

FRQ 1.4: Space & Connections

KEY ISSUE **3****Why Are Different Places Similar?**

- **Scale: Global and Local**
- **Space: Distribution of Features**
- **Space: Cultural Identity**
- **Space: Inequality**
- **Connections: Diffusion**
- **Connections: Spatial Interaction**

LEARNING OUTCOME 1.3.1

Understand global- and local-scale changes in economy and culture.

Geographers recognize that each place or region on Earth is in some ways unique, but they also recognize that human activities are rarely confined to one location. Three basic concepts—scale, space, and connections—help geographers explain why similarities among places and regions result from regularities rather than coincidences.

Scale: Global and Local

Scale was defined at the beginning of the chapter as the relationship between the portion of Earth being studied and Earth as a whole. Geographers are especially concerned with contrasts between the local scale and the global scale.

Scale is an increasingly important concept in geography because of **globalization**, which is a force or process that involves the entire world and results in making something worldwide in scope. Globalization means that the scale of the world is **shrinking**—not literally in size, of course, but in the ability of a person, an object, or an idea to interact with a person, an object, or an idea in another place.

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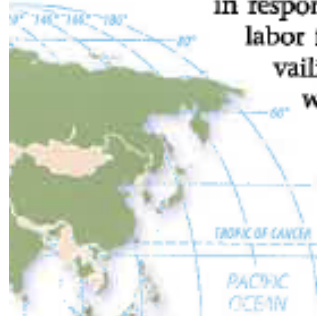
ECONOMIC GLOBALIZATION AND LOCAL DIVERSITY

A few people living in very remote regions of the world may be able to provide all of their daily necessities. But most economic activities undertaken in one region are influenced by interaction with decision makers located elsewhere. The choice of crop is influenced by demand and prices set in markets elsewhere. A factory is located to facilitate bringing in raw materials and shipping out products to the markets.

Globalization of the economy has been led primarily by transnational corporations, sometimes called multinational corporations. A **transnational corporation** conducts research, operates factories, and sells products in many countries, not just where its headquarters and principal shareholders are located. Examples include Procter & Gamble (Figure 1-25) and McDonald's (Figure 1-26).

Every place in the world is part of the global economy, but globalization has led to more specialization at the local level. Each place plays a distinctive role, based on its local assets, as assessed by transnational corporations. A locality may be especially suitable for a transnational corporation to conduct research, to develop new engineering systems, to extract raw materials, to produce parts, to store finished products, to sell them, or to manage operations. In a global economy, transnational corporations remain competitive by correctly identifying the optimal location for each of these activities. Factories are closed in some locations and opened in others.

Changes in production have led to a spatial division of labor, in which a region's workers specialize in particular tasks. Transnationals decide where to produce things in response to characteristics of the local labor force, such as level of skills, prevailing wage rates, and attitudes toward unions. Transnationals may close factories in locations with high wage rates and strong labor unions. Particular production tasks are concentrated in specific geographic areas.



Space: Distribution of Features

LEARNING OUTCOME 1.3.2

Identify the three properties of distribution across space.

Space was defined at the beginning of the chapter as the physical gap or interval between two objects. Geographers observe that many objects are distributed across space in a regular manner, for discernible reasons. Spatial thinking is the most fundamental skill that geographers possess to understand the arrangement of objects across Earth. Geographers think about the arrangement of people and activities found in space and try to understand why those people and activities are distributed across space as they are.

Look around the space you currently occupy—perhaps a classroom or a bedroom. Tables and chairs are arranged regularly, perhaps in a row in a classroom or against a wall at home. The room is located in a building that occupies an organized space—along a street or a side of a quadrangle. Similarly, the community containing the campus or house is part of a system of communities arranged across the country and around the world.

Geographers explain how features such as buildings and communities are arranged across Earth. On Earth as a whole, or within an area of Earth, features may be numerous or scarce, close together or far apart. The arrangement of a feature in space is known as its **distribution**. Geographers identify three main properties of distribution across Earth—density, concentration, and pattern.

DISTRIBUTION PROPERTIES: DENSITY

Density is the frequency with which something occurs in space. The feature being measured could be people, houses, cars, trees, or anything else. The area could be measured in square kilometers, square miles, hectares, acres, or any other unit of area.

Remember that a large number of a feature does not necessarily lead to a high density. Density involves two measures—the number of a feature and the land area. China is the country with the largest number of people—approximately 1.4 billion—but it does not have the world's highest density. The Netherlands, for example, has only 17 million people, but its density of around 500 persons per square kilometer is much higher than China's 140 persons per square kilometer. The reason is that the land area of China is 9.3 million square kilometers, compared to only 42,000 square kilometers for the Netherlands.

High population density is also unrelated to poverty. The Netherlands is one of the world's wealthiest countries and Mali one of the world's poorest. Yet the Netherlands' density of around 500 persons per square kilometer is much larger than Mali's density of 13 persons per square kilometer (see Chapter 2 for more about density).

DISTRIBUTION PROPERTIES: CONCENTRATION

The extent of a feature's spread over space is its **concentration**. If the objects in an area are close together, they are clustered; if relatively far apart, they are dispersed. To compare the level of concentration most clearly, two areas need to have the same number of objects and the same size area.

Geographers use concentration to describe changes in distribution. For example, the distribution of people across the United States is increasingly dispersed. The total number of people living in the United States is growing slowly—less than 1 percent per year—and the land area is essentially unchanged. But the population distribution is changing from relatively clustered in the Northeast to more evenly dispersed across the country.

Concentration is not the same as density. As Figure 1-28 shows, two neighborhoods could have the same density of housing but different concentrations. In a dispersed neighborhood, each house has a large private yard, whereas in a clustered neighborhood, the houses are close together and the open space is shared as a community park.

The distribution of Major League Baseball teams illustrates the difference between density and concentration (Figure 1-29). After remaining unchanged during the first half of the twentieth century, the distribution of Major League Baseball teams changed during the second half of the twentieth century. The Major Leagues expanded from 16 to 30 teams in North America between 1960 and 1998, thus increasing the density. At the same time, 6 of the 16 original teams moved to other locations. In 1952, all the teams were clustered in the northeastern United States, but the moves dispersed several teams to the West Coast and Southeast. These moves, as well as the spaces occupied by the expansion teams, resulted in a more dispersed distribution.

DISTRIBUTION PROPERTIES: PATTERN

The third property of distribution is **pattern**, which is the geometric arrangement of objects in space. Some features are organized in a geometric pattern, whereas others are distributed irregularly. Geographers observe that many objects form a linear distribution, such as the arrangement of houses along a street or stations along a subway line.

Objects are frequently arranged in a square or rectangular pattern. Many American cities contain a regular pattern of streets that intersect at right angles at uniform intervals to form square or rectangular blocks; this is known as a grid pattern. The system of townships, ranges, and sections established by the Land Ordinance of 1785 is another example of a square or grid pattern (Figure 1-30).

Connections: Diffusion

LEARNING OUTCOME 1.3.5

Describe the various ways that features can spread through diffusion.

Connection was defined at the beginning of the chapter as relationships among people and objects that cross the barrier of space. Geographers are concerned with the various means by which connections occur. More rapid connections have reduced the distance across space between places—not literally in miles, of course, but in time.

Connections between cultural groups can have several results:

- **Assimilation** is the process by which a group's cultural features are altered to resemble those of another group. The cultural features of one group may come to dominate the culture of the assimilated group.
- **Acculturation** is the process of changes in culture that result from the meeting of two groups. Changes may be experienced by both of the interacting cultural groups, but the two groups retain two distinct culture features.
- **Syncretism** is the combination of elements of two groups into a new cultural feature. The two cultural groups come together to form a new culture.

DIFFUSION

Diffusion is the process by which a feature spreads across space from one place to another over time. Something originates at a hearth and diffuses from there to other places. A **hearth** is a place from which an innovation originates. Geographers document the locations of nodes and the processes by which diffusion carries things elsewhere over time.

How does a hearth emerge? A cultural group must be willing to try something new and must be able to allocate resources to nurturing the innovation. To develop a hearth, a group of people must also have the technical ability to achieve the desired idea and the economic structures, such as financial institutions, to implement the innovation.

As discussed in subsequent chapters, geographers can trace the dominant cultural, political, and economic features of the contemporary United States and Canada primarily to hearths in Europe and Southwest Asia. Other regions of the world also contain important hearths. In some cases an idea, such as an agricultural practice, may originate independently in more than one hearth. In other cases, hearths may emerge in two regions because two cultural groups modify a shared concept in two different ways.

For a person, an object, or an idea to have interaction with persons, objects, or ideas in other regions, diffusion must occur. Geographers observe two basic types of diffusion—relocation diffusion and expansion diffusion.

RELOCATION DIFFUSION

The spread of an idea through physical movement of people from one place to another is termed **relocation diffusion**. We shall see in Chapter 3 that people migrate for a variety of political, economic, and environmental reasons. When they move, they carry with them their culture, including language, religion, and ethnicity.

The most commonly spoken languages in North and South America are Spanish, English, French, and Portuguese, primarily because several hundred years ago Europeans who spoke those languages comprised the largest number of migrants. Thus these languages spread through relocation diffusion. We will examine the diffusion of languages, religions, and ethnicity in Chapters 5 through 7.

Introduction of a common currency, the euro, in 12 European countries in 2002 gave scientists an unusual opportunity to measure relocation diffusion from hearths (Figure 1-38). Although a single set of paper money was issued, each of the 12 countries minted its own coins in proportion to its share of the region's economy. A country's coins were initially distributed only inside its borders, although the coins could also be used in the other 11 countries. Scientists in France took month-to-month samples to monitor the proportion of coins from each of the other 11 countries. The percentage of coins from a particular country is a measure of the level of relocation diffusion into France.

EXPANSION DIFFUSION

The spread of a feature from one place to another in an additive process is **expansion diffusion**. This expansion may result from one of three processes:

- **Hierarchical diffusion** is the spread of an idea from persons or nodes of authority or power to other persons or places (Figure 1-39). Hierarchical diffusion may result from the spread of ideas from political leaders, socially elite people, or other important persons to others in the community. Innovations may also originate in a particular node or core region of power, such as a large urban center, and diffuse later to isolated rural areas on the periphery. Hip-hop or rap music is an example of an innovation that originated in urban areas, though it diffused from low-income African Americans rather than from socially elite people.
- **Contagious diffusion** is the rapid, widespread diffusion of a characteristic throughout the population. As the term implies, this form of diffusion is analogous to the spread of a contagious disease, such as influenza. Contagious diffusion spreads like a wave among fans in a stadium, without regard for hierarchy and without requiring permanent relocation of people. New music or an idea goes viral because web surfers throughout the world have access to the same material simultaneously (Figure 1-40).

- **Stimulus diffusion** is the spread of an underlying principle even though a characteristic itself apparently fails to diffuse. For example, innovative features of Apple's iPhone and iPad have been adopted by competitors.

Expansion diffusion occurs much more rapidly in the contemporary world than it did in the past. Hierarchical diffusion is encouraged by modern methods of communication, such as computers, texting, blogging, Twitter, and e-mail. Contagious diffusion is encouraged by use of the Internet, especially the World Wide Web. Stimulus diffusion is encouraged by all of the new technologies.

Connections: Spatial Interaction

LEARNING OUTCOME 1.3.6

Explain how places are connected through networks, though inequality can hinder connections.

Interaction takes place through a **network**, which is a chain of communication that connects places. A major airline, for example, typically has a network known as "hub-and-spoke" (Figure 1-41). With a hub-and-spoke network, an airline flies planes from a large number of places into one hub airport within a short period of time and then a short time later sends the planes to another set of places. In principle, travelers originating in relatively small towns can reach a wide variety of destinations by changing planes at the hub airport.

The farther away someone is from another, the less likely the two are to interact. Contact diminishes with increasing distance and eventually disappears. This trailing-off phenomenon is called **distance decay**. In the contemporary world, distance decay is much less severe because connection between places takes much less time. Geographers apply the term **space-time compression** to describe the reduction in the time it takes for something to reach another place (Figure 1-42).

In the past, most connections among cultural groups required the physical movement of settlers, explorers, and plunderers from one location to another. As recently as A.D. 1800, people traveled in the same ways and at about the same speeds as in 1800 B.C.—they were carried by an animal, took a sailboat, or walked.

To be connected with another place in the modern world, we do not need to travel at all. Ideas that originate in a hearth are now able to diffuse rapidly to other areas through communications networks. One example is the TV network (for example, BBC in the United Kingdom, CBC in Canada, NBC in the United States), which comprises a chain of stations simultaneously broadcasting to distant places the same program, such as a football

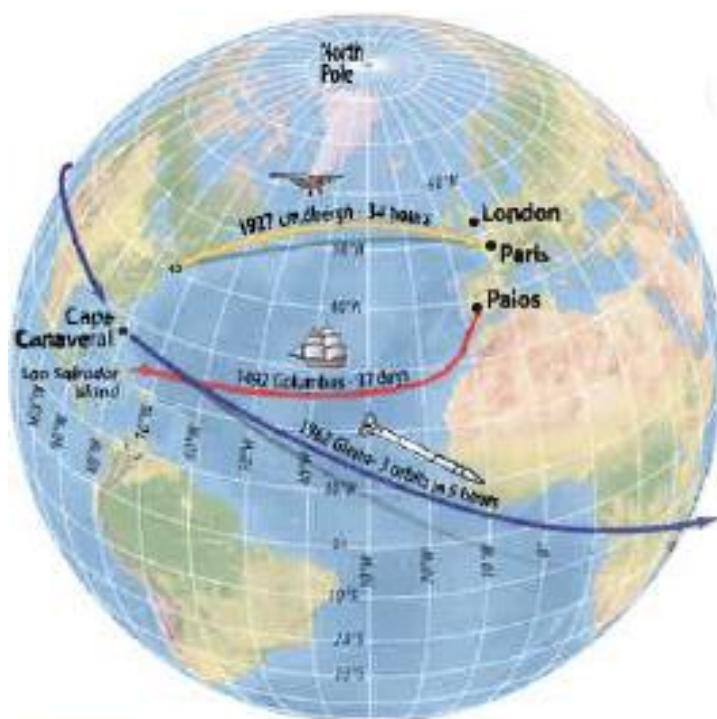


FIGURE 1-42 SPACE-TIME COMPRESSION Transportation improvements have shrunk the world. In 1492, Christopher Columbus took nearly 900 hours (37 days) to sail across the Atlantic Ocean. In 1927, Charles Lindbergh was the first to fly nonstop across the Atlantic, taking 33.5 hours. In 1962, John Glenn, the first American to orbit in space, crossed above the Atlantic in about 1½ hours and circled the globe three times in 5 hours.

game. Through a communications network, diffusion from one place to another is instantaneous in time, even if the physical distance between places—as measured in kilometers or miles—is large.

Computers, tablets, and smart phones make it possible for individuals to set up their own connections through individually constructed networks such as Facebook and Twitter. At the click of a button, we can transmit images and messages from one part of the world to our own personalized network around the world.

Modern networks make it possible for us to know more about what is happening elsewhere in the world, and space-time compression makes it possible for us to know it sooner. Distant places seem less remote and more accessible to us. With better connections between places, we are exposed to a constant barrage of cultural traits and economic initiatives from people in other regions, and perhaps we may adopt some of these cultural and economic elements.

Name: _____

Date: _____

Period: _____

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AP® HUMAN GEOGRAPHY -- SECTION II -- Time—25 minutes --- Percent of total score—100

Directions: You have 25 minutes to answer the free response portion. It is suggested that you take 5 minutes of this time to plan and outline each answer. While a formal essay is not required, it is not enough to answer a question by merely listing facts. Illustrate your answers with substantive geographic examples where appropriate. Be sure to number each of your answers, including individual parts, in this booklet as the questions are numbered below

1. Despite all places being different in many aspects, they often share common characteristics that make them similar. Diffusion is often one of the factors that allows for these connections among places.
 - A. **Explain** the impact of Globalization at the Global and Local level.
 - B. **Identify** and **Define** the three (3) properties of distribution across space.
 - C. **Describe** the three (3) ways features can spread through diffusion.
 - D. **Describe** the difference between Relocation Diffusion and Expansion Diffusion.
 - E. **Explain** how places are connected through networks spatially.