Human Geography

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Introduction

Welcome to Human Geography! If you are interested in how humans interact with the environment and how human systems are geographically distributed over space, then you've found your place.

We hope that find this textbook useful and enjoyable; please dive in by clicking "Contents" to immerse yourself in all-things-human geography.

1. Thinking Geographically

More than anything, geography is about **spatial** relationships and utilizing a **spatial perspective** to view and understand the world. This is in contrast with looking at the world with a chronological perspective, where time, instead of place, is the primary unit of analysis.

In **human geography**, the connections of most interest are between people and places, and the mode of connection is as important as the connection itself. The goal of this text is to make sense of these connections.

Geographers seek to answer:

*What is Where, Why There, and Why Care?**

*Charles F. Gritzner, "What Is Where, Why There, and Why Care?," *Journal of Geography*, 101, no. 1 (January/February 2002), pp. 38–40.

These questions underscore the importance of the WHERE in geographical thought and research. Geographers must rely on a spatial perspective to produce knowledge that answers these questions. This means that they have a heavy eye towards how the geographical context of whatever phenomenon they are exploring helps to explain the presence, character, and meaning of the

phenomenon. Another way to articulate this is that geographers seek to understand what **processes** (natural, political, economic, socio-cultural) help explain various **patterns** (natural, political, economic, socio-cultural) on the landscape and across space.

In answering these questions, geographers produce knowledge about the **spatial distribution** of various natural and socio-cultural phenomena. For example: how the percent of people living in urban vs. rural areas, number of adherents to particular religions, **karst topography**, governance structure, and access to K-12 education, to name a few, are distributed across space.

Why do we care? Aside from better understanding the world in which we occupy, assessing the spatial distribution of various phenomena reveals **unevenness** in the world which has implications both for how we as individuals live our lives and for how countries make policies and distribute resources. For instance, knowing that children, in particular, girls, in **periphery** countries have on average less access to K-12 schooling in comparison to children in **core** countries, has implications for local policy-makers and international organizations.

We may not think about it often, but we are parts of a large network or system of production and exchange. This system works across multiple **scales**:

- Interpersonal
- Local
- Regional
- National
- Global

Humans and their activities are shaped by many changing processes:

- Natural
- Political
- Economic

- Socio-cultural

As well, various power structures affect humans and human activities:

- Government institutions
- Financial systems
- Religious hierarchies
- Discrimination
- Colonialism
- … and more

All these systems and processes overlap and affect individuals and communities of people in different ways. Human geographers are interested in studying the convergence of these that occur in specific places. The specific way that these systems and processes intersect are one thing that gives a **place** its local distinctiveness or character, as differentiated from other places.

Before we get into depth about the many fields of human geography, we will begin by investigating a banal concept and seeing just how complex the **spatio-cultural** relationships are. Let's talk about breakfast and how we see interdependence occurring with a couple common breakfast items.

Bananas

Have you ever wondered why bananas are so cheap in the United States, while native/domestic fruit grown locally is more expensive? Bananas are not native to the United States and are generally not grown domestically. Instead, bananas come from thousands of miles away, and often need to be shipped by sea. In addition, bananas must be kept cool, and only keep for about two weeks after they are harvested. Compare this to a common apple; though not native to

the United States, apples are widely cultivated. Apples can be grown locally, cutting down on shipping costs, and can be kept for months. Yet, apples can be 2 to 4 times as expensive as bananas.

A bunch of bananas (photo by author)

A number of things have been put in place over time in order for bananas to be cheaply available in the United States. First, we essentially only see one species of banana, the cavendish. By limiting the number of species or cultivars available, an **economy of scale** is produced, where cost savings come through the creation of more of a product. Second, transportation technology improved to make the transport of bananas from Central America and the Caribbean cost effective. While not native to the Americas, bananas can thrive in plantations through the tropical regions of the Americas. Bananas became popular in the United States when the United Fruit Company (now Chiquita) figured out how to quickly and coolly get bananas to the United States, through trains and ships outfitted with refrigeration units.

Still, most banana production, even in the large plantations which became widely established during the European **colonization** of the Americas, is done by hand. Bananas are delicate, and most are hand cut and hand packed. This means, in order to have a cheap banana, there must be cheap labor. The ability of fruit companies to control labor costs in foreign lands is the source of the term **banana republic**. This refers to a country where large-scale exploitative plantation agriculture is supported by the ruling class in exchange for kickbacks. In other words, the rulers of a less developed country are financially supported by fruit companies located in a more **developed country**, and those rulers use local power (and often, tacit military support from more developed countries) to keep those

working on the fruit plantations from demanding higher wages. Another broader name for this type of government is a **kleptocracy:** rule by thieves. US fruit companies, with help from the US military, maintained this cooperative stance for many years within Central America, the Caribbean, and South America.

Of course, systems and cultures change over time. As recent as 2011, workers for Dole in Costa Rica are paid about 46% above the then national minimum wage of $10.31 a day, implying somewhat improved pay. However, there are still issues involving workers rights and environmental degradation in banana plantations. For a visualization of Dole bananas, visit this Story Map called The Truth behind the Dole Banana.

Corn Flakes

Perhaps you've seen the classic commercials of breakfast cereals, showing a bowl of cereal surrounded by various other breakfast foods and drinks, with a narrator explaining it as "part of this balanced breakfast." Yes, it's a way to try to sell as healthy some of the multitudes of sugary breakfast cereals. But ready-to-eat cold cereals, from which we now have these sugary concoctions, were started as a healthy alternative to the heavy breakfasts of the 19th century. Part of this balanced breakfast, indeed!

A box of Corn Flakes (photo by author)

Corn Flakes were invented in Battle Creek, Michigan, developed by the brothers Kellogg (John Harvey and Will Keith). John Harvey Kellogg was a trained doctor. He was raised and lived within the Seventh-day Adventist faith, a Protestant Christian denomination that came into existence in the mid-1800s. Battle Creek was both the headquarters of the Adventist church and the location of the Western Health Reform Institute (later the Battle Creek Sanitarium). John Harvey Kellogg was the head of this Adventist health center. The Sanitarium was run with the health and dietary laws of Adventists in mind; in terms of diet, this meant temperance against tobacco, alcohol, meats, caffeine, spices, and sweets.

The brothers Kellogg experimented with creating vegetarian food products using various grains. Through a happy accident, they developed a method of making flakes of grain that could then be toasted. Patients at the Sanitarium enjoyed the flakes, which were originally named "Granose". These flakes were marketed and sold as health food items, creating many imitators (despite the Kellogg's holding patents). Will Keith Kellogg saw that there could be bigger commercial growth in the product, bought John Harvey out of the patent, and opened the Kellogg Company, which is still known to this day. In mass marketing, Will Keith added sugar to the recipe, helping create a break in the relationship between the two brothers. We can see here that a spatial intersection of **religion** and **health** played a formative role in actually shaping Corn Flakes themselves, as certain ingredients were both chosen and avoided by the Kellogg brothers. This invention occurred in Battle Creek due to specific, overlapping geographic distributions of human culture.

Now, Kellogg's is a huge international company operating within the increasingly interconnected **globalized** economy, developing and selling products for all kinds of cultures and beliefs. Will Keith Kellogg's signature still serves as a company logo, but beyond that, the cultural history of the product isn't seen on the box. Instead of religion and dietary laws, the box shows a cartoon mascot Cornelius Rooster.

Can you see how utilizing a spatial perspective transforms the way you look at common objects on your kitchen counter? Let's test that..

Your turn

Think about what you had for breakfast today or what you've recently had for breakfast. Think about the activities, structures, and processes involved in you eating your breakfast. Use the following questions as a guide:

Questions

Do not feel obligated to answer all these questions, but use them as a guide (to the best of your ability and knowledge) to think about the processes and systems involved in you eating your breakfast.

- What did you eat for breakfast?
- Did you make your breakfast at home or buy at a restaurant/take out establishment?

- Was your breakfast culturally or regionally specific? In other words, are Corn Flakes, scones, breakfast burritos, lattes, pop tarts, etc. consumed everywhere?
- Is the type of food you eat affected by economic and political processes, or is your choice of food simply based on "taste"?
- Where did the ingredients in your breakfast come from? Where was it produced and by whom? (Developed vs. developing world? Factory vs farm?)
- What are the different networks and activities that must be in place before you can eat breakfast?
- Who financed your breakfast (from the earliest stages of food production to the last moments of consumption or waste)?
- Does it matter what places your food comes from and what social conditions (like the working conditions of farmers, etc) it was produced under? Why or why not?
- Is it important – or possible – to consume locally?

2. Geographic Tools & Methods

What is Geography anyway?

Beware: geography is NOT the same as geology. These are related disciplines for sure, but there is a very important distinction between the two and we don't have to look far to learn what that is (hint: Greek roots! Yep, locate them in your brain).

Geography: geo + *graph*y = to *write* the world

Geology: geo + logy = to study the world

In one sense, geography can certainly be understood as the study of the world, however, first and foremost, the discipline is about writing the world.

What does it mean to "write the world"? It means to chart the land, the sea, and the sky; to describe the natural and socio-cultural processes and systems of which humans and animals are part; to represent the world.

How can we "write the world"? Geographers can write travel journals and observations about people and place; measure distance between physical features; map place at the local, regional, and international scales.

Branches of Geography

Geography as an academic discipline and practice can be divided into a few main branches, namely: **human geography**, **physical**

geography, **human-environment geography**, and **Geoinformation Science (GIScience),** sometimes called Mapping Sciences.

> **DEEPEN YOUR UNDERSTANDING:** Read more about a few core concepts in Geography and the main branches here: http://debitage.net/humangeography/whatis.html

Geographic Tools & Methods

Scientific research is oriented around gathering data and producing useful knowledge. Data and methods can be qualitative, quantitative, or a mix of the two. **Qualitative** data and methods rely on information derived from words; **quantitative** data and methods rely on information derived from numbers.

In terms of geography, data collection methods such as observation, surveys, and interviews tend to be more qualitative, whereas specimen sampling, mapping, and remote sensing tend to be more quantitative. However, there is a fair deal of overlap between the two genres of data and research methods, so don't get too bogged down trying to differentiate the two.

Let's take a closer look at some key geographic tools and methods. Remember, regardless of the method, geographers rely on a spatial perspective to answer "*What is where, why there, and why care?*" (Gritzner, 2000) in order to produce useful geographic knowledge.

Maps

Mapping is a way to "write the world" and therefore is a kind of representation. The art and science of creating maps is known as **cartography**. With cartographic representation, especially with trying to represent a 3-D earth on a 2-D surface, comes distortion. This distortion actually shapes our geographical knowledge of the world and affects our perceptions of place. For instance, if you've ever played the board-game Risk where Greenland looked huge compared to Africa, or grew up with a map of the United States that placed Hawai i just off the coast of California, you know what I'm talking about.

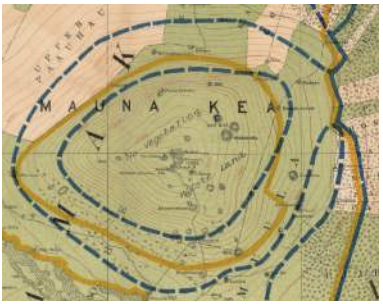
DEEPEN YOUR UNDERSTANDING: Read more about the elements of a map here: gislounge.com/whats-in-a-map/

Learn more about map projections and distortions in the video below.

A YouTube element has been excluded from this version of the text. You can view it online here: https://viva.pressbooks.pub/humangeog/?p=29

Labeling maps and adding **toponyms** (names of places) is also a representative practice, and reminds us of the power involved in the act of representing.

Check out the image below for a map of Hawai ʻi from 1901 commissioned by the Hawaii Territory Survey, after the end of the Hawaiian Kingdom and soon after American occupation began. You'll see the labels "no vegetation, waste land" towards the center. The map shows Mauna Kea, an inactive volcano on the Big Island.



Source: https://evols.library.manoa.hawaii.edu/handle/10524/49272

These labels assign meaning to the area mapped here from the mapmaker's perspective, but do not necessarily reflect the meaning the land has for others. For instance, Mauna Kea is a sacred and culturally significant site quite the opposite of waste land for many Hawaiians, particularly Native Hawaiian cultural practitioners. This example underscores the power that comes in mapping and naming and how it can equally highlight and obscure features and meaning of places.

Colonial era maps often used used label **terra nullius**, a Latin term meaning nobody's land or empty land. Maps with this label played a role in justifying colonialism, as colonizers used the supposed-reality, as marked on a reliable map, that land was unoccupied and therefore up for grabs. Labels like this ignore and silence the presence of indigenous people and meanings of land help by non-mapmakers.

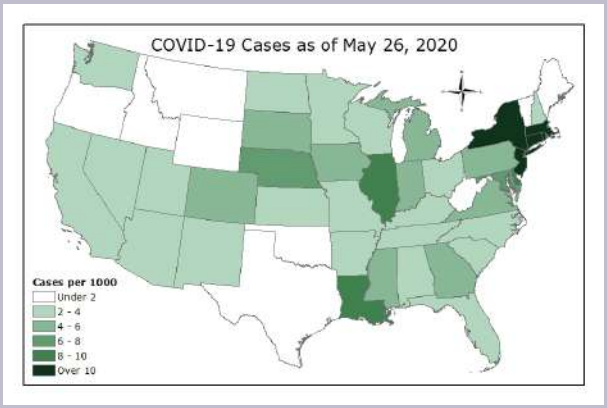
Maps have power. Historically, maps were created for and by those with political power. Maps were used to demarcate and claim ownership of land; a means of showing everyone that one has planted their proverbial flag to claim possession. As such, maps have an air of authority and being "official" and "true." But all maps are made for specific purposes, and can have both accidental and purposeful lies included. The accidental, small white lies of a map have to do most often with the creation of a representation and **generalization**. Maps have **scale**, and will show a larger geographic area than the size of the paper they are printed upon. Because the map is not at a 1:1 scale as the world, objects must be simplified or generalized in order to not be overly cluttered by the infinite complexity of the world. What is shown, and just as importantly *not* shown, are choices made by the cartographer. A map might show

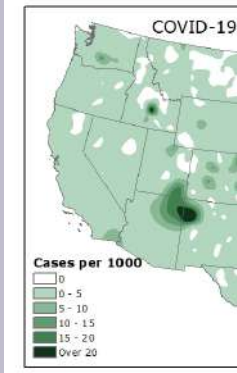
the locations of important socioeconomic features, like schools and mines, but not show features like landfills or prisons.

Two broad categories of maps exist. **General reference** (or general purpose) maps are those that show important physical or cultural features in an area. **Thematic maps** are those that shows information about a particular topic. Thematic maps use qualitative and quantitative data to show spatial patterns. Several types of thematic maps exist, differentiated in how thematic data is displayed. **Choropleth**, **isoline**, **dot density**, and **proportional / graduated symbols** are all examples of thematic maps.

Examples of thematic maps

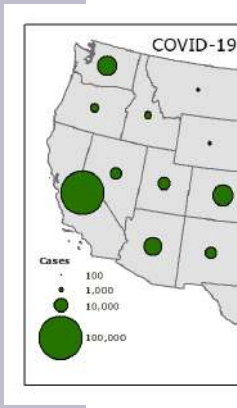
The following maps show four types of thematic maps using the same data.





Choropleth map; shows values through color/tint/shading existing political/administrative units. Commonly values are **classed** together to reduce the complexity of color or symbol.

Isoline map; shows v
equality. The layer of da
elevation. This example



Dot density map; shows counts of phenomenon as represented by dots. Dots represent 1 or more units, and where dots **cluster** there are more of the phenomenon.

Proportional or **grad**
areal units through diff
symbols size symbols p
graduated symbols crea

(Data from Census Bureau and the Centers for Disease Control and Prevention; maps by author)

GIS (Geographic Information Systems)

GIS stands for Geographic Information Systems and is foundational to Geoinformation Science (GIScience). What is it? It's a technically

advanced way of making in-depth maps by layering together data. Imagine a double-decker peanut butter and jelly sandwich, but instead of the traditional ingredients, the layers are:

- groundcover
- streams
- streets
- above-ground electrical lines
- infrastructure

Now smash all those layers together like a good sandwich and you have replicated in a very rudimentary way how GIS creates a composite view of place.

Remote Sensing

When you cannot be in a particular place and collect data on the ground, you can collect it from above ground by using remote sensing technologies. **Remote sensing** refers to collecting data from afar. This is typically achieved through cameras, videos, and sensors attached to aircraft including airplanes, satellites, and drones.

Remote sensing provides a wonderful way to gather information about the Earth's surface and allows us to track landscape change over time.

Exercise: Identifying Landscape Change

Peruse the before and after landscape changes profiled in these USGS Earthshots cards.

DEEPEN YOUR UNDERSTANDING: Read more about GIS and remote sensing here: https://humangeography.pressbooks.com/chapter/1-5/

Learn more about what geoinformation technologies can do in practice in the video below.

A YouTube element has been excluded from this version of the text. You can view it online here: https://viva.pressbooks.pub/humangeog/?p=29

Qualitative analysis of interviews, surveys, and texts

This is human geography, after all, so we definitely don't want to forget that people themselves have a lot to teach us about the world and their words, stories, and experiences certainly help geographers answer "*What is where, why there, and why care?*" (Gritzner, 2000).

What might a geographer use?

- Interviews where a researcher asks either a set of closed (yes/no, etc) or open-ended (no answer choices given) questions
- Surveys where a researcher sends a questionnaire to a set of people to learn about their experience or perception of the phenomenon being studied
- Texts where a researcher may review old maps and documents in an archive, environmental impact statements outlining the existing natural and cultural resources of an area, etc.

The data collected is qualitative in nature, meaning it is based around words. Once the stories and experiences of place-based research questions are gathered, the researcher will analyze them by categorizing the data across all sources into themes and even quantify the relative presence of the themes in comparison to each other.

To build upon the example above of a map that coded indigenous land as terra nullius, you can imagine how talking to indigenous people about their own perceptions of that place and the values and meanings that the land has for them, would significantly add to our overall geographical knowledge and understanding of the world. It would also have implications for policies on how to manage the land.

3. Population, Migration, & Spatial Demography

Population geography

A crowd for a sumo match. Source: "Sumo Crowd" by camknows is licensed under CC BY-NC-SA 2.0

The study of human populations is known as **demography**. A population must be measured in order to study the characteristics of people. In other words, we need to count people and measure attributes of them to practice demography. There are two main ways of counting people. First, demographers can complete a **census**, where every person in a geographical area is counted. Second is a **sample**, in which a randomly selected subset of people are measured to estimate a whole population. As strange as it sounds, a census is can be less accurate than a sample. As the population to measure gets larger, there are several factors that make getting an accurate census with great depth of data. When censusing a population, the number of questions must be reduced, and often the answers are simplified only to **Likert scale** or multiple choice style questions, whereas samples can have longer form questions and full interviews. A census is also expensive and burdensome for data collection, whereas samples are cheaper and can be deployed more frequently, allowing change to be measured more rapidly. Lastly, a census can be less accurate because it is hard to find and count 100% of the population.

Let's build on that last idea by looking at the United States Census and examine some excerpts from the Constitution. The US has a decennial census mandated by the Constitution in Article I, Section 2, Clause 3:

> Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers, which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three fifths of all other Persons. The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct.

This clause sets up the census to be completed every ten years. It also includes the infamous Three-Fifths Compromise; enslaved peoples were counted, but only as 3/5 of a person for apportionment purposes. This clause was subsequently changed in the 14th Amendment, Section 2:

> Representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed.

Note that with the 14th Amendment, following the original language of Article I, states that the US is to count the "whole number of persons in each State." It does not state to only count **citizens**, or only count people that live in homes with well-defined addresses. Both of these populations are to be counted as part of the US Census, but both can be difficult to count subpopulations. In some cases, noncitizens may not want to have their whereabouts or information be known to the federal government, especially if they

are undocumented. The homeless are themselves difficult to find and count with 100% accuracy.

As such, often censuses will undercount. However, a well-defined sample will be able to estimate values, sometimes to a greater degree of accuracy, through statistical inference and interpolation. The US Census Bureau samples frequently. One of the most well-known is the **American Community Survey**, which provides yearly estimates for a wide range of demographic attributes. Geographically, values estimated for larger areas, like states, will have more accuracy by having a larger sample. Smaller geographical entities, like counties, cities, and census tracts, will have more variability and sometimes need to combine 3 or 5 years worth of samples to get a solid estimate.

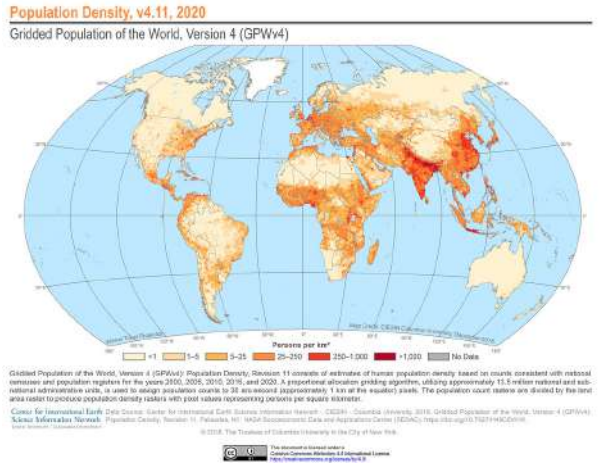
DEEPEN YOUR UNDERSTANDING: Read more about some core concepts in the geographical study of population here, focusing on the Demographic Transition section here: http://debitage.net/humangeography/population.html

Exercise: Census & ACS data

If you are interested in exploring Census and ACS data, go to https://data.census.gov/cedsci/. There are guided interfaces on how to view and download data for a variety of geographical scales.

Density and population ratios

Geographers are interested in how populations are distributed spatially. It may not be good enough to say how many people are in a particular area, but instead, it should be normalized by some other factor. If two countries have the same population, but one is twice as big as the other in physical area, the populations will be distributed in different ways. For this situation, geographers use density. **Population density** is the number of people in an area divided by the total land area. Another way of thinking about density is **physiological density**, which is the number of people in an area divided by the amount of land under cultivation. This gives an idea of the amount of **arable** land being used to support a population.



World population density
Source: "Population Density, v4.11, 2020" by SEDACMaps is licensed under CC BY 2.0

Beyond area-based densities, **demographers** will normalize the size of different subpopulations by dividing by the total population; in other words, creating ratios or percentages. These can then be compared from location to location. For example, chances are that New York City, being the most populous city in the United States, will have the largest raw numbers for any particular demographic (race, age group, or multitudes of other population breakdowns).

But, new patterns may emerge in seeing if these demographics are comparatively large or small as a percentage.

Population pyramid examples (by author):

One common method of studying population is by looking at the distribution of people's ages within a location. Visually this is done through **population pyramids,** which give a window into the age-based composition of a population as opposed to the geographical distribution. This horizontal bar graph separates males and females and breaks each into smaller **cohorts**. Cohorts are groups of people who share a common temporal experience. Your graduation year sets you in a certain cohort with others that graduate at the same time. Likewise, those that are born in the same time period is a cohort. In population pyramids, cohorts are generally grouped into 5-year intervals. The shape of the pyramids are generally categorized as **expansive**, **stationary**, or **constrictive**. Expansive locations have a wide base and are experiencing high population growth. Stationary locations have a base close to the size of other cohorts, meaning they are either slowly growing or not growing. Constrictive locations have a narrow base, showing population decline. Note that these categories are generally applied to countries; when looking at smaller geographies like cities, the same patterns don't tend to exist. People commonly

move in and out of cities, but are much less likely to leave a country. That means that classic college towns will always have a large cohort of people from about age 20 – 30; older people move out, and younger people keep moving in, rather than a cohort aging through the location.

Exercise: Explore Population Pyramids

Go to https://www.populationpyramid.net/world/2019/. There you can use the pull down menu to see current population pyramids for the world, continents, regions, or individual countries. There is also the ability to see population pyramids in the past. Look at a few; can you find:

- Examples of countries that are expansive, stationary, and constrictive?
- What continent is experiencing the fastest growth? The slowest?
- How the US population pyramid has changed over time?

Looking at broader cohorts can be illustrative of patterns of population, especially as your geography gets smaller. Counties and cities look at three broad cohorts:

- **Youth cohort**: population under age 15
- **Middle cohort**: population between 15 and 64

- **Old-age cohort**: population 65 and older

The middle cohort is generally seen as the population that is economically productive. The youth and old-age cohorts are generally aged too young or too old to be a part of the labor market. These are of course quite broad comparisons and are not looking at the employment status of every single person. If the youth and old-age cohorts are combined, and divided by the size of the middle cohort, a **dependency ratio** is calculated. This calculates a ratio of the economically unproductive to the economically productive. Higher ratios mean that there are fewer workers supporting larger numbers of people, which can hurt economic sustainability.

Exercise: Thinking About Cohorts

Imagine that you are an urban planner, or someone working in a city government. You see the sizes of the youth, middle, and old-age cohorts. What sort of implications are there under the following scenarios? In other words, what infrastructure or policies will you explore in these situations?

- The youth cohort is relatively large
- The middle cohort is relatively large
- The old-age cohort is relatively large

Birth rates

How populations change is described with a fairly simple equation:

> Population = Previous Population + Births – Deaths + Immigration – Emigration

The next section will discuss migration. This part outlines natural changes to the population; namely births and deaths. While total numbers of births and deaths are what will change the population, demographers often look at crude rates. The **crude birth rate** is the total number of births in a given time period per 1,000 people in a population. The **crude death rate** is the same but for deaths. A narrower slice at looking at natural increases is to understand the **total fertility rate** (TFR). This is the average number of children born by females aged 15-49, which is the age range typically tied to reproduction. Demographers look at a TFR of 2.1; if TFR falls below this number, there will be a natural decline in population as not enough births are happening for replacement rate. According to the CIA World Factbook, the country with the highest total fertility rate is Niger at 6.49. The United States has the 143rd highest value at 1.87. Why isn't the United States population decreasing?

Migration

Migration is the other way that populations change. Migration is split between **emigration** (moves *from* a place) and **immigration** (moves *to* another place). A trick to remember this distinction is that you **E**xit when you **E**migrate and you come **I**n when you are an **I**mmigrant. The difference is whether you are talking about people coming or going from a particular location.

Other ways to categorize migration are by distance and choice.

Physical and social distances are different between **international** and **internal migration**. International migration is from one country to another, while internal migration is moving from one part of a country to another part. **Voluntary** and **forced migration** is about the migrant's choice; clearly voluntary migration is based on an individual's choice while forced migration is against an individual's will.

Examples of combining categories of migration

International voluntary migration

European migration to the United States, from colonial times through especially the early 1900's was largely voluntary. Reasons for migration were varied (religious freedom, economic opportunities, and more). Asian and Latin American migration to the United States has likewise been largely voluntary. International voluntary migration can be temporary; perhaps after earning an education or enough money, people may return to their native countries.

International forced migration

The transatlantic slave trade is an example of international forced migration. People from West Africa were forcibly taken from their homes, packed tightly into ships, and sold into slavery onto forced labor camps called plantations in the New World. This is still classified as migration, which is just about if movement occurred, but was clearly not done by individual choice from the migrants.

Internal voluntary migration

The Great Migration of African Americans from the rural South to the industrial North occurred in waves from 1910 to 1970. Large scale agricultural mechanization led to less need for workers on southern farms, while at the same time massive industrialization in northern cities called for new migrant workers. This was a massive population shift as African Americans were more concentrated in the South.

Internal forced migration

The Trail of Tears is perhaps the best known American example of internal forced migration. The Cherokee Nation was forced to leave their treaty-protected homelands in Georgia for Oklahoma in the 1830's. It is estimated that about a quarter of the 16,000 Cherokees died in the forced march to Oklahoma.

DEEPEN YOUR UNDERSTANDING: Read more about

push and pull factors for migration and migration status here: http://debitage.net/humangeography/migration.html *NOTE: you ONLY need to read the People on the Move and Migrant Status sections.

Migration, especially internationally, is not as easy as just wanting to leave a place or wanting to go to a place. Often there are barriers to movement. **Absorbing barriers** are those that completely block movement, whereas **permeable barriers** are those that weaken movement but still allow some diffusion. These barriers can be physical or social. A physical barrier may be an ocean, whereas social barriers may be walls, passports, and quota policies. The Berlin Wall, for example, was a social policy to separate democratic West Berlin from Communist East Berlin. This barrier was fairly permeable for West Berliners, who were free to enter East Berlin, but essentially an absorbing barrier in the other direction for East Berliners.

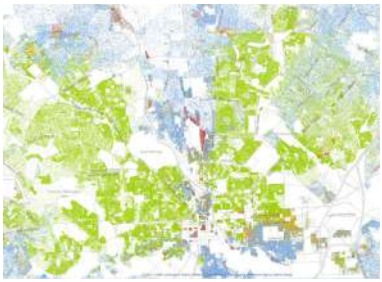
Race and ethnicity

One common demographic distinction to observe is that of race and ethnicity. Race and ethnicity is an identity in a culture that shapes the opportunities and disadvantages people may see in a society. As you will read about in the link below, race is something that does exist in humanity in the social sense, but not the biological sense. In other words, race is real because people *think* its real. Ethnicity, again as you will read below, is at times used as an euphemism for race but is a separate concept.

DEEPEN YOUR UNDERSTANDING: Read about race and ethnicity, and how geography is related to these concepts, focusing on The Geography of Race section here: http://debitage.net/humangeography/race.html

Though race and ethnicity are enforced strongly by society, there is also a significant individual component. One can see the competition between the individual and the society in looking at historical Census forms where people answer to their racial or ethnic identities. The Census Bureau has a database showing census forms from each decennial census. Early on, these forms were completed by Census employees who themselves could designate a person's race. Later forms allow for individuals to fill out and return forms, answering the questions themselves. But, there is still the battle between individual and social definitions when looking at the terminology used for race. View the 2010 Census form; there is an entry for "Black, African Am., or Negro." In 2010, this entry was controversial due to the inclusion of the anachronistic term "negro." The argument was that some individuals, raised in a bygone era, still self identify as negro. Again, this was controversial. In looking at the more recent 2020 Census form, the category has been shortened to "Black or African American." Ethnicity, of which the US Census Bureau only defines as Latino/a origin, is a separate question from race.

As described in the above chapter, one of the primary geographical connections with race is residential segregation. This pattern is clearly demonstrated by looking at the Racial Dot Map created by the Weldon Cooper Center for Public Service at the University of Virginia. In the interactive map linked above, there is one dot on the map for every person in the United States as of the 2010 Census. As a dot density map, the dots are randomly placed within census blocks and colored based upon the racial identity of individuals. The screenshot image to the right shows the pattern of residential segregation in Baltimore, Maryland. The map shows the white population with blue dots and the black population with green dots. The 2010 data still shows the classic "Black butterfly" shape of residential segregation in Baltimore that has existed for decades.



The Racial Dot Map, zoomed to Baltimore, MD, showing residential segregation. Source: image screenshot from http://racialdotmap.demographics.coopercenter.org/

Many cities in the United States have stark dividing lines between black and white neighborhoods. Of course, divisions between other racially-concentrated neighborhoods exist as well, but the history of residential segregation in the United States is largely a black/white phenomenon.

Exercise: Exploring the racial dot map

Many cities in the United States have stark dividing lines

between black and white neighborhoods. It may simply be a street, with one side being predominantly white and the other predominately black. Of course, divisions between other racially-concentrated neighborhoods exist as well, but the history of residential segregation in the United States is largely a black/white phenomenon.

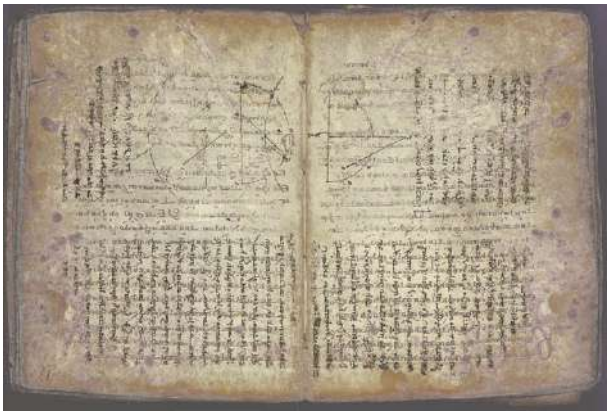
Go to http://racialdotmap.demographics.coopercenter.org/ and navigate to any city of your choice. Is there a dividing line (or lines) between segregated neighborhoods? What are the dividing lines? Explore some other cities; what spatial patterns of segregation can you see?

4. Interpreting Place & Cultural Landscape

By chance, have you ever heard of the word "palimpsest"? I'm going to guess the answer is no, but this unique sounding word is helpful in understanding what cultural landscapes are, how they are formed, and how to interpret or produce meaning from them, all of which are the topics of this chapter.

Let's take a closer look.

According to Merriam-Webster dictionary, a **palimpsest** is "writing material (such as a parchment or tablet) used one or more times after earlier writing has been erased" and "something having usually diverse layers or aspects apparent beneath the surface."

Below is a photograph of a prayer book, with traces of what was previously written on the parchment pages, which were mathematical notes by Greek mathematician Archimedes.

Source: https://upload.wikimedia.org/wikipedia/commons/9/9b/Archimedes_Palimpsest.jpg

Before paper, books were made up of pages of parchment, which was typically made from animal skin and was scarce and pricey. This

meant that instead of discarding an out-of-use book, the original text would be scraped off the parchment and new text would be layered on. The trace of what came before was figuratively palpable and literally present. You can see this on the page above.

> *Landscapes are like palimpsests: they bear the trace of what came before and frame what comes next.*

Landscapes are accumulations of the past–both natural and human-made past influences, spanning from the recent past to the distant past. Like books, they can be read or interpreted. Instead of words on the page signifying the meaning, natural and human-made forces and elements that have shaped the landscape signify the landscape's meaning. Cultural landscapes specifically examine how human systems and forces shape landscape more so than natural forces.

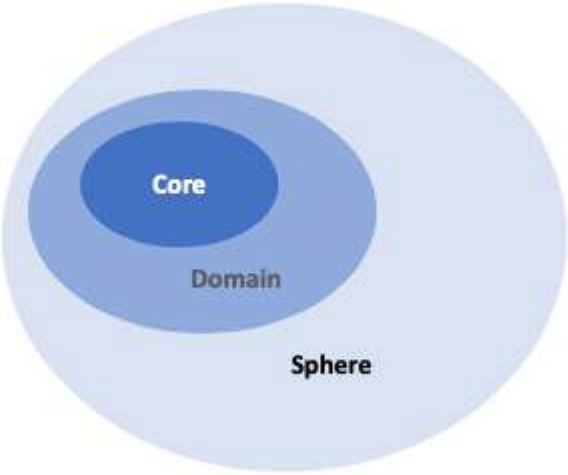
> **DEEPEN YOUR UNDERSTANDING:** Learn more about landscapes by reading the "Landscapes" section here.

Interpreting Cultural Landscapes

There are a few models we can follow that guide us in how to interpret cultural landscapes and **cultural regions**, or areas with similar cultural influences.

The first is the **core-domain-sphere model** foregrounded by geographer Donald Meinig, who examined the Mormon cultural landscape in the United States. To interpret this landscape, he

looked for the layers of Mormon culture embedded within the American Mormon region and what kinds of signatures the culture left/leaves in terms or architecture, business type, spatial arrangement of residential and commercial establishments, etc. The idea of this model is that the cultural influences are strongest at the core of the region and diffuse from there in a diluted way.



(*Image by author*)

According to this model, the core of the Mormon cultural region would be characterized by comparatively higher rates of the following as compared with with the domain and sphere: church attendance, religious billboards, brunch traffic at restaurants after services, restrictions on how much alcohol is served at at time in bars and restaurants reflecting the Mormon value of restraint, etc. Likewise, there would be a lack of certain aspects within the core as compared with other regions, like tattoo and piercing shops, which are classically discouraged within Mormon culture.

When you're interpreting landscapes, consider examining the following aspects or layers and how they reveal the past, reflect the present, and shape the future of a place:

- Infrastructure (layout, type/purpose, architecture)
- Names (of neighborhoods, buildings, streets, sports teams)
- Natural (presence or removal or arrangement of trees; water systems; role of natural elements in shaping built environment; how human systems and infrastructure are adapted to the environment)
- Local customs (examples: Do people stand in line or is it a free-for-all? Are crosswalks marked and followed by pedestrians?)
- Other material and immaterial culture (see section below)

Exercise: Core-domain-sphere model

Think of a culture and/or way of life with which you have familiarity–perhaps this is gaming culture, farming culture, urban culture, etc. Apply the core-domain-sphere model to your case study.

- How well does the core-domain-sphere model apply to your case study? Describe a specific example of a cultural aspect that fits with the model and another aspect that diverges from it. If you don't think the model applies at all, discuss why that might be. Are there aspects of contemporary society and how culture diffuses that might limit the utility of this model nowadays, or not?

Another way to approach landscape interpretation is by paying special attention to both material and nonmaterial culture. **Material culture** relates to the various tangible objects made and used by culture. Many of these material artifacts are given meaning by the

culture and can even change over time. **Nonmaterial culture** refers to intangible ideas that cultures have that are not tied directly to material objects. These beliefs are often attached to place.

Let's use these ideas of material and nonmaterial culture to read cultural landscapes. The United Nations Educational, Scientific and Cultural Organization (UNESCO) has a list of cultural landscapes. The following short videos show several of these landscapes.

Uluru-Kata Tjuta National Park (UNESCO/NHK) video

Questions (for video above)

- How do the cave paintings relate to culture?
- Discuss the importance of water in this cultural landscape. How is this importance embedded in place?

Cultural Landscape and Archaeological Remains of the Bamiyan Valley video (UNESCO/NHK)

Questions (for video above)

- How can we tell that a large political/national change occurred within this landscape?
- Which cultural groups (Taliban, Buddhists) did which things to the landscape?

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Questions (for video above)

- How has history, time, and scale impacted this landscape?
- How has the local culture changed over time vis-à-vis the labor and treatment of both children and horses?

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Questions (for video above)

- What do fences tell us about the culture? About the geography of this location?
- Do the people living here use indigenous/ traditional methods and knowledge, or new methods and knowledge?

The Rice Terraces of the Philippine Cordilleras video UNESCO (NKH)

Questions (for video above)

- Names of places and objects have importance on the cultural landscape. What does the language and naming in this landscape tell us about the local history and tradition?
- Discuss the form and function of the terrace structures. What ideas from culture are imbued in these structures?
- How is local infrastructure adapted to the agricultural practices in the video?

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Questions (for video above)

- Tequila often has a **Declaration of Origin**, which certifies that the product is from Mexico and produced according to strict guidelines. What does a Declaration of Origin tied to a drink tell us about cultural identity?
- What aspects of **cultural syncretism**, which refers to a co-evolution of cultures or the influence of one culture on another resulting in blended cultural products, processes, and beliefs, do you see?

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Questions (for video above)

- What do the Western clothing and artifacts tell us?
- What is the relationship between people and livestock and how is that reflected or revealed in the landscape?

5. Nature & Society

Environmental Perspectives

One thing that should become clear from cultural landscapes is that the environment both *influences* and *shapes* humans and is *influenced by* and *shaped by* humans. The environment provides both opportunities and constraints for humans. This is known as **possibilism:** the theory that the environment offers human culture multiple possible ways to develop, and choices made by humans are guided by cultural heritage. This contrasts with ideas other perspectives about how humans relate to the environment including the following:

Environmental determinism: human experience and traits of society are determined by environmental factors; contemporary geographical thought cautions against adopting an "environmentally deterministic" attitude/perspective, as it can lead to false and damaging claims such as associating human characteristics with climate type for instance.

Environment-as-backdrop: human experience and traits of society are not at all influenced by the environment, which is thought of as a passive backdrop to human activity; contemporary geographical thought cautions against fully adopting the environment-as-backdrop perspective in favor of recognizing the opportunities and constraints that the environment poses for humans and human systems (i.e. possibilism).

There are many examples throughout history documenting how humans have undergone **adaptation** to their environmental surroundings, which demonstrates both 1) how the environment does indeed influence and shape human possibilities/outcomes and 2) how humans do exercise some ability to manipulate their environments.

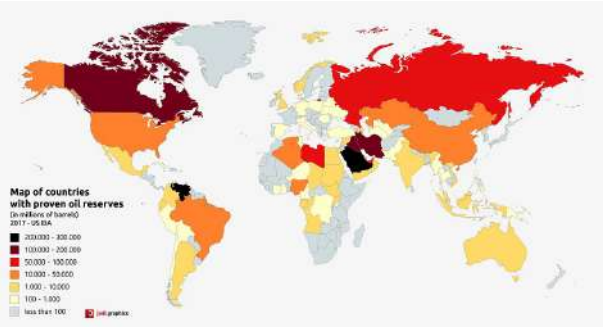
Examples of Human Adaptation to the Environment

Click the links below highlighting a few examples of human adaptations to various environmental circumstances.

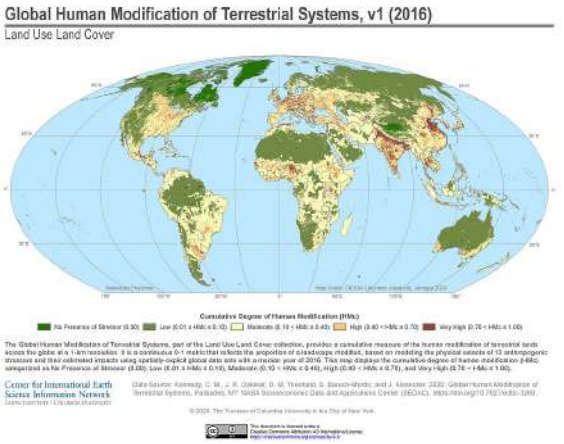
- Ghadames, Libya: Architectural Adaptation to Aridity
- Inuit in the Arctic: Adjusting Travel Modes & Hunting Practices

Resources & Human Impact

Resources refer to substances that have utility for humans in some way. They include sun, wind, water, trees and vegetation, land, soil, minerals, and oil and gas, among other things. Resources are **renewable** if they can replenish and **non-renewable** if there is a finite amount of them. It can be helpful to examine **land cover** and **land use** types to gain insight into the presence of various resources and how they are used by humans. See the maps below for a look into how oil reserves and land cover types in terms of level of human modification are distributed globally.



Source: https://en.wikipedia.org/wiki/List_of_countries_by_proven_oil_reserves



Source: https://sedac.ciesin.columbia.edu/data/collection/lulc/maps/gallery/search

Human impact to the environment is unevenly distributed across the world and often results in depleting resources in an unsustainable way (example: over fishing to the point that the fish cannot replenish) and prompting or amplifying environmental hazards (example: making previously arable land unsuitable for agriculture). One way we can measure or assess that impact is by relying on the **IPAT** framework, which holds that the degree of

environmental impact is a mixture of how many people are in a place, how they use resources, and how affluent they are.

If two countries have the same population and access to/use of the same types of technology, the more affluent country will have a higher impact. Why? Because generally more affluent lifestyles take more energy and use of resources to support. If, however, two countries have about the same level of affluence and the same number of people, the country with the least efficient technology will have a higher impact; this is why sometimes non-core countries actually have high overall impact.

Impact = **P**opulation x **A**ffluence x **T**echnology

Another way to measure impact is through **ecological footprint,** which examines the degree of resources needed to support an individual's lifestyle.

DEEPEN YOUR UNDERSTANDING: Read more about IPAT and ecological footprint here, under the "Measuring our impact" section. Also consider assessing your own ecological footprint, specifically your **carbon footprint**, by using this calculator.

Researchers who examine human impact to the environment have noted that the extent and depth of impact nowadays is so great, that humans are the greatest source of impact to the environment. They call this time period the **anthropocene**, which is different than past geologic time periods regarding the scale of human impact. If you're interested to learn more, skim this article and see the embedded interactive graphic.

Humans have the capacity to modify the landscape in ways and at rates never before seen. Let's look at a few examples of this and think through related socio-cultural issues that arise with this level of human impact.

Deforestation, which refers to the clearing of trees, is one of the principal processes involved in converting or modifying landcover. Why does deforestation happen? It happens to make way for some new kind of land use, most typically, some kind of agriculture (cattle ranching and soya cultivation primarily) or infrastructural development. A common way to clear forests is by setting fires; the Amazon experienced uncontrolled burning in 2019. **Remote sensing** is often used to capture information about landscape change. See below for a breakdown of what's going on in the Amazon in Latin America.

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Desertification refers to the extension of desert-like conditions into otherwise non-desert land. Causes include deforestation, drought, and sustained overuse/improper land use in some way. **Greening**, or adding vegetation to back to areas where it has been lost, is sometimes used to combat desertification. Learn about both of these processes by reading what's going on in the Gobi desert, which straddles China and Mongolia.

Additional processes that result in heavy human impact to the environment include **extractive** practices like mining of metals, minerals, oil, and gas. See below for real-world examples.

Examples of Extractive Activities

Read up on the following examples and ask yourself: What are the socio-cultural impacts of these activities? Can diamonds be conflict-free? Who is effected most by diamond mining and fracking? What can be done to minimize impact for each activity?

- Diamond mining, which happens in large part throughout South, Central, and West Africa but also in countries like Canada, Russia, China, Brazil, and Australia. Diamonds coming from African countries have classically been termed **blood diamonds** or **conflict diamonds**, reflecting diamonds that are produced by workers during wartime under duress, force, and violence. Many diamonds today are sold under the label conflict-free. Brands such as Brilliant Earth, among others, market their products accordingly.
- **Fracking**, which refers to hydraulic fracturing or

injecting water into underground rock layers to crack them and release natural gas, used for energy. Companies tend to go into towns, set up operations, and then leave when all the gas is extracted, which mimics a **boom-and-bust** economic cycle, as happened in Williston, North Dakota.

The degree to which humans impact the environment in sustainable and/or unsustainable ways is guiding by the environmental perspective held by individuals, societies, and cultures. If a culture views the natural world to be part of the human world, this prompts the society to care for the earth and its resources in a more gentle and sustainable way than if a culture views the natural world as separate from humans and existing only for human consumption. **Traditional ecological knowledge (TEK)** refers to knowledge of the environment often acquired and shared orally from generation to generation; TEK may provide the foundation for the environmental perspective characteristic of a particular culture. As compared with Western scientific knowledge, TEK tends to be more focused on the kinds of solutions and adaptations to environmental challenges that span time and generations as opposed to producing a quick fix. In addition, TEK tends to be more interrelated to individual and cultural identity and spirituality that Western scientific knowledge and practices.

Watch the linked and embedded videos below and reflect on the following:

- How do people in the videos explain the importance and value of TEK as opposed to Western knowledge? What does it provide?
- How is TEK transmitted and how can this transmission be

disrupted?

First Stories: Nganawendaanan Nde'ing (I Keep Them In My Heart)

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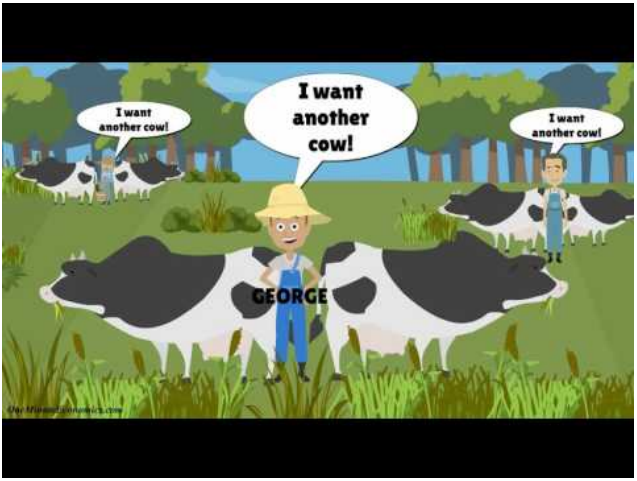
Tragedy of the Commons–Too Much Impact?

How do we know how much is too much when it comes to humans using resources? One way is through the concept of carrying

capacity. **Carrying capacity** refers to "the maximum population size of a biological species that can be sustained in that specific environment, given the food, habitat, water, and other resources available" (https://en.wikipedia.org/wiki/Carrying_capacity). When carrying capacity is exceeded, degradation to natural and human systems results.

Garret Hardin forwarded the notion of the **tragedy of the commons** as a way to understand the impacts of regulating and not regulating common resources. The basic idea is that enclosing (i.e. putting up a border or fence around; privatizing) common resources (land, water, forests) and attaching some kinds of regulations on their use is the only way to conserve that resource, prevent depletion, and prevent the carrying capacity from being exhausted. See image and video below to learn more.



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DEEPEN YOUR UNDERSTANDING: Learn more about this concept by reading the "Tragedy of the Commons" section here.

Questions

Do you concur with concept of tragedy of the commons? Can you think of an example that supports its claims and and example that challenges its claims?

Which kinds of resources do you think benefit most from being enclosed/regulated? Which kinds of resources do you think societies should NOT enclose/regulate?

Environmental (In)justice

Not all people nor cultures and societies feel environmental hazards or the human impact on the environment in the same way or to the same degree. Once again, the key geographical concept of **unevenness** is key to examining matters regarding the intersection between humans and the environment. **Environmental justice** is a framework to examine the (un)evenness and fairness of how environmental hazards and human impacts to the environment are distributed and felt by people. A related concept is **environmental racism**, which is defined as:

"Racial discrimination in environmental policy-making and enforcement of regulations and laws; the deliberate targeting of communities of color for toxic-waste facilities; the official sanctioning of the presence of life-threatening poisons and pollutants in communities of color; and the history of excluding people of color from leadership in the environmental movement" (Source: Camacho, 1998, as quoted in Ruffin, S. (2012). Royal Dutch Shell environmentally degrades Nigeria's Niger Delta Region. *Environmental Justice*,(5)3, 140-152).

Examples

- Shell oil in Nigeria: Oil producers in the Niger Delta routinely conduct hazardous practices (ex: gas flaring, overground gas pipes) that they do not in more developed, core countries with majority white populations. Because of this, their practices are often examined with environmental justice and environmental racism lenses.
- Pollution hazards in DC: Note the spatial distribution of trash transfer stations among Percent Black census tracts.
- Uranium mining on Navajo land: Note the uneven exposures to Navajo miners and the locations of Uranium mines within the US.

DEEPEN YOUR UNDERSTANDING: Read more about

environmental justice by reading ONLY “The unavoidability of the justice question” section here; other sections are optional.

6. Agricultural & Food Systems

Food is a basic human need and considered a **human right** by the United Nations and many countries and individuals. People who have steady, affordable, and safe access to sufficient food, which means they experience **food security**, tend to think about food in substantially different ways than people who experience **food insecurity**, which refers to people whose food access and intake is limited by external factors.

Not only is there an **unevenness** regarding food consumption and nutritional experiences, choices, and conditions for people across the world, but so too is there an unevenness regarding how food is produced. Food systems and agricultural systems vary greatly across space and through time and **globalization** has altered the need for urban centers to always be located near an **agricultural hearth**. As geographers, we continue to ask "What is where, why there, and why care" a la geographer Charles Gritzner (2002), and in this chapter, these questions are oriented around foodstuffs. This chapter will orient you with types and impacts of agriculture and food production and the geography of food consumption.

Domestication & the Birth of Agriculture

The word domestication comes from the Latin words Domesticus and Domus, referring to "belonging to the household" and "house." In terms of agriculture, as defined by National Geographic, "**Domestication** is the process of adapting wild plants and animals for human use. Domestic species are raised for food, work, clothing, medicine, and many other uses. Domesticated plants and animals

must be raised and cared for by humans. Domesticated species are not wild."

To domesticate a plant, seeds are gathered and planted in the ground instead of natural forms of distribution to potentially root and grow. Enough sun and water are provided to facilitate growth and then the plants are harvested. To domesticate an animal, wild animals are enclosed and provided a food source; some animals are more easily domesticated than others. **Cross-breeding** between particularly desirable plant and animal strains and species is common and new species may emerge over time entirely distinct from their wild predecessors.

What did domestication help to directly bring about and set the conditions for?

- **Agriculture** (i.e. the process of cultivating domesticated species)
- Tool development
- More permanently settled population
- Food **surplus**
- **Specialization** of tasks/labor/jobs away from exclusively agriculture
- **Hearth areas**
- **Urbanization** (eventually)
- Trade
- Currency

The basic logic goes like this: By growing domesticated plants, you do not have to obtain nourishment by wandering around to follow your food source, which is the norm within **hunting-gathering** lifestyles. Instead, you stay in one area and produce enough food for yourself (you exceed **sustenance**) and a **surplus**. The (first) **agricultural revolution** refers to when

Food as Currency

I can pay in cheese? What the fork!?

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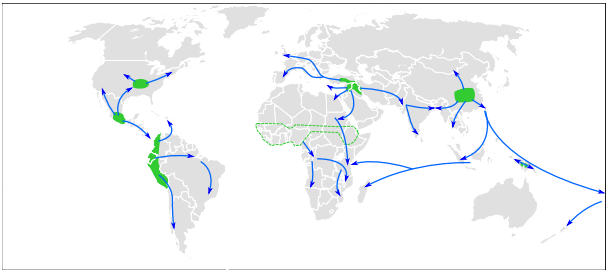
the shift from hunting and gathering to agriculture occurred, about 10,000 years ago.

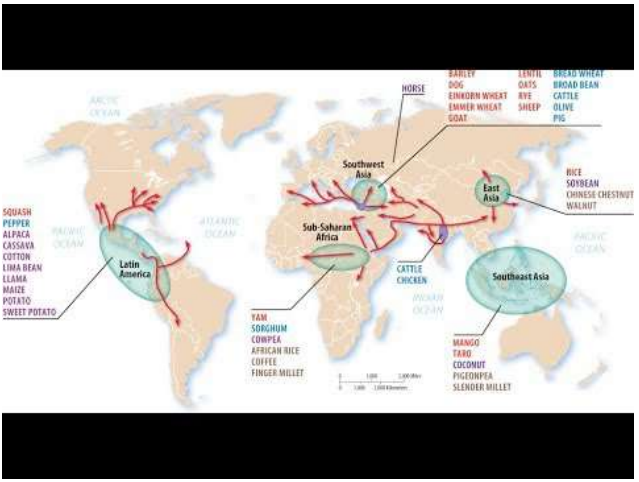
DEEPEN YOUR UNDERSTANDING: If you need or want a review on the connection between agriculture and urbanization, view the Urban and Suburban Spaces chapter of this textbook.

Now that you are familiar with the "what" and "how" of agriculture, you should be wondering about the "*where*" of agriculture– where did domestication and agriculture emerge? Take a look below for the locations of where major plants and animals were first domesticated. Pull up a reference map on the internet if you don't know the locations of the green hearths.

Source: https://www.e-education.psu.edu/geog597i_02/node/863



You should notice that domestication is not distributed entirely evenly across place. It is clustered in what are called **agricultural hearths**, referring to regions of the world where many species were domesticated. Check out the video below for a recap of information about domestication, agriculture, and hearth areas.



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Types & Transformations of Agriculture

The most basic way to characterize types of agriculture is into the following:

- **Subsistence agriculture**: food is produced for family

consumption
- **Commercial agriculture**: food is produced for sale

There are additional types of agriculture within these two categories, including **slash-and-burn**, **shifting cultivation**, **intensive subsistence**, **pastoral nomadism**, **transhumance**, **plantations**, and **agribusiness**. All of these types of agriculture feature different methods and procedures. Another spectrum of difference in agricultural methods is based on **intensification:** the amount of agricultural extract per unit land. Agricultural methods can range from **extensive** to **intensive**, or from having low human inputs and productive outputs, to having high human inputs and productive outputs. In general, societies tend to become more intensive over time, as it means that more can be produced per unit land. However, intensification does have real drawbacks:

- Agriculture is more work; hunters and gatherers may only need 2-3 days a week to gather necessary sustenance but agriculturalists must work 6-7 days to maintain large plots of crops
- Agriculture is more fragile; one major disaster or pestilence can remove a societies major food source
- Agriculture can be less healthy; if agriculturalists farm and depend upon a single crop, malnourishment may occur

DEEPEN YOUR UNDERSTANDING: Read about additional types of agriculture, how they coincide with the first and second agricultural revolutions, and how the spatial distribution of the various practices coincides with levels of development here. Consider also how prevalence of agriculture type may relate to population pyramid shape for communities and

countries. *NOTE: ONLY read ***until*** the "Making Sense of Land Use section."

A few other interesting and creative ways to produce food include the following:

- **Aquaculture**, or cultivating food or animals in water (examples: fish, cranberries, hydroponic lettuce)
- **Urban gardening**, or cultivating food or animals in an urban as opposed to rural setting (examples: growing a tomato plant on your front stoop or balcony, renting a community garden plot, rooftop gardens)

Aquaculture in Greece. Source: Flickr.com

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Agricultural Adaptations

In some ways, the type of agriculture someone can or chooses to do is influenced by the geography of where s/he is, including the topography, land cover, and climate. Humans have adapted how they produce the basic need of food in creative ways. Examples include:

- **Terraces** in the Incan Empire and Asia, which allow agriculture to take place on steep slopes

- **Drip irrigation** in arid regions, which releases tiny bits of water so it is absorbed into dry soil
- **Fossil acquifers** in Arabian Peninsula, which are ancient underground water reserves used to support agriculture on otherwise non-arable land

Aside from the first agricultural revolution, which refers to the birth of agriculture about 10,000 years ago, the **second agricultural revolution** refers to major transformations in technology used for agriculture, specifically regarding irrigation, harvesting, and transportation, around the time of the **Industrial Revolution**, ~mid-1700s-mid -1800s.

second agricultural revolution An additional agricultural revolution that has taken place is the **Green Revolution**, referring to the influx of high-yield seeds and fertilizers, and often **GMOs** (genetically modified organisms).

DEEPEN YOUR UNDERSTANDING: Read more about the Green Revolution and 3 main critiques of it here. *NOTE: you only need to read the section called "The Green Revolution."

Consumptive Behaviors & Food (In)security

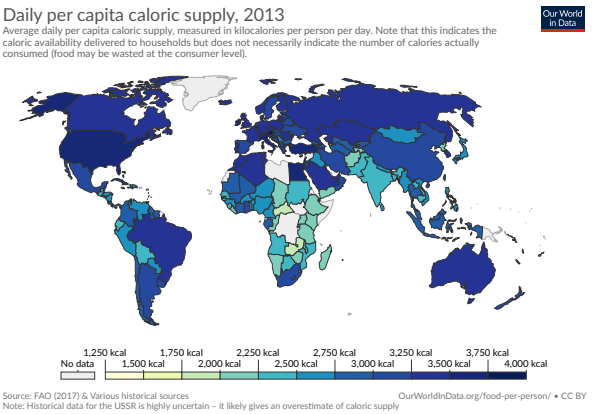
The amount and type of food we consume varies across space as does our safe and secure access to food. This chapter opened by

defining **food security** as having steady, affordable, and safe access to sufficient food and **food insecurity** as just the opposite.

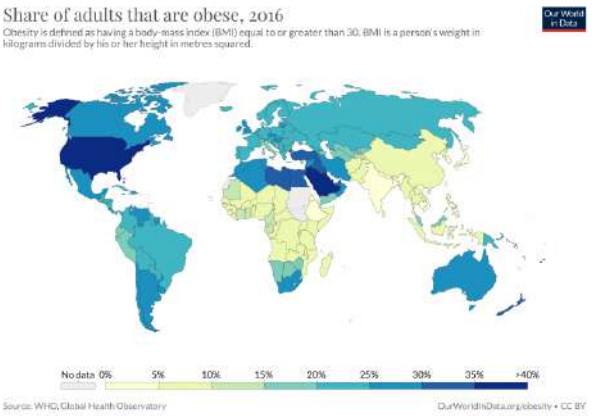
> **DEEPEN YOUR UNDERSTANDING:** Read more about food insecurity as explained by Feeding America here and be sure to view the chart that appears on the linked page.

To get an idea of food security and insecurity at a global scale, compare and contrast the maps below and consider the following questions:

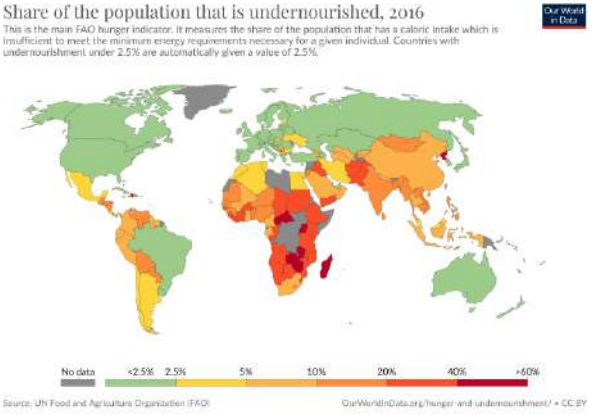
- What spatial patterns are present?
- What socio-cultural, economic, political, and physical geographical factors contextualize the spatial distribution of daily per capital caloric supply, obesity, and undernourishment?



Source: https://ourworldindata.org/exports/daily-per-capita-caloric-supply-1961-2013_v4_850x600.svg



Source: https://ourworldindata.org/app/uploads/2019/11/share-of-adults-defined-as-obese-1-768×542.png



Source: https://ourworldindata.org/hunger-and-undernourishment

Some people may experience food insecurity due to living in what's called a food desert. **Food deserts** refer to "regions of the country often feature large proportions of households with low incomes, inadequate access to transportation, and a limited number of food retailers providing fresh produce and healthy groceries for affordable prices" according to the USDA. Often food deserts are identified by the following parameters:

- **Urban food desert**: distance to nearest grocery store is 1+ miles in area with primarily low-income residents (profiled in the embedded video below)
- **Rural food desert**: distance to nearest grocery store is 10+ miles in area with primarily low-income residents

Check out the USDA's Food Desert Research Atlas to explore patterns in the US and see if you live in or near a food desert. Remember, you may experience food security *or* food insecurity if you technically live in a food desert; level of food security has to do with your overall access and capability–physical, social, and financial–to food, not just if you live in a designated food desert or not.

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Beyond food insecurity and food deserts can be large-scale bouts of hunger called **famines**. Famines affect large populations and can be regional to national in geographic scale. The common perception is that famine occurs when there is not enough food in a region to support the population. Scholar Amartya Sen argued instead that famines are often failures of the system that links food supply to food demand. Sen showed that the 1943 Bengal famine occurred due to the inability for millions to afford the rapid inflation of food prices, along with with poor distribution, government response and hoarding. The 1959-1962 famine in China coincided with the Great Leap Forward, a program of rapid industrialization. The program may have caused some 35 million people to die in a famine due to processes of collectivization of farms that produced food sent to industrial cities, leading to massive rural starvation.

End of Chapter Activity: Compare & Contrast

This chapter has provided language to describe the differences in agricultural practices and unevenness regarding agricultural lifestyles and individual consumptive behavior. To end, watch the videos below, each of which profiles fish cultivation and answer the following questions pertaining to each video:

- What are the processes for securing fish?
- Who is the typical consumer of the fish?
- What types of economic activity (primary, secondary, etc) are present for each process?
- How would you describe each of these fishing landscapes in terms of culture and economy?
- How are the processes in each video related to

globalization?

- How could the different ways of fishing relate to food security and insecurity?

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7. Economy & Development

Economy. A word that we hear and use all the time, but what exactly does it mean?

The etymology of the word reveals that its first meaning was "household management" but has since grown to signify the presence and use of "wealth and resources of a country." Colloquially, economy is often used to mean how a person or a country makes money and supports a livelihood.

The field of **economic geography** concerns itself with the often unevenly distributed spatial dimensions of economic structure and type, resources, and general activities of production and consumption. Economic geography is often oriented around issues and questions of **development**, which refers to the processes of increasing the wealth and quality of life within a country.

But before we talk about development, let's pause and learn some ways to describe economy and economic development.

Economic Type

One way to describe the economy of a place–a city, a country, or an entire world region–is by classifying its economy into types:

1. **Primary (aka. extractive)** examples: agriculture, mining
2. **Secondary (aka. manufacturing)** examples: automobile assembly, textile manufacturing
3. **Tertiary (aka. service)** examples: tourism, banking
4. **Quaternary (aka. knowledge)** examples: education, information-technology, research and development

In addition to these 4 types, there is also the **informal economy**,

which refers to activities that happen outside of any formal regulations. For instance, shoe shining, street performances, and window washing at stop lights are examples of economic activities that tend to fall with in the informal economy–rarely do people who engage in these activities get protections employees do (in theory) in the formal economy, nor is their compensation for services subject to taxes. Other terms for the informal economic sector is under-the-table or the black market. Those of you reading this that have earned money babysitting or housesitting have likely participated in the informal economy.

Nearly all economies have elements of each of the types above, albeit in vastly different proportions. In fact, there is a geography to how economic type is distributed across the world, which we will talk about below.

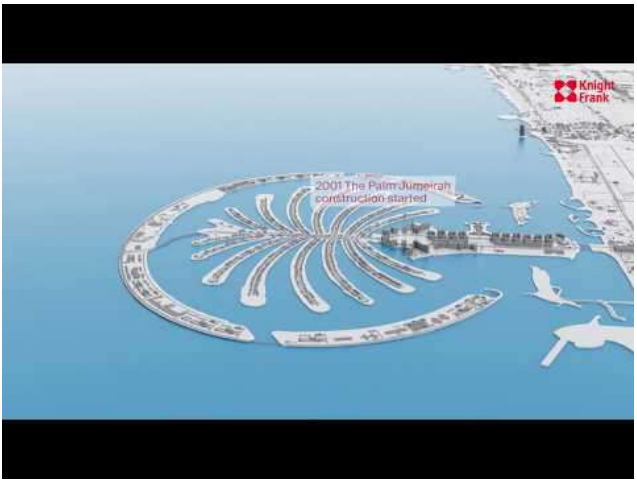
Just as a financial planner would tell you that a diversified financial portfolio is a stronger than a undiversified one, so too is a diversified economy generally stronger than an undiversified one. This means that economies that are nearly all made up of one of the sectors or types above is more vulnerable to damage than one that has economic activity in multiple sectors. Why and how is this the case? Let's look at an example.

The Arab states have a huge proportion of the world's oil and gas reserves; as such, the primary economic sector of their economy has historically and still is in large part very robust in comparison to other sectors. As long as oil and gas are present, extractable, and in demand, this allows the region to easily amass wealth, BUT, what happens when the oil and gas reserves are depleted and/or demand for alternative forms of energy overtake demands for oil and gas? If the Arab states' economy were overly reliant on the primary sector of the economy, they may face economic turmoil.

One way countries in the Middle East are working to diversify their economy and ramp up the tertiary and quaternary sectors is through developing various tourism industries (even building islands off the coast with extravagant hotel experiences) and educational facilities, such as attracting major universities to open

branch campuses in places like Qatar and the United Arab Emirates (UAE). Building the infrastructure to support these expanding sectors takes a huge amount of labor.

Check out this time-lapse of infrastructural development in Dubai, UAE (speed it up to get an idea of how the landscape has changed).



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To learn more about issues surrounding the labor conditions facing typically migrant workers from South Asia who come to Arab States for construction-related jobs, including those surrounding building stadiums for the 2022 Wold Cup in Qatar, see here.

Exercise: Tree Maps

Check out the Atlas of Economic Complexity hosted by Harvard to view various countries' economic tree maps, representations of how the economies of a country break down. Type in or select the country you want to view by clicking the Country box in the right hand navigation panel. Hover over the boxes on the tree map to learn more.

- View the export tree maps for Vietnam, Mauritania, and Poland
- Compare and contrast the tree maps. Why are the economies different? What aspects–geographical, historical, cultural–can you think of that would explain the differences?
- Practice classifying the economy by applying the correct economic type to various product sectors depicted in the tree maps

Development & Measuring Development

Development is a broad term referring to processes of increasing the wealth and quality of life within a country.

It is common practice to conceptually break the world into different categories based on each country's or region's level of development. The result is a geography of development that codes regions like North America and Europe as **developed**, and regions like South Asia and East Asia as **developing. MDC** refers to more developed countries and **LDC** refers to least developed country. Other terms used to describe these distinctions are **core** and **periphery**, or core, **semi-periphery**, and periphery, which were

foregrounded as part of sociologist and historian Immanual Wallerstein's **world-systems theory**.

Check out the video below to learn about other terms used to describe the developing-developed spectrum.

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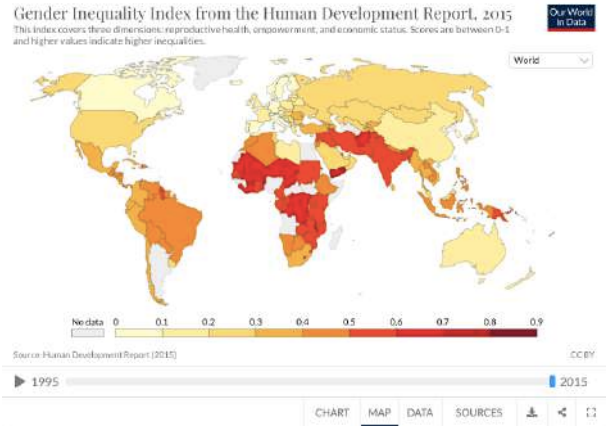
So, how do we assess and measure development?

Common metrics include the following:

- **HDI**, Human Development Index
- **GII***, Gender Inequality Index
- **GDP**, Gross Domestic Product
- **GNI per capita**, Gross National Income per person
- **Gini coefficient**, which measures income inequality

DEEPEN YOUR UNDERSTANDING: Learn what these terms mean and about more ways to describe the world in terms of development by clicking here and reading the following sections: A Mission to Help the World, Measuring Development, and The Geography of Development.

*View map below and click here for interactive map.



Source: https://ourworldindata.org/grapher/gender-inequality-index-from-the-human-development-report

Exercise: HDI

Examine this map of HDI using UN data from Our World

in Data. Hover over and/or click on countries to learn more.

- What patterns do you notice regarding the spatial distribution of HDI across the world?
- On the top right of the map, click the drop down menu labeled "world" and click to view a particular world region that hast countries with varied HDIs. Select a country in that region to explore more.
- Learn more about your selected country by viewing its country profile in the CIA World Factbook (select relevant country in drop down menu on top right). What information did you learn that helps contextualize why the HDI is relatively high or low in this country?

Paths to & Funding of Development

There are many different approaches a country may take towards developing. These may include **top-down** or **bottom-up development**, and may strive more towards **self-sufficiency** or **international trade**.

Top-down development may include projects initiated and funded at the federal level, whereas bottom-up development may include projects (infrastructural development, social aid programs, educational initiatives) that emerge from a group of people at the local level and are carried out from there.

Taking a self-sufficiency path towards development means that a country places primacy on limiting/eliminating foreign influence in

the domestic economy. Two ways this is typically done is by limiting the ownership of business by foreign companies and increasing tariffs (taxes) on imported foreign goods and services. **Import substitution** refers to when domestically produced items come to replace foreign imports.

Countries that take the international trade path towards development, in contrast, focus on amplifying their production of a few key resources, products, or services, and competing on the international market. Foreign business presence in the country is not limited and the goal is not to eliminate foreign imports.

DEEPEN YOUR UNDERSTANDING: Read more about the paths to development here. *NOTE: you ONLY need to read the section labeled Strategies for Development.

All paths and approaches to development require funding, which often comes through any combination of the following:

- **Foreign Direct Investment (FDI)**: when a foreign country or company provides funds for a domestic project
- **International Monetary Fund (IMF):** provides loans to countries specifically to expand their presence within international trade
- **World Bank:** provides loans to countries for development purposes
- **Microcredit/microfinancing:** when banks provide tiny loans to individuals who would otherwise not qualify for traditional loans

Check out this video which has clips from the documentary Life & Debt, which documents the on-the-ground impacts on everyday life of the IMF and World Bank loans to and programs in Jamaica.

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Globalization & Economic Geography

In the current iteration of **globalization**, which can be understood as increasingly intensified interconnectedness among people and places across economic and socio-cultural dimensions, the way that national economies work has vastly changed.

One way to understand how is to borrow the term **space-time compression,** foregrounded by geographer David Harvey. Space-time compression refers to the idea that the world is getting smaller due to the reduced time it takes to travel (in reality and virtually) through space.

As space-time compresses, what happens to the uniqueness of

place? As the world gets 'smaller', is the world becoming a single place? To some degree, yes. There are places separated by vast distance that have similar looks and feels. If you are traveling the world, there is a decent chance you can still encounter Americanized fast food, with its familiar packaging. You likely might hear the same songs popular back home. But this is far from the full picture; in many ways, place differentiation is being heightened by globalization. Regional and ethnic differences can become more valuable as cultural diffusion eases. The further transnational corporations (see below) reach, the more they may respond to place-to-place differences.

Some factors that have led to the current landscape of globalization include **Transnational Corporations (TNCs**), which operate in multiple countries, and the associated **outsourcing** of labor to areas where labor is less regulated and cheaper to obtain. Examples of this include how Apple outsources labor to China to produce the iPhone, as exemplified by the Foxconn factory in Zhengzhou, China and **maquiladoras**, or foreign-owned factories in Mexico that produce tax-free products for US export. For considerations about what it's like to work in the maquiladora industry, which overwhelmingly employs women, read this synopsis for the movie Maquilapolis. Some see globalization as **neocolonialism**; a process in which former colonies, now as new independent countries, are still controlled economically and politically by core countries. This is an informal rule, rather than the formal and direct rule of core countries over colonies. Informal rule is enforced via international financial regulations, commercial relations, and covert intelligence operations. At the same time, corporations in core countries grew larger and became transnational, themselves being able to exert financial pressure on peripheral countries.

In order to illustrate the truly global scope of international economic integration and contemporary globalization, it is common practice among economic geographers to chart **commodity chains,** which show from where all the component parts of a fabricate

product come. Products of everyday use may travel tens if not hundreds of thousands of miles to reach their final destination. This is made possible by the effects of **consumption**. Wealthy people and regions can consume more, and corporations are able to reduce prices through outsourcing. Not only are products and components **outsourced**, but so too are labor and pollution. Look at cotton; the United States ranks first in cotton production around the world by far. However, most cotton-based apparel sold in the United States was imported from abroad. How does that make sense? While the US produces the raw product (with the help of government subsidies), but corporations that need the raw product to create finished clothes ship it overseas. The corporation saves on labor costs through international outsourcing, plus the United States saves locally on greenhouse gases and other pollution associated with the manufacture of clothing. The final product is then shipped and bought back to the US, in some cases at a low cost for end consumers.

Click here to view an interactive map charting the commodity chain of Nike shoes.

8. Power, Politics, & Place

Power & Politics

One common misconception people have about geography is that it's all about states and capitals. Geographers certainly do care about place, but memorizing a list of states and capitals is not at all what geographers do, nor how geography is taught, particularly in a world where this information is much more readily accessible than times past due to technology.

Political geography is a subfield of human geography that examines how politics influences place and how place and its distinctiveness shapes the kind of politics that operate there. Geographers always have an eye open towards noticing and evaluating the spatial distribution of phenomenon and possible resulting unevenness. In the case of political geography, this translates to examining how political structures are distributed across the world, understanding the context of why political structures operate where they do, and the impact this has on peoples' everyday lives and the global world order, or how power is distributed internationally.

Politics is first and foremost about power.

Check out the video below to learn about two key types of power: **hard power**, which operates by force and coercion and **soft power**, which operates by fostering consent and attraction.

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Politics can be understood in three senses:

- **High Politics:** essential to state survival (examples: elections, war and peace, diplomacy)
- **Low Politics:** non-essential to state survival; mundane; about welfare of the state (examples: department of education, environmental protection agency)
- **politics with a lower case p**: challenging existing structures of power (examples: Black Lives Matter movement, gun right's advocacy groups)

Political geography examines how all three aspects of politics intersect in place and impact peoples' livelihoods.

States, Nations, & Borders

DEEPEN YOUR UNDERSTANDING: Learn more about **states**, **nations**, **sovereignty**, **state shape**, **types of governance**, and **borders** by reading this (you may stop reading once you reach the Theories of a State section): https://humangeography.pressbooks.com/chapter/4-1/

Exercise: Distribution of Governance Structures

Geographers examine the spatial distribution of phenomena, including governance structures. Use the link below to complete the following tasks: https://education.maps.arcgis.com/home/webmap/viewer.html?webmap=a4712b8499994842a6a34a8c8803e62c

- What spatial patterns do you notice in terms of how and where government types are distributed? What factors do you know of that may help explain these patterns?
- Choose 3 government types to analyze further and do a quick web search to learn what exactly each government type means and compare and contrast the 3 types.

Challenges to State Sovereignty

DEEPEN YOUR UNDERSTANDING: Learn more about challenges to state sovereignty including **separatism** often driven by differences in **identity** here (you may stop reading once you reach the Terrorism section): https://humangeography.pressbooks.com/chapter/4-2/

Border disputes and conflicts also pose challenges to state sovereignty. Check out the video about Kashmir below to learn more.

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Exercise: Border Disputes

Visit this link and click on countries and yellow dots along borders to learn more about major ongoing border disputes: http://metrocosm.com/disputed-territories-map.html

Sometimes conflict within states, often rooted in (at least perceived) cultural differences, can lead to a humanitarian crisis involving **internally displaced persons** or **refugees**, where people are either uprooted from their home and move internally within a country, or cross borders to gain protection. Check out the video below to hear from the voice of a refugee from Myanmar fleeing to Bangladesh, as part of the **Rohingya crisis**.

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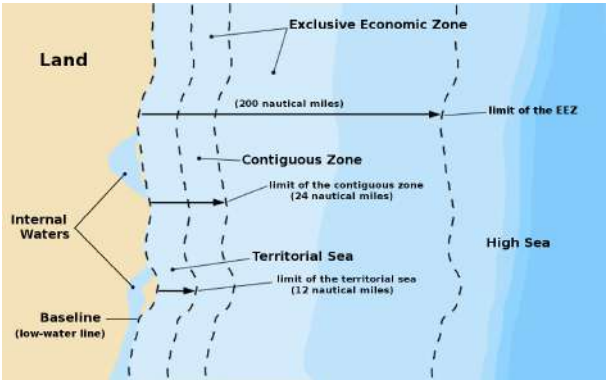
Sovereignty in Maritime Spaces

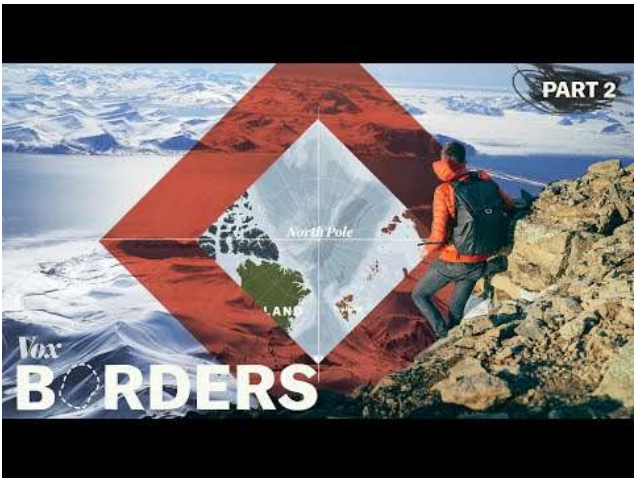
The world is about 70% water and you may have wondered at some point: who owns the oceans? It's a fair question, but not an entirely easy one to answer.

UNCLOS, which stands for the **United Nations** (**an international organization**) Convention for the Law of the Sea, is the current governing agreement by which the majority of countries in theory abide. Below is a chart explaining how sovereignty extends from a territory's land borders into the sea. Of special note are the powers afforded to countries within **territorial sea,** which include air, surface, and subsurface rights, and **exclusive economic zones (EEZ)**, which include surface and subsurface rights.



Source: https://commons.wikimedia.org/wiki/File:UNCLOS-en.png

The videos below profile two hotspot maritime battlegrounds: the Arctic, where waterways are opening up because of the retreat of sea ice due to climate change, and the South China Sea, where countries in East Asia and Southeast Asia are vying for rights and human-made islands are being constructed to help assert sovereignty. Note how UNCLOS does and does not guide the actions of countries in these areas.



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Closer to Home: Electoral Geography

A substantial branch of political geography is devoted to **electoral geography**, which examines how geography influences political representation and even prescribe best practices to ensure fairness.

If you've ever heard of **gerrymandering**, or wonder why the **census** becomes a hot-button political issue every ten years, you already know a thing or two about electoral geography.

Check out the video below for a crash course on how geometry and geography intersect with politics, and can affect the weight of your vote in state and national elections.

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Questions

After working through this chapter, you should have something to say in response to each of these questions:

- What is the difference between a state and a nation?
- What is the function of borders?
- What factors (natural, socio-cultural, etc) influence the location, character, and impact of borders?

- What are the effects of border disputes (and for whom)?
- How does the shape of a state affect its internal operations and international actions?
- How does sovereignty operate in marine spaces?
- How have events like the Cold War and European and American colonialism shaped the distribution of government types and international diplomatic relations globally?
- On what grounds are countries making claims in the Arctic?

9. Geography of Religion

Religion and geography

Religion plays a strong role in the culture of believers, shaping values, actions, food, and even dress. A religion is a system of beliefs and practices that recognize a higher power beyond humanity. Religions commonly have varying rituals. Prominently there are often rituals revolving around life changes recognized as important to the religious community, such as birth, coming-of-age, marriage, and death. While culture also has **secular**, or non-spiritual, rituals at these life moments, many religious traditions have specific rituals such as baptisms and bar mitzvahs along with traditional religious practices of marriage and death. Additional rituals, beliefs, and practices surround holidays (or, Holy days).

Basic features of major religions

Religion, like any other cultural practice, can readily be assessed from a geographic lens. Geographers study the spatial distribution of organized religious systems, specific religious practices, and the impact of religion on the landscapes of culture and institutions. Religion tends to have a patchwork nature; individual belief and practice is quite nuanced and intrinsic. At a global scale, it is difficult to view specific practices, but geographers can categorize and look at major religious trends. Major religions are those that share basic tenets of faith among believers, even if there exists wide sectarian differences within these faith families. Generally, five major world religions are identified:

- Hinduism
- Buddhism
- Judaism
- Christianity
- Islam

Like other cultural practices, major religions started in **hearth areas** of origin and have spread over time. Beyond these five, **Taoic** and **Animistic** religions are looser categories but still are important as belief systems.

Exercise: Religions around the World

Explore maps of religions worldwide at https://mpt.pbslearningmedia.org/resource/sj14-soc-religmap/world-religions-map/. This interactive map shows prevailing religions around the world along with country-based breakdowns by major religious group.

In looking at beliefs and practices of religion, there are several ways to further categorize religions. How many gods do adherents believe in? **Monotheistic religions** have a belief in only one God, while **polytheistic religions** have many gods. Does the religion **proselytize**, or seek new converts to the faith? **Ethnic religions** are those that do not proselytize and are associated with a specific place or ethnic group, while

Judaism

Monotheistic and ethnic

Major splits of Orthodox, Conservative, Reform

Religion of the Hebrews

Focus on this life and obeying God's commandments

Hindu

ism	
Polytheistic and ethnic	
Associated with India	
Extremely diverse	
Humans seek release from cycle of rebirth	
Buddhism	
Polytheistic and	

universalizing religions breaks from bounds of place and ethnicity to seek converts. How "pure" is the faith of the religion, or more likely the sect or denomination? **Syncretism** is the melding of various religious traditions and systems in to one, while **orthodoxy** is a specific emphasis on purity of faith within a sect.

These and other religions have diffused geographically through three major methods. First, adherents have **migrated** to new places, bringing religious practices with them. Second, religion has spread through **contact conversion**, which is similar to the concept of expansion diffusion. Third, religion has spread through the use of **organized missions**. This is similar to the concept of relocation diffusion.

The religious landscape of the United States

Source: 2010 U.S. Religion Census, sponsored by the Association of Statisticians of American Religious Bodies

Before European colonization of the Americas, there were myriad indigenous religions practiced by Native Americans.

The colonists brought various forms of Christianity to the Americas. Christian denominations were not randomly distributed, but rather clustered along denominational lines in certain colonies or regions. In the New England colonies, Congregationalists were most prominent. Southern colonists were largely Anglican (or Episcopalian as it became known after the American Revolution). The colony of Maryland was chartered for Catholics. As more people migrated and more churches were founded, these early patterns of regional domination by particular sects changed. Three major changes caused this diffusion and confusion of American religion:

- American-style freedom, which encouraged experimentation of spiritual matters and departure from establishment churches
- Westward expansion, where new and eclectic worship practices developed in the vacuum of established churches
- Immigration, as new migrants to the United States held on to the security of their homeland's religious practice

universal izing

Major splits of Therava da, Mahayan a, and Vajrayan a

There is no permane nce; gain enlighte nment to leave the cycle of rebirth

Christ ianity

Monot heistic and universal izing

Major

splits of Catholic, Orthodox, and Protestant

One God as a Trinity, salvation comes through Christ

Islam

Monotheistic and universalizing

Major splits of Sunni, Shi'a, and Sufi

One God named

Source: 2010 U.S. Religion Census, sponsored by the Association of Statisticians of American Religious Bodies

As a result, there are few counties in the United States that have a single, dominant religion. The map above shows the religious diversity in the United States by county. However, there are four general 'dominant' or pluralistic regional religions in America, as seen in the map on the right.

- Mormonism around Utah and southern Idaho
- Baptist in the South
- Lutheranism in the Upper Midwest
- Catholicism in the Northeast and the West

The Catholic patterns themselves come from two different patterns of migration. Those mostly urban strongholds in the Northeast were started from European Catholic migration of Ireland, Italy, and other European countries. The West is largely influenced from Hispanic or **Latinx** immigration.

Some scholars of religion have posited that the United States, in addition to being religiously pluralistic, also possesses a **civil religion**. Put forward by Robert Bellah, a civil or civic religion recognizes an implicit religion practiced by members of a nation. As described at the

beginning of this chapter, religions often have associated rituals, symbols, and practices associated with adherents. The argument for the existence of an American civil religion is that many Americans are connected by civic culture that works in a quasi-religious manner. American culture celebrates sacred documents like the Constitution, sacred times like the Fourth of July, and sacred places like Arlington Cemetery, and these cultural artifacts are not dissimilar from, for example, how Catholics may treat the Bible, Christmas, and the Vatican. The following video outlines more of the arguments for American civil religion.

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Allah, humans submit to Allah to gain paradise

Animism

Polytheistic and often ethnic

Includes traditional folk religions, Wicca

Nonhumans and inanimate features have

spirits or souls

Taoic religions

Generally polytheistic and ethnic

Major faiths include Taoism, Confucianism, Shinto

Often moralistic codes/ethics with polytheistic animism

Often syncretic with

Questions about American Civil Religion video

The video above outlines several arguments about the theory of existence for an American civil religion. What do you think?

- What are three arguments for there being an American civil religion?
- What are three arguments against?
- Overall, what do you think? Is there an American civil religion, and does it rise to the level of 'religion'?

Buddhis
m

10. Geography of Language

Talking about talking

If you're reading or listening to this book and understand it, then you comprehend at least one language: English. **Language** is a spoken, written, or spoken and written system of communication that is understood by groups of people. English is the current global **lingua franca**, or a language of international business and exchange. In terms of sheer numbers, here's how the 5 most spoken* languages rank according to Ethnologue in terms of native and second-language speakers:

- English……1.3 billion
- Mandarin Chinese…1.1 billion
- Hindi……637 million
- Spanish……538 million

*NOTE: if we *only* consider native speakers, Chinese has by far the highest number of speakers.

Sign language is an un-spoken and un-written form or mode of language for people who are deaf or hearing-impaired (certain systems of sign language like **American Sign Language (ASL)** are considered stand-alone languages complete with their own grammar) and **braille** is "a code by which many languages […] may be written and read" (https://www.afb.org/blindness-and-low-vision/braille/what-braille).

One of the most common questions when it comes to languages is: how many are there? Just as it's not so straightforward to declare how many countries there are in the world due to variation in definition and recognition, so too is the case with languages. However, according to Ethnologue, a leading source on all-things-language, there are just over 7,000 language in the world with about 4,000 of them being written.

In addition to size and whether the language is written or oral, languages can be classified in terms of health, referring to the level of robustness and growth they experience or if they are **threatened** and/or **dying**, to be discussed towards the end of this chapter. Furthermore, **linguists**, or scholars who specialize in studying language, organize language hierarchically as follows:

Exercise: Language map

Check out this map by Ethnologue of the ~7,000 languages of the world.

- **Language family** (ex: Sino-Tibetan, Afro-Asiatic, Indo-European)
- **Language branch** (ex: Tibeto-Burman, Semitic, Romance)
- **Language group** (ex: Burmese, Arabic, Romanian)

Using the model of a tree, you can think of each language family as a trunk (stretching furthest back in time), each giving rise to branches, and then leaves (language groups). This chapter examines language from a geographical standpoint, using a spatial perspective, by providing an overview of the spatial distribution and diffusion of languages and how language relates to power, culture, and place.

Please note that examples used in this chapter tend to be centered around Indo-European languages, in particular English. This is because English is the language of this text and therefore it is

presumed that readers have much familiarity with it and its history more-so than other languages.

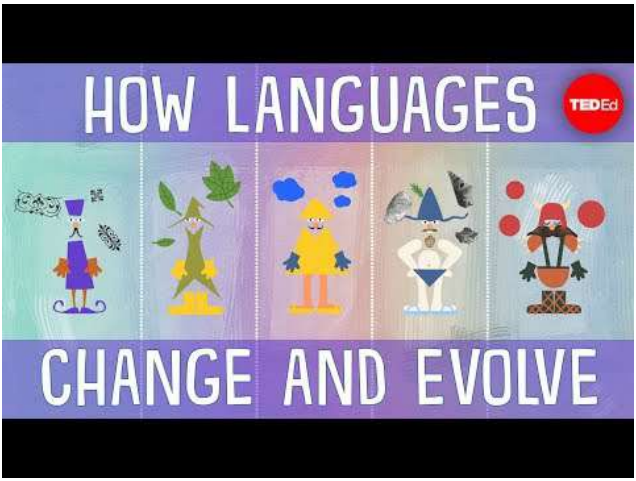
Distribution & Diffusion of language

Let's start with an exercise to warm up our brains: examine this map of language distribution through ArcGIS. Click the hold to drag the map and use the +/- on the top left corner to zoom in and out and consider:

- How does the distribution of major language families align or not align with major world regions?
- Which regions have the most diversity in language families?
- What processes might explain how a language part of the Indo-European family ended up being dominant in a place far away from it's origin point?
- White space appears and is not labeled. These areas are not completely unpopulated, so what kinds of languages do you think are present there?

From the map and section linked above, you'll see the major language families associated with each major world region and how the distribution of language families spans world regions, even ones that are not connected by land.

So, how did these languages get *WHERE* they are? Check out the video below for a quick overview and then see below for more.



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The most common theories as to how language diffuses, in particular the largest language family, Indo-European, are through:

1. *Peaceful, passive interactions.*

Agricultural theory holds that the Indo-European language spread from its likely origin point, also known as a **linguistic hearth**, of Anatolia (modern-day Turkey) alongside farmers who moved further and further out from the **agricultural hearth**. Agriculture provided the opportunity for settlements with large numbers of people residing in one spot needing a way to interact and communicate with one another.

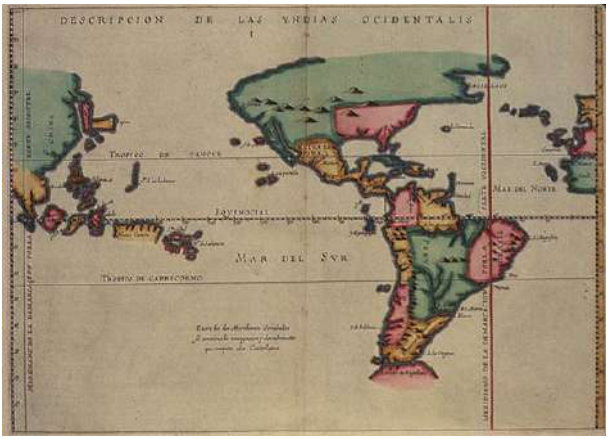
2. *Conquest/war/invasion.*

In contrast with the agricultural theory, **conquest theory** or **nomadic warrior theory** refers to the claim that the Indo-European language family diffused due to violent expansion and take-over by people from Anatolia to other parts of Europe.

2.5. *Colonialism.*

We can look to a more contemporary but still historical example of how colonialism, which tends to involve violent forms of conquest usually coupled with less violent forms of influence, as a related mechanisms that facilitates language diffusion.

Latin America provides a tidy example of this. The red vertical line on the map below, from the Library of Congress, divided territory in the "new world" between Spain and Portugal in 1794 as part of the Treaty of Tordesillas. Area to the west of the line came under Spanish colonial rule and area to the east, Portuguese.



Source: https://www.loc.gov/rr/hispanic/guide/hs046001.jpg

The linguistic impact of this is evident today: Central and South America are largely Spanish-speaking (with notable pockets and second languages of various Amerindian and Indigenous languages) except for Brazil, where Portuguese is predominant. In fact, the reason this region is widely referred to as Latin America and people from this region are called Latinos/Latinas/**Latinx** (the latter term is a gender-neutral way to refer to Latino men and Latina women) instead of Hispanic America, for instance, is because of the two Indo-European linguistic influences of Spanish and Portuguese. Take a look at a colonial/second-language map of of Africa, and

you'll see a similar colonial legacy. **Proselytizing**, or trying to convert people to a particular religion, tends to be part of colonial practices and as such also plays a direct role in language diffusion.

3. *Cultural imperialism and the internet?*

When thinking about how language–entire communication systems or even parts of the system, like particular words or even gestures–spreads today in the 21st century, we must consider forces of **cultural imperialism**, referring to how more indirect (but strong) cultural influences (largely American, referring here to the US) are imposed on usually less developed and less powerful regions of the world. Take a look at these charts of language used on the internet and compare the most common internet languages with the most spoken languages.

Pidgins, Creoles, & Place-Making

In the context on language, pidgins don't refer to the birds (i.e. pigeons) and creole doesn't exactly refer to delicious food from Louisiana (although it is related, as we will see below). Instead, these terms refer to types of communication that emerge alongside human interaction.

A **pidgin** is a simplified language that emerges when two people who each speak different languages come up with another language by which they can communicate. That new language is a pidgin, or sometimes just called pidgin. For example, if I speak Spanish and you speak Korean, we may come up with a simplified pidgin language drawing from each of our own languages that, mixed with gestures and other symbols, is mutually intelligible to each of us. We may also draw from a language that we both already know, like a lingua franca, and use that as base for our simplified communication.

Pidgins are very geographical in nature because they emerge as people traverse through space, arriving in a place where they don't speak the language. Pidgins have historically sprung up along

historic trading routes and at ports where people needed to communicate in order to conduct business and interact. For this reason, pidgins are often called **contact languages**. Check out the video below and ponder the accompanying questions.

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Questions about Hawaiian Pidgin

After watching the video above, consider the following:

- From what languages is Hawaiian pidgin drawn?

- How was Hawaiian pidgin perceived in the past and what things indicate that these past perceptions are changing?
- How does Hawaiian pidgin relate to cultural identity?
- If someone grew up speaking Hawaiian pidgin as her first language, would the communication system of "Hawaiian pidgin" be a pidgin language or a creole language (see below)?

A **creole** is a formalized, developed pidgin that has a complete grammar and **lexicon** (vocabulary) and has native speakers, meaning that babies are born who grow up learning the creole language (sometimes just called creole) as their first language. Perhaps familiar examples of creole languages within North America and the Caribbean include Louisiana creole (which also refers to a style of cuisine), and Haitian creole, spoken in Haiti. Many creoles emerged within **maroons**, or communities of Africans (and often later Indigenous peoples) who were formerly enslaved or were descendants of formerly enslaved parents. One such example of this is **Garifuna**, referring to a language and a group of people who were marooned in the Caribbean after a slave-ship shipwreck. Read more about the status of the language and group here and note how much overlap there is between language, culture, identity, and even cuisine and how these aspects are written about in the article.

Exercise: The Gullah

Learn about the Gullah here by reading the following pages and answering the questions below: "Introduction," "Origin of the Gullah," and "The Gullah Language."

- What does Gullah refer to?
- From what languages is Gullah creole derived?
- What factors explain why the Gullah emerged as a distinct and persisting group?
- What information did Dr. Lorenzo Turner discover about the Gullah in terms of the linguistic knowledge and even cultural practices of the Gullah?

By learning about the various creoles and pidgins above, you can hopefully start to see the **power** that language has in making meaning regarding identities across a range of scales: from the individual, to the cultural/sub-cultural/counter-cultural, and even to a specific place or entire region. As a dimension of culture, language plays a big role in creating the identity of a place, or **place-identity**, and a **sense of place**, or a uniqueness of feeling people attach to place.

Think of words that you may use from another language and how those give you a sense of your own individual heritage and cultural identity, and may even identify you with a particular place or region. Or perhaps you avoid using certain words to signal a distance between what they signify or have come to signify and your own values and identity.

Language then, including place names or **toponyms**, street names, plaza names, and school names is an element of a **cultural landscape** and contributes to the overall place-identity of a location. Language is a form of and canvas for power and power is exercised from above and below, equally including efforts to enforce authority and contest authority. We can see what this looks like on

the ground by analyzing some examples of naming and re-naming or un-naming. Check out the links below:

1. Swaziland becomes eSwatini.
2. Former Yugoslav Republic of Macedonia becomes Republic of North Macedonia.
3. Robert E. Lee High School in Springfield, VA to get a new name

The first example reflects a trend among formerly colonized places to re-name places based in languages and systems of meaning that pre-date colonial influence. Re-naming, thus, is a way to symbolically and sometimes materially throw off or reject colonial power, possession, influence, and identity.

The second example illustrates how naming is deeply and inherently tied to cultural, national, and place identities.

The third example may strike much closer to home and illustrates how the choice *or* avoidance of certain names and words themselves is a way to signal allegiance with or distance from widely perceived meanings of those names. Controversies surrounding the changing of names (not to mention removing statues), in this case, associated with the Confederacy in the US, abound among everyday individuals, public historians, businesses, and local, state, and national governing bodies and policy-makers. The controversies are based around language–a system of communication that produces meaning.

We as individuals and a society have to determine which particular words and symbols we want to be associated with and accept, reject,

Words & Sports

It is not uncommon for sports teams–local, state, and national–to have controversial names. This just points to the power of

language and naming. Read up on The Washington Redskins for a case study here.

or re-interpret popular and contemporary meanings of said words and symbols. The process is and should be continuous.

Linguistic Variations

You learned about two major linguistic variations above, pidgins and creoles, but let's pause and talk briefly about two more commonly discussed features of language: dialect and accent. The basic distinction is that a **dialect** differs from its base language in vocabulary, grammar and spelling, and pronunciation whereas an **accent** differs from its base language in terms of pronunciation style. Think of it like this: dialects are place-based variations of language and the aspect of a dialect that includes variations in pronunciations is called an accent. See the video below for more and consider how dialects and accents are tied to conceptions of **identity** across many scales.

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Exercise: English accent quiz

Take this quiz from Babbel (scroll below video to see quiz) to see if it can determine from which region of the US you are from or learned English. Did it guess correctly?

Check out these heat maps of language use in the US for fun.

The Language Lifespan

By now, you should already have a good sense of how languages are born and how they grow through time and across space, but you might be wondering: do languages die? The answer is yes, more or less.

UNESCO, the United Nations Educational, Scientific, and Cultural Organization, classifies languages in terms of several levels of endangerment, ranging from **safe**, referring to languages that are spoken and transmitted across generations, to **vulnerable**, referring to languages typically only spoken in certain spaces or circumstances, to **endangered**, referring to languages that are not spoken nor transmitted across generations, to **extinct**, referring to languages with no native speakers (extinct languages can possibly be revitalized, so you can think of them as technically dormant). See UNESCO's chart of endangerment for more.

Exercise: Endangered Languages

Read through UNESCO's Frequently Asked Questions on Endangered Languages to learn more about causes of language endangerment, examples of extinct languages, and what might be done to preserve and revitalize vulnerable and extinct languages.

The number of speakers of a language is certainly a key criterion in determining its overall health status or level of endangerment. As a general rule of thumb, areas that have high linguistic diversity are most susceptible to some kind of endangerment or extinction.

Papua New Guinea, which is an island-nation in the world region of Oceania, is the most linguistically diverse place in the world. Of the approximate 7,000 known languages, over 800 of them are spoken in this country. What?! But more importantly, why? The most commonly cited reason includes the fact that the mountainous terrain creates isolated communities of people who have little interactions with each other over time. Thus, pockets of speakers of one language exist in relative isolation from other geographically proximate pockets of speakers of another language and languages do not collide or co-evolve due to contact. We see here a clear example of how the physical geographic layer of place plays a role in shaping human systems, in this case, language. As a very linguistically diverse place, Papua New Guinea is also at high risk for experiencing language losses and given how integral language is to culture, this could prove to be rather culturally damaging and traumatic.

Exercise: Language Loss

View this Story Map of endangered languages. Select a language to examine by choosing one that appears on the top scroll bar or clicking a pin on the map. Read any information associated with the language that appears in the left pane. Then search the language in the UNESCO Atlas of World's Languages in Danger and respond to the following prompts:

- Summarize key features about the endangered language you chose to examine (ex: where is the language spoken? what level of endangerment does it

suffer? how does it relate to the culture and identity? Cite specific statistics when possible (ex: number of speakers).

- Conduct a web search to find out what efforts are being made to preserve or revitalize the endangered language. If you cannot find anything about the exact language, research efforts being made to revitalize other languages and/or brainstorm your own ideas on how this could be done. Describe at least 3 ways that the language is being or could be revitalized, being as specific and precise as you can.

11. Urban & Suburban Spaces

Why cities?

Cities are a relatively recent part of human culture. The first settlements recognized as cities arose about 10,000 years ago in what is now considered the Middle East. While this region saw the first cities, cities also developed independently around the world in the millennia following, emerging from **hearth areas** of civilization. Why did cities come about during this time period? Different scholars will point to different reasons, but these three are commonly provided:

1. Agriculture became efficient enough to create a productive surplus
2. A growing population created pressure to densify
3. New social organizations of power developed

Agriculture, the process of cultivating plants and/or livestock, is often given as a primary reason for the creation of cities. Once humans began to cultivate crops, humans became less migratory and built permanent structures so that they could tend to and store agricultural products. As humans improved agricultural methods, soon a single farmer or farming family could produce more food than they themselves needed for **sustenance.** The result is that within this permanently-located society, not everyone needed to be an agriculturalist. Instead, the **productive surplus** meant that people in the society could have more specialized, non-agricultural livelihoods; a more complex division of labor emerged. The **specialization** that took place meant that some people would grow and raise food for society, while others would build structures, create tools, defend the settlement as professional soldiers, or

become philosophical/religious leaders. As agricultural production improved, more people had access to food leading to population increases. However, agricultural technology did not yet exist to improve marginal lands to productive lands. This meant that the increasing population needed to be more **dense** around productive lands, leading to denser settlements like cities. Lastly, most of these nascent urban societies, in creating a complex division of labor, moved away from **egalitarian** power structures and instead became more **hierarchical**, with a few at the top with much societal power and influence and many at the bottom with little power. Power often came to religious or military leaders. Organized power also enabled the society to collect taxes, pooling resources so that large, permanent structures were built. These structures, such as temples, themselves demonstrated the increased power of the society.

DEEPEN YOUR UNDERSTANDING: This chapter is fairly comprehensive, but if you are looking for more clarification or to complement the knowledge you gain from reading this chapter, consider perusing this linked text.

Spatial structures of cities

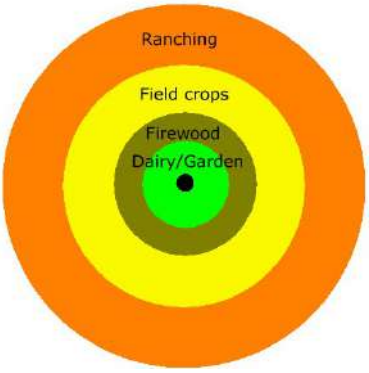


Diagram of the von Thunen model (by author)

Before investigating how cities are internally structured, it is illustrative to view the **von Thunen model** of **hinterland** organization. In 1826, Johann Heinrich von Thunen created an economic model of how the area around the city from which resources are gathered (the hinterland) is organized. Two key points of this economic model become analogous for economic rationale for how cities are theorized to organize. First, this model showed that proximity to the city came with a premium on price due to desirability. This meant that land uses nearest to the city had to be the most profitable in order to afford land rent. Second, the resulting organization of the hinterland is in **concentric rings**, with more profitable products closer and less profitable products further from the center. As an economic model, these outcomes are contingent upon several assumptions, none of which are truly realistic. However, it models an idealized form that is altered and complicated by the complexity of local and regional geographies in all locations. The assumptions are:

- The City is in the center of an isolated State; it is a single market
- The hinterland itself is surrounded by "wilderness"; combined with the prior assumption, it means that there are no connections or products coming to this region or being exported out of the region
- Land is ubiquitous; there are no differences in soil type,

topography, or climate, and no water features. All environmental factors are equal everywhere
- Farmers transport their own products to market using an ox cart without roads; roads change the ubiquity of land and therefore don't exist
- Farmers behave rationally in order to maximize profits; farmers seek the most profitable use of their land

Given these assumptions, von Thunen predicted that certain types of production (or land use) would dominate certain rings. The innermost ring would be dedicated to dairy production and market gardening. Both categories of agriculture are bulky to transport, can potentially spoil quickly (this is before the invention of refrigeration), and have relatively high productivity per acre in terms of sale price. As such, farmers both can afford the more expensive land, and need proximity in order to get products to market. The next ring is wood for fuel. As with dairy/gardening, it is bulky and hard to transport, but does not produce as much value per acre, therefore it occupies less expensive land. Following fuel wood is a ring of grains and field crops. This produce needs many acres, but cannot merit a large market value per acre planted. Grains however store well and do not need to come to market immediately after ripening. Farmers therefore need larger quantities of cheaper land, and are willing to travel further to market due to a lack of immediate spoilage. The last ring is ranching and livestock. Livestock is transported easily to market, so proximity is not necessary. As well, though an individual cut of meat may be more expensive than the products mention above, meat production is the least profitable per acre. It may take years to raise livestock to the proper age for butchering and it takes vast amounts of grazing land for the larger animals. For these reasons, ranching is furthest from the market and the last agricultural ring before wilderness.

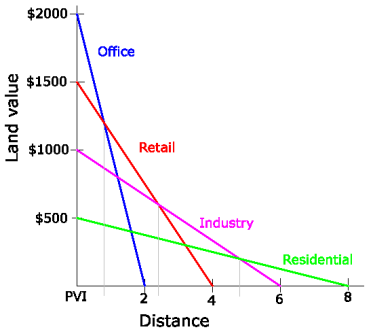
When it comes to cities, similar economic models are used to look at basic spatial structural patterns. A **land value model** of urban land

uses is one such example. In this model, land values are estimated based on bid rent. **Bid rent** is the amount of money an individual parcel of land can receive for any land use. While true bid rents are based on a function of **site** and **situation** (attributes of the parcel itself and its location/accessibility), the land value model simplifies reality through these assumptions:

- There exists a **prime value intersection** (PVI); the central point of a city with the highest amount of access
- Access from all other places to the PVI is based solely on distance; no transportation network effects
- All sites are ubiquitous; site advantages like hills, ocean views, and others do not exist
- There is no zoning or planning for particular land uses; land use is based on market forces only

With these assumptions, we get the formula:

Bid Rent = Land Value at PVI – Access Costs

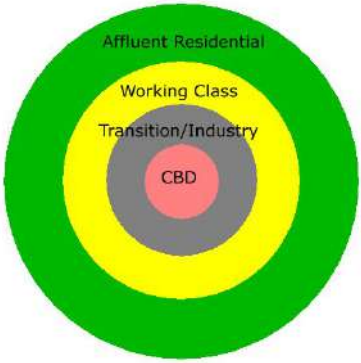


By author

Different land uses have different attenuating effects of distance. In other words, some land uses must have high access, and others can have further distance from the PVI and still be profitable. Land uses have different **bid rent curves**, or different slopes, affected by accessibility. The image to the left is a rough demonstration of this concept. In this simplified model, there are four land uses: office, retail, industry, and residential. Each has a different bid rent curve on the basis of access costs. Office space, where corporate headquarters locate, need access and connectivity, and are also quite profitable. The office bid rent curve then is the steepest; office land uses are willing to pay a premium for the most

access, and are unwilling to pay if access decreases too much. Retail likewise wants access, for walk-in shoppers and increased customer traffic, but while profitable are not as profitable as office space. Retail land uses then won't pay the extreme premium of office space, and is willing to have slightly less access. Industry also desires centrality, but generally needs more parcel space than is affordable near the PVI. Industrial land uses are less profitable and need lower rents that have less accessibility. Residential uses have the lowest profitability but also have little stake in needing prime access, and have the shallowest bid rent curve.

As a result, whichever land use is willing to pay the most at each location becomes the land use of that location. This is the "highest and best use" of the land. The result are rings of development based on distance. The gray lines on the image show the distance break points when one dominant land use cedes to another that is willing to pay the highest rent. The center ring is office, then retail, then industry, then residential. At a certain distance, residential land uses too are far from the PVI that rent could be $0 and residences still won't be built. Think of it this way; if someone offered you a free house, but it was 500 miles from your work or school, you probably wouldn't live there! The access costs of commuting would be too great.



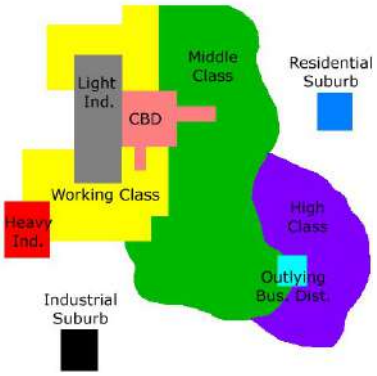
The Burgess Concentric Ring model (by author)

The **Burgess concentric ring model** is, in many ways, seemingly similar to the land value model outlined above, but with one major difference; the land value model is *economic* in nature, and the Burgess model is *social*. The Burgess model outlines rings of zones based on creating social distance between different groups of people. The inner-most ring is the **Central Business District**

(CBD), where offices, public-facing government buildings, major institutions of culture (EG: museums), and retail are situated. Surrounding that core is a zone of transition that includes industry and factories. The last rings are residential, with the working class occupying land closest to factories and the more affluent classes (middle and upper class) living furthest away. While Burgess did see that the residential land uses where stratified by income, the rationale was still social in nature. The wealthy were living further away to avoid the dirt and noise of the city. Their ability to do so was of course due to economic advantages, like being able to afford transportation and larger plots of land, but the Burgess models the choice as being one to create social distance and not the "highest and best use" of land.

The Hoyt Sector model (by author)

The **Hoyt sector model** adapted Burgess to show how cities do not stay in neat circles, but instead have expanding zones of development that often hug transportation corridors. Cities may have sectors of industry that follow a railroad, highway, or body of water, sited so as to lower transportation costs of goods. Small and large cities alike have a 'main drag' of businesses and retail that follow major surface roads. Sometimes the most fashionable neighborhoods of a city generally expand out corridors; these neighborhoods are sometimes nicknamed a "Millionaire Mile" in the city, indicating its sector-based alignment. The Hoyt model still shows that residential uses are largely segregated by socioeconomic class.



Harris and Ullman Multiple Nuclei model (by author)

A third common model discussed is the **Harris and Ullman multiple nuclei model**. This model starts with the central business district of the other models, but shows that a newer and smaller CBD develops on the outskirts of the city. This newer CBD takes advantage of shorter commuting distance for the more affluent people living in the residential areas far from the city center. As well, the multiple nuclei model shows the effect of transportation hubs, like ports or airports, on settlement patterns. Overall, the multiple nuclei model is adapting towards American cities becoming automobile dominant and much more **suburban** in nature.

It is important to note about these models that they are largely based upon cities of the developed world, particularly in North America. Concentric rings was based upon Chicago in the early 20th century, while the multiple nuclei model was based upon Los Angeles at the beginning of the massive suburban exodus that would become dominant in North American cities.

Exercise: Slums

Slums are areas within or adjacent to an urban center

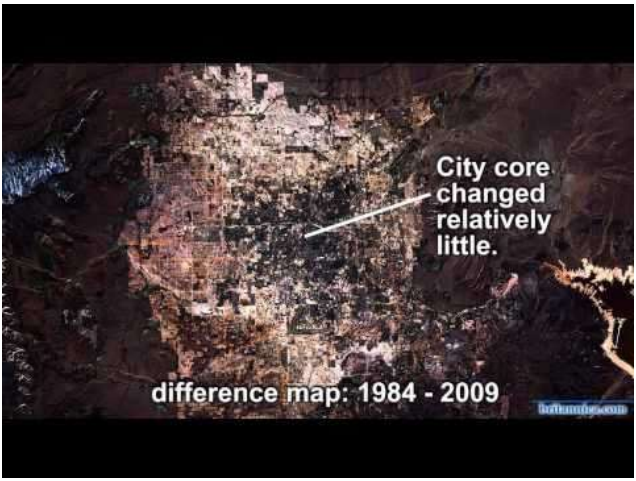
occupied by people with no-very low income who live in precarious infrastructure vulnerable to damage or collapse from heavy winds, rains, mudslides, and other hazards. Structures in slums are often not hooked up to public services like running water or electricity. People living in slums often participate in the **informal economy**, which is comprised of jobs without benefits nor subject to labor laws and minimum wages. See below for more information.

- Slums in Latin America are called **favelas** (Brazil) and **barrios** (Venezuela). Check out this video about favela tourism. *What's YOUR take on favela tourism? Who does it benefit, at whose expense, and who does it harm?*
- Makoko is a floating slum in Lagos, Nigeria. *Why is there an effort to map Makoko? What opportunities and/or risks come with being mapped?*

Suburbanization

Between the urban core and the rural hinterland, serving as a kind of buffer and transition zone between the two, are **suburbs** or **suburban spaces**. The suburbs are primarily residential but also have public services like schools and businesses people need to rely on to go about their daily lives. Plenty of people live and work in the suburbs, but commuting to work in or nearer the urban center and living in the suburbs is the predominant pattern. **Sprawl** refers to the expansion of suburbs without a population to match; in other words, infrastructure is built, electrical lines are put up,

but the space is not yet occupied with people. If you have ever driven through a neighborhood with brand new houses, usually looking pretty similar to each other (having **standardized** housing allows for it to go up quickly and can be cheaper to purchase) but only a handful seem to be occupied, you've likely witnessed sprawl. An obvious critique of sprawling suburbs is the extreme consumption of land through this development pattern. Regions with modest or even negative population growth are still growing in terms of the footprint of development; a process which often destroys natural landscapes like forests and wetlands, and working landscapes like farms. The **wildland-urban interface** (WUI) refers to where human settlement meets unsettled and undeveloped spaces. Research shows that that expansion of settlement into the WUI, which provides residents with a beautiful residential setting, intermingled with more or less in-tact natural surroundings, increases risk for wildfire exposure because settlement is encroaching in "wild" spaces that experience natural fires. Another geographical critique of sprawl is that this development pattern often lacks a **sense of place**, or a uniqueness of feeling people attach to place. **Remote sensing** helps assess and measure sprawl, as evidenced in the video below.



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The 1950s and 1960s in the United States are classically considered major periods of suburban development. This was in part due to changes in transportation which made it possible to more easily commute in and out of the city center, the culture of consumerism, and also because it was during the post-war era when families were reunited and expanding, and the government had programs incentivizing the construction and selling of houses for veterans. The creation of the Interstate system in particular changed the paradigm of commuting over long distances. Interstates not only connected major cities to each other, but cut through many cities themselves. As a result, suburbanites could live dozens of miles from the center of the city, but still commute via personal automobile in a reasonable time frame.

One such effort can be seen in Levittown, a planned community in Pennsylvania which had cookie-cutter houses specifically built

for veterans. The video below shows historical footage of a house going up in a day in Levittown. What the video leaves out is the fact that this particular suburban project, and many others, contributed to **residential segregation**, a relic with which suburban spaces of today have to contend and reverse. During the early days of suburbanization, only those that could afford home and auto ownership could live in the suburbs, leading to socioeconomic segregation. While some suburbs maintain this separation of affluence, many suburbs now are places in which those of moderate incomes can live. The link in the grey box above discusses this further.

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Two additional patterns of suburban development are notable. First are new development patterns called **exurbs**. Exurbs are residential, prosperous, but rural areas beyond the suburbs. In the United

States, the Census Bureau defines areas as either urban or rural mostly on the basis of population density. There is no definition for suburbs or exurbs at the federal government level. Generally, most suburbs maintain a high enough population density (roughly 1000 people per square mile or more) that the Census Bureau categorizes them as 'urban'. But, there are large swaths of land within commuting distance of cities that are defined as rural; in fact, the majority of land inside metropolitan areas is actually rural. This does not mean agricultural, however; there are many that live lifestyles quite connected to the nearby urban core but live in low population regions in the metropolitan area. These areas are the exurbs and the people are **exurbanites**. A major way of distinguishing between exurban areas and what we colloquially think of as rural is to understand the development pattern and the people occupying the space. Exurbs are generally affluent, shown by statistics on income levels or observing the large footprints of houses. Exurbanites are largely still connected to urban living via commuting and culture.

A second pattern is that of **edge cities**. Edge cities are new concentrations of business, retail, and residences outside of the urban core. They are so named edge cities as they are located on the edge of the traditionally denser development of a major city, but edge cities themselves are starting to be centers in their own right. The classic example of an edge city is Tyson's Corner in Northern Virginia. Edge cities are distinguishable from the surrounding suburbia by possessing development density (as viewed through taller buildings) and the presence of service/retail and office employment. However, edge cities do not have the density of 'traditional' urban cores. Other ways in which edge cities are unique compared to traditional cities are that edge cities:

- Are often **unincorporated**, meaning they lack municipal borders and local government
- Tend to have spread out, car-centric development
- Are often sited at the junctions between highways and expressways

Emphasizing the first point above, most edge cities are not legally-defined cities!

Edge cities developed in three waves. First, there was suburbanization of the population. People moved from the urban core into suburban developments. Second, retail suburbanized in new developments called malls. This 'malling of America' brought retail from the urban core to locations closer to the stores' affluent customer base. Third, companies and industry moved to these areas. White collar employers found cheaper land to build headquarters or to otherwise expand their business footprint within the region. As the third point above details, malls and employers tended to concentrate near junctions of large roads, facilitating the personal automobile as the primary means of transportation into these new centers.

Urban systems

Cities are connected, interrelated, and distributed in knowable ways. Cities organize according to an **urban hierarchy**, which how an **urban system** distributes cities on the basis of size and services. Urban settlements are **central places**; places in which goods and services are available for purchase. The more central a place is, more goods and services are available. Goods and services also have a **range**, which is the distance a customer is willing to travel to consume the good or service.

These interrelated concepts were placed together by Walter Christaller in 1933 as **Central Place Theory**. Small settlements like towns, villages, or hamlets have limited centrality and only provide goods and services with shorter range. These places provide for the people in the immediate area, such as those living in the hinterland. Larger settlements provide more goods and services, and some of those goods and services have a larger range, pulling customers from further away. These longer range goods and services may

be those that are more expensive or of infrequent use. The result geographically is an urban system in which there are many smaller-sized places surrounding a few large, somewhat far apart large areas.

You as a reader have likely experienced this concept without knowing the theory behind it! If you are home, and notice that you are out of milk, you are probably going to walk or drive to a shop less than 10 minutes away. Likewise, people do not travel hundreds of miles in order to purchase gasoline for a car. These are goods that have a short range, and therefore we see lots of small settlements, fairly close together, in order to provide people with daily goods. On the other end of the spectrum, major professional sports, operas, and other cultural services are only found, with few exceptions, in the largest of cities. Customers are often willing to travel long spatial and temporal distances for these services. The same pattern is seen when looking at a single good. The types of automobiles available for purchase follow a similar pattern. Small settlements may have used car lots with inexpensive cars. Somewhat larger places will have dealerships for mainline or common makes like Ford and Honda. In even larger/more central places, higher-end brands like BMW and Lexus emerge. And, in only a few major cities are you likely to find the most luxurious brands like Bentley and Lamborghini. One is unlikely to find a Tesla storefront in a tiny village!

Like the geo-economic models outlined above, Central Place Theory depends on assumptions of ideal conditions. If the ground is featureless and ubiquitous, and if transportation is equal in all places, the hierarchy of central places will be hexagonal in shape. The largest cities will be in a hexagonal pattern, with mid-sized cities arranged around each in a hexagon, with smaller cities around each of those in a hexagon, and so on down to the smallest settlements.

The urban hierarchy goes even higher than a region or a country; there are **global cities**. Global cities are cities that are influential in the worldwide economic system. These cities host a

disproportionate amount of the world's most important business, culture, and politics. In other words, these are centers of power that have a strong influence over things that occur around the world. These are often, but not always, the largest cities. In some cases, there are large population cities that do not have a strong global influence; these are common in the Global South or developing world. While global cities are more often discussed for overall economic impact, one can also describe global cities in various economic sectors. For example, Milan is not one of the largest cities, but is globally important as a "fashion capital." The definition for global cities is loose, but commonly cities that have large, important financial sectors are included; think of cities like New York, London, Tokyo, and Shanghai with large stock exchanges.

The largest cities are called **megacities**. These are extremely large cities, typically with 10 million people or greater, that are highly centralized and have the highest population in their state. One can also use the term megaregion as these are metropolitan regions that include developed land both inside and outside the city proper.