

Advanced Placement Human Geography Terms and Definitions (alphabetical by unit and by major concepts)

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Unit 1: Nature and Perspectives

Anthropogenic: caused or produced by humans

Data: **qualitative** - described in terms of its quality (that is, informal or relative characteristics such as culture, language, religion, ...); **quantitative** - precisely describes data using numbers and measures (population, political, economic, ...).

Diffusion: the process of the spreading of a feature or trend from one place to another over time.

- **Expansion diffusion:** spread of a feature from one place to another in a snowballing process...
 - **Hierarchical diffusion:** spread of an idea from persons or nodes of authority or power to other persons or places (Ex: hip-hop/rap music)
 - **Contagious diffusion:** rapid, widespread diffusion of a characteristic throughout the population. (Ex: ideas placed on the internet)
 - **Stimulus diffusion:** spread of an underlying principle, even though a characteristic itself apparently fails to diffuse; a cultural adaptation emerges resulting from the introduction of a cultural trait from another place (Ex: PC vs. Apple)
- **Relocation diffusion:** spread of an idea through physical movement of people from one place to another. (Ex: spread of AIDS from New York, California, & Florida).
 - **Migrant diffusion:** spread of an idea through people, in which the phenomena weakens or dies out at its previous source ... moves like a "Slinky" (e.g., spread of the Spanish Flu toward the end of World War I).

Distance: **absolute** - exact measurement of the physical space between two places. **relative** - approximate measurement of the time and cost it takes to travel between two places.

Environmental perception (mental map): a person's idea or image of a place; may often be inaccurate.

Five Themes of Geography (1986): GENIP

- **location:** position; situation of people and things
- **human/environmental interaction:** reciprocal relationship between humans and the environment
- **region:** area on Earth's surface marked by a degree of homogeneity (uniformity) of some phenomenon
- **place:** uniqueness of a location (or similarity of two or more locales); phenomena *within* an area
- **movement:** mobility of people, goods and ideas; phenomena *between* areas

Distribution: see Unit 2 (Population and Migration)

Geographic Information Systems (GIS): collection of computer hardware and software permitting spatial data to be collected, recorded, stored, retrieved, used, and displayed.

Global Positioning System (GPS): satellite-based system for determining the absolute location of places.

Holocene epoch: current interglaciation period (sustained warming phase between glaciations during an ice age), extending from around 12,000 years ago to the present (some scientists speculate that since humans influence the Earth as no species was able to before, we have recently entered the "Anthropocene epoch" – an informal age signifying the human impact, starting at the time of the Industrial Revolution.

Human adaptation:

- **Environmental determinism:** a 19th- and early 20th-century approach to the study of geography that argued that the general laws sought by human geographers could be found in the physical sciences. Geography was therefore the study of how the physical environment caused human activities (e.g., Diamond – Guns, Germs, and Steel)
- **Possibilism:** the physical environment may limit some human actions, but people have the ability to adjust to their environment.
- **Cultural Ecology:** the geographic study of the multiple interactions of human-environmental relationships

Location: **absolute** - position on Earth's surface using the coordinate system of longitude (that runs from North to South Pole) and latitude (that runs parallel to the equator). **relative** - position on Earth's surface relative to other features. (Ex: My house is east of I-95).

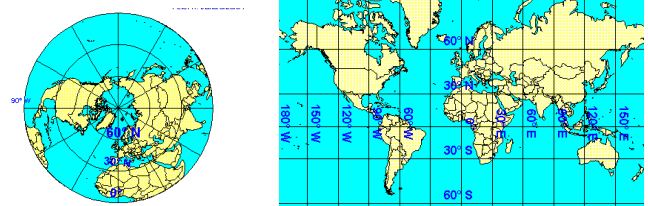
Region:

- **Formal Region-** (uniform, homogeneous) or homogenous region is an area within which everyone shares in common one or more distinctive characteristics. The shared feature could be a cultural value such as a common language, or an environmental climate.

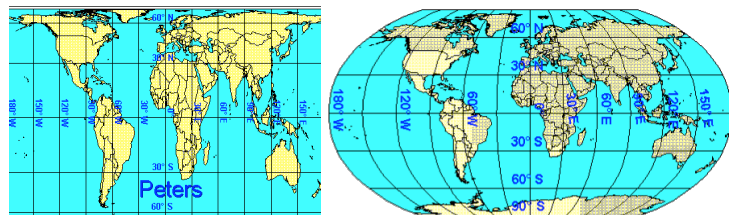
- **Functional Region-** (nodal) Area organized around a node or focal point. The characteristic chosen to define a functional region dominates at a central focus or node and diminishes in importance outward. This region is tied to the central point by transportation or communication systems or by economic or functional associations.
- **Perceptual Region-** (vernacular) is a place that people believe exists as a part of their cultural identity. Such regions emerge from peoples informal sense of place rather than from scientific models developed through geographic thought. (Often identified using a **mental map (terra incognita)**- which is an internal representation of a portion of Earth's surface). Many "belts" in the US fit this description ... cotton belt (what used to be dominated by agriculture, and is often referred to as the New South), Bible belt, sun belt, rust belt, frost belt ...

Maps: **projections:** any 3-dimensional object (Earth) will project some distortion onto any 2-dimensional object (map)

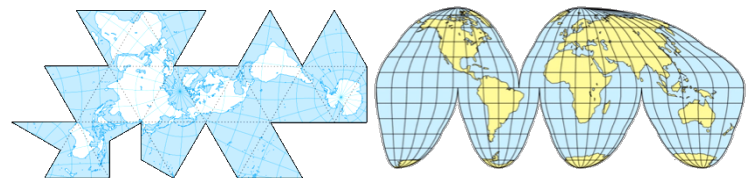
- **Azimuthal:** directions from a central point are preserved; usually these projections also have radial symmetry
- **Mercator:** straight meridians and parallels that intersect at right angles, used for marine navigation; most distortion at the poles (high latitudes)



- **Peters:** equal-area cylindrical, areas of equal size on the globe are also equally sized on the map
- **Robinson:** distorts shape, area, scale, and distance in an attempt to balance the errors of projection properties



- **Fuller (Dymaxion):** using the surface of a polyhedron, it is unfolded and flattened to two dimensions; reduces distortion of relative size and shape
- **Goode's Homolosine:** a hybrid map that focuses on equal-areas; sometimes referred to as the "orange peel map"



Maps types: two major types ...

- **reference:** generalized map type designed to show general spatial properties of features (e.g., world maps, road maps, atlas maps)
- **thematic:** made to reflect a particular theme about a geographic area (e.g., geographic, political, ...)
 - **cartogram:** map in which some thematic mapping variable is substituted for land area (e.g., GDP, poverty, etc.)
 - **choropleth:** thematic map in which areas are shaded or patterned in proportion to the measurement of the statistical variable being displayed (e.g., population density)
 - **dot (dot density):** one dot represents a certain number of phenomena (e.g., population)
 - **proportional symbol:** type of thematic map in which the areas of symbols are varied in proportion to the value of an attribute (e.g., city population)
 - **preference:** map demonstrating progressively more desirable options
 - **topographical:** quantitative representation of **relief** (vertical and horizontal dimension of terrain), usually using contour lines

Map terms:

-parallel: line of latitude (Equator, Tropic of Cancer & Capricorn, Arctic & Antarctic Circles)

-meridian: line of longitude (Prime Meridian, International Date Line)

Pattison's Four Traditions (1964): W.D. Pattison

- **earth-science:** physical geography (not one of the Five Themes)
- **locational:** spatial tradition (location)

- **man-land:** human/environmental interaction
- **area-studies:** regional geography

Remote sensing: method of collecting data or information through the use of instruments (e.g., satellites) that are physically distant from the area or object of study.

Scale: 1) the territorial extent of something; 2) the representation of a real-world phenomenon at a certain level of reduction or generalization; represented as a fraction (**large scale** = large detail, small area; **small scale** = small detail, large area)

Sequent occupance: The notion that successive societies leave their cultural imprints on a place, each contributing to the cumulative cultural landscape; symbolizes how humans interact with their surroundings.

Site: The physical character of place; what is found at the location and why it is significant.

Situation: The location of a place relative to other places.

SOAPS: (Speaker, Occasion, Audience, Purpose, Subject); acronym for dissecting any passage, or visual (graph, image, chart, map, etc.) to fully understand its importance and relevance.

TODALSIG: (Title, Orientation, Date, Author, Legend, Scale, Index, Grid); acronym for assessing the validity and reliability of any map.

Unit 2: Population and Migration

Carrying capacity: the population level that can be supported, given the quantity of food, habitat, water and other life infrastructure present; it tells how many people an area – or country or region - will be able to support.

Census tract: areal unit that best approximates a neighborhood in size through small county subdivisions (around 4,000 people, often with similar racial, ethnic, age, or socioeconomic traits)

Cohort: population of various age categories in a population pyramid. This is important because this can tell which stage a state is in the demographic transition model.

- **Baby Boom:** people born in the US between 1946 and 1964; this post-war era allowed for better education, employment, peace and prosperity - increasing higher rates of both marriage and fertility.
- **Baby Bust:** period in the US during the 1960s and 1970s when fertility rates dropped as many female baby boomers sought higher levels of education and jobs, marrying later in life.
- **Generation X:** people born in the US between 1965 and 1980; will be the first to have the burden of supporting the Baby Boom cohort as they head into retirement.
- **Generation Y:** people born between 1980 and 2001; also referred to as "Echo Boomers" (many are the offspring of Baby Boomers).
- **Millennials:** children born from 2001 to the present.

Crude birth rate (CBR or natality): number of live births per year per 1,000 people

Crude death rate (CDR): number of deaths per year per 1,000 people

Demography: geographic study of population

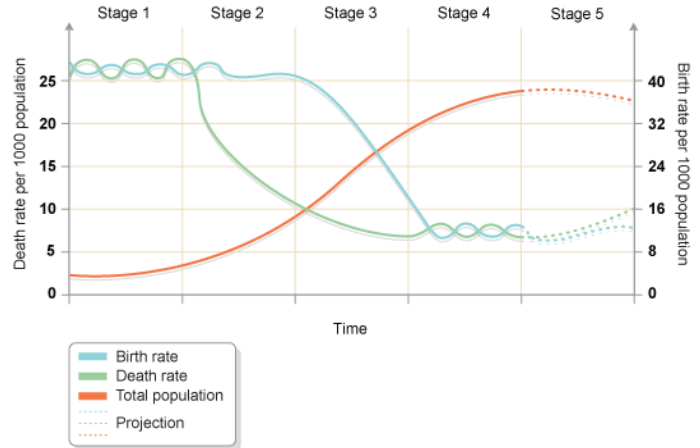
- **Overpopulation-** relationship between the number of people on Earth, and the availability of resources
- *Problems result when an area's population exceeds the capacity of the environment to support them at an acceptable standard of living.*
- **Underpopulation-** it is the opposition to overpopulation and refers to a sharp drop or decrease in a region's population. *Unlike overpopulation, it does not refer to resources but to having enough people to support the local economic system. If there are not enough tax payers, then the area cannot continue.*
- **Stationary population level (SPL):** when the crude birth rate equals the crude death rate and the natural increase rate approaches zero. (aka **Zero population growth**; *Often applied to countries in stage 4 of the demographic transition model*)

Demographic equation: The formula that calculates population change. The formula finds the increase (or decrease) in a population. The formula is found by doing births minus deaths plus (or minus) net migration. This is important because it helps to determine which stage in the demographic transition model a country is in.

Demographic Transition model: this model illustrates how states are transformed from a less developed to a more developed country; has 5 steps:

- **Stage 1** is Low Growth (high stationary; with high birth and death rates); no country today, but some poor or war-torn regions are in this stage
- **Stage 2** is High Growth (early expanding; with high birth but declining death rates (due to improved health and sanitation)); less developed states such as Kenya, Haiti, Cambodia, ...
- **Stage 3** is Moderate Growth (late expanding, with declining birth rates and already lower death rates); are often newly industrialized states such as Brazil, China, Mexico, ...
- **Stage 4** is Low Growth (low stationary; with low birth and death rates); developed countries such as the United Kingdom, United States, ...

- **Stage 5** is Negative Growth (with death rates that exceed birth rates); countries such as Japan, Italy, and Germany
- * Stage 6 is not officially a stage, however some wealthy regions in developed countries sometimes experience increased birth rates since they can afford to do so.



Demographic momentum: this is the tendency for growing population to continue growing after a fertility decline because of their young age distribution; once this happens a country moves to a different stage in the demographic transition model.

Demographic trap: when a country remains in stage 2 of the demographic transition; death rates fall, but birth rates remain high if living standards do not improve (resulting in endemic poverty with parents relying on children as their social security)

Dependency ratio: the number of people who are too young or too old to work compared to the number of people in their productive years; tells how many people each worker supports (e.g., the larger population of dependents, the greater financial burden on those who are working to support those who cannot)

Distribution: The arrangement of something across Earth's surface (space); **population distributions-** geographers identify the three main properties as **density**, **concentration**, and **pattern** (*used to describe how things and people are distributed*)

Doubling time: the number of years needed to double a population, assuming a constant rate of natural increase; this number is calculated by dividing 70 by the rate of natural increase (RNI); can help project countries' population increase over the years and when its population will double.

Note: it is a projection and not a truly accurate predictor of the future.

Ecotone: transition area between two **biomes** (areas of similar climactic zones); where two communities meet and integrate.

Ecumene: the proportion of earth's surface occupied by permanent human settlement. This is important because it tells how much of the land has been built upon and how much land is left for us to build on.

Life expectancy: (infant & child mortality rate) a figure indicating how long an average person may be expected to live. Normally expressed in the context of a state. Relatively high mortality rates may drastically lower life expectancy, as seen in many least developed countries (LDCs).

Major population concentrations:

- **East Asia:** largest concentration; China, Japan, North and South Korea (>1.5 billion people). Ribbon-like extensions of dense population (clustered near **rivers**; majority of people are farmers)
- **South Asia:** second major concentration; India, Pakistan, Bangladesh, Sri Lanka (1.5 billion). Also ribbon (finger)-like extensions of dense population (e.g. Ganges River in India), majority are farmers as well.
- **Europe:** third major concentration; Britain to Russia, including Germany, Poland, Ukraine, Belarus, Netherlands, Belgium, parts of France, northern Italy (700 million). Ribbon-like extension deep into Russia (follow Europe's **coal deposits**, not fertile river valleys); ribbons are concentrated along numerous cities & towns (due to the Industrial Revolution; Germany – 85% urban, UK - >90%).
- **North America** a far fourth; east-central US and southeastern Canada (<200 million). Like Europe, much is concentrated in major cities.

Mortality: there are two useful ways to measure mortality; infant mortality rate and life expectancy. The IMR reflect a country's health care system and life expectancy measures the average number of years a baby can live.

• **Infant mortality rate: (IMR)** the annual number of deaths of infants under one year of age, compared with total live births. Its is expressed as the annual number of deaths among infants per 1000 births rather than a percentage. This is important because it tell how developed a country is, if they have a high IMR they are an LDC and if it is low they are an MDC.

- **Child mortality rate:** (CMR) annual number of deaths of children between the ages of 1 and 5, compared with total live births (also calculated as number of deaths per 1,000 births).
- **Maternal mortality rate:** annual number of deaths of women during childbirth per 1,000 women.

Natural increase: (rate of natural increase) the percentage by which a population grows in a year. CBR-CDR = RNI (or NIR) (excludes migration)

Population growth: linear – (arithmetic); increases at a constant amount per unit time (1, 2, 3, 4, ...); **exponential – (geometric);** doubles each population (2, 4, 8, 16, ...)

Population explosion- a sudden increase or burst in the population in either a certain geographical area or worldwide. *Occurred in the late 18th and early 19th centuries because several countries moved on to stage 2 of the DTM. Can trace factors that lead to these explosions.*

Population structure (composition or distribution): (population pyramid) is two back-to-back bar graphs, one showing the number of males and one showing females in a particular population in five-year age groups. This is important because you can tell from the age distribution important characteristic of a country, whether high **guest worker** population, they just had a war or a deadly disease and more.

Population curves: relates to growth and decline in the natural increase.

- **J-curve:** This is when the projection population show exponential growth; sometimes shape as a j-curve; resource use will parallel exponential population growth (and even exceed this rate if the population is technologically advanced), causing a greater demand for food and more.
- **S-curve-** the horizontal bending, or leveling of a J-curve; population growth slows as birth rates decline (through development)

Population densities- the frequency with which something occurs in space

- **Arithmetic density:** the total number of people divided by the total land area; how many people per area of land.
- **Physiological density:** the number of people per unit of area of arable land, which is land suitable for agriculture. This is important because it relates to how much land is being used by how many people.

***Agricultural density:** the number of farmers per unit of area of farmland; *can indicate if a country has inefficient agriculture.*

Population policies: typically sponsored by governments

- **Expansive:** encourage large families and raise the rate of population growth (e.g., USSR under Stalin and China under Mao Zedong)
- **Restrictive:** reduce the rate of natural increase (e.g., India promoted sterilization, now has focused on education, advertising, and family planning; in China – the **One-Child policy** since 1978; although it is being loosened due to their aging population)
- **Eugenic:** favor one racial sector over others (e.g., Japan (limits immigration), US South against Blacks up until the civil rights movement (1960s), Nazis are an extreme example of this)

Population theorists:

- **Thomas Malthus:** food production = linear; human reproduction = geometric; despite natural checks (famine, disease) ... will always be overpopulation; he brought up the point that we may be outrunning our supplies because of our exponentially growing population.
 - **Neo-Malthusianism-** theory that builds upon Malthus' thoughts on overpopulation. Takes into count two factors that Malthus did not: population growth in LDC's, and outstripping of resources other than food. *Recognizes that population growth in LDC's is from the transfer of medical talents from MDC's but not the wealth that would provide food and resources.*
- **Esther Boserup:** human growth stimulates agricultural intensification (Malthus upside-down)
- **Karl Marx:** anti-capitalist; lack of food is due to unequal distribution; human growth is not a problem
- **Julian Simon:** (Cornucopian theory; based on *The Ultimate Resource, 1981*): Earth has an abundance of resources; can never be used up; humans are the ultimate resource (and will develop new technologies and synthetics as resources become more scarce)

Sustainability- providing the best outcomes for human and natural environments both in the present and for the future. *Relates to development that meets today's needs without compromising the ability of future generations to meet their own needs.*

Total fertility rate: (TFR) average number of children born to a woman during her childbearing years (expressed as children per woman). This is important because its shows how many kids a mother is having which indicates the level of development of a region

Migration

Brain drain: phenomena of the emigration of the most intellectually gifted and vocationally qualified citizens of least developed countries (LDCs) to more developed countries (MDCs)

Catalysts of migration: may be positive (pull factors) or negative (push factors); many exist such as economic conditions, political circumstances, armed conflict & civil war, environmental conditions, culture and traditions, technological advances, flow of information (through technology) ...

Commute: process of travelling between a place of residence and a place of work (usually from suburban to urban in the US). **Reverse commute:** from a metropolitan area to a suburban one in the morning, and returning in the evening (opposite of the normal commute)

Distance Decay: the diminishing in importance and eventual disappearance of a phenomenon with increasing distance from its origin (interaction or culture traits). Typically, the farther away one group is from another, the less likely the two groups are to interact (electronic devices such as the Internet and e-mail have aided in eliminating barriers to interaction between people who are far from each other).

Friction of Distance: is based on the notion that distance usually requires some amount of effort, money, and/or energy to overcome. Because of this "friction," spatial interactions will tend to take place more often over shorter distances, and the quantity of interaction will decline with distance.

Gravity Model: (Ernst Ravenstein) Predicts that the optimal location of a service is directly related to the number of people in the area and inversely related to the distance people must travel to access it.

Intervening opportunity: the presence of a nearer opportunity that greatly diminishes the attractiveness of sites farther away

Laws of migration: 1885; Ravenstein (studied internal migration in England)

- Most migration is due to economic causes
- Migration increases with economic development
- Most migration is over a short distance, and [often] occurs in steps
- Long-range migrants usually move to urban areas
- Large towns grow more by migration than by natural increase
- Each migration produces a movement in the opposite direction (often not the same size)
- Rural dwellers are more migratory than urban dwellers
- Within their own country females are more migratory than males; males are more migratory over long distances
- Most migrants are adults

Migration: physical movement by humans from one area to another

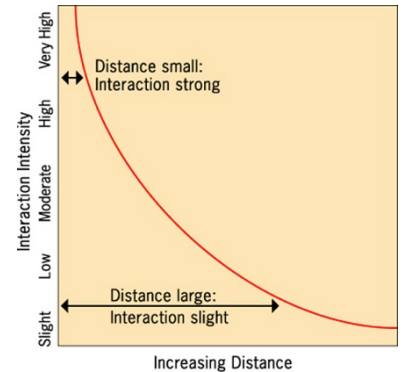
- **Chain migration:** migration event in which individuals follow the migratory path of preceding friends or family to an existing community (initial migration created a "chain reaction") *Can be seen from Mexico to the United States when guest workers set up homes and make money for their family to follow them.*
- **Counter migration:** migration back to an original area in which people had left (e.g., migration increases after natural disasters, yet many eventually return after a time)
- **Step migration:** migration to a destination that occurs in stages (e.g., from farm to nearby village and later to town and city)
- **Voluntary migration:** movement in which people relocate in response to perceived opportunity)
- **Forced migration:** People removed from their countries and forced to live in other countries because of war, natural disaster, and government. (Atlantic Slave Trade, Jewish Diaspora)

Migration patterns: (immigration = into a region; emigration = out of a region)

- **Intercontinental -** permanent movement from one country to a different country on the same continent.
- **Interregional -** permanent movement from one region of the country to another.
- **Rural-Urban -** permanent movement from suburbs and rural area to the urban city area.

Migrants: people who move from one location to another

- **Refugee:** people who leave their homes because they are forced out (but not because they are officially relocated (Nazis forcing Jews into ghettos) or enslaved. Most refugees 1) move without any more tangible property than what they can carry or transport with them; 2) make their first "step" on foot, by bicycle, wagon, or open boat; and 3) move without the official documents that accompany channeled migration.
- **Internally displaced persons (IDPs; Intra-national (internal)):** people displaced within their own countries



- **international:** crossed an international boundary during **dislocation**; seeking **asylum** (protection) in a different country; **asylum seeker:** refugee seeking shelter and protection in one state from another state.

Movement: three general classifications ...

- **Cyclic:** movement that has a closed route and is repeated annually or seasonally (e.g., **activity (action) space** – space within which daily activity occurs; commuting, seasonal, nomadism)
 - **Periodic:** movement that involves temporary, recurrent relocation (e.g., military service, migrant workers, college attendance, **transhumance** – movement of pastoralists and their livestock between highland and lowland pastures)
 - **Migratory:** a change in residence intended to be permanent
- Push factors:** incentives for people to leave a place (e.g., harsh climate, economic recession, political turmoil)
- Pull factors:** attractions that draw migrants to a place (pleasant climate, employment, education)
- Quota:** numerical limits on immigration or emigration

Unit 3: Culture

Carl Sauer – defined cultural landscape, as an area fashioned from nature by a cultural group. A combination of cultural features such as language and religion; economic features such as agriculture and industry; and physical features such as climate and vegetation. "Culture is the agent, the natural area is the medium, the cultural landscape is the result."

Culture: The body of customary beliefs, social forms, and material traits that together constitute a group of people's distinct tradition.

- **Culture trait:** a single element of normal practice in a culture (e.g., turban)
- **Culture complex:** a combination of related cultural traits (e.g., prevailing modes of dress; nationalism)
- **Culture hearth:** the region from which innovative ideas originate. This relates to the important concept of the spreading of ideas from one area to another (diffusion). Must be viewed in the context of time ...
 - **Ancient culture hearth:** Fertile Crescent, Indus Valley, Chang & Yellow River Valley (China), Nile River Valley and Delta, Meso-America (origin of farming developed during the **First Agricultural Revolution** beginning around 12,000 years ago).
 - **Modern culture hearth:** Europe, North America, Japan (origin and focus of the **Industrial Revolution** beginning in the early 1800s after the onset of the **Second Agricultural Revolution**).

Cultural identity: one's belief in belonging to a group or certain cultural aspect. You can "identify with" a group or "identify against" a group (what you are, or what you are not).

Cultural landscape (built environment): the visible imprint and fashioning of a natural landscape by a cultural group. This is the essence of how humans interact with nature.

Cultural modification:

- **Acculturation:** process of adopting only certain customs that will be to their advantage
- **Transculturation:** A near equal exchange of culture traits or customs
- **Assimilation:** Process of less dominant societies or people losing their cultural traits and distinctiveness to a more dominant culture

Cultural linkage: migrants who have moved away but renew or maintain their connections with their homeland (facilitated by modern technology – newspapers, newsletters, blogs, ...)

Cultural revival: process that works against **globalization**, revitalizing cultural ties and promoting distinction.

Cultural types:

- **Material culture:** things constructed by a culture; art, housing, clothing, sports, dances, foods, etc. (artifacts)
- **Nonmaterial culture:** beliefs, practices, aesthetics, and values of a culture (mentifacts and sociofacts)

Language: a set of sounds, combination of sounds, and symbols used for communication.

- **language family:** group of languages with a shared but fairly distant origin (e.g., Indo-European, Sino-Tibetan, ...)
- **language subfamily:** group of languages with more commonality than a language family (indicates they have branched off more recently in history)
- **language group:** set of languages with a relatively recent common origin and many similar characteristics (e.g., Germanic, Romance, Slavic, ...)

Dialect: local or regional characteristics of a language. More than just a different accent, dialects have distinctive grammar and vocabulary (e.g., Mandarin Chinese and Cantonese).

Diffusion of language (and hearths): movement of languages through migration (for hearths see the original locations of the major language families).

- **Agriculture theory:** theory of the diffusion of the Proto-Indo-European language into Europe through the innovation of agriculture (being more efficient than hunting and gathering). Its hearth is around modern day Anatolia (in Turkey; Renfrew Hypothesis - Colin Renfrew).
- **Conquest theory:** theory of the diffusion of the Proto-Indo-European language into Europe through the speakers' overpowering of earlier inhabitants through warfare and technology (e.g., fighting on horseback). Its hearth is around modern day Ukraine (Kurgan Hypothesis - Marija Gimbutas).

Esperanto: a constructed international language developed in the late 1880s and promoted after World War I to be a universal second language (lingua franca) to foster peace. Although thousands still speak this language, it is not widespread (mostly resembles an Indo-European language, and therefore, not a global tongue).

Hispanicization: process whereby the number of Hispanics is increasing in the U.S.; currently the largest minority group in the U.S.

Isogloss: geographical boundary within which a particular linguistic feature occurs.

Language convergence: collapsing of two languages into one resulting from the consistent **spatial interaction** of peoples with different languages.

Language divergence: when a language breaks into dialects due to a lack of **spatial interaction** among speakers of a language, and continued isolation causes new languages to be formed.

Language reconstruction:

- **Sound shift:** slight change in a word across related languages from the present backward toward its origin (using **backward reconstruction**)
- **Deep reconstruction:** technique using the vocabulary of an extinct language to re-create the language that preceded it.

Language replacement (extinction): obliteration of an entire culture through war, disease, assimilation, or any combination of the three.

Modern linguistic mosaic - literacy, technology, political organization: three areas of innovation have shaped the location and nature of language in the modern world ... literacy, technology (e.g., Gutenberg's printing press), and political organization (e.g., nation-states that set up linguistic laws).

- **Lingua franca:** a common language used among speakers of different languages for the purposes of trade and commerce; originally referring to the "Frankish language" spoken around the Mediterranean before the Age of Exploration.
- **Pidgin:** when parts of two or more languages are combined in simplified structure and vocabulary.

• **Creole (and creolization):** a language that began as a pidgin language but was later adopted as the mother tongue of a region and/or people.

Monolingual state: country in which only one language is primarily spoken (e.g., Portugal, Japan, Venezuela, Poland, ...).

Multilingual state: country in which two or more languages are spoken.

Official language: in multilingual states the language selected, often by the elite, to promote internal cohesion.

Nostratic: hypothesized ancestral language of Proto-Indo-European, as well as other ancestral language families.

Preiterate societies: cultures without any written language (most of the estimated 6,000 world languages are unwritten). **Standard language:** variant of a language that a country's intellectual or politically elite seek to promote as the norm (e.g., King's English)

Proto-Indo-European: hypothesized ancestral Indo-European language that is the hearth of the ancient Latin, Greek, and Sanskrit languages.

Toponymy: the study of place names. (e.g., San Diego or San Francisco indicate they were established by Spain due to their Spanish and Catholic connotations).

Religion-the faithfulness to codified beliefs and rituals that generally involve a faith in a spiritual nature. This is important to HG because man wars have been fought over it.

Universalizing religions: (global, proselytic) a religion in which the followers attempt to appeal to all people, and actively seek converts wherever they may live in the world, not just to those of one culture or location. There are three religions that practice this - they are Christianity, Islam, and Buddhism. To proselytize is to try to convert another person to your religion. * **Listed by order of population:**

- **Christianity:** (>2 billion) a monotheistic religion centered on the life and teachings of Jesus of Nazareth as presented in the New Testament of the Bible. Major concentrations exist in the Americas, Europe, Russia
- Three **denominations** (branches) - Orthodox (oldest), Catholic (largest with the richest bureaucracy of all religions), Protestant (newest); the Protestant Reformation weakened the Vatican's control of Europe and

gave rise to **secularism** in the West; landscape contains churches and cathedrals; use the most land for their dead (cemeteries).

- **Islam:** (>1.3 billion; means the submission to the will of god (Allah)) a monotheistic religion originating with the teachings of Muhammad in the Qu'ran, a key religious figure in the 6th c. CE. It is the fastest growing (largely due to birth rates), and has especially impacted North Africa, Southwest Asia, South Asia, and Indonesia. The two major branches are Sunni and Shiah (Shiites believe in the infallibility of imams; are concentrated mostly in Iran and eastern Iraq); Five Pillars of Islam - 1) shahada (creed), 2) frequent prayer (toward Mecca), 3) Ramadan, almsgiving, 5) hajj (pilgrimage to Mecca); Sharia law is the system of Islamic law (based on interpretation of the Qu'ran); hijab refers to the need for women to cover themselves (burkas cover women entirely except for the eyes); landscape contains mosques and minarets (for calling out prayers).
- **Buddhism:** (>400 million) Prince Siddhartha (Buddha) had a vision while sitting under the Bodhi (awakening) tree, then founded Buddhism in the 6th c. BCE (in eastern India) against the caste system; branched off from Hinduism. Buddhists believe all life is dukkha (nothing permanent); seek to achieve nirvana (enlightenment); believe in no named deity, but do believe in god; cultural landscape contains statues of Buddha, pagodas & shrines (often bell-shaped to protect burial mounds). The major concentrations are in China and Southeast Asia.

Ethnic religion: a religion with a rather concentrated distribution whose principles are likely to be based on the physical characteristics of the particular location of its origin; most religions start off as an ethnic religion.

* **Listed by order of population:**

- **Hinduism:** (>800 million) Emerged around the Indus River valley, approximately 4,000 years ago. Unlike other religions, no single founder or text; heaven isn't always the ultimate goal in life. It is monotheistic, however god (Brahman, universal soul) may be in many forms (mistaken as polytheistic); karma (what goes around comes around; transferability of the soul) and reincarnation are cornerstones; caste system locks people into class levels (often only practiced in traditional regions); cultural landscape has many temples and shrines (bestow merit on the builder, should be in a comfortable place for the gods (often by water)); cows are revered (not worshipped) and their consumption is **taboo** (improper or unacceptable)
- **Folk religions:** (>400 million) **Animism:** Belief that inanimate objects, such as plants and stones, or natural events, like thunderstorms and earthquakes, have a discrete spirit and life. Common in many parts of Sub-Saharan Africa, Native American religions are fundamentally animistic, and even Shinto is highly animistic. **Shamanism:** This is the range of traditional beliefs and practices that claim the ability to cure, heal, and cause pain to people.
- **Chinese religions:** (>400 million) **Confucianism:** Developed by earlier Chinese man Confucius, it's a complex system of moral, social, political, and religious thought. This is important to HG because it has affected Chinese Civilizations tremendously. **Taoism:** religion founded by Lao-Tsu and based on his book titles "Book of the Way"; focused on proper political rule and on the oneness of humanity and nature.
- **Shinto:** (~50 million) said to be the way of god. It is the native religion of Japan and was once its state religion, combining elements of Buddhism and local religions (a **syncretic religion**). It involves the worship of *kami* (a god). It was very popular prior to WWII, but has lost much of its dominance and importance in Japanese culture.
- **Sikhism:** (~25 million) a religion that began in sixteenth century Northern India and locate primarily between India and Pakistan today. The principal belief in Sikhism is faith in *Vahiguru*.
- **Judaism:** (~16 million) It is the religion of ancient Hebrews, said to be one of the first monotheistic faiths originating in Israel. This is important to HG because many other religions have been based off it.
- **Mormonism:** (~14 million) a term used to describe religious, ideological, and cultural aspects of the various denominations of the Latter Day Saint movement originating in the US Northeast in the 1820s. It is practiced around the world, but is concentrated in Utah.
- **Jainism:** (~10 million) founded in the 6th century B.C. in India as a revolt against current Hinduism and emphasizing the perfectibility of human nature and liberation of the soul, especially through asceticism and nonviolence toward all living creatures.

Religious origins and diffusion routes (see the religion reading guide)

Cult: a religion or sect considered to be false, unorthodox, or extremist, with members often living outside of conventional society under the direction of a charismatic leader.

Feng Shui: literally means "wind water"; Chinese art and science of placement and orientation of tombs, dwellings, buildings, cities. Structures and objects are positioned in a way (often according to cardinal directions (compass lines)) to channel flows of energy in favorable ways. It is not an official religion.

Fundamentalism (extremism): literal interpretation and strict adherence to a set of basic principles (usually religious); many can take these beliefs to an extreme and even violent level.

Interfaith boundaries: the boundaries between the world's major faiths, such as Christianity, Muslim, and Buddhism. For case studies ... Nigeria, Sudan, Kashmir, Armenia/Azerbaijan, and Yugoslavia ... (see the religion reading guide)

Intrafaith boundaries: describes the boundaries within a major religion (e.g., Belgium; Switzerland; Northern Ireland is mostly Protestant, whereas the rest of Ireland is mostly Catholic)

Jihadists: jihad means "struggle" and is a religious duty of Muslims; some can take their "jihad" to an extreme and violent level often against a perceived threat to their way of life or culture (e.g., 9/11 terrorists)

Monotheism/polytheism: Monotheism this is the belief in one god and polytheism is the belief in many gods. This affects HG because many religions spread throughout the world fall under these two categories.

Mujajideen: a person involved in jihad who fought against the USSR in Afghanistan from 1979-1989.

Syncretic religion: separate religions that combine into a new religion; often borrow from the past and the present (e.g., Shinto, Sikhism).

Sacred space: place or space people infuse with religious meaning; Ex) Jerusalem - Christianity (Church of the Holy Sepulchre), Judaism (Western Wall), and Islam (Dome of the Rock); Catholicism - The Vatican; Islam - Mecca, Medina; Hinduism - Varanasi & Ganges River; Buddhism - Lumbini (birthplace of the Buddha) ...

Secularism: the belief that humans should base their reality on facts, not religious beliefs; this has caused conflict in many different areas including politics.

Identity

Culture types:

- **Folk culture:** cultural traits such as dress modes, dwellings, customs, and institutions of usually small, traditional communities.
- **Local culture:** refers to people who see themselves as part of a community who work to preserve their traits and customs to be unique and distinguish themselves from others.
- **Popular culture:** (mass culture) cultural traits such as dress, diet and music that identify and are part of today's changeable, urban-based, media-influenced western societies.

Dowry deaths: sometimes due to arranged marriages in India (and also Pakistan and Bangladesh), disputes over the price to be paid by the family of the bride to the father of the groom (the dowry) have, in some extreme cases, led to the killing (or driving to suicide) of the bride by the groom or his family - often through immolation (**bride burning**) (numbers in India have increased to over 8,000 deaths a year depending on the validity of reports).

Ethnicity: affiliation or identity within a group of people bound by common ancestry and culture; many acts of hostility and wars (**ethnic conflict**) are fought over ethnolinguistic claims to territory.

Ethnic island (enclave/neighborhood): an area typically situated apart from a more homogenous region (e.g., metropolitan city) and comprised of a **local culture** that may practice their own culture.

Ethnic cleansing: the persecution through imprisonment, expulsion, or killing of members of an ethnic minority by a majority to achieve ethnic homogeneity (e.g., Nazi campaign from the 1930s through WWII; Yugoslavia from 1991-1999, Rwanda in 1994; Sudan (e.g., Janjaweed in Darfur) from 2003 to the present, ...).

Ethnocentrism: judging another culture solely by the values and standards of one's own cultural group.

Gender gap: **gender** refers to social differences between men and women (as opposed to biological differences); women outlive men in the vast majority of countries (exceptions are some states in West and Southern Africa due to the AIDS epidemic, and parts of South Asia due to cultural beliefs of male dominance). Men are more likely to die younger due to comparably worse habits and higher levels of stress.

Gendered space: areas or regions designed for men or women

Impact of Globalization: expansion of economic, political, and cultural processes to a global scale and impact (transcend state boundaries):

- **Commercialization:** transformation of an area of a city into an area attractive to residents and tourists alike in terms of economic activity (**spaces of consumption** such as Riverfront in Ft. Lauderdale, Times Square, ...).
- **Commodification:** process through which something is given monetary value (e.g., bottled water).
- **Global-local continuum:** notion that what happens at the global scale has a direct effect on what happens at the local scale, and vice versa; the result of a modern and globalized world.
- **Glocalization:** process by which people in a local place alter regional, national, and global processes; **"think globally, act locally"**; can refer to

a business strategy for MNCs (multinational corporations) to build local roots.

- **Homogenization:** popular culture tends to create a more similar and homogenous cultural landscape; many criticize that globalization has promoted this and has reduced the distinctiveness of the world in general.
- **Regionalization:** process by which specific regions acquire characteristics that differentiate them from others within the same country; certain economic activities may dominate in particular regions.
- **Placelessness:** the loss of uniqueness in a cultural landscape (due to globalization and the diffusion of popular culture)
- **Neolocalism:** reinvigorating local or regional aspects of one's culture (in the face of globalization)
- **Reterritorialization:** when people in a place produce an original aspect of popular culture themselves (in the context of their local culture)

Infanticide: practice of someone intentionally causing the death of an infant; occurs sometimes in peripheral and poor regions as a form of population control or as a sex-selective practice (e.g., the One-Child Policy of China has led to larger female infant mortality rates and abandonment due to the preference of male children).

Invasion and succession: changing land use within a neighborhood (e.g., a few immigrants move to a neighborhood to the discontent of the original residents who will eventually leave; succession is the end of the process when the area has changed completely)

Longevity gap: the difference in life expectancy between MDCs and LDCs

Quality of life: even though women may outlive men in most societies, it does not necessarily reflect the quality of their life (e.g., nutrition, legal status, social treatment, work load ...)

Race: categorization of humans based on skin color and other physical characteristics; based on the idea that some characteristics are more important than others (e.g., skin color over height). Skin pigmentation is caused by **melanin**, a chemical in the skin.

Segregation: affinity segregation: process by which people group and live with people more like themselves in terms of culture, ethnicity, or race; this is done by choice, free of outside intervention; **forced segregation:** situation in which ethnic or racial groups are separated into different classes; this is done against their will (e.g., US before the 1960 Civil Rights Act (Jim Crow Laws); South Africa before 1994 (Apartheid); also the Hindu caste system).

Xenophobia: a fear or dislike of foreigners or people significantly different from oneself.

Unit 4: Political

Annexation: incorporation of a territory into another geo-political entity.

Apartheid: Afrikaans for apartness; it was the segregation of blacks, coloreds, and Asians in South Africa from 1948 to 1994. It was created to keep the white minority in power and allow them to have almost total control over the black majority (~90% of the total population).

Balkanization: the political term used when referring to the fragmentation or breakup of a region or country into smaller regions or countries. The term comes from the Balkan wars, where the country of Yugoslavia was broken up into six countries between 1989 and 1992.

Boundary: vertical plane between states that cuts through the rocks below, and the airspace above (even outer space).

- **Above the state boundary:** refer to supranationalist agreements with two or more states working together for a common purpose.
- **Below the state boundary:** internal divisions within a state (e.g., States, counties, municipalities (local self-government))
- **Evolution** (of boundaries):
 - **Definition:** legal document or treaty drawn up to specify actual points in the landscape
 - **Delimitation:** cartographers put the boundary on the map
 - **Demarcation:** boundary is actually marked on the ground w/ wall, fence, posts, ... (too expensive or impractical for most borders)
- **Types** (of boundaries):
 - **Geometric:** straight-line, unrelated to physical or cultural landscape, lat & long (US/Canada)
 - **Physical-political:** (natural-political) – conform to physiologic features (Rio Grande: US/Mexico; Pyrenees: Spain/France)
 - **Cultural-political:** mark breaks in the human landscape (Armenia/Azerbaijan)
- **Genesis:** origin-based classification of boundaries
 - **Antecedent:** existed before the cultural landscape emerged (e.g., Malaysia/Indonesia)
 - **Subsequent: (consequent)** developed contemporaneously with the evolution of the cultural landscape (e.g., US/Mexico)

- **Superimposed:** placed by powerful outsiders on a developed landscape, usually ignores pre-existing cultural-spatial patterns (e.g., Indonesia/Papua New Guinea; Haiti/Dominican Republic)
- **Relict:** has ceased to function, but its imprint can still be detected on the cultural landscape (e.g., North/South Vietnam, East/West Berlin)
- **Disputes** (over boundaries):
 - **Definitional:** focus on legal language (e.g. median line of a river: water levels may vary)
 - **Locational:** definition is not in dispute, the interpretation is; allows mapmakers to delimit boundaries in various ways
 - **Operational:** neighbors differ over the way the boundary should function (migration, smuggling) (e.g., US/Mexico)
 - **Allocational:** disputes over rights to natural resources (gas, oil, water) (e.g., Saddam Hussein invaded Kuwait, in part, due to a dispute over rights to an oil field between the two states)

Buffer zone (state): zone of separation, a territorial "cushion" that keeps rivals apart (e.g., Mongolia b/w China and Russia; Rhineland prior to WWI; DMZ b/w North and South Korea)

Capital city: principle city in a state or country. The best place to locate a capital is at the center of a country, so it is a somewhat equal distance from all parts of the country.

Centrifugal forces: forces that divide a state – internal religious, political, economic, linguistic, or ethnic differences

Centripetal forces: forces that unify a state – national culture, shared ideological objectives, common faith, ...

Cold War era: from post-WWII to the end of 1991, the **bipolar world** (split between the allies of the capitalist US and the allies of the communist USSR) was dominated by a struggle of power between the two camps ...

- **First world:** the largely democratic and free-market states of the United States and Western Europe (Cold War to today)
- **Second world:** the communist and state-planned countries of the Soviet Union, Eastern Europe, and China (Cold War)
- **Third world:** the generally poorer countries of Asia, Africa, and Latin America (Cold War to today)
- **East/west divide:** geographic separation between the largely democratic and free-market states of Western Europe and the Americas from the communist and socialist countries of Eastern Europe and Asia.
- **North/south divide: (Brandt Line (1960s))** economic division between the wealthy countries of Europe, North America, Japan, and Australia, and the generally poorer countries of Asia, Africa, and Latin America.
- **New World Order:** commonly refers to the post-Cold War era vision in which world affairs would not be dominated by the competition between the two nuclear superpowers; a positive and hopeful vision for the future

Colonialism: (modern) The attempt by a country to establish settlements and impose political and economic control and principles. Often associated with the European movement beginning in the 16th c., which created unequal cultural and economic relations; also led to massive depopulation due to the spread of disease and through conquest.

- **European Model:** a state model based on inviolable territory (after the Peace of Westphalia), governmental **sovereignty** (possessing supreme or independent political power), permanent population with a national culture, and a state capital (was spread globally due to European Colonization).

Confederation: association of sovereign states (or States) by a treaty or agreement. It deals with issues such as defense, foreign affairs, trade, and a common currency.

Core-periphery: Core countries have high levels of development, a capacity at innovation and a convergence of trade flows. Periphery countries usually have less development and are poorer countries.

- **World-Systems Theory: (Immanuel Wallerstein's core-periphery model)** three-tier structured theory (core, semi-periphery, periphery) proposing that social change in the developing world is linked to the economic activities of the developed world.

Decolonization: Decolonization is the movement of American/ European/ Asian colonies gaining independence (mostly after the post-WWII era). Some were peaceful struggles, others became violent.

Devolution: process whereby regions within a state demand and gain political strength and growing autonomy at the expense of the central gov't (e.g., Basque and Catalonia in Spain, Chechnya in Russia, ...).

Domino theory: the idea that if one land in a region came under the influence of Communists, then more would follow in a domino effect. A resulting policy out of the Truman Doctrine that promoted containment of communism, the domino theory was used by successive United States administrations during the Cold War to justify American intervention around the world.

Electoral geography:

- **Census tract:** these are gov't. designated areas in cities that each have ~5,000 people, they often times correspond to neighborhoods (data in

census tracts is used to analyze urban patterns such as gentrification or **white flight**)

- **Electoral regions:** the different voting districts that make up local, state, and national regions.
- **Gerrymandering:** the process of redrawing legislative boundaries for the purpose of benefiting the political party in power. The process is usually used to turn "too close to call" states into a party's favor.

Enclave: a small and relatively homogeneous group or region surrounded by a larger and different group or region (e.g., Nagorno-Karabagh (part of Armenia surrounded by Azerbaijan), West Berlin during the Cold War,...); or wholly lying within the boundaries of another country (Lesotho). Not the same thing as an **ethnic enclave** (e.g., Chinatowns, Little Italys, Little Havana (in Miami),...).

Exclave: bounded territory that is part of a state but is separated by the territory of another state (e.g., Alaska, Kaliningrad (part of Russia),...)

Federalism is where power is shared between the national & state governments. Considered the most geographically expressive of all states.

Forward capital: a symbolically relocated capital city usually because of either economic or strategic reasons; sometimes used to integrate outlying parts of a country into the state (e.g., Brasilia, Washington D.C.).

Frontier: area where borders are shifting and weak, and where peoples of different cultures or nationalities meet and lay claim to the land (e.g., Amazon Basin, Antarctica, between Saudi Arabia and Yemen).

Immigrant state: a type of receiving state which is the target of many immigrants. Immigrant states are popular because of their economy, political freedom, and opportunity (e.g., US, Germany,...).

Imperialism: (modern) Second phase of European colonialism beginning in the late 18th c. due to the Second Agricultural Revolution and the Industrial Revolution. European states sought colonies for resources necessary for industrialization, outlets for overpopulation, and markets for their goods. The United States and Japan (and Russia to a lesser extent) were also engaged in imperialism (e.g., Berlin Conference (1885) carved Africa into a plethora of superimposed boundaries).

Irredentism: the recovery of territory or population culturally or historically related to one's nation but now subject to a foreign government (e.g., Falkland Islands are an irredentist claim by Argentina)

Law of the sea: laws establishing states' rights and responsibilities concerning the ownership and use of the Earth's waters and resources.

- **Territorial sea:** states' territory extending 12 nautical miles (1 nautical mile = 1.15 statute miles) from the coast (since 1982); regarded as the sovereign territory of the state, although foreign ships (both military and civilian) are allowed innocent passage through it; this sovereignty also extends to the airspace over and seabed below.
- **EEZ (Exclusive Economic Zone):** a sea zone over which a state has special rights over the exploration and use of marine resources stretching 200 nautical miles from the coast. The country that controls the EEZ has rights to the fishing, whaling, etc., as well as the raw material resources.
- **Median-line principle:** in situations where there is less than 400 nautical miles

Microstate (ministate): state or territory that is small in both population and area (e.g., Vatican City, Monaco,...)

Multicore state: a state that has more than one dominant region in terms of economics or politics (e.g., US, South Africa)

Multinational state: country with two or more nationalities within its borders (e.g., US, Canada, Russia, Iran,...).

Multistate nation: nation that transcends the borders of two or more states (e.g., Kurds (Kurdistan), The Koreans,...).

Political units:

- **Nation:** tightly knit group of people sharing a common language, ethnicity, religion, and other cultural attributes.
- **State:** politically organized territory administered by a sovereign government, with a permanent population, and recognized by the international community ("State" = internal division; "state" = country).
- **Nation-state:** a state whose population possesses a substantial degree of cultural homogeneity and unity (e.g., Japan, Portugal, Venezuela, Armenia, Iceland, ...).
- **Stateless nation:** a nation without a state (e.g., Kurds, Palestinians, ...).

Theocracy: a state whose government is either believed to be divinely guided or a state under the control of a group of religious leaders (e.g., Iran, Saudi Arabia, Vatican City (Holy See)).

Territorial morphology: study of states' shapes and their effects

-Compact: distance from geometric center is similar (e.g., Germany, Hungary,...)

-Elongated: a.k.a. attenuated (e.g., Chile, Vietnam,...)

-Fragmented: two or more separate pieces (e.g., Indonesia, Malaysia,...) -

-Perforated: territory completely surrounds that of another state (e.g., Italy, Azerbaijan,...)

-Protruded: a.k.a. prorupt; have an area that extends from a more compact core (e.g., Thailand, India,...)

Political organization: internal governmental structure of states ...

- **Federal state:** a state in which a group or body of members are bound together with a governing representative head.
- **Unitary state:** a state governed constitutionally as a unit, without internal divisions or a federalist delegation of powers

Power relationships: theories on geographical influence on politics ...

- **Geopolitics:** (Friedrich Ratzel) (**organic theory**) study that analyzes geography, history and social science with reference to international politics. States can be viewed as living organisms that need to consume other territories to survive. Gained a negative reputation when Hitler and the Nazis embraced geopolitics to justify their right for **lebensraum** (living space) because of their racial superiority.
- **Sea Power:** (Alfred Mahan; 1890) discussed the influence and importance of navies (trade, blockades, defense, ...); explained Britain's dominance (19th c.) and the value of a strong navy. His ideas, in part, led to a naval arms race prior to World War I (mostly between Britain and Germany)
- **Heartland Theory:** (Halford Mackinder) early 20th c. theory that claimed whichever state controlled the resource-rich "heartland" of Eastern Europe could eventually dominate the world. It would suggest that not the United Kingdom (an ocean-based empire), but Russia (which was becoming communist) would be in a position to achieve this dominance. "Who rules East Europe commands the Heartland; who rules the Heartland commands the World-Island (Europe, Asia & Africa); who rules the World-Island controls the world."
- **Rimland Theory:** (Nicholas Spykman) mid 20th c. theory that the domination of the coastal fringes of Eurasia (the "rimland") would provide the base for world conquest (not the "heartland").

Shatterbelt: a region caught between stronger colliding external cultural-political forces, under persistent stress, and often fragmented by aggressive rivals (e.g., Israel or Kashmir today; Eastern Europe during the Cold War,...).

Supranationalism: a venture of three or more states (sometimes two or more) involving formal economic, political, and/or cultural cooperation to promote shared objectives. Some examples ...

- **United Nations (UN):** established at the end of WWII to foster international security and cooperation (192 member states); precursor was the League of Nations that went defunct at the beginning of WWII. Has many subsidiaries such as the Security Council, World Health Organization (WHO), ...).
- **European Union (EU):** union of 27 democratic member states of Europe; began with the formation of Benelux by the end of WWII, then with the formation of the European Economic Community (EEC) years later. The EU's activities cover most areas of public policy, from economic policy to foreign affairs, defense, agriculture and trade. The European Union is the largest political and economic entity on the European continent, with over 500 million people and an estimated GDP of >US\$18 trillion (2008).
- **North Atlantic Treaty Organization (NATO):** a military alliance of western democracies begun in 1949 with 28 member states today; its members agree to mutual defense in response to an attack by any external party.
- **North American Free Trade Agreement (NAFTA):** a trilateral trade bloc in North America created by the governments of the United States, Canada, and Mexico. Poverty rates have fallen and real incomes have risen in Mexico, but farmers haven't fared well due to cheaper food from US agribusiness; also US manufacturing workers have lost jobs to maquiladora plants in Mexico (mostly due to cheaper labor costs).
- **Commonwealth of Independent States (CIS): confederacy** of states of the former Soviet Union; it possesses coordinating powers in the realm of trade, finance, lawmaking, and security; also promotes cooperation on democratization and cross-border crime prevention. Some states are considered to be part of the "**near-abroad**", referring to states (e.g., Baltic states – Estonia, Latvia & Lithuania) with strong Russian ties linguistically and politically.

Unit 5: Agricultural and Rural

Agriculture: The deliberate effort to modify a portion of Earth's surface through the cultivation of crops and the raising of livestock for subsistence or economic gain.

- **Extensive activity** (fishing, forestry, nomadic herding, ranching, shifting cultivation)
- **Intensive activity** (plantation agriculture, mixed crop/livestock systems, market gardening, horticulture, factory farms)
- **Aquaculture:** The cultivation of aquatic organisms in natural or controlled marine or freshwater environments (e.g., fish, shellfish, and seaweed); increased attention to aquaculture has led to a "**Blue Revolution**"

- **Horticulture:** the cultivation of a garden, orchard, or nursery; the cultivation of flowers, fruits, vegetables, or ornamental plants.
- **Monoculture:** growing a single crop over a wide area and for a large number of consecutive years
- **Polyculture:** using multiple crops in the same space; **multi-cropping** - growing two or more crops in the same space; **intercropping (inter tillage)** – an additional crop is planted in the spaces available between the main crop

Agricultural landscape: The land that we farm on and what we choose to put there on our fields; effects how much yield one gets from their plants.

Agricultural origins: Through time nomadic people noticed the growing of plants in a cycle and began to domesticate them and use for their own use. Carl Sauer points out vegetative planting and seed agriculture as the original forms. He also points out that vegetative planting likely was originated in SE Asia and seed agriculture originated in W. India, N. China and Ethiopia. Without the development of agriculture we would still have a relatively small and likely uneducated population.

Agricultural revolutions:

- **First Agricultural Revolution (Neolithic Agricultural Revolution):** a farming revolution that led to the establishment of permanent settlements along fertile river valleys which moved humans from **egalitarian societies** (equal) to more **stratified societies** (unequal).
 - **Plant domestication:** deliberate tending of crops to gain certain desired attributes; began around 12,000 years ago along several fertile river valleys and cultural hearths.
 - **Animal domestication:** domestication of animals for selling or using byproducts (the Fertile Crescent had cows, horses, pigs, and sheep, and therefore a **comparative advantage*** over other early culture hearths). Helped us obtain meat without having to go out and kill our food right before dinner. (*comparative advantage - ability of an individual or group to carry out an economic activity, such as production, at a lower cost and more efficiently than another entity)
- **Second Agricultural Revolution:** Precursor to Industrial Revolution in the 19th c., that allowed a shift in work force beyond subsistence farming to allow labor to work in factories. Started in United Kingdom, Netherlands, and Denmark, especially with the Enclosure Act, which consolidated land in Great Britain. Potatoes and corn diffused from the Americas to Europe, and other resources followed from colonial possessions to Europe.
 - **Crop Rotation:** The practice of rotating use of different fields from crop to crop each year, to avoid exhausting the soil. Takes up large areas of land but keeps land usable for future generations.
- **Third Agricultural Revolution: (Green Revolution)** Rapid diffusion of new agricultural technology, especially new high-yield seeds and fertilizer. Because of Green Revolution, agricultural productivity at a global scale has increased faster than the population. (e.g., major impact in Mexico, India, China, ...)
 - **Agribusiness:** general term for businesses that provide goods and services that support agriculture; many are vertically integrated
 - **Biotechnology:** using living organisms in a useful way to produce commercial products like pest resistant crops. Has helped the farmers grow a more bountiful harvest through the using of pesticides. **Genetically modified organisms (GMOs, or genetically modified foods)** have had their genes altered in a laboratory for specific reason (e.g., disease resistance, nutritional value, or increased productivity); grant producers greater control, predictability, and efficiency.
 - **Mechanization:** Farmers need tractors, irrigation pumps, and other machinery to make the most effective use of the new miracle seeds. Farmers in LDC"s cannot afford this machinery or the fuel to run the equipment, so governments must allocate funds to subsidizing the cost of seeds, fertilizers and machinery.

Agrarian: pertaining to the development of agriculture. Where agrarian people and societies are located is not generally near cities; but these types of people are essential to the way that we live and our ability to live in cities.

Chemical Farming – increased use of fertilizers with nitrogen, phosphorus, and potassium. The development of higher-yield crops has produced: a „miracle wheat seed" which is shorter and stiffer, less sensitive to variation in day length, responds better to fertilizers, and matures faster; a similar miracle rice seed, that was heartier and has increased yields; a high-yield corn seed is currently being developed.

Commercial agriculture: characterized by integration of different steps in the food-processing industry, usually through ownership by large corporations.

Commodity chains: (e.g. agribusiness) a sequential process used by firms to gather resources, transform them into goods or commodities and, finally, distribute them to consumers.

Debt-for-nature swap: when agencies such as the World Bank make a deal with third world countries that they will cancel their debt if the country will set aside a certain amount of their natural resources.

Double cropping: harvesting twice a year from the same land. Can cause agricultural exhaustion making people move away from the land.

Economic activities:

-Primary: (extractive sector) concerned with the direct extraction of natural resources from the environment (e.g., agriculture, mining, lumbering, fishing, ...).

-Secondary: (manufacturing sector) processing of products and assembling raw materials.

-Tertiary: (service sector) provides us with transportation, communication and utilities (transportation, retailing, education, routine office-based jobs, ...).

-Quaternary: concerned with the collection, processing, and manipulation of data and capital (e.g., FIRE – finance, insurance, real estate, ...).

-Quinary: require a high level of specialized knowledge or technical skill (e.g., scientific research, high-level management).

Feedlot: a plot of land on which livestock are fattened for market.

Folk-housing: building styles that are particular to the culture of the people who have long inhabited the area; there are three distinct folk-housing regions in the United States (by way of Europe):

- **New England:** dating back to colonial times is of wood-frame and diffused past WI.
- **Middle Atlantic:** style originated as a one-room log cabin with a chimney at one end diffusing into MO, AR, and MS.
- **Southern (Tidewater South):** style was originally smaller, only one story, and a porch that diffused southward into Georgia. They were often built on a raised platform to reduce heat.

Food manufacturing: the Green Revolution has increased production to avoid widespread famine. Allowing the world population to grow about four billion since started, also allowing populations in developing nations to consume 25% more than before. This increase in diets is questioned by the content in diets; Asian farmers are eating more rice than fish and other vegetables because they can rely on rice to grow efficiently.

Functional differentiation: as civilizations developed and societies became more complex, so did the function and complexity of the homes and buildings (e.g., a chief's or leader's home would typically be larger).

Growing season – the season in which crops grow best. Growing seasons can vary by location, societies rely on their growing season to which crops they can or can't grow at their latitude.

Little Ice Age: period of global cooling that occurred between the 16th c. and 19th c. after the Medieval Warm Period (~10th c. to 14th c.); greatly affected the northern empires of Rome and China (e.g., helped lead the Chinese to abandon overseas expeditions and focus inward to protect their lands).

Location of world crops: (cultivation regions)

- **Dairy:** expensive transportation and storage makes it most profitable near larger markets (e.g., NE US and NW Europe).
- **Commercial grains: (wheat, corn,...)** most profitable in the temperate zone with decent land fertility (e.g., Eastern US, Mid to East Europe, ...).
- **Rice:** a commercial grain that is the staple of many Asian nations; China is the largest producer, US is the largest exporter.
- **Livestock ranching** – commercial grazing of livestock over an extensive area. Practiced in semi-arid or arid land, where vegetation is too sparse or the soil is too poor to support crops. Prominent in later 19th century in the American West; ranchers free roamed throughout the West, until the U.S. government began selling land to farmers who outlined their farms with barbed wire, forcing the ranchers to establish large ranches to allow their cattle to graze.
- **Mediterranean:** farming in the land surrounding the Mediterranean Sea (Southern Europe, North Africa, and Western Asia), also in lands with similar climates (California, central Chile, Southwestern South Africa, and Southwestern Australia). Sea winds provide moisture and moderate winter; land is hilly with mountains frequently plunging directly into sea. Growing fruits, vegetables, flowers, and tree crops are the main crops, while animals are grown under transhumance – kept on coastal plains in winter and moved to hills in the summer.
- **Cash crops:** crops grown for money; more specifically refers to more specialized crops located mainly in or near the tropics (e.g., sugar, cotton, rubber, bananas, oranges, ...)
- **Luxury crops:** specialized crops typically not essential to human survival; historically grown on plantations by European colonial powers (e.g., tea, coffee, tobacco, cocoa (or cacao), ...).
- **Illegal drugs:** illegal cash crops are typically grown in the periphery and sold to the core; coca (cocaine; >50% grown in Colombia); poppy (heroin, opium; >90% grown in Afghanistan & Myanmar); marijuana (or cannabis).

Maladaptive diffusion: diffusion of an idea or innovation that is not suitable for the environment in which it diffused into (e.g., New England-style homes in Hawaii, or Ranch-style homes in northeast US).

Market gardening – The small scale production of fruits, vegetables, and flowers as cash crops sold directly to local consumers. Distinguishable by

the large diversity of crops grown on a small area of land, during a single growing season. Labor is done manually.

Nutrition & Diet:

- **Caloric intake:** often excessive in the core and deficient in the periphery (e.g., >50% of US adult population is overweight, ... >30,000 people starve to death each day worldwide!) (World Bank determines 2,500 calories per day is adequate).
- **Dietary balance:** calories alone does not determine a balanced diet, but necessary requirements for the body to function and survive (e.g., the "food pyramid")
- **Hidden hunger:** people who may consume enough calories to survive, but lack certain nutrients – specifically protein (protein deficiency in the first three years can cause permanent damage; both to mental capacity & physical growth).
- **Reducing global hunger:** (see reading guide)

Organic agriculture: approach to farming and ranching that avoids the use of herbicides, pesticides, growth hormones, and other similar synthetic inputs.

Plantation agriculture: based on a large estate owned by an individual, family, or corporation and organized to produce a cash crop. Almost all were established in or near the tropics – many have been divided into smaller holdings, or reorganized as **cooperatives** (owned by a group of individuals).

Pre-agricultural:

- **Hunting & gathering:** Humans gained food by hunting for animals, fishing, or gathering plants. They lived in small groups (often less than 50 people), traveled frequently following game and seasonal growth of plants (practiced by less than 1 percent of the population today).
- **Metallurgy:** technique or science of working or heating metals so as to give them certain desired properties or shapes (e.g., tools). Predates plant and animal domestication (e.g., gold, silver, copper, tin, iron,...).

Rural dwellings:

- **Unchanged-traditional:** layout, construction, and appearance have not been significantly altered by external influences.
- **Modified-traditional:** new building materials used, but no change to the original structure or layout.
- **Modernized-traditional:** materials and layout have been changed (e.g. multiple bathrooms, two-car garage, aluminum siding, etc...)
- **Modern:** sacrifices tradition for practicality & efficiency; reflects advanced technology, comfort, affluence, and suburbanization (common in US)

Rural settlements: sparsely settled places away from the influence of large cities. Live in villages, hamlets on farms, or in other isolated houses.

Typically have an agricultural character, with an economy based on logging, mining, petroleum, natural gas or tourism (**ecotourism**).

- **Building materials: (wood, brick, stone, wattle, grass & brush)** houses and buildings are typically built from materials that are abundant in the area (especially in the LDCs)
- **Dispersed:** characterized by farmers living on individual farms isolated from neighbors rather than alongside other farmers in the area.
- **Nucleated:** a number of families live in close proximity to each other, with fields surrounding the collection of houses and farm buildings (e.g., Asian longhouse)

Sharecropping – where a tenant farmer pays as rent a share of the crop.

Subsistence farming: self-sufficiency farming in which the farmers focus on growing enough food to feed themselves and their families

- **Extensive:** characterized by low inputs of labor per unit land area.
- **Shifting cultivation: (slash-and-burn)** vegetation is cut down and then ignited to make the ground more productive (**swidden** is the term for this prepared land); each field is used for a couple years then left fallow for a relatively long time.
- **Nomadic herding/pastoralism: (animal husbandry)** based on herding domesticated animals.
- **Intensive**– involves effective and efficient use of labor on small plots of land to maximize crop yields. Popular in East, South, and Southeast Asia, because the ratio between farmers and arable land is so high, most of the work is done by the family by hand or by animal with processes refined over thousands of years.

Sustainable yield: ecological yield that can be extracted without reducing the base of capital itself, the surplus required to maintain nature's services at the same or increasing level over time. Example, in fisheries the basic natural capital decreases with extraction, but productivity increases; so the sustainable yield is within the ranch that the natural capital together with production are able to provide satisfactory yield.

Survey systems:

- **Long Lots (French)** – houses erected on narrow lots perpendicular along a river, so that each original settler had equal river access.
- **Metes and Bounds (English)** – uses physical features of the local geography, along with directions and distances, to define the boundaries of a particular piece of land. Metes refers to boundary defined by a

measurement of a straight run, bounds refers to a more general boundary, such as a waterway, wall, public road, or existing building.

- **Rectangular: (Public Land Survey)** US system set up to parcel land west of the Appalachian Mountains. e.g., **Township-and-Range** (U.S.A) – survey's used west of Ohio, after the purchase of the Louisiana Purchase. Land is divided into six-mile square blocks (township), which is then divided into one-mile square blocks (range). Ranges were then broken into smaller parcels to be sold or given to people to develop.

Staple grains – Maize (corn), wheat, and rice are the most produced grains produced world-wide, accounting for 87% of all grains and 43% of all food.

Maize staple food of North America, South American, Africa, and livestock worldwide, wheat is primary in temperate regions, and rice in tropical regions.

Terracing: cultivating sloped land through graduated steps to decrease erosion and surface runoff of nutrients

Truck farm – Commercial gardening and fruit farming, so named because truck was a Middle English word meaning bartering or the exchange of commodities. Predominant in Southeastern U.S.A (long growing season, humid climate, and accessibility to large markets). Truck farms grow many of the fruits and vegetables that consumers demand in developed societies. Truck farms sell some of their product to fresh markets, but mostly to large processors for canning or freezing. Truck farms are highly efficient and large-scale operations that take full advantage of machines at every stage of the growing process.

Village forms: (linear, cluster, round, walled, grid pattern)

Patterns of Rural Settlement: particular to the region in which they originated, or diffused to other parts of the world through diffusion and colonization.

- **Primogeniture:** system which the eldest son in a family (or daughter if necessary) inherits all of a dying parent's land (tradition brought by the Normans to England).
- **Cadastral system:** survey system that determines the value, extent, and ownership of land for purposes of taxation.

Von Thünen Model: (The Isolated State) 1826, Northern Germany. When choosing an enterprise, a commercial farmer compares two costs; cost of the land versus the cost of transporting production to market. Identifies a crop that can be sold for more than the land cost, distance of land to market is critical because the cost of transporting varies by crop. Von Thunen's theory disregards site or human factors. Also found that specific crops were grown in varying rings around city:

1. Market-oriented gardens and milk producers in first ring, because of expense of transportation and perishability. (**intensive agriculture** – utilizes maximum efficiency in farming due to limited and high-cost land near markets)
2. In the next rings wood lots used for construction and fuel; it is a heavy industry with high transportation costs.
3. Next rings are used for various crops or pasture (**extensive agriculture** – large-scale farming utilizing large plots of lower-cost land further from markets)
4. The outermost ring devoted primarily to animal grazing.

Unit 6: Urban

Agglomeration: (nucleation) clustering of people or businesses for mutual benefits of close proximity; can share labor pools, technological and financial amenities, and **ancillary industries** (support large-scale industries).

Centralization – the movement of people, capital, services, and govt. into the central city (opposite of suburban sprawl, happened to US cities before WWII and is happening now).

City components: predominant urban land uses ...

- **CBD (central business district):** location of skyscrapers and companies (would always be the center of the 3 urban models, many people commute, few actually live there)
- **Central city:** urban area that is not suburban; generally the older or original city surrounded by the newer suburbs.
- **Inner city:** urban area around the CBD; typically poorer and more run down in the US and other long-developed states; typically more rich upscale in less-developed states.
- **Ghetto:** inner cities that become dilapidated centers of poverty; may contain many **tenements** (a run-down and often overcrowded apartment house); historically, many affluent whites moved out of the suburbs (**white flight**) as immigrants and poorer people vied for scarce jobs and resources.
- **Node:** geographical centers of activity; large cities have numerous nodes.
- **Suburb:** residential communities, located outside of city centers; usually homogeneous in terms of population and ethnicity; massive suburbanization accelerated in the US after WWII due to funds for

veterans through the GI Bill, highway expansion and **prefab** construction (assembling components of a structure in a factory, and transporting the assemblies to the construction site where the structure is to be located).

- **Exurb**: ring of prosperous communities beyond the suburbs that are commuter towns for an urban area; began to emerge in the 1970s when rampant crime and **urban decay** (when part of a city falls into disrepair - due to deindustrialization, depopulation, high unemployment, ...) in U.S. cities were the primary **push factors**; more recently since house prices have skyrocketed, middle-class people who want a large yard or farm are pushed beyond suburban counties and into "exurbs".

City types: examples of primarily Western origin ...

- **Medieval city**: European-style city with high density of development, narrow buildings, and an ornate church at the city center, with high walls for defense (walls proved futile when gunpowder made its way into Europe by the 1300s).
- **Mercantile city**: Atlantic maritime trade disrupted old trade routes & centers of power starting in the 1500s (from interior to coastal ports); central square became focus ("downtown"), these cities became nodes of a network of trade; brought huge riches to Europe (e.g. Lisbon, Amsterdam, London, ...).
- **Manufacturing city**: grew out of the Industrial Revolution and the "Little Ice Age"; associated w/ mushrooming population, factories, tenement buildings, railroads, ...; poor living & health conditions; cities improved w/ government intervention, city planning, and zoning, ...
- **Modern city: (modern architecture)** little attention is spent on building aesthetics or ornate designs; improved transportation & road systems has allowed greater complexity, multiple CBDs, and dispersal into the suburbs; the hallmark of American life.

Deagglomeration (de-agglomeration): process of industrial deconcentration in response to technological advances and/or increasing costs due to congestion and competition.

Early urbanization: emerging from the First Agricultural Revolution

- **Egalitarian society**: civilization in which all people are equal; typical of most hunter-gatherer societies.
- **Stratified society**: civilization in which people exist in different classes; the development of farming and early cities began this process.
- **Formative era**: time where the major urban hearths came into exist stance (e.g., for the Fertile Crescent this occurred between 7,000 – 5,000 BCE (Before Common Era – same as BC (Before Christ))).
- **Urban elite**: group of socially, politically, or economically dominant figures in a society.
- **Theocratic center**: focus of religious activity or importance.

Early examples:

- **Mesopotamia, Greece, Rome** (see reading guide)
- **Medieval Optimum (Medieval Warm Period)**: a time of warm weather around CE 800-1300 (Common Era – same as AD (Anno Domini)) during the European Medieval period. The effect may largely have been focused in the Northern Atlantic.
- **Little Ice Age (16th - 19th c.)**: period of global cooling after the Medieval Warm Period (~9th c. to 14th c.); greatly affected the northern empires of Rome and China (e.g., encouraged the migration of people to the cities in England due to shrinking farmlands providing factories with an abundant supply of cheap labor).

Edge city: characterized by extensive office and retail space, few residential areas, and modern buildings (built since the 1960s); signifies a newer worldwide trend of the movement of the loci of economic activity to the urban fringe (unlike the loci of activity around the CBD – which had dominated the industrial world).

Employment structure:

- **Basic sector**: activities and services that generate income for a city (e.g., manufacturing, retail, ...).
- **Nonbasic sector**: work responsible for the functioning of the city itself (e.g., government, street cleaning, ...).
- **Economic base (basic vs. nonbasic sectors)**: ratio of basic to nonbasic workers (nonbasic is always greater for larger cities).
- **Multiplier effect (1:2 (or 1:3) for most large cities)** for every worker in the basic sector, there are typically 2-3 workers in the nonbasic sector for most modern cities.

Entrepôt: (French for "warehouse") a trading post (e.g., port) where merchandise can be imported and exported without paying import duties, often at a profit (e.g., Hong Kong, Dubai, Singapore, ...).

Functional specialization: some cities are characterized by one specific activity (e.g., Orlando – tourism, Las Vegas – gambling, ...); cities tend to lose their functional specialization as they grow. Typically specialize in management, research and development of a specific industry (motor vehicles in Detroit), or are centers of government and education, notably state capitals that also have a major university (Albany, Lansing, Madison, or Raleigh-Durham).

Gateway city: because of their geographic location (often with at least one seaport and airport), they act as ports of entry and distribution centers for large geographic areas (e.g., NYC, Miami, San Francisco, ...).

Hinterland: literally "country behind"; refers to the surrounding area served by an urban center (the **heartland**).

Megacity: cities with 10 million or more inhabitants; occur predominantly in LDCs; high population growth and migration cause these cities to attract massive amounts of population since WWII; tend to be plagued by chaotic and unplanned sprawling growth, pollution, and widespread poverty.

New Urbanism (a type of **smart growth**): urban design originating in the US during the 1980s to work against sprawl; characterized by organized urban planning, suburban **infill** (filling in unused space), and are designed to be walkable.

Postmodernism: (postmodern architecture) architecture & design developed for look & commerce (may connect to historical roots); a reaction to feeling of sterile alienation some had to modern architecture; city spaces become more people-friendly.

Primate city: a country's largest city; most expressive of the national culture and usually the capital city as well (e.g., Paris, France; Lagos, Nigeria; Mexico City, Mexico; Dhaka, Bangladesh, ...).

Rank-size rule: states without a true primate city may follow this rule (many MDCs lack primate cities b/c technology and wealth has diffused throughout their countries); the population of any given city should be inversely proportional to its rank in the urban hierarchy (e.g., if #1 = 12 million, then #2 = 6 million, #3 = 4 million, #4 = 3 million, ...).

Societal Classification – Gideon Sjoberg; cities changed over time:

- **Folk-preliterate**: earliest cities, predating written languages.
- **Feudal**: arose during the Middle Ages which actually stagnated urban growth in Europe; fostered a dependent relationship between wealthy landowners and peasants – provided few alternative economic alternatives.
- **Preindustrial**: found in societies without sophisticated machine technology, where human and animal labor form the basis for economic production (no city moved past this stage until the Industrial Revolution).
- **Urban-industrial**: predominate in the modernized nations of Western Europe, America, Japan (and to a lesser extent where their cultures have globalized) where productivity through machines, and energy sources from fossil fuels and atomic power phenomenally expand economic productivity.

Squatter settlement: (shantytown, slum) residential development characterized by extreme poverty; usually exists on land just outside of cities that is neither owned nor rented (e.g., Favelas in Brazil)

Urban Banana (crescent-shaped zone): urbanized zone that spread from India and the Far East (China & Japan) across the Islamic Empires, and into Europe; followed mostly along the **silk and spice trade** routes.

Urban hierarchy: ranking of settlements according to their size and economic functions.

- **Hamlet**: lowest level of settlements (often not urban); offers few if any services.
- **Village**: clustered human settlement larger than a hamlet and generally offering several services.
- **Town**: clustered human settlement larger than a village; may range from a few to thousands of inhabitants (even hundreds of thousands); generally many goods and services are available.
- **City**: clustered conglomeration of people and buildings together serving as a center of politics, culture, and economics; a town may have outskirts, but virtually all cities have suburbs (hinterlands).
- **Metropolis**: usually contains several urbanized areas and suburbs that act together as a coherent economic whole.
- **Megalopolis (e.g. conurbation such as Bosnywash, SanSan, ChiPitts,...)** occur predominantly in MDCs; large coalescing supercities that were originally separate but have expanded and joined together.

Urban sprawl: process of expansive suburban development over large areas; the automobile provides the primary source of transportation.

Urban Models

- **Central place theory (Walter Christaller)**: explains how services are distributed and why there are distinct patterns in this distribution; organized by hexagons to eliminate unserved or overlapping market areas.
 - **Central goods and services**: provided only at a central place, or city (available to consumers in a surrounding region).
 - **Range of sale (breaking point)**: maximum distance people will travel for a good or service (economic reach).
 - **Threshold**: the minimum number of customers needed to keep the business running
 - **Complementary region**: the market area; an exclusive hinterland w/ a monopoly on a certain good or service.
 - **Generalizations of the model**: the greater the size of the central place:

1. the fewer they are in number;
 2. the greater the distance between them;
 3. the greater the number and range of functions;
 4. the greater the number of higher-order services (e.g., arenas, universities, museums, zoos, etc.)
- **John Borchert's model: (1967)**; recognized four epochs (a fifth has been suggested) in the evolution of the American metropolis based on the impact of transportation & communication:
 1. Sail-Wagon Epoch (1790-1830) – associated with low technology
 2. Iron Horse Epoch (1830-70); impact of the steam engine; steamboats & spreading regional railroad networks
 3. Steel-Rail Epoch (1870-1920); long haul railroads and a national railroad network; hinterlands expand
 4. Auto-Air-Amenity Epoch (1920-70); gas-powered internal combustion engine
 5. High-Technology Epoch (Satellite-Electronic-Jet Propulsion) (1970-?) – modern technology has facilitated suburbanization and metropolitan decentralization
 - **Concentric zone (1920s; Ernest Burgess)**: based on his studies of Chicago: 1) CBD, 2) Zone of transition (residential deterioration & light industry), 3) Blue-collar workers, 4) Middle-class, 5) outer suburban ring; the model is dynamic (as the city grows, the inner rings encroach on the outer ones).
 - **Sector: (1939; Homer Hoyt)** urban growth creates a pie-shaped urban structure due, in part, to the advancement of transportation like the electric trolley (e.g. low-income areas could extend from the CBD to the outer edge (3)); the same is true w/ high-rent, transportation, and industry.
 - **Multiple nuclei: (1945; Chauncy Harris & Edward Ullman)** claimed the CBD was losing its dominant position as the nucleus of the urban area; separate nuclei become specialized and differentiated, not located in relation to any distance attribute (urban regions have their subsidiary, yet competing, "nuclei").
 - **Peripheral Model (Galactic City Model)**: the US urban area consists of an inner city surrounded by large suburban residential and business areas tied together by transportation nodes (e.g., a beltway or ring road to avoid traffic congestion). The periphery acts as a functional metropolitan complex, not a series of separate CBDs. It represents urban decentralization (with an increase in edge cities) and the US transcendence into a post-industrial society (from predominantly secondary economic activities to tertiary, quaternary, and quinary activities).
 - **Urban realms**: each realm is a separate economic, social and political entity that is linked together to form a larger metropolitan framework. Independent suburban downtowns are the foci of the urban realms, yet they are within the sphere of influence of the central city and its metropolitan CBD.

Foreign city models (modern)- most residences tend to decrease in quality and value as the distance from the CBD increases:

- **Latin-American**: owe much of their structure to colonialism, industrialization, and massive population growth; sector development radiates out from the CBD (which often contain a central plaza), where most industrial and financial activity occurs; also contain **barrios** (ethnic neighborhoods) which can often be associated with poorer sectors of the city.
- **Southeast Asian**: consist of sectors and zones radiating from the port zone; influenced by colonialism and are often still focused on exporting goods.
- **Sub-Saharan African**: consist of sectors and zones, but possess a great deal of centrality around the CBD (may contain multiple CBDs); typically have strong ethnic neighborhoods and squatter settlements on the outskirts.
- **Canadian city**: tend to be more centralized and less suburbanized than US cities; b/c of this their inner cities tends to be much less dilapidated due to fewer wealthy people leaving them.
- **Western European city**: older ones were mostly developed during the Medieval period; display less sprawl than US cities, in part since gasoline my cost up to 3-4 times more than in the US; also, some cities have **greenbelts** (undeveloped area neighboring an urban area, often protected from development by planning law) which confine urban sprawl.
- **Eastern European city**: typically less affluent than Western European cities due to the communist urban planning by the USSR during the Cold War; most residential spaces were organized into **microdistricts** (designed to minimize cost by reducing roads and maximizing living space).
- **Islamic city**: found in the Muslim regions; owe their structure to their religious beliefs; contain mosques, open-air markets, courtyards surrounded by walls, limiting foot traffic in residential neighborhoods.

Sociocultural influences-

- **Racial steering**: the practice in which real estate brokers guide prospective home buyers towards or away from certain neighborhoods based on their race.
- **Redlining**: illegal discriminatory practice in the US where minorities are prevented from obtaining loans to buy homes or property in predominantly white or affluent areas.
- **Blockbusting**: the process of white families selling their homes because of fears that blacks would move in and lower the property value (explains the **white flight** of the 1950"s from almost every major US city (e.g., Detroit and Cleveland), and the growth of suburbs)

Urban Trends:

- **Commercialization**: transforming of an area of a city into **spaces of consumption** - areas attractive to residents and tourists alike in terms of economic activity.
- **Gentrification**: trend of mid to high-income Americans moving into city centers and rehabilitating much of the architecture, but also replacing low-income population – changing the social character of certain neighborhoods.
- **Revitalization**: city planners have redesigned their central cities to make them more amenable to people moving in, especially higher income residents.
- **Suburbanization**: began largely in the US after WWII (US is the only country in the world in which the majority of the population resides in the suburbs), however, more people have started the process of centralization since the 1990s (moving back into the central cities).
- **Tear-downs**: houses that new owners bought with the intention of tearing them down and building a larger home (sometimes called **McMansions** due to their super size and similar look); like gentrification in the city, it increases housing values and tax revenues, and average income; however, unlike gentrification, the houses are destroyed (not preserved), and this occurs in the wealthy suburbs (like Greenwich Connecticut, or the intracoastal waterway in South Florida) not the central city.

World city: (global city) centers of economic, culture, and political activity that are strongly interconnected and together control the global systems of finance & commerce (e.g. NYC, London, Tokyo, Buenos Aires, Sydney, ...)

Zoning laws: legal restrictions on land use; residential, commercial, or industrial.

Urbanization Concerns: 1) Sprawl – outlying areas more susceptible to landslides, floods, storms, earthquakes, ... 2) Loss of soil – farmland lost (US = 1 million acres/yr.; China = 3x as much); 3) Land use – natural landscape becomes cultural (pavement, buildings,...); less rainfall, more pollutants; 4) Pollution – growing volumes of contaminants (in air, water, and soil); Mexico City, Delhi, Bangkok are most smog-ridden; riverfront cities create pollution as well; 5) Waste – many lack of sewer facilities (>3 million w/o in Mexico City); burning garbage heaps; 6) Consumption habits – urban dwellers use more energy, change diets (meat), dress, and recreation habits

Units 7: Industry and Services

Industrial History

- **First-round industrialization (up to WWI)**: England had a **comparative advantage** with the rest of the world (e.g., natural resources, cheap labor, ports, ...) and began industrializing with textiles; industrial pace rapidly increased and England created several **break-of-bulk** locations (where goods are transferred from one type of carrier to another) primarily along its port cities (e.g., London, Liverpool, ...); industrialization diffused into Western Europe and into the United States; the industrialized nations engage in **imperialism**, seeking out new regions for resources and markets for their goods.
- **Mid-twentieth century industrialization**: after WWII the US became the strongest industrial nation (**NAMB (North American manufacturing belt)**) with the USSR as the other superpower; oil & natural gas rose to become virtually the most important resources driving the industrialized world; Japan rises to a major industrial power (initially due to its cheap labor).
- **Late twentieth century industrialization & beyond**: the four primary industrial zones are still dominant, however, secondary industrial regions are making great strides; many developed economies have been expanding into tertiary, quaternary and quinary activities – diverting (or outsourcing) more manufacturing to other regions (e.g., China, India, Four Tigers, Thailand, Malaysia, Indonesia, Vietnam, ...).

Colonization: laid the groundwork for today's globalized networks; physical process of a state putting its government in charge of a foreign place to gain control of its people and resources.

Economic Models: all must assume that people (and firms) will

- 1) maximize their advantages over competitors, ..., 2) will want to make as

much profit as possible, ..., and 3) will take into account variable costs (energy, transportation, labor, tax rates...)

- **Core-periphery model:** describes the pattern of distribution of the MDCs and LDCs. When the earth is viewed from the North Pole (azimuthal), the MDCs are clustered near the center of the map (core) while the LDCs are near the edges (periphery).
- **Least cost theory: (Alfred Weber);** described the optimal location of a manufacturing firm in relation to the cost of transportation, labor, and advantages through agglomeration.
 - **Weight-losing case: (bulk reducing)** if the finished product costs less to transport, the firm will be located closer to the raw materials to reduce cost (smelting, steel production, paper products, ...)
 - **Weight-gaining case (bulk gaining)** if the finished product costs more to transport, the firm will be located closer to the market to reduce cost (bottling (soft drinks, beer), bread products, ...)
- **Linear City Model: (Harold Hotelling; dealt with locational interdependence)** the location of industries can't be understood w/o reference to the location of other industries of like kind; two similar vendors would locate next to each other in the middle of a market area to maximize profit (or beach/street as his model suggests); beach/street is really a metaphor for **product differentiation** (firms gravitate toward locations or styles of products that meet demand)
- **Profit Maximization Model: (August Lösch; zone of profitability)** a number of different points may appear as optimal due to the **substitution principle** (an increase in one cost (e.g., transportation) offset by a decrease in another cost (e.g., labor)); this series of points, connected, mark a **zone of profitability** (not a single point as Weber had contended).
- **Spatial Interaction Model (Edward Ullman's Conceptual Frame):** proposed that trade was an interaction based on three phenomena:
 - **Complementarity:** when two regions, through trade, can specifically satisfy each other's demands; regions specialize along their **comparative advantage** (ability of a region to specialize in an economic activity, such as production, at a lower cost and greater efficiency than another region)
 - **Intervening opportunity:** presence of a nearer opportunity diminishes the attractiveness of sites farther away.
 - **Transferability:** the ease (or difficulty) in which a good may be transported from one area to another.

Economic Types:

- **Market economy:** capitalist economy based on the division of labor in which the prices of goods and services are determined in a free enterprise system set by supply and demand.
- **Mixed economy:** economic system that incorporates a mixture of private and government ownership or control, or a mixture of capitalism and socialism.
- **Planned economy:** communist economic system in which a central government determines the price of goods and services, controls the factors of production and makes all decisions about their use and about the distribution of income (e.g., the Soviet Union). In the 1980's and 90's the communist governments presiding over planned economies began deregulating and moving toward market based economies today most economies are market or mixed economies, except those in Cuba or North Korea.

Factors of industrial location: numerous costs are considered; some costs are transportation, labor, agglomeration, market, energy, terrain, climate, personal preference, the product itself, ...

Foreign direct investment: investment in the economies of LDCs by transnational corporations based in MDCs. However, all countries are not recipients of this investment. Brazil, China and Mexico were the LDCs that received most of the investment.

Industry types:

- **Cottage industry:** industry in which the production of goods and services is based in homes (not factories); **specialty goods** (assembled individually or in small quantities) are often produced in this manner.
- **Brick-and-mortar industry:** industry with actual stores in which trade or retail occurs; doesn't solely exist on the internet.
- **Footloose industry:** industry in which the cost of transporting both raw materials and finished product is not important for the location of firms (e.g., diamonds or **E-commerce** (web-based economic activities)).

Industrial revolution – term for the social and economic changes in agriculture, commerce, and manufacturing resulting from technological innovation and specialization in the late 18th c. Europe.

Deindustrialization: process where the companies move industrial jobs to other regions (typically with cheaper labor), leaving the newly deindustrialized region to switch to a service economy and work through a period of high unemployment. (e.g., the US "**Rustbelt**"; Northeastern China).

Industrial location:

- **Primary vs. secondary:** Von Thünen only had to deal with primary industries, which are obviously located adjacent to the natural resources (farming, ranching,...). Secondary industries are less dependent on resource location; they deal with more variable costs such as energy, transportation, and labor.
- **Primary industrial regions:** represent the strongest (and mostly the original) industrial zones (all in the Northern Hemisphere):
 - **Eastern North America:** strongest and most dominant since WWII
 - **Western & Central Europe:** oldest and highly urbanized
 - **Russia & Ukraine:** massively developed under communism (only primary region abundant in oil & natural gas)
 - **Eastern Asia:** Japan's dominance is being challenged by China (dominant in terms of low cost mass production) and the "**Four Tigers**" (South Korea, Hong Kong, Taiwan, and Singapore)
- **Secondary industrial regions:** states and regions that have been intensely developing and urbanizing in recent decades; typically represent more semi-peripheral economies (e.g., Mexico, Brazil, South Africa, Egypt, India, Australia,...).

Port: a commercial center where goods are received for distribution, transshipment, or repackaging

Production types:

- **Mass production: (assembly line production/Fordism);** requires a critical mass of land (resources), labor (usually cheap) & capital (money); industrial arrangement of machines, equipment, and workers for continuous flow of work pieces in mass production operations, each movement of material is made as simple and short as possible. Important because it allowed for goods to be produced at a rate comparable to the demand for many of those products, made for more efficient manufacturing industries.
- **Lean production: (lean manufacturing/Toyota Production System TPS)** production that is centered around creating **more value with less work**; using modern transportation, efficiency is maximized by obtaining components and parts through **just-in-time delivery** from varying competing companies around the world (as opposed to keeping large stockpiles in warehouses as in mass production); this is largely a system pioneered by the Toyota Motor Corporation; has led to spatial disaggregation of industrialization and is more flexible in determining optimal locations for production (e.g., labor cost)
- **Horizontal integration:** ownership by the same firm of a number of companies that exist at the same point on a commodity chain (e.g., PepsiCo owns Gatorade, Frito-Lay, Quaker, ... YUM! owns Taco Bell, KFC, A&W).
- **Vertical integration:** ownership by the same firm of a number of companies that exist along a variety of points on a commodity chain (e.g., Perdue Farms).

Unit 8: Economic Development

Country classifications:

- **BRICS:** (Brazil, Russia, India, China & South Africa); newly industrialized countries (except Russia, which is a more developed country) distinguished by their large, fast-growing economies and significant influence on regional and global affairs
- **Four Asian Tigers:** refers to the highly developed economies of Hong Kong, Singapore, South Korea and Taiwan; beginning in the 1960s, they experienced high economic growth rates rapid industrialization; today all four have essentially developed into more developed countries (MDCs), specializing in areas of competitive advantage.
- **Four Tiger Cubs:** refers to the four export-oriented and rapidly expanding economies in Southeast Asia [behind the Four Tigers], which are Indonesia, Malaysia, the Philippines, and Thailand; they are classified as newly industrialized countries (NICs), except for Indonesia (which still has many undeveloped regions and limited infrastructure to do its fragmentation).

Development levels (for countries):

- **More developed country (MDC):** a state with a high level of industrialization, per capita income, Human Development Index (HDI), and a widespread infrastructure (e.g., Japan, UK, US, ...)
- **Newly industrialized country (NIC):** a state that hasn't reached the status of an MDC, but has outpaced the living standards and economic levels of their developing counterparts; it's economy may be export-oriented, with a high amount of its people working in the secondary sector (e.g., Brazil, China, India, ...)
- **Least developed country (LDC):** has a low living standard, an undeveloped industrial base, and a low Human Development Index (HDI) (e.g., Congo Haiti, Zambia, ...)

Gatekeepers: people or companies who control access to information (e.g., CNN, Wall Street Journal, Fox News, Al-Jazeera, ...).

Global (New international) division of labor: phenomenon whereby corporations and others can draw from labor markets around the world; made possible through improvements in communication and transportation systems (resulting in **time-space compression**).

Substitution principle: losses in one area may be offset by savings in another (e.g., higher labor costs could be offset by lower taxes).

Network: a set of interconnected nodes without a center (e.g., financial, transportation, communication, governmental, ...) with modern [information] technology, networks enable globalization to occur and create a higher degree of interaction and interdependence than ever before.

Outsourcing: turning over production in part or in total to another firm or business to another part – or outside – a country.

Offshoring - specifically refers to moving production outside the country or *overseas* (e.g., China)).

Measures of development: used to distinguish LDCs from MDCs. They include GDP, literacy rate, life expectancy, caloric intake, etc.

- **GDP: (gross domestic product)** the total value of goods and services produced in a year in a given country. The value varies greatly between MDCs and LDCs and is one of the best indicators of development.
- **GNP: (gross national product)** similar to GDP except that includes income that people earn abroad.
- **GNI PPP: (gross national income with purchasing power parity)** PPP takes into account price differences between countries. Usually goods in LDCs are priced lower, so this makes the difference between LDCs and MDCs less.
- **HDI: (human development index)** an aggregate index of development, which takes into account economic, social and demographic factors, using GDP, literacy and education, and life expectancy.
- **PQL (physical quality of life index)** based on literacy rate, infant mortality rate, and life expectancy at age one.
- **Calorie consumption** as a percentage of daily requirement is an important index of development. People in MDCs generally consume more than 130% of their daily requirements, but most people in LDCs barely get enough to sustain themselves (e.g., Sub-Saharan Africa).

Models of Development:

- **Liberal Models:** assume 1) all countries are capable of developing economically *in the same way*, and 2) disparities b/w countries & regions are the result of short-term inefficiencies in local or regional markets.
 - **Walter Rostow's Modernization Model** (1960s) stated countries develop through five stages: Stage 1: Traditional; Stage 2: Preconditions for takeoff; Stage 3: Takeoff; Stage 4: Drive to Maturity; Stage 5: Age of Mass Consumption
- **Structuralist Models:** economic disparities are the result of historically derived power relations w/in the global economic system; cannot be changed easily (misleading to assume all areas will go through the same process of development).
 - **Dependency Theory:** states that political & economic relationships b/w countries & regions control & limit the developmental possibilities of less well-off areas (e.g., imperialism caused colonies to be dependent – this helps sustain the prosperity of dominant areas & poverty of other regions); only at later stages of development does the core have a positive impact on the periphery (grants, loans, specialized economic zones,...).
 - **World Systems Theory: (Immanuel Wallerstein)** illuminated by a three-tier structure (core, semi-periphery, periphery); refers to perspective that seeks to explain the dynamics of the "capitalist world economy" as a "total social system". Important because explains the power hierarchy in which powerful and wealthy "core" societies dominate and exploit weak and poor peripheral societies.

Neocolonialism: the economic control that MDCs are sometimes believed to have over LDCs. Through organizations such as the IMF, the MDCs are able to dictate precisely what LDCs economic policies are, or are able to use their economic subsidies to put LDCs industries out of business.

Uneven development:

- **Backwash effect:** when one region's economic gain translates into another region's economic loss.
- **Economic backwaters:** regions that fail to gain from national economic development.
- **Island of development** – place in which the infrastructure is built up by a government or corporation, to attract foreign investment with an agglomeration of jobs (may serve as a **growth pole**)
- **Growth pole** – place that draws people and jobs into an area; usually into an undeveloped interior (e.g., Brasilia)

Tourism: a service industry giant, a means by which countries are seeking to develop; tourism & travel = 11% of all global jobs, and 11% of global GNP; the initial investment by the "host" country is huge (i.e. building hotels diverts money that could be used for housing, education, ...); many hotels

are owned by MNCs, NOT the "host" country; affects the local economy little.

- Tourism can **diminish cultural landscape distinctiveness** (make more homogeneous) – hotels, fast food chains, resorts, theme parks, and environmental degradation (litter, pollution, effects on wildlife).
- Tourism can **enhance cultural landscape distinctiveness** (place preservation, uniqueness & marketing) – preservation of historic buildings; sustaining indigenous (native) lifestyles; promotion of exotic scenery & wildlife (**ecotourism**); conservation of natural resources (mostly for commercial reasons – for tourism industry).

Local currency: there are over 1,000 in use in the world today; they establish **Local Exchange Trading Systems (LETS)** that allow members of a local community to trade services or goods in a local network separated from the formal economy (e.g., gain popularity during economic downturns – parts of Detroit today).

OECD: (Organisation for Economic Co-operation and Development) born after World War II to coordinate the Marshall Plan; today has 30 member countries (which produce > 2/3 world's goods & services), w/ more than 70 developing and transition economies working w/ them; sometimes accused of **neo-colonialism** (entrenchment of the colonial order (trade & investment) under a new economic (non-political) guise).

NGO: (Non-governmental Organization) organization not run by state or local governments that generally operate as nonprofits; they have created a web of global development networks in response to **top-down** (governmental) decision making dominated by the core (e.g., World Bank, WTO (World Trade Organization), IMF (International Monetary Fund)). The goal of NGOs is to have peripheral countries partake in **participatory development** (locals should be engaged in deciding what development for them is and how it should be achieved); this is seen as **counterhegemonic** (hegemons are nations that dominate other nations – economically, politically, culturally, ...).

Special Economic Zone: (SEZ) specific area within a country in which tax and investment incentives are implemented to attract foreign (and domestic) businesses and investment.

- **Export processing zone: (EPZ)** established by many countries in the periphery and semi-periphery where they offer favorable tax, regulatory, and trade arrangements to attract business and investment (labor is cheaper and environmental restrictions are relatively weak).
 - **Maquiladora:** an EPZ in northern Mexico with factories supplying manufactured goods to the US market; primarily foreign-owned factories that assemble imported components (or raw materials) and export finished goods.
- **High technology corridor: (technopole)** areas devoted to research, development, and sale of high technology products; the networking and synergistic advantages of concentrating in these areas (with good universities and infrastructure) facilitate modern technological innovation (e.g., Silicon Valley, Route 128 Corridor (Boston)).

Venture capital: investments typically made in the early stages of developing companies in the hope of generating a favorable return through the growth or sale of the companies; venture capital investments are generally made as cash in exchange for shares in the invested company.

Time-space convergence: refers to the greatly accelerated movement of goods, information, and ideas during the 20th c. made possible through modern technology (and obviously has continued to accelerate into today).

Time-space compression: the social and psychological effects of living in the modern technological world (the world seems smaller, or compressed).

Standard of living - refers to the quality and quantity of goods and services available to people and the way they are distributed within a population.

Higher standards of living are found in MDC's rather than LDC's.

Informal economy: economic activity that is neither taxed nor monitored by a government (not included in GNP as the formal economy is); examples are the black market, illegal drug trade, odd jobs or work done "under the table", and **remittances** (money migrants send back to family and friends in their home countries).

"The End of Geography": hypothetical situation in which place and territory are unimportant because global superhighways of information transcend place (e.g., internet, **weblogs** (blogs - over 112 million as of 2008!), cell phones, ...) ... however, people continue to recognize territories and create places.

Synergy: is the cross promotion of vertically integrated goods & services (e.g., Magic Kingdom - Frontierland Fries – hosted by McDonald's, Mickey's PhilharMagic – presented by Kodak ...).

Unit 9: Environmental & Medical Geography

Environmental geography: describes the spatial aspects of interactions between humans and the natural world.

Biodiversity: (biologic diversity) 1.75 million species identified in the world today (may be tens of millions more); human travel has introduced new species worldwide, and has threatened many species (e.g. Columbian exchange); combination of human population pressure, technology & economic forces lead to species endangerment & **extinction** (e.g., Dodo bird, passenger pigeon, ...)

Environmental Policies –

- **Biodiversity** - in 2001, 168 countries agreed to lower human activities that negatively affect biological systems and the environment (proposed by the **UN Environment Programme**); UN General Assembly declared 2010 as the "International Year of Biodiversity"
- **Global Environment Facility (GEF)**: global partnership of 178 countries organized by the United Nations and the World Bank in 1991; funds projects related to six issues: 1) loss of biodiversity; 2) climate change; 3) protection of international waters; 4) depletion of the ozone layer; 5) land degradation; and 6) persistent organic pollutants.
- **Kyoto Protocol**: was signed in 1997 by more than 80 countries; it laid out plans to reduce the emission of greenhouse gases; the US has decided to go its own course (would have restricted U.S. growth, but not for "developing countries" including India or China); the US eventually abandoned it unilaterally (although the rate of US emissions has been reduced – shift toward tertiary activities?).
- **Montreal Protocol**: was signed in 1987 to initially eliminate chlorofluorocarbon (CFC) production by 2000; participants eventually agreed to stop by 1996, and to accelerate the phase-out of other ozone-depleting chemicals.
- **UN Millennium Development Goals**: eight international development goals officially established by the United Nations in 2000. The goals are:
 1. Eradicating extreme *poverty* and *hunger*,
 2. Achieving universal primary *education*,
 3. Promoting *gender equality* & *empowering women*,
 4. Reducing *child mortality* rates,
 5. Improving *maternal health*,
 6. Combating HIV/AIDS, malaria, and other *diseases*,
 7. Ensuring *environmental sustainability*, and
 8. Developing a global partnership for *development*

Little Ice Age (good example of environmental determinism);

- **in Europe**: necessitated the onset of the 2nd Agricultural Revolution; field methods improved (planting, sowing, watering, harvesting,...); transportation and storage of produce involved less waste & loss.
- **in Asia**: colder weather caused famines, epidemics, especially in the North where wheat was primarily grown; the Qing (1644-1912) rulers ordered an end to overseas expeditions; built only ships for the Grand Canal (with cargoes of Southern rice brought to the North; rice became the staple crop of the Chinese).

Industrial Optimum: Post-1850 phase; glaciers are retreating; global temperatures are warming; agriculture has expanded. The Industrial Optimum was interrupted by cooler decades from 1940-1970 (this led to the **green revolution**); but temperatures are rising again.

Mining – extraction of valuable minerals or other geological materials from the Earth, usually from an ore body (e.g., iron), vein (e.g., silver), or coal seam. Any material that cannot be grown from agricultural processes, or created artificially, is mined (mining in a wider sense then includes the extraction of petroleum, natural gas, and water).

Resources:

- **Renewable**: energy replaced continually within a human lifespan, has an essentially unlimited supply and is not depleted when used by people. Solar energy, hydroelectric, geothermal, fusion and wind, are the most widely used.
- **Non-renewable**: energy formed so slowly that for practical purposes it cannot be renewed. The three main fossil fuels (petroleum (oil), natural gas, and coal) plus nuclear energy are the most widely used, mostly because they are more cost efficient.

Resource types:

- **Atmosphere**: a renewable resource ...
 - **Acid rain** (sulfuric acid and nitric acid dissolved in droplets of water) is caused by the burning of fossil fuels (coal, oil, natural gas); emitted by cars, industries,...; it can be caustic enough to do great damage over time (e.g. acidification of lakes, stunting of forests, loss of crops & fish,...).
 - **Greenhouse gases** presumed to increasing at a rate of 2% per decade (debatable impact) (CO₂, methane, nitrous oxides,...)
 - **Ozone layer**: a naturally occurring O₃ exists in the upper levels of the stratosphere (when O₃ is too plentiful in the troposphere (0-16 kilometer altitude), **smog** can occur); protects the Earth from the Sun's harmful **ultraviolet (UV)** rays; **CFCs** (chlorofluorocarbons) found in refrigerants, fire extinguishers, and aerosol cans used since the 1950s

were found to be harmful to the ozone layer (a "hole" exists over Antarctica).

- **Land – soil** is renewable...
 - **Desertification** (encroachment of desert conditions) is cyclic; the Sahara alone has lost 270,000 sq. mi. of non-desert land over the past 50 yrs.; accelerated by overgrazing, woodcutting, soil exhaustion,...
 - **Deforestation**: in the 1980s, the Food & Agriculture Organization (FAO – part of the UN) studied its effects; determined that 44% of global tropical rainforests are already affected by cutting. Around 1% is logged every year, however, many forests have proven to be resilient – and have experienced substantial **regrowth**. Forests convert CO₂ to oxygen counteract oxygen loss & greatly affect the **oxygen cycle**.
 - **Soil erosion** has been a "quiet crisis;" **topsoil loss** (loss of the top fertile layer of soil through erosion) is a tremendous problem in areas with fragile soils, steep slopes, or torrential seasonal rains; **population pressure** (overpopulation which exceeds the carrying capacity of an area) has been a major cause – as agricultural land use intensifies, water & wind erosion increases; >25 billion tons of topsoil is lost per year worldwide.
- **Water**: a renewable resource;
 - **Hydrologic cycle**: fresh water is distributed and sustained (through rain and snow from the oceans to the landmasses); much of that water is lost through runoff & evaporation, but a substantial amount seeps downward into **aquifers** (porous, water-holding rocks called). Nearly ¾ of all the fresh water in the world is consumed in farming, (not in cities) industries use another 20%, sometimes contributing heavily to pollution.
 - **Aral Sea**: b/w Kazakhstan & Uzbekistan, a negative example of **environmental modification**; one of the great ecological disasters of the 20th c. Streams that fed this large sea were diverted to irrigate the surrounding desert (mainly for commercial cotton production). Chemical fertilizers have ruined the groundwater below, causing a major health crisis. By the 1990s it had lost more than 75% of its original surface area!

Trends in consumption: more technology = more environmental stress, resource demand and usage, pollution,...; greater demand for meat (can lead to cutting of rainforests for grazing land); ...

Waste disposal:

- **Solid waste**: US is the largest producer (3.7 lbs. per person per day); containers, packaging, etc...; core regions (US, EU, Japan) export solid waste to the periphery. MDCs have **sanitary landfills** (prepared areas for waste disposal (includes a floor of materials to treat seeping liquids)); LDCs have open garbage dumps, decomposition sends methane into air (acid rain), contaminants seep into the groundwater.
- **Toxic waste** can cause death or injury to living creatures (chemicals, infectious materials, ...).
- **Radioactive waste**: **low-level**: give off small amounts of radiation – hospitals, research facilities, nuclear power plants are the main sources of these minor contaminants. **High-level**: nuclear power plants & nuclear weapons facilities; may cause massive pollution and contamination; no satisfactory means of disposing high-level radioactive waste (e.g. most is stored in the facilities themselves, although salt effectively blocks some radiation).

Medical geography: application of geographical information, perspectives, and methods to the study of health, disease, and health care.

Disease diffusion: There are two major types, contagious and hierarchical. Contagious is spread through the density of people. Hierarchical is along high-density areas that spread from urban to rural areas. This is important in determining how the disease spread so you can predict how it will spread.

Epidemic: when an outbreak affects a large number of people in a region (may be associated with a large number of deaths).

Pandemic: when the outbreak spreads to other regions around the world (e.g. influenza – 1918).

Endemic: an adjective used to describe a disease that is particular to a region.

Agent: organism (e.g. worms, insects, viruses, bacteria,...) that infects people (hosts).

Vehicle: a mechanical vector (water, food, soil,...).

Reservoir: when a population contains a large number of hosts.

Vectored disease: when a disease is carried from one host to the next by an intermediate host.

Non-vectored disease: spread through contact, no intermediate host (vector).

Types of diseases:

Infectious: result from an invasion of parasites; 65% of all illnesses.

- **Vectored infectious diseases**: (mostly tropical)
 - **Malaria** - (occurs worldwide, but not at higher latitudes; mosquitoes are the vectors; symptoms include fever, chills, reduced energy, and higher

susceptibility to other diseases (kills b/w 2-3 million yearly). In 1955, the **WHO (World Health Organization)** used **DDT** (a pesticide) to eliminate malaria in Sri Lanka (Ceylon); DDT is **carcinogenic** (cancer-causing).

- **Yellow Fever** – now confined to tropical & near-tropical areas; mosquitoes are the vectors; symptoms – high fever w/ aches & vomiting; can color eyes and skin yellow (**jaundice**).
- **Sleeping sickness** – source is in West Africa; tsetse flies are the vectors & Africa's huge wildlife population acts as a reservoir; symptoms - fever w/ swelling of lymph nodes, and swelling of limbs in some cases; inflammation can go to brain & spinal cord (lethargy).
- **Non-vectorized infectious diseases:** passed by direct transmission through 1) **bodily contact** (w/o the vectors); 2) contamination of **food** or **water** (fecal matter); 3) contamination of the **air** (saliva - sneezing).
- **Influenza** – source is often in China; transmitted from birds to pigs, from pigs to humans (virus survives in the air long enough to be transmitted w/o vectors); 1918 – worst pandemic in history (50-100 million died worldwide).
- **AIDS (acquired immune deficiency syndrome)** - source is in tropical Africa; spreads through exchange in bodily fluids; breaks down the immune system; people can carry **HIV** (human immunodeficiency virus) for years w/o symptoms; 1980 – 200,000 cases; 2002 - >40 million cases (major epidemic in Western and Southern Africa).
- **Cholera** - source is in India; symptoms include diarrhea & dehydration (death can be convulsive); hygiene prevents it (e.g. boiling water) – this fact was first discovered in England by Dr. John Snow in the 1850s; mapping out the reported cases (shown in the **dot map**), and saved hundreds of lives.
- **Chronic: (degenerative)** diseases of longevity or age; long-term deterioration; often concentrated in urban/industrial cores (infectious is most common in the periphery); the U.S. top four causes of death - 4) lung diseases (5%); 3) stroke (6%); 2) cancer (23%); 1) heart disease (26%).
- **Genetic: (inherited)** traced to genetic factors; chromosomes & genes. (e.g., radiation, viruses); some examples include Down's Syndrome, galactosemia (lactose intolerance).

NIMBY: "Not in my backyard"; opposition by residents to a proposal for a new development close to them. (e.g., led to the cancellation of the Yucca Mt. Nuclear Waste Repository in Nevada in 2011)