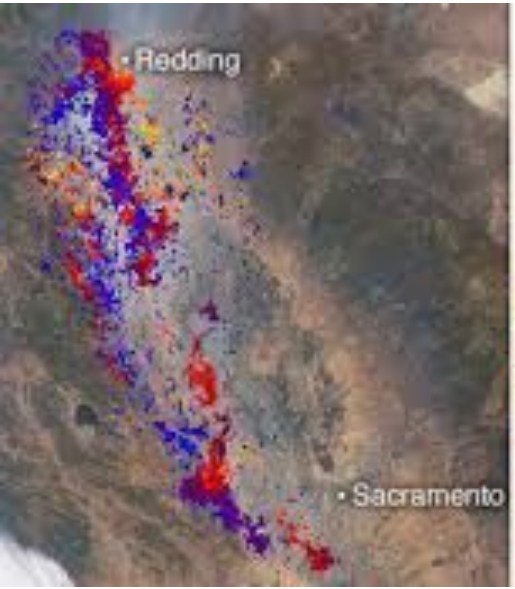
APPLICATION?

REMOTE SENSING

Gathering of information about a place from a distance. Such examination can occur with devices (e.g. - cameras) based on the ground, and/or sensors or cameras based on ships, aircraft, ***satellites***, or other ***spacecraft.***

Time lapse

APPLICATION?

- Mainly conducted for image processing and interpretation.
- Air photos and satellite images to create maps and/or to show change.
- Remote sensed imagery is integrated within a GIS

(the collection of data)