Dragging myself out of bed for a 9:00 A.M. lecture, I decide I need to make a stop at Starbucks. “Grande coffee of the day, please, and leave room for cream.” I rub my eyes and look at the sign to see where my coffee was grown. Kenya. Ironically, I am about to lecture on Kenya’s coffee plantations. Just the wake up call I need.

When I visited Kenya in eastern Africa, I noticed nearly all of the agricultural fields were planted with coffee or tea (Fig. 1.1). I also saw the poor of Kenya, clearly hungry, living in substandard housing. I questioned, “Why do farmers in Kenya grow coffee and tea when they could grow food to feed the hungry?” Through the process of answering this question, I learned a lot about the complexities of globalization. In a globalized world, connections are many and simple answers are few.
Major problems in the world, like hunger, may seem easy to solve. Take the total annual food production in the world, divide it by the world's population, and we have plenty of food for everyone. Yet, one-sixth of the world's population is seriously malnourished. The vast majority of the 1 billion malnourished people on Earth are women and children, who have little money and even less power.

Figure 1.2 reveals the wide range of caloric intake throughout the world. Various agencies monitor this index, but their categories differ, and, in recent years, the urgency of their reporting has diminished. As the map indicates, countries are usually grouped into four ranks ranging from high intake (usually over 3000 calories daily) to very low, or under 2000, but there is no agreement about adequacy. The World Bank regards 2500 calories as adequate, whereas the United Nations uses 2160 as its boundary between adequate and low intake. Such discrepancies (there are others when additional sources are consulted) should raise a caution when you consult Figure 1.2, which is based on data from 2004. The map may effectively portray the global situation by country in general terms. What the map does not reflect is also important: there are nutritional disparities within countries that cannot be shown at this level of scale. For example, diets in western India are superior to those in eastern India; the
Figure 1.2 shows how food consumption is currently distributed—unevenly.\textsuperscript{1}
Comparing Figure 1.2 with Figure 1.3 shows that the wealthier countries also are the best-fed and that Subsaharan Africa (the part of Africa south of the Sahara Desert) is currently in the worst position, with numerous countries in the lowest categories.

Intake in northern parts of Sudan is substantially higher than that in its unstable south. Another factor not shown in Figure 1.2 is dietary balance. With few exceptions, the countries where caloric intake is low are also those where protein is in short supply. Recent studies have indicated that the first six months of life are critical in this respect: inadequate protein intake can damage brain and body for life. Moreover, the food sources that are richest in proteins—meat, fish, and dairy products—are in short supply where they are most needed. It takes food to raise the animals that produce meat, and that food cannot be spared to feed animals when it is needed to sustain the people themselves. And while fish may be obtainable in coastal areas, it becomes less available (and more expensive) in interior Africa and Asia. Thus, even people whose caloric intake is marginally adequate may still be malnourished, and what is often called hidden hunger occurs even in areas mapped as having "adequate calories."
Figure 1.3

The major causes of malnourishment are poverty (inability to pay for food), the failure of food distribution systems, and cultural practices that favor men over women and children. Where food does reach the needy, its price may be unaffordable. Hundreds of millions of people subsist on the equivalent of one dollar a day, and many in the vast shantytowns encircling the world’s cities must pay rent to landlords who own the plots on which their shacks are built. Too little is left for food, and it is the children who suffer most.

Is solving hunger as simple as each country growing enough food to feed its people? Do the best-fed countries have the most arable (farmable) land? Only 4 percent of Norway is arable land, and more than 70 percent of Bangladesh is arable land (Fig. 1.4). Despite this disparity, Norway is wealthy and well fed, whereas Bangladesh is poor and malnourished. Fortunately for the Norwegians,
they are able to overcome their inadequate food production by importing food. Unfortunately for the Bangladeshis, two-thirds of their country is flooded each year during monsoon season, making survival a daily question.

If a poor country has a small proportion of arable land, does that destine its population to a lifetime of malnourishment? It depends on the place. Of all the land classified as arable, some is much more productive than other. For example, only 8 percent of Kenya's land is arable, but the land in the western highlands is some of the most productive agricultural land in the world. Do the Kenyans simply not produce enough food on their lands? Is that what accounts for their malnutrition rate of over 30 percent? No, hunger in Kenya depends much more on what they produce, who owns the land, and how Kenya is tied into the global economy.
The most productive lands of Kenya, those in the western highlands, are owned by foreign coffee and tea corporations. Driving through the open, luxury-crop covered slopes, I saw mostly Kenyan women working the plantations. The lowland plains are dotted by small farms, many of which have been subdivided to the point of making the land unviable. Here, an even higher proportion of the people working the lands are women, but the lands are registered to their husbands or sons because, by law, they cannot own them.

As I drove through the contrasting landscapes, I continued to question whether it would be better for the fertile highlands to carry food crops that could be consumed by the people in Kenya. I drove to the tea processing center and talked to the Kikuyu (manager) and asked him my question. He said that his coun-
try needed foreign income and that apart from tourism, exporting coffee and tea was the main opportunity for foreign income.

As part of the global world-economy, Kenya suffers from the complexities of globalization. With foreign corporations owning Kenya's best lands, a globalized economy that thrives on foreign income, tiny farms that are unproductive, and a gendered legal system that disenfranchises the agricultural labor force and disempowers the caregivers of the country's children, Kenya has multiple factors contributing to the poverty and malnutrition in the country.

To solve one of these problems raises another. If Kenyans converted the richest lands to cash crop production, how would the poor people be able to afford the crops? What would happen to the rest of Kenya's economy and the government itself
if it lost the export revenue from tea and coffee? If Kenya lost its export revenue, how could the country pay loans it owes to global financial and development institutions?

Each of these questions requires its own path of geographic inquiry to answer. Geographers have a long tradition of fieldwork: they go out in the field and see what people are doing, and they observe how people's actions and reactions vary across space. We, the authors, have countless field experiences, and we will share these with you in order to illustrate that global processes have unique outcomes in different places.

Solving major global problems such as hunger or AIDS is complicated in our interconnected world. Each solution has its own ramifications not only in one place, but also across regions, nations, and the world. Our goals in this book are to help you see the multitude of interconnections in our world, to help you recognize the patterns of human geographic phenomena, to help you understand the uniqueness of place, and to teach you to ask and answer your own geographic questions about this world we call home.

**Key Questions For Chapter 1**

1. What is human geography?
2. What are geographic questions?
3. Why do geographers use maps, and what do maps tell us?
4. Why are geographers concerned with scale and connectedness?
5. What are geographic concepts, and how are they used in answering geographic questions?

**WHAT IS HUMAN GEOGRAPHY?**

Human geographers study people and places. The field of human geography focuses on how people make places, how we organize space and society, how we interact with each other in places and across space, and how we make sense of others and ourselves in our locality, region, and world.

Advances in communication and transportation technologies are making places and people more interconnected. Only 100 years ago, the fastest modes of transportation were the steamship, the railroad, and the horse and buggy. Today, we can cross the globe in record time, with easy access to automobiles, airplanes, and ships. Aspects of popular culture, such as fashion and architecture, are making many people and places look more alike. Despite all these changes encouraging us to be more alike, our world still encompasses a multitude of ways in which people identify themselves and others. The world still consists of a jigsaw of countries, a collage of religions, a Babel of thousands of languages, and a hodgepodge of settlement types, with each of these elements constantly in flux and each influencing the others. All of these human attributes come together in different ways around the globe to create a world of endlessly diverse places and people. Understanding and explaining this diversity is the mission of human geography.

The word “globalization” is all around us. To make sense of this phenomenon, we first need to define it. Globalization is a set of processes that are increasing interactions, deepening relationships, and heightening interdependence without regard to country borders. It is also a set of outcomes that are felt from these global processes—outcomes that are unevenly distributed and differently manifested across the world.

All too often, discussions of globalization focus on the pull between global—seen as a blanket covering the world—and local—seen as a continuation of the traditional despite the blanket of globalization. Geographers are in a place to understand globalization as much more than this. When geographers look at the outcomes of globalization as being distributed unevenly, they are not
only talking about the local. Geographers use scale to understand the interrelationships among local, regional, national, and global. What happens at the global scale affects the local, but it also affects the regional and national, and similarly the processes at these scales impact the global. To reduce the world to local and global is to miss much. In this book, we study globalization, and we use scale to understand the effects of globalization and the things that shape globalization (see the discussion of scale later in this chapter).

Globalizing processes occur at the world scale; these processes disregard country borders and include global financial markets or even global environmental change. However, the processes of globalization do not magically appear at the global scale: what happens at other scales (local, regional, national) helps create the process of globalization and shape the outcomes of globalization. For example, the global media players like Time-Warner and Viacom work mainly in global cities (the local scale) to create global processes of media production and flows.

Some argue that understanding globalization is critical to understanding the world today, whereas others maintain that globalization is overhyped. As geographers Ron Johnston, Peter Taylor, and Michael Watts explain, “Whatever your opinion may be, any intellectual engagement with social change in the twenty-first century has to address this concept seriously, and assess its capacity to explain the world we currently inhabit.” We integrate the concept of globalization into this textbook because processes at the global scale and processes that disregard country borders are clearly changing human geography. At the same time, as we travel the world and continue to engage in fieldwork and research, we are constantly reminded how different places and people are—processes at the local, regional, and national scales continue to change human geography and shape globalization.

No place on Earth is untouched by people. As people explore, travel, migrate, interact, play, live, and work, they make places. People organize themselves into communities, nations, and broader societal networks, establishing political, economic, religious, linguistic, and cultural systems that enable them to function in space. People adapt to, alter, manipulate, and cope with their physical geographic environment. No environment stands apart from human action. Each place we see is affected by and created by people, and each place reflects the culture of the people in that place over time.

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**WHAT ARE GEOGRAPHIC QUESTIONS?**

Geographers study human phenomena such as language, religion, and identity, and they also study physical phenomena, such as landforms, climate, and environmental change. Geographers also examine the interactions between humans and environment. Human geography is the study of human phenomena on Earth, and physical geography is the study of physical phenomena on Earth. Geographers are trained in studying both the human and physical worlds, but most focus on one more than the other. We ask similar questions but focus on different phenomena.

Geographer Marvin Mikesell defined geography in shorthand as the “why of where.” Why and how do things come together in certain places to produce particular outcomes? Why are some things found in certain places but not in others? To what extent do things in one place influence those in other places? To these questions, we add “so what?” Why does it matter that things are different across space? What role does a place play in its region and in the world, and what does that mean for the people? Questions such as these are at the core of geographic inquiry—whether human or physical—and they are of critical importance in any effort to make sense of our world.

If geography deals with so many aspects of our world, ranging from people and places to coastlines and climates, what do the various facets of this wide-ranging discipline have in common? The answer lies in a term that both human and physical geographers use: spatial. Whether they are human geographers or physical geographers, virtually all geographers are interested in the spatial arrangement of places and phenomena, how they are laid out, organized, and arranged on the Earth, and how they appear on the landscape.

Mapping the spatial distribution of a phenomenon is typically the first step to understanding it. By looking at a map of how something is distributed across space, a geographer can raise questions about how the arrangement came about, what processes created and sustain the particular pattern of the distribution, and what relationships exist between different places and things.

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**THINKING GEOGRAPHICALLY**

Imagine and describe the most remote place on Earth you can think of 100 years ago. Now, describe how globalization has changed this place and how the people there continue to shape it—to make it the place it is today.

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**Maps in the Time of Cholera Pandemics**

In medical geography, mapping the distribution of a disease is the first step to finding its cause. In 1854, Dr.

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Snow, a noted anesthesiologist in London, mapped cases of cholera in London's Soho District. Cholera is a term used to denote a set of diseases in which diarrhea and dehydration are the chief symptoms.

Cholera is an ancient disease and was confined to India until the beginning of the nineteenth century. In 1816 it spread to China, Japan, East Africa, and Mediterranean Europe in the first of several pandemics, a worldwide outbreak of the disease. This initial wave abated by 1823, but by then the very name cholera was feared throughout the world, for it had killed people everywhere by the hundreds, even thousands. Death was horribly convulsive and would come in a matter of days, perhaps a week, and no one knew what caused the disease or how to avoid it.

Soon a second cholera pandemic struck. It lasted from 1826 to 1837, when cholera crossed the Atlantic and attacked North America. During the third pandemic, from 1842 to 1862, England was severely hit, and cholera again spread into North America.

When the pandemic that began in 1842 reached England in the 1850s, cholera swept through the Soho District of London. Dr. Snow mapped the Soho District, marking all the area's water pumps—from which people got their water supply for home use—with a P and marking the residence of each person who died from cholera with a dot (Fig. 1.5). Approximately 500 deaths occurred in Soho, and as the map took shape, Snow noticed that an especially large number of those deaths clustered around the water pump on Broad Street. At the doctor's request, city authorities removed the handle from the Broad Street pump, making it impossible to draw water there. The result was dramatic: almost immediately the number of reported new cases fell to nearly zero. Snow's theory about the role of water in the spread of cholera was confirmed.

Dr. Snow and his colleagues advised people to boil their water, but it would be a long time before his advice reached all those who needed to know, and in any case many people simply did not have the ability to do so.

Cholera has not been defeated completely, however, and in some ways the risks have been rising in recent years rather than falling (Fig. 1.6). In the teeming shantytowns of the growing cities of the developing world, and in the refugee camps of Africa and Asia, cholera remains a threat. Until the 1990s, major outbreaks remained few and limited (after remaining cholera-free for a half century, Europe had its first reappearance of cholera in Naples in 1972), and Africa reported most cases. But an outbreak in the slums of Lima, Peru, in December 1990 became a fast-spreading epidemic (regional outbreak of a disease) that, though confined to the Americas, touched every country in the hemisphere, infected more than 1 million people, and killed over 10,000.

Hygiene prevents cholera, but contaminated water abounds in much of the tropical world's cities. A cholera vaccine exists, but it remains effective for only six months, and it is costly. Dr. Snow achieved a victory through the application of geographical reasoning, but the war against cholera is not yet won.

The fruits of geographical inquiry were life-saving in this case, but they typically go further in life-understanding. Geographers want to understand why people do different things in different places and how the relationship between people and the physical world varies across space.

The Spatial Perspective

Geography, and being geographically literate, is much more than memorizing places on a map. In this sense, the disciplines of geography and history have much in common. History is not merely memorizing dates. To understand history is to appreciate how events, circumstances, and ideas came together at particular times to produce certain outcomes. Knowledge of how events have developed over time is thought to be critical to understanding who we are and where we are going.
Understanding change over time is critically important, and understanding change across space is equally as important. The great German philosopher Immanuel Kant argued that we need disciplines focused not only on particular phenomena (such as economics and sociology), but also on the perspectives of time (history) and space (geography). The disciplines of history and geography have intellectual cores defined by perspective rather than by subject matter.

Human geographers use a spatial perspective as they study a multitude of phenomena ranging from political elections and urban shantytowns to gay neighborhoods and folk music. To bring together the many subfields of human geography and to explain to nongeographers what geographers do, four major geographical organizations in the United States came together in the 1980s and formed the Geography Educational National Implementation Project. The National Geographic Society published their findings in 1986, introducing the five themes of geography. The five themes are derived from the spatial perspective of geography.

The Five Themes
The first theme, location, highlights how the geographical position of people and things on the Earth’s surface affects what happens and why. A concern with location underlies almost all geographical work, for location helps to establish the context within which events and processes are situated.

Some geographers develop elaborate (often quantitative) models describing the locational properties of particular phenomena—even predicting where things are likely to occur. Such undertakings have fostered an interest in location theory, an element of contemporary human geography that seeks answers to a wide range of questions—some of them theoretical, others highly practical. Why are villages, towns, and cities spaced the way they are? A geographer versed in location theory might conclude where a Super Target should be built (downtown or in a suburb), given the current neighborhoods and new developments, the median income of the people, the locations of other shopping areas, and the existing and future road system. Similarly, a geographer could determine the best location for a wildlife refuge, given existing wildlife habitats and migration patterns, human settlement patterns, and road networks.

A spatial perspective invites consideration of the relationship among phenomena in individual places—including the relationship between humans and the physical world. Thus, the second of the five themes concerns human–environment interactions. Why did the Army Corps of Engineers alter Florida’s physical environment so drastically when they drained part of the Everglades? Have the changes in Florida’s environment created an easier path of destruction for hurricanes? Why is the Army Corps of Engineers again changing the course of the Kissimmee River, and what does that mean for farmers around the river and residential developments in the south of Florida? Geographers study the reciprocal relationship between humans and environments.

The third theme of geography is the region. Phenomena are not evenly distributed on the surface of the Earth. Instead, features tend to be concentrated in particular areas, which we call regions. Geographers use fieldwork, quantitative, and qualitative methods to develop insightful descriptions of different regions of the world. Novelist James Michener once wrote that whenever he started writing a new book, he first prepared himself by turning to books written by regional geographers about the area where the action was to occur.

The fourth theme is represented by the seemingly simple word place. All places on the surface of the Earth have unique human and physical characteristics, and one of the purposes of geography is to study the special character and meaning of places. People develop a sense of place by infusing a place with meaning and emotion, by remembering important events that occurred in a place, or by labeling a place with a certain character. Because we experience and give meaning to places, we can have a feeling of “home,” when we are in a certain place.

We also develop perceptions of places we have never been through, books, movies, stories, and pictures. Geographers Peter Gould and Rodney White asked college students in California and Pennsylvania: “If you could move to any place of your choice, without any of the usual financial and other obstacles, where would you like to live?” Their responses showed a strong bias for their home region and revealed that students from both regions had negative perceptions of the South, Appalachia, the Great Plains, and Utah (Fig. 1.7).

The fifth theme, movement, refers to the mobility of people, goods, and ideas across the surface of the planet. Movement is an expression of the interconnectedness of places. Spatial interaction between places depends on the distances among places, the accessibility of places, and the transportation and communication connectivity among places. Interactions of many kinds shape the human geography of the world, and understanding these interactions is an important aspect of the global spatial order.

Cultural Landscape
In addition to the five themes—location, human–environment, region, place, and movement—landscape
is a core element of geography. Geographers use the term landscape to refer to the material character of a place, the complex of natural features, human structures, and other tangible objects that give a place a particular form. Human geographers are particularly concerned with the cultural landscape, the visible imprint of human activity on the landscape. The geographer whose name is most closely identified with this concept is former University of California at Berkeley professor Carl Sauer. In 1927, Sauer wrote an article entitled “Recent Developments in Cultural Geography,” in which he argued cultural landscapes are comprised of the “forms superimposed on the physical landscape” by human activity.

Any cultural landscape has layers of imprints from years of human activity. As successive occupants arrive, they bring their own technological and cultural traditions—and transform the landscape accordingly. Yet successive occupants can also be influenced by what they find when they arrive—and leave some of it in place. In 1929, Derwent Whittlesey proposed the term sequent occupancy to refer to such cultural succession and its lasting imprint.

The Tanzanian city of Dar es Salaam provides an interesting urban example of sequent occupancy. Arabs from Zanzibar first chose the African site in 1866 as a summer retreat. Next, German colonizers imprinted a
new layout and architectural style (wood-beamed Teutonic) when they chose the city as the center of their East African domain in 1891. After World War I, when the Germans were ousted, a British administration took over the city and began yet another period of transformation. The British encouraged immigration from their colony in India to Tanzania. The new migrant Asian population created a zone of three and four-story apartment houses, which look as if they were transplanted from Bombay (Fig. 1.8 left and right). Then, in the early 1960s, Dar es Salaam became the capital of newly independent Tanzania. Thus, the city experienced four stages of cultural dominance in less than one century, and each stage of the sequence remains imprinted in the cultural landscape.

The cultural landscape can be seen as a kind of text offering clues into the cultural practices and priorities of its various occupiers. As geographer Peirce Lewis explained in *Axioms for Reading the Landscape* (1979), “Our human landscape is our unwitting autobiography, reflecting our tastes, our values, our aspirations, and even our fears, in tangible, visible form.” Like Whittlesey, Lewis recommended looking for layers of history in cultural landscapes, adding that most major changes in the cultural landscape occur after a major event—a war, an invention, an economic depression.
Figure 1.7

THINKING GEOGRAPHICALLY

Geographers who practice fieldwork keep their eyes open to the world around them and through practice become adept at reading cultural landscapes. Take a walk around your campus or town and try reading the cultural landscape. Choose one thing in the landscape and ask yourself, "what is that and why is it there?" Take the time to find out the answers!

WHY DO GEOGRAPHERS USE MAPS, AND WHAT DO MAPS TELL US?

Maps are an incredibly powerful geographic tool, and cartography, the art and science of making maps, is as old as geography itself. (For details on cartography, see Appendix A at the end of this book.) Maps are used for countless purposes—to wage war, make political propaganda, solve medical problems, locate shopping centers, bring relief to refugees, and warn of natural hazards. Reference maps show locations of places and geographic features. Thematic maps tell stories, typically showing the degree of some attribute or the movement of a geographic phenomenon.

Reference maps focus on accuracy in showing the absolute locations of places, locations determined by a frame of reference, typically latitude and longitude. The absolute location of Chicago is 41 degrees, 53 minutes North Latitude and 87 degrees, 38 minutes West Longitude. Comparing coordinates of absolute locations helps us calculate distances between places. The establishment of satellite-based global positioning system (GPS) allows us to locate things on the surface of the Earth with extraordinary accuracy. Researchers can collect data quickly and easily in the field, and reasonably priced GPS units are encouraging hikers to try geocaching (a hunt for a cache whose coordinates are placed on the Internet by other geocachers).
all over the world. Often, new cars are equipped with GPS units and dashboard map displays to help commuters navigate traffic and travelers find their way.

Relative location describes a place in relation to other human and physical features. Descriptors such as “Chicago is on Lake Michigan, south of Milwaukee” or “Chicago is located where the cross-country railroads met in the 1800s” or “Chicago is the hub of the corn and soybean markets in the Midwest” are all descriptors of Chicago relative to other features. In the southern Wisconsin, northern Illinois, and western Indiana region, all roads lead to Chicago (Fig. 1.9). Within this region, people define much of their lives relative to Chicago because of the tight interconnectedness between Chicago and the region.

Absolute locations do not change, but relative locations are constantly modified and change over time. Fredericksburg, Virginia is located halfway between Washington, D.C. and Richmond, Virginia. Today, it is a suburb of Washington, D.C., with commuter trains, van pools, buses, and cars moving commuters between their homes in Fredericksburg and their workplaces in metropolitan Washington, D.C. During the Civil War, several bloody battles took place in Fredericksburg as the North and South fought over the land halfway between their wartime capitals. The absolute location of Fredericksburg has not changed, but its place in the world around it, its relative location, certainly has.

Mental Maps
We all carry maps in our minds of places we have been and places we have merely heard of; these are called mental maps. Even if you have never been to the Great Plains of the United States, you may have studied wall maps and atlases or come across the region in books, magazines, and newspapers frequently enough to envision the States of the region (North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, and Texas) in your mind.

Regardless of the accuracy of our mental maps, we use them constantly. Our mental maps of the places
Figures 1.8, left and right
Mumbai, India (left) and Dar-es-Salaam, Tanzania (right). Apartment buildings throughout Mumbai (formerly Bombay), India are typically four stories with balconies. In Dar-es-Salaam, Tanzania, this four-story walkup with its laundry and other household items festooned on balconies and in doorways (right) stands where single-family African dwellings once stood, reflecting the sequential occupancy of the city. © Jessica Foster, University of Illinois at Chicago (left) and Mark Carlson (right).

within our activity spaces, those places we travel to routinely in our rounds of daily activity, are more accurate and detailed than places we have never been. If your friend calls and asks you to meet her at the movie theater you go to all the time, your mental map will engage automatically. You will envision the hallway, the front door, the walk to your car, the lane to choose in order to be prepared for the left turn you must make, where you will park your car, and your path into the theater and up to the popcorn stand.

Geographers who study human-environment behavior have made extensive studies of how people develop their mental maps. The earliest humans, who were nomadic, had incredibly accurate mental maps of where to find food and seek shelter. Today, people need mental maps to find their way through the concrete jungles of cities and suburbs.

Geographers have studied the mental map formation of children, the blind, new residents to cities, men, and women, all of whom exhibit differences in the formation of mental maps. Women, for example, tend to use landmarks to learn new places, whereas men tend to use paths to learn new places. Activity spaces vary by age, and the extent of peoples’ mental maps depends in part on their ages. Mental maps include terra incognita, unknown lands that are off-limits. If your path to the movie theater includes driving past a school that you do not go to, your map on paper will likely label the school, but no details will be shown regarding the place. However, if you have access to the school and you are instead drawing a mental map of how to get to the school’s cafeteria, your mental map of the school will be quite detailed. Thus, mental maps reflect a person’s activity space, what is accessible to the person in his or her rounds of daily activity and what is not.

Generalization in Maps

All maps simplify the world. A reference map of the world cannot show every place in the world, and a thematic map of tornadoes in the Great Plains cannot pinpoint every tornado and its precise path. When mapping data, whether human or physical, cartographers, the geographers who make maps, generalize the information they present on maps. Many of the maps in this book are thematic maps of the world. Shadings show how much or how little of some phenomena can be found on a part of the Earth’s surface.

The map of world precipitation (Fig. 1.10) is a generalized map of mean annual precipitation received around the world. The areas shaded in the most vibrant green are places that receive the most rain, and those shaded in orange receive the least rain on average. Tracing
the green areas with your eye, you will note the importance of the Atlantic Ocean in global precipitation. Except for South Asia and Southeast Asia, the moistest areas of the world lie clustered against Atlantic shores, from water-warmed Western Europe to Amazonian South America and from the southeastern United States to West and Equatorial Africa. These regions owe most of their annual water supply to the Atlantic Ocean, whose slowly circulating waters bring warmth and moisture to areas from Britain to Brazil. Even the peaks of the Andes Mountains in western South America and the densely populated highlands of eastern Africa get most of their snow and rain not from the neighboring Pacific and Indian oceans but from the faraway Atlantic.

Remote Sensing and GIS

Precipitation data are an average, based on field observations and weather stations scattered across the world. The environment is not stable over time. Often, a geographer would rather have data for a certain range of weeks than an average over many years. To understand the scope and rate of environmental change over short and long time periods, geographers monitor the Earth's surface from a distance using remote sensing. Remotely sensed data are collected by satellites and aircraft (airplanes, balloons) and are almost instantaneously available. After a major weather event, such as the 1993 floods in the Mississippi River Valley or the unprecedented hurricane season in the Gulf of Mexico in 2005, remotely sensed data show us the major areas of impact (Fig. 1.11). A remotely sensed image highlights the eye of a hurricane, and photos taken on the ground show the impact and destruction (Fig. 1.12).

Advances in computer technology and data storage, increasing accessibility to locationally based data and GPS technology, and software corporations that tailor products to specific uses have all driven incredible advances in geographic information systems (GIS) over the last two decades. Geographers use GIS to compare a variety of spatial data by combining layers of spatial data in a computerized environment, creating maps in which patterns
and processes are superimposed (Fig. 1.13). Geographers also use GIS to analyze data—in the process creating new insights into geographic patterns and relationships.

Geographers use GIS for applications in both human and physical geographic research. For example, political geographers use GIS to map layers showing voters, their party registration, their race, their likelihood of voting, and their income along with other layers of data, in order to determine how to draw voting districts in congressional and state legislative elections. In this case, a geographer can draw a line around a group of people and ask the computer program to tally how many voters are inside the region, what the racial composition is of the district, and how many of the current political representatives live within the new district's boundaries.

Geographers trained in GIS apply the software technologies in countless fields today. Students who earn undergraduate degrees in geography are employed by software companies, government agencies, and businesses to use GIS in surveying wildlife, mapping soils, analyzing natural disasters, following diseases, assisting first responders, planning cities, plotting transportation improvements, and tracking weather systems. For example, a group of geographers working for one GIS company tailor the GIS software to serve the branches of the military and the defense intelligence community. The vast amounts
of intelligence data gathered by the various intelligence agencies can be integrated into a GIS and then analyzed spatially. Geographers working in the defense intelligence community can use GIS to query a vast amount of intelligence, interpret spatial data, and make recommendations on issues of homeland security and defense.

A new term of art in geography is GISc. Geographic information science (GISc) is an emerging research field concerned with studying the development and use of geospatial concepts and techniques to examine geographic patterns and processes. Your school may have a program in GISc that draws across disciplines, bringing together the computer scientists who write the programs to map the world and data about it, the engineers who create sensors that gather data about the Earth, and the geographers who combine layers of data and interpret them to make sense of our world.

THINKING GEOGRAPHICALLY

Give a friend or family member a blank piece of paper. Ask the person to draw a detailed map of how he or she gets from home to the place where most of his or her weekdays are spent (work, school). Note the age of the person and the
length of time he or she has lived in the place and traveled the route. Analyze the map for terra incognita, landmarks, paths, and accessibility. What does the map reveal about the person’s lifestyle and activity space?

**WHY ARE GEOGRAPHERS CONCERNED WITH SCALE AND CONNECTEDNESS?**

Geographers study places and patterns at a variety of scales, including local, regional, national, and global. Scale has two meanings in geography: the first is the distance on a map compared to the distance on the Earth, and the second is the territorial extent of something. Throughout the book, when we refer to scale we are using the second of these definitions. As geographers, the scale of our research or analysis matters because we can make different observations at different scales. We can study a single phenomenon across different scales in order to see how what is happening at the global scale affects localities and how what is happening at a local scale affects the globe. Geographers recognize that phenomena, whether human or physical, happen in a context and that the context looks different at different scales.

The scale at which we study a geographic phenomenon tells us what level of detail we can expect to see. We
also see different patterns at different scales. For example, when we study the distribution of wealth at the scale of the globe (see Fig. 1.3), we see the countries in Western Europe, Canada, the United States, Japan, and Australia are the wealthiest, and the countries of Subsaharan Africa and Southeast Asia are the poorest. Does that mean everyone in the United States is wealthy and everyone in Indonesia is poor? Certainly not, but on a global-scale map of states, that is how the data appear.

When you shift scales to North America and examine the data for States of the United States and the provinces of Canada (Fig. 1.14), you see that the wealthiest areas are on the coasts, and the poorest are in the interior and in the extreme northeast and south. Shifting scales again to just one city, for example, metropolitan Washington, D.C. (Fig. 1.15), you observe that suburbs west, northwest, and southwest of the city show the greatest wealth, and suburbs east and southeast have lower income levels. In the city itself, a clear dichotomy of wealth divides the northwest neighborhoods from the rest of the city.

Because the level of detail and the patterns observed change according to scale, geographers must be sensitive to their scale of analysis and also be wary of researchers who make generalizations about a people or a place at a particular scale without considering other scales of analysis.

Geographers’ concern with scale goes beyond an interest in the scale of individual phenomena to a concern with how processes operating at different scales influence one another. If you want to understand the conflict between the Tutsi and the Hutu people in Rwanda, for example, you cannot look solely at this African country. The Rwandan conflict is influenced by developments at a variety of different scales, including patterns of migration and interaction in Central Africa, the economic and political relations between Rwanda and parts of Europe, and the variable impacts of globalization—economic, political, and cultural.

Geographers are also interested in how people use scale politically. Local political movements, like the Zapatistas in southern Mexico, have learned to rescale their actions—to involve players at other scales and create a global outcry of support for their position. By taking their political campaign from the local scale to the national scale through their protests against the North American Free Trade Agreement (NAFTA), and then effectively using the Internet to wage a global campaign, the Zapatistas gained attention from the world media, a feat few local political movements achieve.

Geographer Victoria Lawson uses the term jumping scale to describe rescaling. She compares how Western countries, multinational corporations, and the World Trade Organization all take products and ideas created in
Western places and by Western corporations and globalize all rights to profits from them through intellectual property law. Efforts to push European and American views of intellectual property on the globe negate other local and regional views of products and ideas. To the West, rice is a product that can be owned, privatized, and commodified. To East Asians, rice is part of their culture, and new rice strains and new ideas about growing rice help build community rather than profit. Lawson explains that taking a single regional view and jumping scale to globalize it legitimates that view and negates other regional and local views.

Regions

Geographers often divide the world into regions for analysis. Many colleges offer a course in world regional geography that compares and contrasts major regions of the world. In this book, we use examples from every region of the world, but our focus throughout is on human geography. Nongeographers use some form of the regional idea all the time, even in everyday conversation. When you plan a vacation in the Rockies, or a hiking trip in New England, or a cruise in the Caribbean, you are using regional notions to convey what you have in mind. Used this way, regions serve as informal frames of reference.

In geography, a region constitutes an area that shares similar characteristics. To identify and delimit regions, we must establish criteria for them. Imagine that, as an exercise in physical geography, you were asked to delimit the Amazon River Basin as a geographic region. You could do this in various ways: you might use vegetation distribution, soil properties, slope angles, or drainage patterns. If
you were to present your results, you would first state the basis on which you had mapped the region and then produce the resulting map. Your map might resemble Figure 1.16, which uses drainage lines to define the Amazon Basin on the basis of the rivers and tributaries that ultimately drain into this great South American river.

Not all regions are of the same type; some are marked by visible uniformity. For example, a desert basin is marked by severe aridity, sandy surface, and steep surrounding mountain slopes. Geographers refer to such an area as a formal region. In addition to being defined by physical criteria, formal regions can be defined by cultural traits. Within a formal cultural region, the people share one or more cultural traits. For example, the region of Europe where French is spoken by, say, 90 percent or more of the population, can be thought of as a formal region. When the scale of analysis shifts, the formal region changes. If we shift scales to the world, the French-speaking formal region expands beyond France into former French colonies of Africa and into the overseas departments that are still associated politically with France.
A functional region, on the other hand, is the product of interactions, of movement of various kinds. A city, for example, has a surrounding region within which workers commute, either to the downtown area or to subsidiary centers such as office parks and shopping malls. That entire urban area, defined by people moving toward and within it, is a functional region. Thus a functional region is a spatial system; its boundaries are defined by the limits of that system. Functional regions are not necessarily culturally homogeneous; instead, the people within the region function together politically, socially, or economically.

Finally, regions may be primarily in the minds of people. These perceptual regions are not just curiosities. How people think about regions has influenced everything from daily activity patterns to large-scale interna-
tional conflict. **Perceptual regions** are intellectual constructs designed to help us understand the nature and distribution of phenomena in human geography. Geographers do not agree entirely on their properties, but we do concur that we all have impressions and images of various regions and cultures. These perceptions are based on our accumulated knowledge about such regions and cultures. The natural environment, too, is part of this inventory. Think of Swiss culture, and the image of a single Alpine environment may come to mind, even though Swiss culture is divided into several distinct regions by language, religion, and tradition, and the majority of Swiss citizens today do not live in such environments.

Although we can easily explain in general terms how we perceive a culture region, it is much more difficult to put our impressions on a map. For example, consider the Mid-Atlantic region. Weather forecasters refer to the “Mid-Atlantic area” or the “Mid-Atlantic States” as they divide their maps into manageable pieces. But where is this Mid-Atlantic region? If Maryland and Delaware are part of it, then eastern Pennsylvania is, too. But where across Pennsylvania lies the boundary of this partly cultural, partly physical region, and on what basis can it be drawn? There is no single best answer (Fig. 1.17).

Major news events help us create our perceptual regions by defining certain countries or areas of countries as part of a region. Before September 11, 2001, we all had perceptions of the Middle East region. For most of us, that region included Iraq and Iran but stretched no farther east. As the hunt for Osama bin Laden began and the media focused attention on the harsh rule of the Taliban, our perceptual region of the Middle East stretched farther east to incorporate Afghanistan and Pakistan. Scholars who specialize in the region had long studied the relationship between these places and areas to the west, but the similarities between Afghanistan and Pakistan and the rest of the Middle East were not known to the general population.

**Perceptual Regions in the United States**

Cultural geographer Wilbur Zelinsky tackled the enormous, complex task of defining and delimiting the perceptual regions of the United States and southern Canada. In an article titled “North America’s Vernacular Regions,” he identified 12 major perceptual regions on a series of maps (summarized in Fig. 1.18). Of necessity, it shows overlaps between certain places. For example, the more general term the West actually incorporates more specific regions, such as the Pacific Region and part of the Northwest.

The problem of defining and delimiting perceptual regions can be approached in several ways. One is to conduct interviews in which people residing within as well as outside a region are asked to respond to questions about their home and cultural environment. Zelinsky used a different technique; he analyzed the telephone directories of 276 metropolitan areas in the United States and Canada, noting the frequency with which businesses and other enterprises use regional or locational terms (such as “Southern Printing Company”) in their listings. The resulting maps show a close similarity between these perceptual regions and culture regions identified by geographers.
Among the perceptual regions shown in Figure 1.18, one, the South, is unlike any of the others. Even today, five generations after the Civil War, the Confederate flag still evokes strong sentiments from both those who revere the flag and those who revile the flag.

Certainly a “New South” has emerged over the past several decades, forged by Hispanic immigration, urbanization, Sunbelt movements, and other processes. But the South—especially the rural South—continues to carry imprints of a culture with deep historical roots. Its legacy is preserved in language, religion, music, food preferences, and other traditions and customs.

If you drive southward from, say, Pittsburgh or Detroit, you will not pass a specific place where you enter this perceptual region. You will note features in the cultural landscape that you perceive to be associated with the South (such as Waffle House restaurants), and at some stage of the trip they will begin to dominate the area to such a degree that you will say, “I am really in the South now.” This may result from a combination of features in the culture: the style of houses and their porches, items on a roadside restaurant menu (grits, for example), a local radio station’s music, the sound of accents that you perceive to be Southern, a succession of Baptist churches in a town along the way. These combined impressions become part of your overall perception of the South as a region.

Such cultural attributes give a certain social atmosphere to the region, an atmosphere that is appreciated by many of its residents and is sometimes advertised as an attraction for potential visitors. “Experience the South’s warmth, courtesy, and pace of life,” said one such commercial, which portrayed a sun-drenched seaside landscape, a bowing host, and a couple strolling along a palm-lined path. Such images may or may not represent the perceptions of most inhabitants of the region, but few Southerners would object to publicity of this kind.

The South has its vigorous supporters and defenders, and occasionally a politician uses its embattled history to arouse racial antagonism. But today the South is so multifaceted, diverse, vigorous, and interconnected with the rest of the United States that its regional identity is much more complicated than traditional images suggest. This serves as an important reminder that perceptual regions are not static. Images of the South are rapidly changing, and the vast majority of people in the South today do not believe that the region should secede from the United States.

Regions, therefore, are ways of organizing humans geographically. They are a form of spatial classification, a means of handling large amounts of information so we can make sense of it. Thus, the regional concept is an indispensable aid in our journey through human geography.

**Culture**

At the heart of human geography lies the concept of culture. Location decisions, patterns, and landscapes are fundamentally influenced by cultural attitudes and practices. Culture refers not only to the music, literature, and arts of a society but also to all the other features of its way of life: prevailing modes of dress; routine living habits; food preferences; the architecture of houses and public buildings; the layout of fields and farms; and systems of education, government, and law. Culture is an all-encompassing term that identifies not only the whole tangible lifestyle of peoples, but also their prevailing values and beliefs.
The concept of culture is closely identified with the discipline of anthropology, and over the course of more than a century anthropologists have defined it in many different ways. Some have stressed the contributions of humans to the environment, whereas others have emphasized learned behaviors and ways of thinking. Several decades ago the noted anthropologist E. Adamson Hoebel defined culture as:

"[the] integrated system of learned behavior patterns which are characteristic of the members of a society and which are not the result of biological inheritance ... culture is not genetically predetermined; it is noninstinctive ... [culture] is wholly the result of social invention and is transmitted and maintained solely through communication and learning."

Hoebel's emphasis on communication and learning anticipated the current view of culture as a system of meaning, not just a set of acts, customs, or material products. Clifford Geertz advances this view in his classic work, *The Interpretation of Cultures* (1973), which has influenced much recent work in human geography. Hence, human geographers are interested not just in the different patterns and landscapes associated with different culture groups, but in the ways in which cultural understandings affect both the creation and significance of those patterns and landscapes.

Cultural geographers identify a single attribute of a culture as a *culture trait*. For example, the wearing of a turban can be a culture trait of certain Muslim societies; for centuries, it was obligatory for Muslim men to wear this headgear. Although it is no longer required everywhere, the turban continues to be a distinctive trait of many Muslim societies.

Culture traits are not necessarily confined to a single culture. More than one culture may exhibit a particular culture trait, but each will consist of a discrete combination of traits. Such a combination is referred to as a *culture complex*. In many cultures, the herding of cattle is a trait. However, cattle are regarded and used in different ways by different cultures. The Maasai of East Africa, for example, follow their herds along seasonal migration paths, consuming blood and milk as important ingredients of a unique diet. Cattle occupy a central place in Maasai existence; they are the essence of survival, security, and prestige. Although the Maasai culture complex is only one of many cattle-keeping complexes, no other culture complex exhibits exactly the same combination of traits. In Europe, cattle are milked, and dairy products, such as butter, yogurt, and cheese, are consumed as part of a diet very different from that of the Maasai.

A *cultural hearth* is an area where cultural traits develop and from which the cultural traits diffuse. Often a cultural trait, for example, the religion of Islam, can be traced to a single place and time. Muhammad founded Islam in the 500s C.E. (current era) in and around the cities of Mecca and Medina on the Arabian Peninsula. Other culture traits, such as agriculture, can be traced to several
hearth thousands of years apart. The term for a trait with many hearths that developed independently of each other is independent invention.

**Connectedness through Diffusion**

Diffusion occurs through the movement of people, goods, or ideas across space. The process of dissemination, the spread of an idea or innovation from its hearth (source area) to other places, is known as culture diffusion. Carl Sauer focused attention on this process in *Agricultural Origins and Dispersals* in which he defined the ancient hearths of agriculture and traced the diffusion of agricultural practices from the hearths. In 1970, Swedish geographer Torsten Hägerstrand built on Sauer’s work by publishing pioneering research on the role of time in the diffusion process. Hägerstrand’s research revealed how time, as well as distance, affects individual human behavior and the diffusion of people and ideas. Sauer and Hägerstrand’s fascinating research attracted many geographers to the study of diffusion processes. Geographers are still using principles of diffusion to model movement and diffusion through GIS and other geographic techniques.

Whether diffusion of a cultural trait occurs depends, in part, on time and distance from the hearth. The farther a place is from the hearth, the less likely an innovation is to be adopted. Similarly, the acceptance of an innovation becomes less likely the longer it takes to reach its potential adopters. In combination, time and distance cause time-distance decay in the diffusion process.

Cultural barriers can also work against diffusion. Certain innovations, ideas, or practices are not acceptable or adoptable in particular cultures because of prevailing attitudes or even taboos. Prohibitions against alcoholic beverages, as well as certain forms of meat, fish, and other foods, restrict their consumption in certain areas. Cultural barriers against other practices, such as the use of contraceptives, also have inhibited diffusion processes. Cultural barriers can pose powerful obstacles to the spread of ideas as well as artifacts.

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**Figure 1.20**

**Contagious and Hierarchical Diffusion.** © H. J. de Blij, A. B. Murphy, and E. H. Fouberg, John Wiley & Sons, Inc.
Expansion Diffusion

Geographers classify diffusion processes into two broad categories: expansion diffusion and relocation diffusion. In the case of expansion diffusion, an innovation or idea develops in a hearth and remains strong there while also spreading outward (Fig. 1.20). Later, for example, we will study the spread of Islam from its hearth on the Arabian Peninsula to Egypt and North Africa, through Southwest Asia, and into West Africa. This is a case of expansion diffusion. If we were to draw a series of maps of the Islamic faithful at 50-year intervals beginning in 620 C.E., the area of adoption of the Muslim religion would be larger in every successive period.

Expansion diffusion takes several forms. The spread of Islam is an example of contagious diffusion, a form of expansion diffusion in which nearly all adjacent individuals are affected. A disease can spread in this way, infecting almost everyone in a population (although not everyone may show symptoms of the disease). However, an idea such as a new fashion or new genre of music may not always spread throughout a contiguous population. For example, the spread of Birkenstock sandals is a case of hierarchical diffusion, a pattern in which the main channel of diffusion is some segment of those who are susceptible to (or adopting) what is being diffused. In the case of Birkenstocks, people living in Germany and traveling to Germany were the first adopters. In the U.S., the first adopters were in California, and the sandals were sold in health food stores, primarily in areas with a large population of people involved in outdoor activities. In these places, comfort ruled over fashion. Eventually, college students on several campuses began a Birkenstock-wearing craze (even with socks in the winter). The hierarchy of "outdoorsy" versus "indoorsy" places in the United States helps explain the early diffusion of Birkenstock sandals.

A third form of expansion diffusion is stimulus diffusion. Not all ideas can be readily and directly adopted by a receiving population; some are simply too vague, too unattainable, too different, or too impractical for immediate adoption. Yet, these ideals can still have an impact. They may indirectly promote local experimentation and eventual changes in ways of doing things. For example, the diffusion of mass-produced food items in the late twentieth century—pushed by multinational retailers—led to the introduction of the hamburger to India. Yet the Hindu prohibition against the consumption of beef presented a cultural obstacle to the adoption of this food item (Fig. 1.21). Instead, retailers began selling burgers made of vegetable products—an adaptation that was stimulated by the diffusion of the hamburger but that took on a new form in the cultural context to which it diffused.

Relocation Diffusion

Expansion diffusion spreads across space without people physically moving to become "knowers" of the trait or innovation. With expansion diffusion, the people stay put and the innovation, idea, trait, or disease does the moving.
Relocation diffusion, in contrast, involves the actual movement of individuals who have already adopted the idea or innovation, and who carry it to a new, perhaps distant, locale, where they proceed to disseminate it (Fig. 1.20).

Relocation diffusion occurs most frequently through migration. When migrants move from their homeland, they take their cultural traits with them. Developing an ethnic neighborhood in the new country helps immigrants maintain their culture in the midst of an unfamiliar one. If the homeland of the immigrants loses enough of its population, the cultural customs may fade in the hearth while gaining strength in the ethnic neighborhoods abroad.

Thinking Geographically

Once you think about different types of diffusion, you will be tempted to figure out what kind of diffusion is taking place for all sorts of goods, ideas, or diseases. Please remember any good, idea, or disease can diffuse in more than one way. Choose a good, idea, or disease as an example and describe how it diffused from its hearth across the globe, referring to at least three different types of diffusion.

What Are Geographic Concepts, and How Are They Used in Answering Geographic Questions?

Geographic concepts include most of the boldfaced words in this chapter, such as relative location, mental map, sense of place, diffusion, and cultural landscape. In doing geographic research, a geographer thinks of a geographic question, one that has a spatial or landscape component, chooses the scale(s) of analysis, and then applies one or more geographic concepts to conduct research and answer the question. Geographers use fieldwork, remote sensing, GIS, GPS, and qualitative and quantitative techniques to explore linkages among people and places and to explain differences across people, places, scales, and times.

Research in human geography today stems from a variety of theories and philosophies. To understand what geographers do and how they do it, it is easiest to start by defining what geography is not. Today’s geography is not environmental determinism.

Environmental Determinism

The ancient Greeks, finding that some of the peoples subdued by their expanding empire were relatively docile while others were rebellious, attributed such differences to variations in climate. Over 2000 years ago, Aristotle described northern European peoples as “full of spirit... but incapable of ruling others,” and he characterized Asian people (by which he meant modern-day Turkey) as “intelligent and inventive... but always in a state of subjection and slavery.” Aristotle attributed these traits to the respective climates of the regions—the cold north versus the more tropical Mediterranean.

Aristotle’s views on this topic were long-lasting. As recently as the first half of the twentieth century, similar notions still had strong support. In 1940, in the Principles of Human Geography, Ellsworth Huntington and C.W. Cushing wrote:

The well-known contrast between the energetic people of the most progressive parts of the temperate zone and the inert inhabitants of the tropics and even of intermediate regions, such as Persia, is largely due to climate... the people of the cyclonic regions rank so far above those of the other parts of the world that they are the natural leaders.

The doctrine expressed by these statements is referred to as environmental determinism. It holds that human behavior, individually and collectively, is strongly affected by—even controlled or determined by—the physical environment. It suggests that climate is the critical factor in how humans behave. Yet what constitutes an “ideal” climate lies in the eyes of the beholder. For Aristotle, it was the climate of Greece. Through the eyes of more recent commentators from Western Europe and North America, the climates most suited to progress and productiveness in culture, politics, and technology are (you guessed it) those of Western Europe and the northeastern United States.

For a time, some geographers attempted to explain the distribution of centers of culture in terms of the “dictating environment.” Quite soon, however, certain geographers doubted whether these sweeping generalizations were valid. They recognized exceptions to the environmental determinists’ postulations (e.g., the Maya civilization in Mesoamerica arose under tropical conditions) and argued that humanity was capable of much more than merely adapting to the natural environment. As for the supposed “efficiency” produced by the climate of Western Europe, this idea ignored the fact that for millennia the most highly developed civilizations were found outside Western Europe (North Africa, Southeast Asia, East Asia). Surely it was best not to base “laws” of environmental determinism on inadequate data in the face of apparently contradictory evidence.

Such arguments helped guide the search for answers to questions about the relationships between human society and the environment in different directions, but for several decades some geographers still held to the environ-
mental determinist position. In *Climate and the Energy of Nations* (1947), Sidney Markham thought that by tracing the migration of the center of power in the Mediterranean (from Egypt to Greece to Rome and onward) he could detect the changing climates of that part of Europe during several thousand years of glacial retreat. Markham saw the northward movement of isotherms—lines connecting points of equal temperature values—as a key factor in the shifting centers of power in the Ancient World.

Geographers grew increasingly cautious about such speculative notions, however, and they began asking new questions about human–environment relationships. If generalizations were to be made, they felt they ought to arise from detailed, carefully designed research. Everyone agrees that the natural environment affects human activity in some ways, but people are the decision makers and the modifiers—not just the slaves of environmental forces. People and their cultures shape environments, constantly altering the landscape and affecting environmental systems.

**Possibilism**

Reactions to environmental determinism produced counterarguments. An approach known as **possibilism** emerged—espoused by geographers who argued that the natural environment merely serves to limit the range of choices available to a culture. The choices that a society makes depend on its members’ requirements and the technology available to them. The doctrine of possibilism became increasingly accepted, and environmental determinism became increasingly discredited—at least within geography. For those who have thought less carefully about the human–environment dynamic, environmental determinism continues to hold an allure, leading to some highly questionable generalizations about the impact of the environment on humans and a multitude of popular books that use it to explain history.

Even possibilism has its limitations, for it encourages a line of inquiry that starts with the physical environment and asks what it allows. Yet human cultures have frequently pushed the boundaries of what was once thought to be environmentally possible by virtue of their own ideas and ingenuity. Moreover, in the interconnected, technologically dependent world we live in today, it is possible to do many things that are at odds with the local environment. Hence, research today tends to focus on how and why humans have altered the environment, and on the sustainability of their practices. In the process, the perspectives of **cultural ecology** (an area of inquiry concerned with culture as a system of adaptation to environment) have been supplemented by those of **political ecology**—an area of inquiry fundamentally concerned with the environmental consequences of dominant political-economic arrangements and understandings.

The fundamental point is that human societies are sufficiently diverse and the human will is too powerful to be the mere objects of nature’s designs. We cannot escape the environmental contexts in which we are situated—nor should we try if the environmental degradation that has followed such efforts is any guide. Indeed, the effort to avoid any semblance of determinism has perhaps overly discouraged consideration of the impact of the environment on humans. What is clear, however, is that any inquiry that does not give credence to the extraordinary power of the intertwined domains of culture, politics, and economy in human–environment relations embarks on a path that has consistently been shown to be simplistic, if not fundamentally wrong.

**Today’s Human Geography**

The concept of culture is so broad-ranging that cultural geography is sometimes considered to be synonymous with human geography. More often, however, it is considered to be a subset of human geography because many questions about population, economy, and politics can be posed without emphasizing their cultural dimensions.

Does this mean that cultural geography is limited to the study of particular elements of culture (language, religion)? Few contemporary cultural geographers would see it that way. Instead, they would argue that cultural geography looks at the ways culture is implicated in the full spectrum of topics addressed in human geography. As such, cultural geography can be seen as a perspective on human geography as much as a component thereof.

To more fully appreciate the vast topics researched by human geographers, we can examine the multitude of careers human geographers pursue. Human geographers have titles such as location analyst, urban planner, diplomat, remote sensing analyst, geographic information scientist, area specialist, travel consultant, political analyst, intelligence officer, cartographer, educator, soil scientist, transportation planner, park ranger, or environmental consultant. All of these careers and more are open to geographers because each of these fields is grounded in place and is advanced through spatial analysis.

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**THINKING GEOGRAPHICALLY**

Create a strong (false) statement about a people and their environment using either environmental determinism or possibilism. Determine how the statement you wrote is false, taking into consideration the roles of culture, politics, and economy in human–environment relations.
Summary

Like cultural geography, human geography is not limited to geographical studies of culture. This book does not contain a list of places or cultures for you to memorize. Instead, it serves as a study of people and places and explains how they interact across space and time. Chapters 2 and 3 lay the basis for our study of human geography by looking at where people live. Chapters 4–7 focus on aspects of culture and how people use culture and identity to make sense of themselves in their world. The remaining chapters examine how people have created a world in which they function economically, politically, and socially, and how their activities in those realms recreate themselves and their world.

Geographic Concepts

fieldwork
human geography
globalization
physical geography
spatial
spatial distribution
pattern
medical geography
pandemic
edemic
spatial perspective
five themes
location
location theory
human–environment
region
place
sense of place
perception of place
movement
spatial interaction
distance
accessibility
connectivity
landscape
cultural landscape
sequent occupancy
cartography
reference maps
thematic maps
absolute location
global positioning system
geocaching
relative location
mental map
activity space
generalized map
remote sensing
geographic information systems
rescale
formal region
functional region
perceptual region
culture
culture trait
culture complex
cultural hearth
independent invention
cultural diffusion
time-distance decay
cultural barrier
expansion diffusion
contagious diffusion
hierarchical diffusion
stimulus diffusion
relocation diffusion
geographic concept
environmental determinism
isotherm
possibilism
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