



POPULATION GEOGRAPHY

Shaping the Human Mosaic

The nineteenth-century French philosopher Auguste Comte famously asserted that “demography is destiny.” Though this might be a bit of an exaggeration, it is true that one of the most important aspects of the world’s human population is its demographic characteristics, such as age, gender, health, mortality, density, and mobility. In fact, many cultural geographers argue that familiarity with the spatial dimensions of demography provides a baseline for the discipline. Thus, **population geography** provides an ideal topic to launch our substantive discussion of the human mosaic.

The most essential demographic fact is that more than 6.8 billion people inhabit the Earth today. But numbers alone tell only part of the story of the delicate balance between human populations and the resources on which we depend for our survival, comfort, and enjoyment. Think of the sort of lifestyle you may now enjoy or aspire to in the future. Does it involve driving a car? Eating meat regularly? Owning a spacious house with central heating and air conditioning? If so, you are not alone. In fact, these “Western” consumption habits have become so widespread that they may now be more properly regarded as universal. Satisfying these lifestyle demands requires using a wide range of nonrenewable resources—fossil fuels, extensive farmlands, and fresh water among them—whose consumption ultimately limits the number

of people the Earth can support. Indeed, it has been argued that if Western lifestyles are adopted by a significant number of the globe’s inhabitants, then our current population of 6.8 billion is already excessive and will soon deplete or contaminate the Earth’s life-support systems: the air, soil, and water we depend on for our very survival. Although we may think of our geodemographic choices, such as how many children we will have or what to eat for dinner, as highly individual ones, when aggregated across whole groups they can have truly global repercussions.

population geography

The study of the spatial and ecological aspects of population, including distribution, density per unit of land area, fertility, gender, health, age, mortality, and migration.

As we do throughout this book, we approach our study using the five themes of cultural geography. The demographics of human populations, their size, age, gender compositions, and spatial distribution, are discussed under the regional theme. Population mobility and the related movement of diseases that affect human populations are discussed next. Population debates are considered under the theme of globalization. Although population is experienced locally and policies affecting population are typically set at the national level, the size and impact of human populations involve a debate that is most commonly pitched at the global scale. Next, the theme of nature-culture reveals that the ways in which we interpret the natural world and adapt it to our needs are deeply entwined with

demographic practices. We close with a consideration of the demographic cultural landscape, which highlights the surprisingly diverse ways that places across the world respond to changing population dynamics.



Region

In what ways do demographic traits vary regionally? How is the theme of culture region expressed in terms of population characteristics? The principal

characteristics of human populations—their densities, spatial distributions, age and gender structures, the ways they increase and decrease, and how rapidly population numbers change—vary enormously from place to place. Understanding the demographic characteristics of populations, and why and how they change over time, gives us important clues to their cultural characteristics.

Population Distribution and Density

If the 6,800,000,000 inhabitants of the Earth were evenly distributed across the land area, the **population**

density
A measurement of population per unit area (for example, per square mile).

Population Density

Population Density	
Per sq km	Per sq mile
0–1	0–2
1–25	2–60
25–100	60–250
Over 100	Over 250

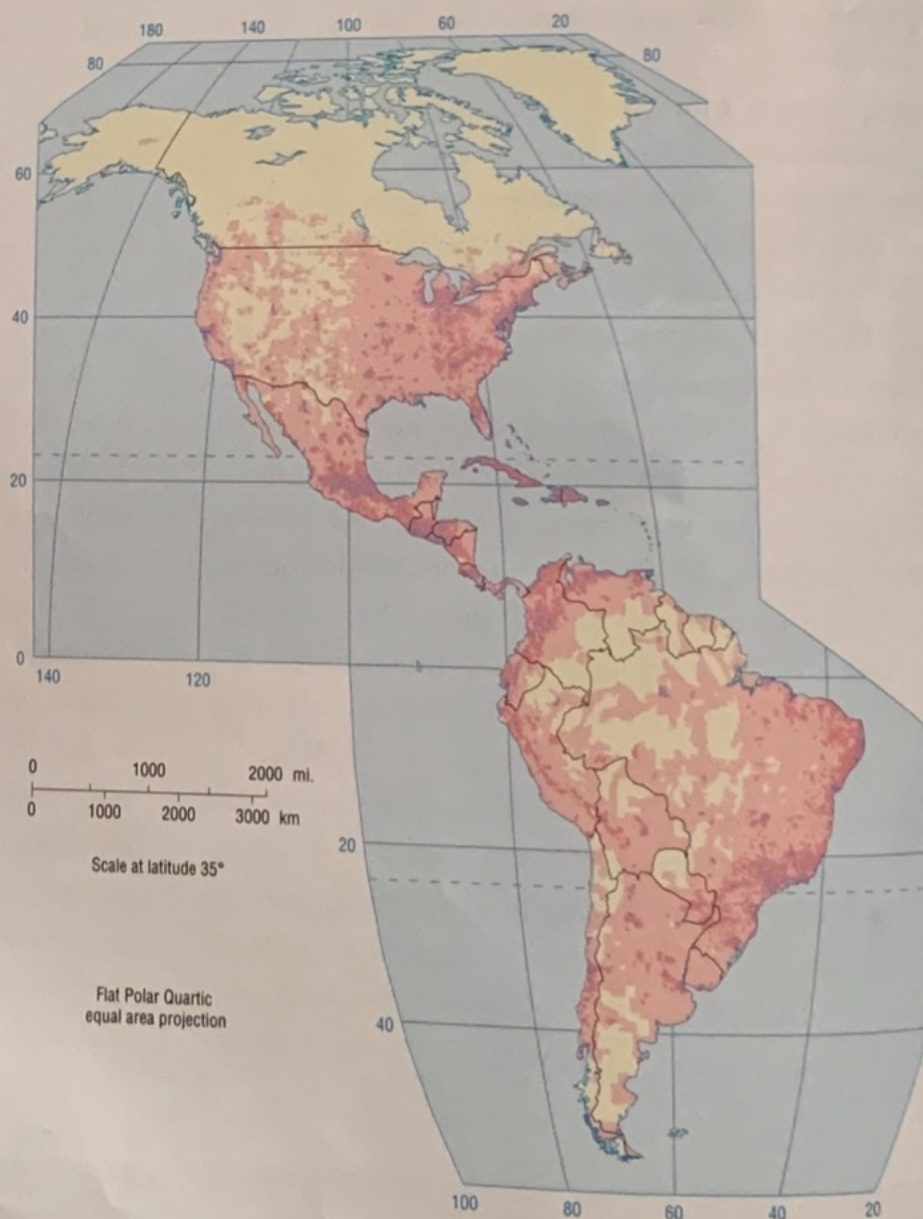


FIGURE 3.1 Population density in the world.

Try to imagine the diverse causal forces—physical, environmental, and cultural—that have been at work over the centuries to produce this complicated spatial pattern. It represents the most basic cultural geographical distribution of all.

(Source: Population Reference Bureau.)

density would be about 115 persons per square mile (44 per square kilometer). However, people are very unevenly distributed, creating huge disparities in density. Mongolia, for example, has 4.3 persons per square mile (1.7 per square kilometer), whereas Bangladesh has 2300 persons per square mile (890 per square kilometer) (Figure 3.1).

If we consider the distribution of people by continents, we find that 72.7 percent of the human race lives in Eurasia—Europe and Asia. The continent of North America is home to only 7.9 percent of all people, Africa to 13.2 percent, South America to 5.7 percent, and Australia and the Pacific islands to 0.5 percent. When we consider population distribution by country, we find that 20 percent of all humans

reside in China, 17 percent in India, and only 4.6 percent in the third-largest nation in the world, the United States (Table 3.1, page 74). In fact, one out of every 50 humans lives in only one valley of one province of China: the Sichuan Basin.

For analyzing data, it is convenient to divide population density into categories. For example, in Figure 3.1, one end of the spectrum contains thickly settled areas having 250 or more persons per square mile (100 or more per square kilometer); on the other end, largely unpopulated areas have fewer than 2 persons per square mile (less than 1 per square kilometer). Moderately settled areas, with 60 to 250 persons per square mile (25 to 100 per square kilometer), and thinly settled areas, inhabited by 2 to 60 persons per square mile



TABLE 3.1 The World's 10 Most Populous Countries, 2010 and 2050

Largest Countries in 2010	Population in 2010 (in millions)	Largest Countries in 2050	Population in 2050 (estimated, in millions)
China	1,330	India	1,657
India	1,173	China	1,304
United States	310	United States	439
Indonesia	243	Indonesia	313
Brazil	201	Pakistan	291
Pakistan	184	Ethiopia	278
Bangladesh	156	Nigeria	264
Nigeria	152	Brazil	261
Russia	139	Bangladesh	250
Japan	127	Democratic Republic of Congo	189

(Source: U.S. Census Bureau International Data Base, 2010.)

(1 to 25 per square kilometer), fall between these two extremes. These categories create formal demographic regions based on the single trait of population density. As Figure 3.1 shows, a fragmented crescent of densely settled areas stretches along the western, southern, and eastern edges of the huge Eurasian continent. Two-thirds of the human race is concentrated in this crescent, which contains three major population clusters: eastern Asia, the Indian subcontinent, and Europe. Outside of Eurasia, only scattered districts are so densely settled. Despite the image of a crowded world, thinly settled regions are much more extensive than thickly settled ones, and they appear on every continent. Thin settlement characterizes the northern sections of Eurasia and North America, the interior of South America, most of Australia, and a desert belt through North Africa and the Arabian Peninsula into the heart of Eurasia.

As geographers, there is more we want to know about population geography than simply population density. For example, what are people's standards of living and are they related to population density? Some of the most thickly populated areas in the world have the highest standards of living—and even suffer from labor shortages (for example, the major industrial areas of western Europe and Japan). In other cases, thinly settled regions may actually be severely overpopulated relative to their ability to support their populations, a situation that is usually associated with marginal agricultural lands. Although 1000 persons per square mile (400 per square kilometer) is a “sparse” population for an

industrial district, it is “dense” for a rural area. For this reason, **carrying capacity**—the population beyond which a given environment cannot provide support without becoming significantly damaged—provides a far more meaningful index of overpopulation than density alone. Oftentimes, however, it is difficult to determine carrying capacity until the region under study is near or over the limit. Sometimes the carrying capacity of one place can be expanded by drawing on the resources of another place. Americans, for example, consume far more food, products, and natural resources than do most other people in the world: 26 percent of the entire world's petroleum, for instance, is consumed in the United States (Figure 3.2). The carrying capacity of the United States would be exceeded if it did not annex the resources—including the labor—of much of the rest of the world.

A critical feature of population geography is the demographic changes that occur over time. Analyzing these gives us a dynamic perspective from which we can glean insights into cultural changes occurring at local, regional, and global scales. Populations change primarily in two ways: people are born and others die in a particular place, and people move into and out of that place. The latter refers to migration, which we will consider later in this chapter. For now we discuss births and deaths, which can be thought of as additions to and subtractions from a population. They provide what demographers refer to as natural increases and natural decreases.

carrying capacity
The maximum number of people that can be supported in a given area.



FIGURE 3.2 From where does U.S. oil come? The United States has domestic oil resources, but they cannot fully supply the domestic demand, so oil is imported from other areas of the world. The United States consumes 26 percent of all the oil produced in the world. (Source: U.S. Department of Energy, 2010.)

Patterns of Natality

Births can be measured by several methods. The older way was simply to calculate the birthrate: the number of births per year per thousand people (**Figure 3.3**, pages 76–77).

total fertility rate (TFR)

The number of children the average woman will bear during her reproductive lifetime (15–44 or 15–49 years of age). A TFR of less than 2.1, if maintained, will cause a natural decline of population.

More revealing is the **total fertility rate (TFR)**, which is measured as the average number of children born per woman during her reproductive lifetime, which is considered to be from 15 to 49 years of age

(some countries have a lower upper-age limit of 44 years of age). The TFR is a more useful measure than the birthrate because it focuses on the female segment of the population, reveals average family size, and gives an indication of future changes in the population structure. A TFR of 2.1 is needed to produce a stabilized population over time, one that does not increase or decrease. Once achieved, this condition is called **zero population growth**.

zero population growth

A stabilized population created when an average of only two children per couple survive to adulthood, so that, eventually, the number of deaths equals the number of births.

The TFR varies markedly from one part of the world to another, revealing a vivid geographical pattern (**Figure 3.4**, pages 78–79). In southern and eastern Europe, the average TFR is only 1.3. Every

country with a TFR of 2.0 or lower will eventually experience population decline. Bulgaria, for example, has a TFR of 1.2 and is expected to lose 38 percent of its population by 2050. Interestingly, the Chinese Special Administrative Regions of Macau and Hong Kong report TFRs of only 0.91 and 1.04, respectively, the lowest in the world as of 2010.

By contrast, sub-Saharan Africa has the highest TFR of any sizable part of the world, led by Niger with 7.68 and Uganda with 7.63 in 2010. Elsewhere in the world, only Afghanistan and Yemen, both in Southwest Asia, can rival the sub-Saharan African rates. However, according to the World Bank, during the past two decades TFRs have fallen in all sub-Saharan African nations.

The Geography of Mortality

Another way to assess demographic change is to analyze death rates: the number of deaths per year per 1000 people (**Figure 3.5**, pages 80–81). Of course, death is a natural part of the life cycle, and there is no way to achieve a death rate of zero. But geographically speaking, death comes in different forms. In the developed world, most people die of age-induced degenerative conditions, such as heart disease, or from maladies caused by industrial pollution of

Crude Birthrate

Birth Rate
(births per year
per 1,000 population)

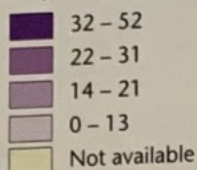
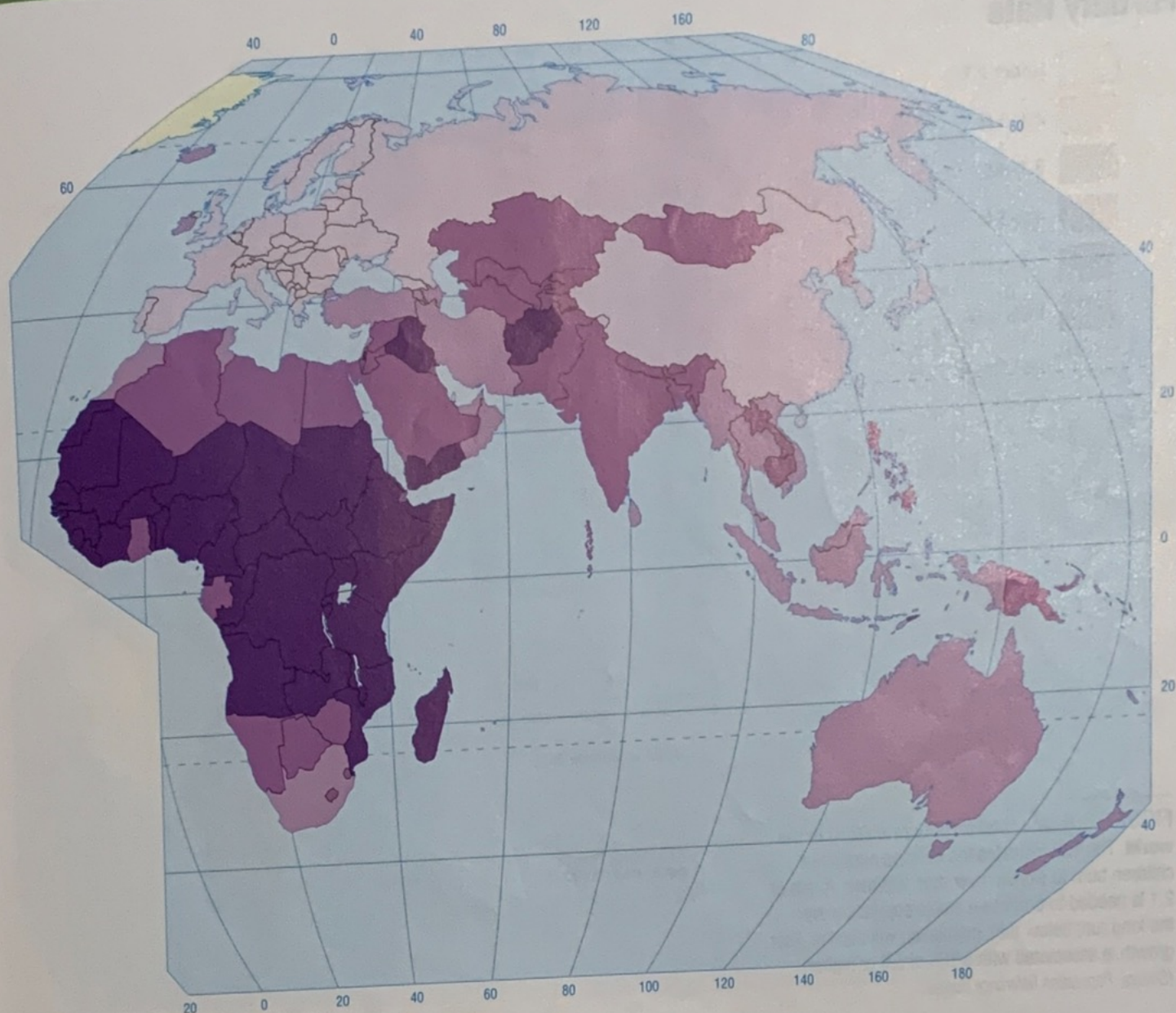


FIGURE 3.3 Crude birthrate. This map shows births per thousand population per year. (Source: Population Reference Bureau.)

the environment. Many types of cancer fall into the latter category. By contrast, contagious diseases such as malaria, HIV/AIDS, and diarrheal diseases are a leading cause of death in poorer countries. Civil warfare, inadequate health services, and the age structure of a country's population will also affect its death rate.

The highest death rates occur in sub-Saharan Africa, the poorest world region and most afflicted by life-threatening diseases and civil strife (Figure 3.6, pages 82–83, illustrates the geography of HIV/AIDS). In general, death rates of more than 25 per 1000 people are uncommon today. The world's highest death rate as of 2010—just under 24 per 1000 people—was found in Angola, in southwestern Africa,

and is the result of high infant mortality rates coupled with the destruction of Angola's infrastructure and economy after thirty years of civil warfare. High death rates are also found in eastern European nations—Russia, for instance, ranked seventh in the world in 2010, with a death rate of 16 per 1000, thanks to a collapsing public health care system in the post-Soviet era, environmental contamination and increased cancer incidence, poor health choices including smoking and alcohol consumption, and very high rates of diseases such as tuberculosis and HIV/AIDS. By contrast, the American tropics generally have rather low death rates, as does the desert belt across North Africa, the Middle East, and central Asia. In these regions, the



predominantly young population depresses the death rate. Compared to Angola, Nicaragua's death rate of only 4 per 1000 seems quite low. Because of its older population structure, the average death rate in the European Union is 10 per 1000. Australia, Canada, and the United States, which continue to attract young immigrants, have lower death rates than most of Europe. Canada's death rate, for instance, is slightly less than 8 people per 1000.

The Demographic Transition

All industrialized, technologically advanced countries have low fertility rates and stabilized or declining populations,

having passed through what is called the **demographic transition** (Figure 3.7, page 82). In preindustrial societies, birth and death rates were

both high, resulting in almost no population growth. Because these were agrarian societies that depended on family labor, many children meant larger workforces, thus the high birthrates. But low levels of public health and limited access to health care, particularly for the very young, also meant high death rates. With the coming of the industrial era, medical advances and improvements in diet set the stage for a drop in death rates. Human life expectancy in industrialized countries soared from an

demographic transition
A term used to describe the movement from high birth and death rates to low birth and death rates.

Fertility Rate

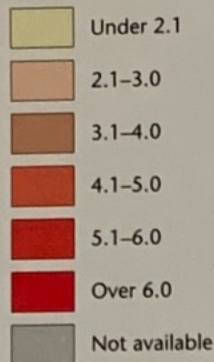
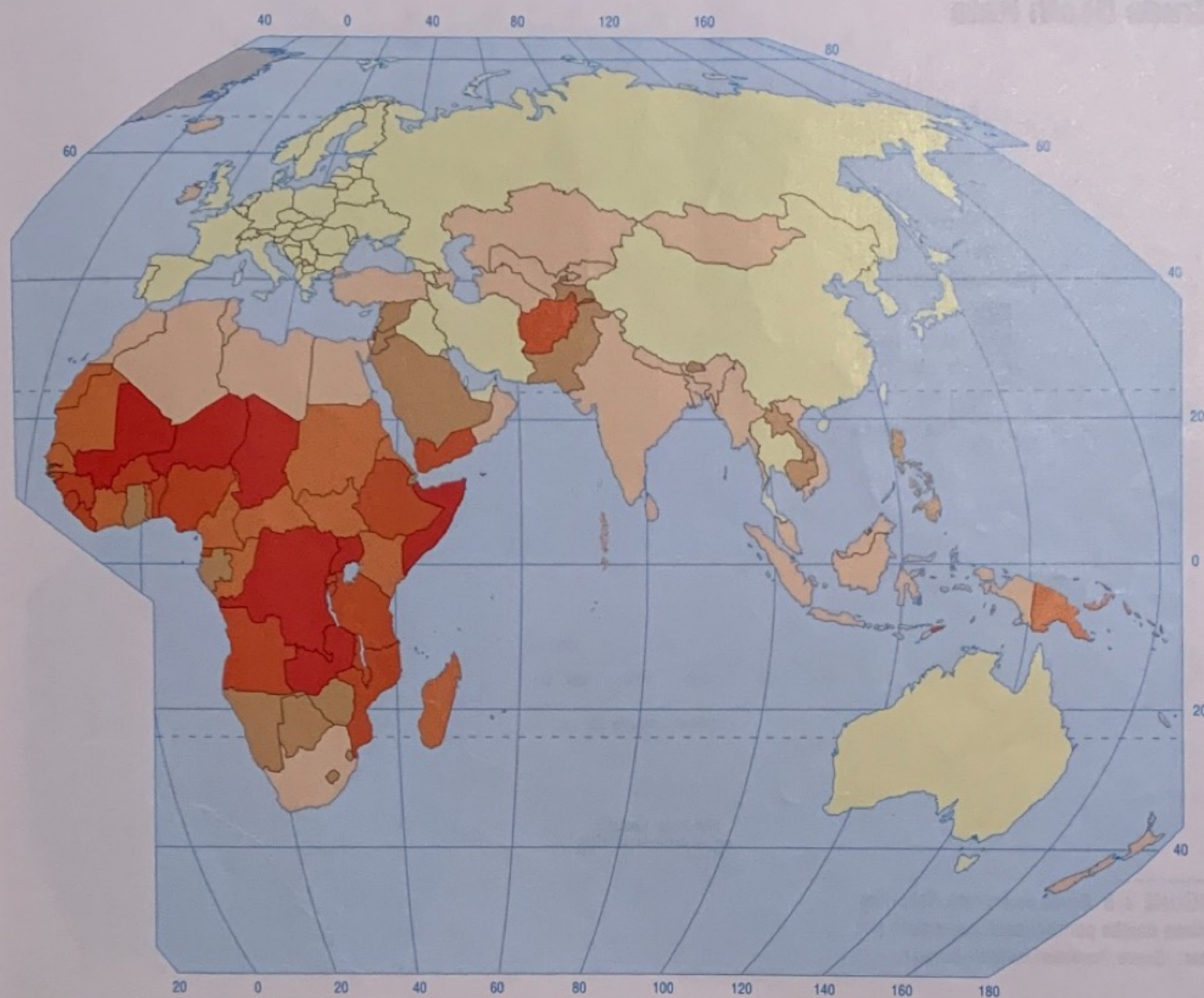


FIGURE 3.4 The total fertility rate (TFR) in the world. The TFR indicates the average number of children born to women over their lifetimes. A rate of 2.1 is needed to produce a stable population over the long run; below that, population will decline. Fast growth is associated with a TFR of 5.0 or higher. (Source: Population Reference Bureau.)

average of 35 years in the eighteenth century to 75 years or more at present. Yet birthrates did not fall so quickly, leading to a population explosion as fertility outpaced mortality. In Figure 3.7, this is shown in late stage 2 and early stage 3 of the model. Eventually, a decline in the birthrate followed the decline in the death rate, slowing population growth. An important reason leading to lower fertility levels involves the high cost of children in industrial societies, particularly because childhood itself becomes a prolonged period of economic dependence on parents. Finally, in

the postindustrial period, the demographic transition produced zero population growth or actual population decline (Figure 3.7, page 82, and Figure 3.8, pages 84–85).

Achieving lower death rates is relatively cost effective, historically requiring little more than the provision of safe drinking water and vaccinations against common infectious disease. Lowering death rates tends to be uncontroversial and quickly achieved, demographically speaking. Getting birthrates to fall, however, can be far more difficult, especially for a government official who wants to be



reelected. Birth control, abortion, and challenging long-held beliefs about family size can prove quite controversial, and political leaders may be reluctant to legislate for them. Indeed, the Chinese implementation of its one-child-per-couple policy (see Subject to Debate, page 87) probably would not have been possible in a country with a democratically elected government. In addition, because it involves changing a cultural norm, the idea of smaller families can take three or four generations to take hold. Increased educational levels for women are closely associated with falling

fertility levels, as is access to various contraceptive devices (Figure 3.9, page 86).

The demographic transition is a model that predicts trends in birthrates, death rates, and overall population levels in the abstract. Yet, like many models used by demographers, it is based on the historical experience of western Europe: it is **Eurocentric**. It does a good job of describing population patterns over time in Europe, as well as in other wealthy regions. However, it has several

Eurocentric

Using the historical experience of Europe as the benchmark for all cases.

Crude Death Rate

Death Rate
(deaths per year
per 1,000 population)

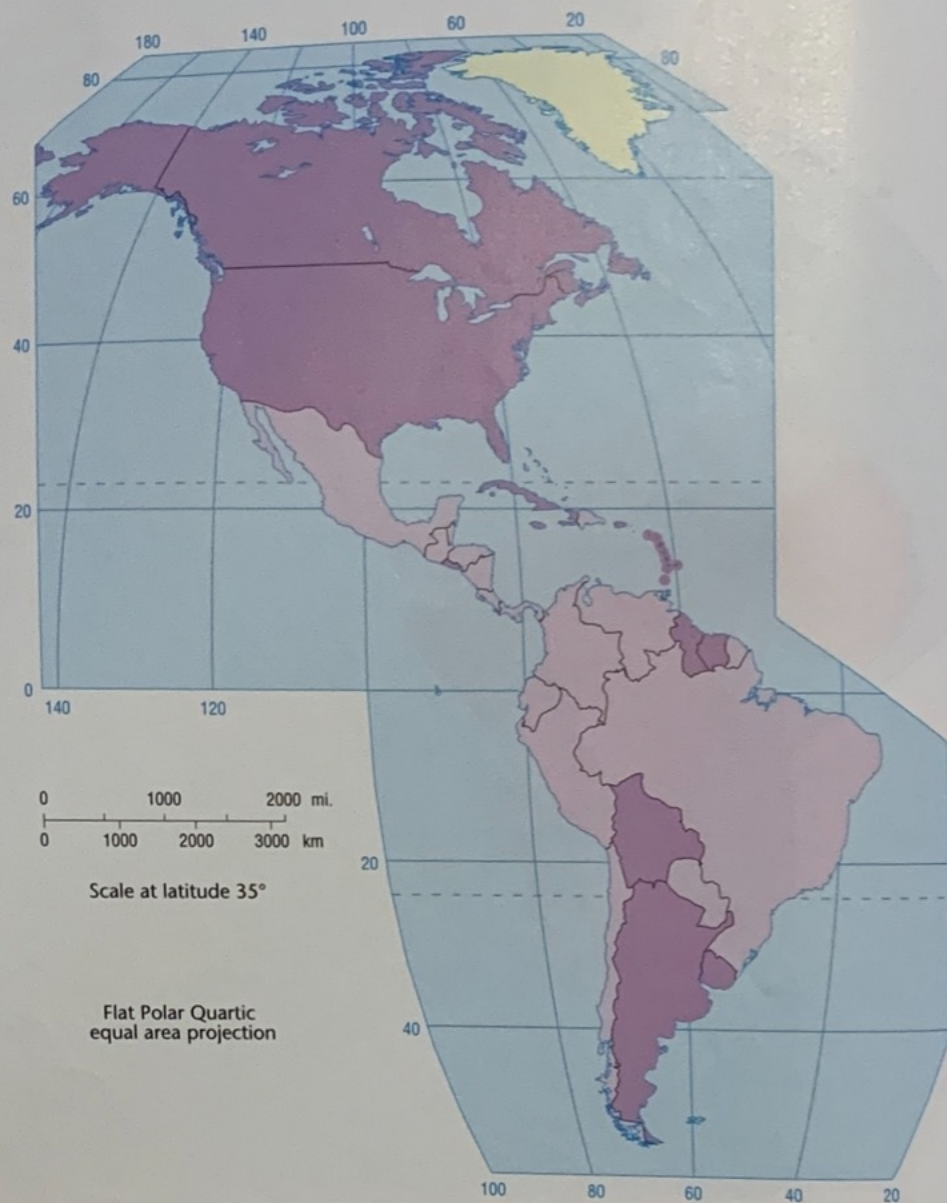
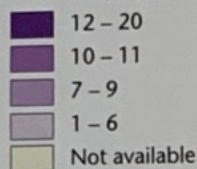
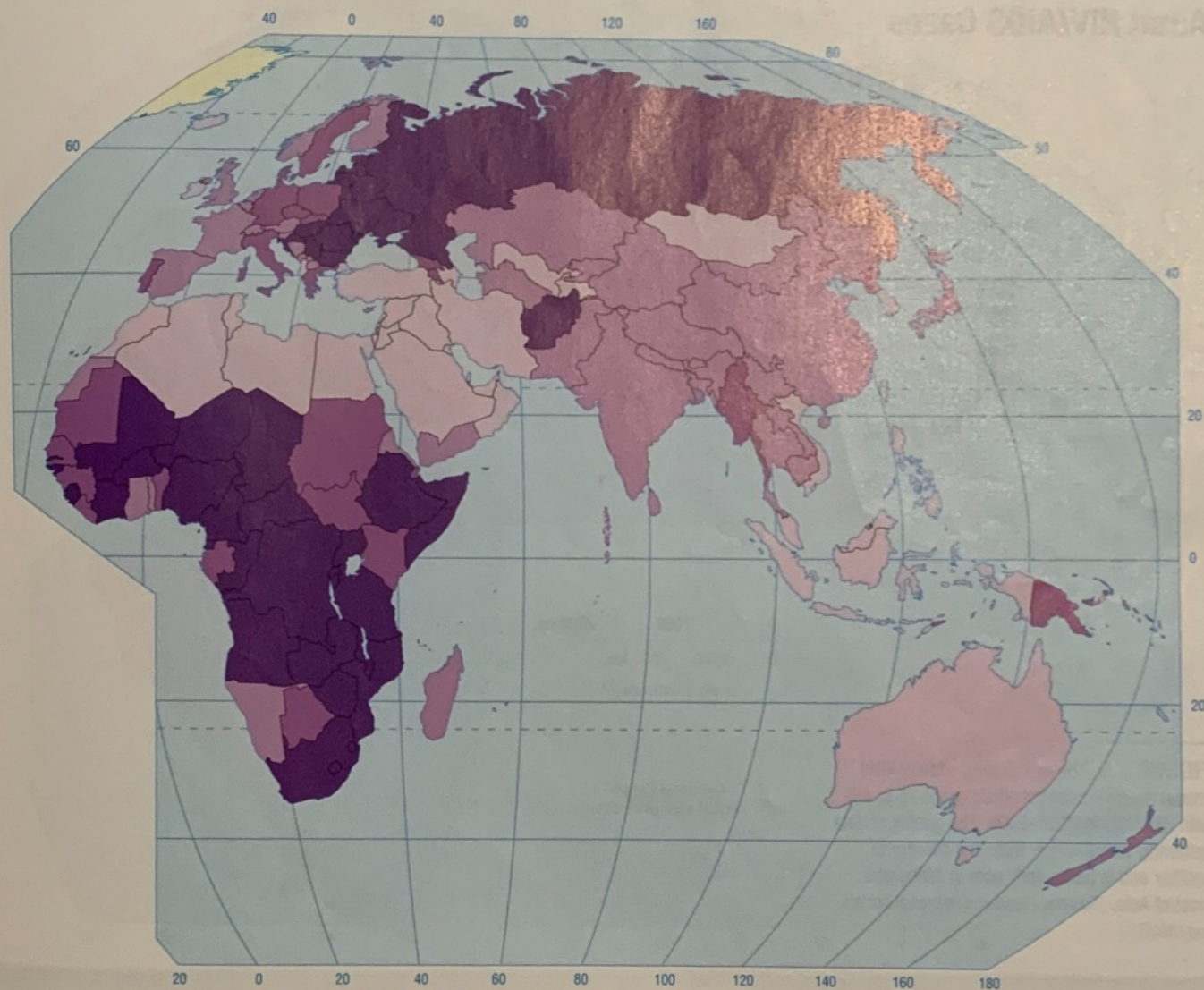


FIGURE 3.5 Crude death rate. This map shows deaths per thousand population per year. (Source: Population Reference Bureau.)

shortcomings. First is the inexorable stage-by-stage progression implicit in the model. Have countries or regions ever skipped a stage or regressed? Certainly. The case of China shows how policy, in this case government-imposed restrictions on births, can fast-forward an entire nation to stage 4 (see Subject to Debate). War, too, can occasion a return to an earlier stage in the model by increasing death rates. For instance, Angola and Afghanistan are two countries with recent histories of conflict and with some of the highest death rates in the world: 24 per 1000 and 18 per 1000, respectively. In other cases, wealth has not led to declining fertility. Thanks to oil exports, residents of Saudi

Arabia enjoy relatively high average incomes; but fertility, too, remains relatively high at nearly 4 children per woman in 2010. Indeed, the Population Reference Bureau has pointed to a “demographic divide” between countries where the demographic transition model applies well and others—mostly poorer countries or those experiencing widespread conflict or disease—where birth and death rates do not necessarily follow the model’s predictions. Even in Europe, there are countries where fertility has dropped precipitously, while at the same time death rates have escalated. In countries such as Russia, which, according to Peter Coclanis, has “somehow managed to reverse



the so-called demographic transition," the model itself must be questioned.

Age Distributions

Some countries have overwhelmingly young populations. In a majority of countries in Africa, as well as some countries in Latin America and tropical Asia, close to half the population is younger than 15 years of age (**Figure 3.10**, pages 88–89). In Uganda, for example, 51 percent of the population is younger than 15 years of age. In sub-Saharan Africa, 44 percent of all people are younger than 15. Other

countries, generally those that industrialized early, have a preponderance of middle-aged people in the over 15–under 65 age bracket. A growing number of affluent countries have remarkably aged populations. In Germany, for example, fully 19 percent of the people have now passed the traditional retirement age of 65. Many other European countries are not far behind. A sharp contrast emerges when Europe is compared with Africa, Latin America, or parts of Asia, where the average person never even lives to age 65. In Mauritania, Niger, Afghanistan, Guatemala, and many other countries, only 2 to 3 percent of the people have reached that age.

Adult HIV/AIDS Cases

Adults (ages 15 – 49)
with HIV/AIDS

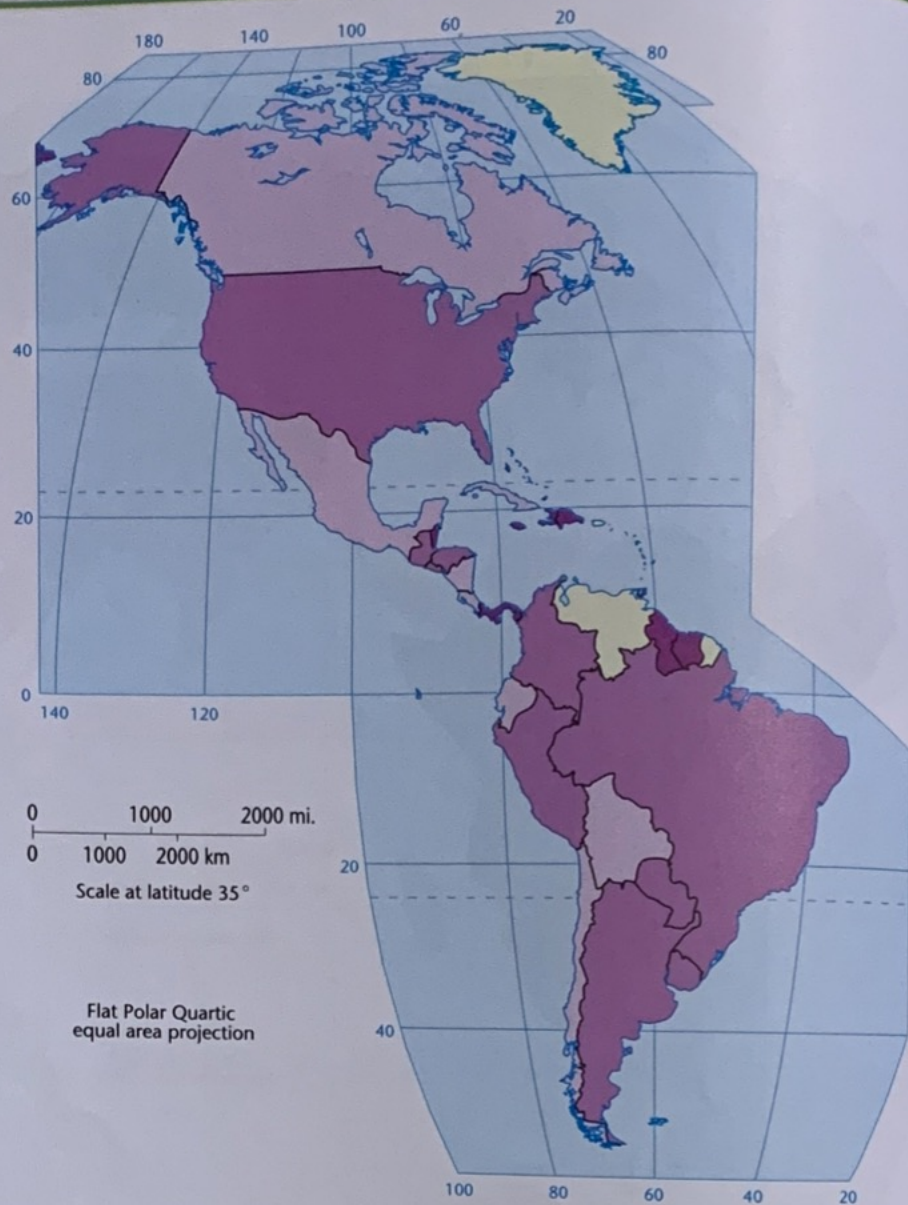
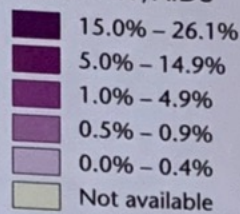


FIGURE 3.6 The geography of HIV/AIDS, shown as the percent of adults (ages 15 to 49) with HIV/AIDS in 2005–2006. The quality of data gathering varies widely from one country to another and is particularly poor in Africa and most of Asia. (Sources: Population Reference Bureau and UNAIDS.)

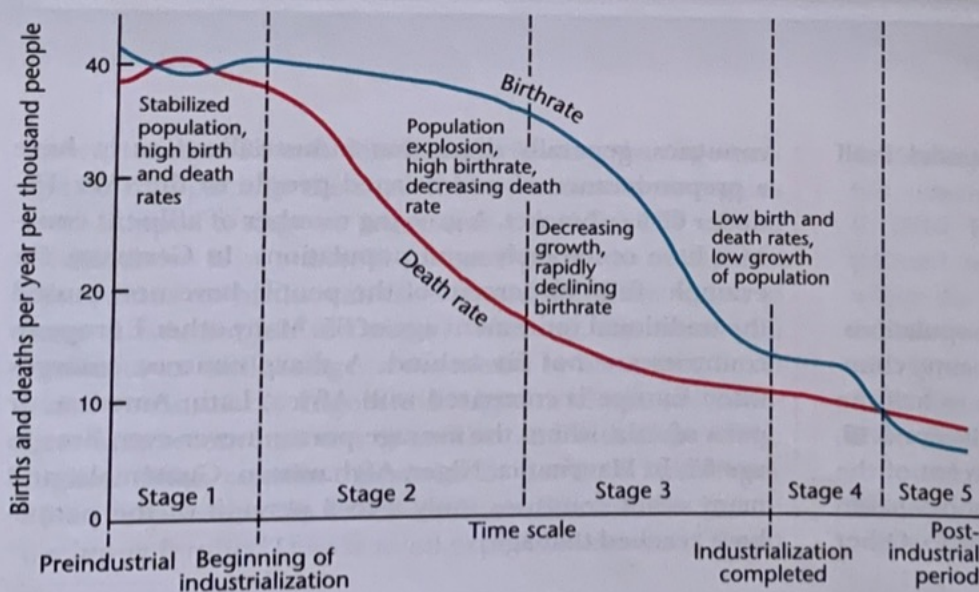


FIGURE 3.7 The demographic transition as a graph. The “transition” occurs in several stages as the industrialization of a country progresses. In stage 2, the death rate declines rapidly, causing a population explosion as the gap between the number of births and deaths widens. Then, in stage 3, the birthrate begins a sharp decline. The transition ends when, in stage 4, both birth and death rates have reached low levels, by which time the total population is many times greater than at the beginning of the transformation. In the postindustrial stage, population decline eventually begins.



Countries with disproportionate numbers of old or young people often address these imbalances in innovative ways. Italy, for example, has one of the lowest birthrates in the world, with a TFR of only 1.3. In addition, Italy's population is one of the oldest in the world: 20.3 percent of its population is age 65 or older. As a result of both its TFR and age distribution, Italy's population is projected to shrink by 10 percent between 2010 and 2050. Of course, immigrants to Italy from other countries can and doubtlessly will counteract this trend, but this will entail contentious political and cultural debates.

Given that the Italian culture does not embrace the institutionalization of the growing ranks of its elderly, and

faced with the reality that more Italian women than ever work outside the home and thus few adult women are willing or able to stay at home full time to care for their elders, Italians have gotten creative. Elderly Italians can apply for adoption by families in need of grandfathers or grandmothers. Frances D'Emilio recounts the experience of one such man, Giorgio Angelozzi, who moved in with the Rivas, a Roman family with two teenagers. Angelozzi said that Marlena Riva's voice reminded him of his deceased wife, Lucia, and this is what convinced him to choose the Riva family. Dagmara Riva, the family's teenage daughter, said that Mr. Angelozzi has helped her with Latin studies and that "Grandpa is a person of great experience, an

Annual Population Change

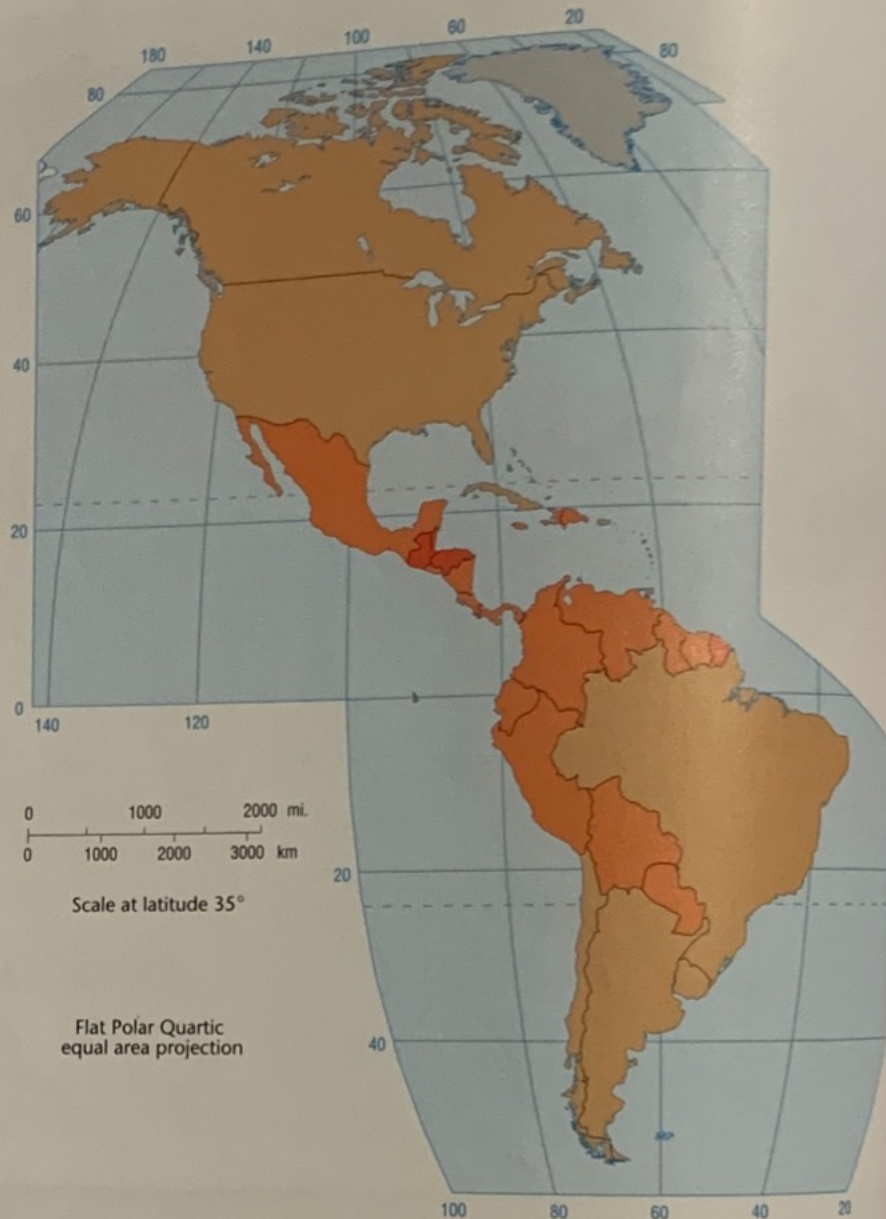
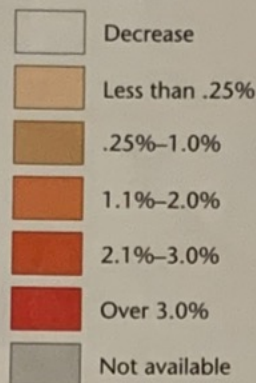


FIGURE 3.8 Annual population increase.

The change is calculated as the difference between the number of births and deaths in a year, taken as a percentage of total population. Migration is not considered. Note the contrast between tropical areas and the middle and upper latitudes. In several places, countries with a very slow increase border areas with extremely high growth. (Source: Population Reference Bureau.)

affectionate person. We're very happy we invited him to live with us."

Age structure also differs spatially within individual countries. For example, rural populations in the United States and many other countries are usually older than those in urban areas. The flight of young people to the cities has left some rural counties in the midsection of the United States with populations whose median age is 45 or older. Some warm areas of the United States have become retirement havens for the elderly; parts of Arizona and Florida, for example, have populations far above the average age. Communities such as Sun City near Phoenix,

Arizona, legally restrict residence to the elderly (Figure 3.11, page 89). In Great Britain, coastal districts have a much higher proportion of elderly than does the interior, suggesting that the aged often migrate to seaside locations when they retire.

A very useful graphic device for comparing age characteristics is the **population pyramid** (Figure 3.12, page 90). Careful study of such pyramids not only reveals the past progress of birth control but also allows geographers to predict future population trends. Youth-weighted pyramids, those that are broad at

population pyramid
A graph used to show the age and sex composition of a population.



the base, suggest the rapid growth typical of the population explosion. What's more, broad-based population pyramids not only reflect past births but also show that future growth will rely on the momentum of all of those young people growing into their reproductive years and having their own families, regardless of how small those families may be in contrast to earlier generations. Those population pyramids with more of a cylindrical shape represent countries approaching population stability or those in demographic decline. A quick look at a country's population pyramid can tell volumes about its past as well as its future. How many dependent people—the very old and the very

young—live there? Has the country suffered the demographic effects of genocide or a massive disease epidemic (**Figure 3.13**, page 92)? Are significantly more boys than girls being born? These questions and more can be explored at a glance using a population pyramid.

The Geography of Gender

Although the human race is divided almost evenly between females and males, geographical differences do occur in the **sex ratio**: the ratio between men and women in a

sex ratio

The numerical ratio of males to females in a population.

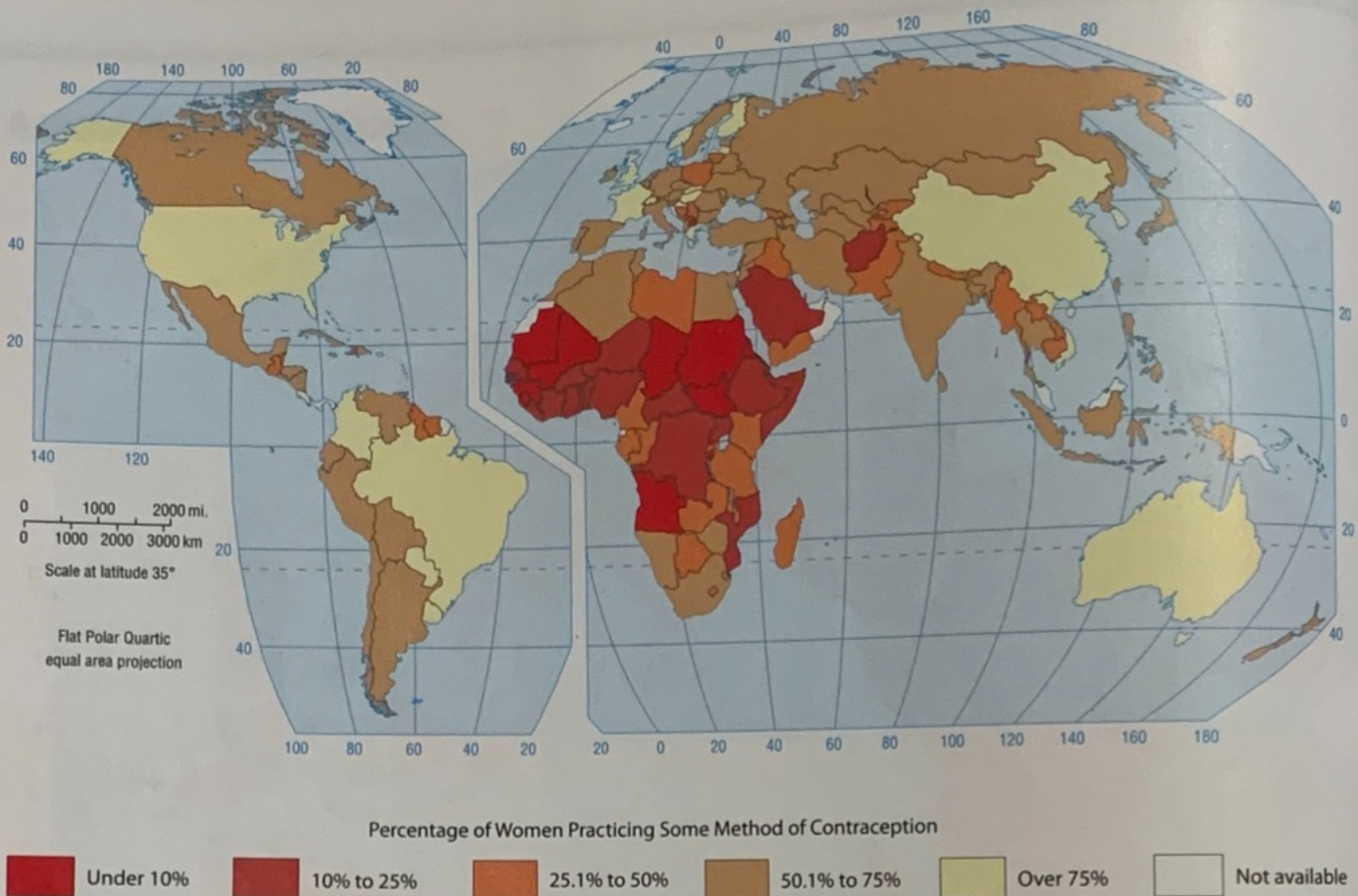


FIGURE 3.9 The geography of contraception in the modern world, as measured by the percentage of women using devices of any sort. Contraception is much more widely practiced than abortion, but cultures differ greatly in their level of acceptance. Several different devices are included. (Source: World Population Data Sheet.)

population (Figure 3.14, pages 92–93). Slightly more boys than girls are born, but infant boys have slightly higher mortality rates than do infant girls. Recently settled areas typically have more males than females, as is evident in parts of Alaska, northern Canada, and tropical Australia. According to the U.S. Census Bureau, in 2009 males constituted 52 percent of Alaska's inhabitants. By contrast, Mississippi's population was 52 percent female, reflecting in part the emigration of young males in search of better economic opportunities elsewhere. Some poverty-stricken parts of South Africa are as much as 59 percent female. Prolonged wars reduce the male population. And, in general, women tend to outlive men. The population pyramid is also useful in showing gender ratios. Note, for instance, the larger female populations in the upper bars for both the United States and Sun City, Arizona, in Figure 3.12 (page 90).

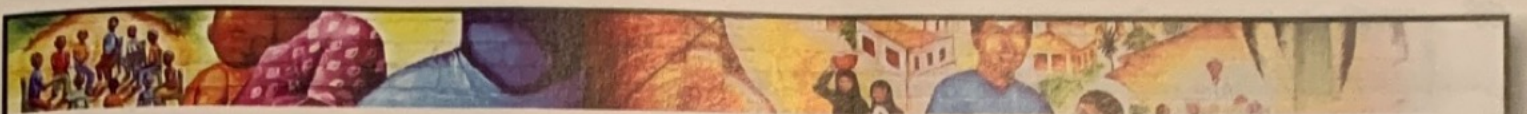
Beyond such general patterns, gender often influences demographic traits in specific ways. Often **gender**

roles—culturally specific notions of what it means to be a man and what it means to be a woman—are closely tied to how many children

are produced by couples. In many cultures, women are considered more womanly when they produce many offspring. By the same token, men are seen as more manly when they father many children. Because the raising of children often falls to women, the spaces that many cultures associate with women tend to be the private family spaces of the home. Public spaces such as streets, plazas, and the workplace, by contrast, are often associated with men. Some cultures go so far as to restrict where women and men may and may not go, resulting in a distinctive geography of gender, as Figure 3.15, page 94, illustrates (see also Seeing Geography, page 112). Falling fertility levels that coincide with higher levels of education for women, however, have resulted in numerous challenges to these cultural ideas of male and female spaces. As more

gender roles

What it means to be a man or a woman in different cultural and historical contexts.



Subject to Debate

Female: An Endangered Gender?

Does the simple fact of being female expose a person to demographic peril? In most societies, women are viewed as valuable, even powerful, particularly as mothers, nurturers, teachers, and spiritual leaders. Yet in other important ways, to be female is to be endangered. We will consider this controversial idea with an eye to how demographics and culture closely shape each other.

Many cultures demonstrate a marked preference for males. The academic term describing this is *androcentrism*; you may know it as *patriarchy*, *male bias*, or simply *sexism*. Whether a preference for males is a feature of all societies has been disputed. Some societies pass along forms of their wealth, property, and prestige from mother to daughter, rather than from father to son. This is rare, however, and it is clear that the roots of the cultural preference for males are historically far-reaching and widespread. In most societies, positions of economic, political, social, and cultural prestige and power are held largely by men. Men typically are considered to be the heads of households. Family names tend to pass from father to son, and with them, family honor and wealth. In traditional societies, when sons marry, they usually bring their wives to live in their parents' house and are expected to assume economic responsibility for aging parents.

For all of these reasons, in many places a cultural premium is placed on producing male children. Because couples often can choose to have more children, having a girl first is usually not a problem. However, in countries that have enacted strict population control programs, couples may not be given the chance to try again for a male child. This has resulted in severe pressures on couples to have boys in some countries, particularly in China and India. In both of these countries, female-specific infanticide or abortion has resulted in a growing gender imbalance. Ultrasound devices that allow gender

identification of fetuses are now available even to rural peasants in China. About 100,000 such devices were in use as early as 1990 in China, and by the middle of that decade there were 121 males for every 100 females among children two years of age or younger. The sex ratio in China is radically changing, and a profound gender imbalance already exists there. In India, too, there were only 927 girls for each 1000 boys in 2001.

The cultural ramifications of such male-heavy populations are potentially profound. Men of marriageable age are increasingly unable to find female partners. Social analysts speculate that this will lead to human trafficking and violence against women. In China, the policy of one child per couple has resulted in the so-called four-two-one problem. This refers to the fact that the generational structure of many families now reflects four grandparents, two parents, and a single male child. This places enormous pressures on the shoulders of the male child to care for aging parents and grandparents. It also encourages parents and grandparents to lavish all of their attention, wealth, and hopes on the only child. For some families, this has led to the "little emperor syndrome," whereby the male heir becomes spoiled, unable to cope independently, and even obese.

Continuing the Debate

As noted, most societies value females. For a number of reasons, however, some societies show a clear preference for males. Keeping all of this in mind, consider these questions:

- Are Chinese families somewhat justified in emphasizing having a boy at all costs?
- According to a recent report, Americans using technology to select their baby's gender, unlike the Chinese, more often choose to have a girl. Why do you think there is a difference between male and female preference in these two societies?

This "little emperor" poses with his grandparents. (Dennis Cox, LLC)



Youth and Old-Age Populations

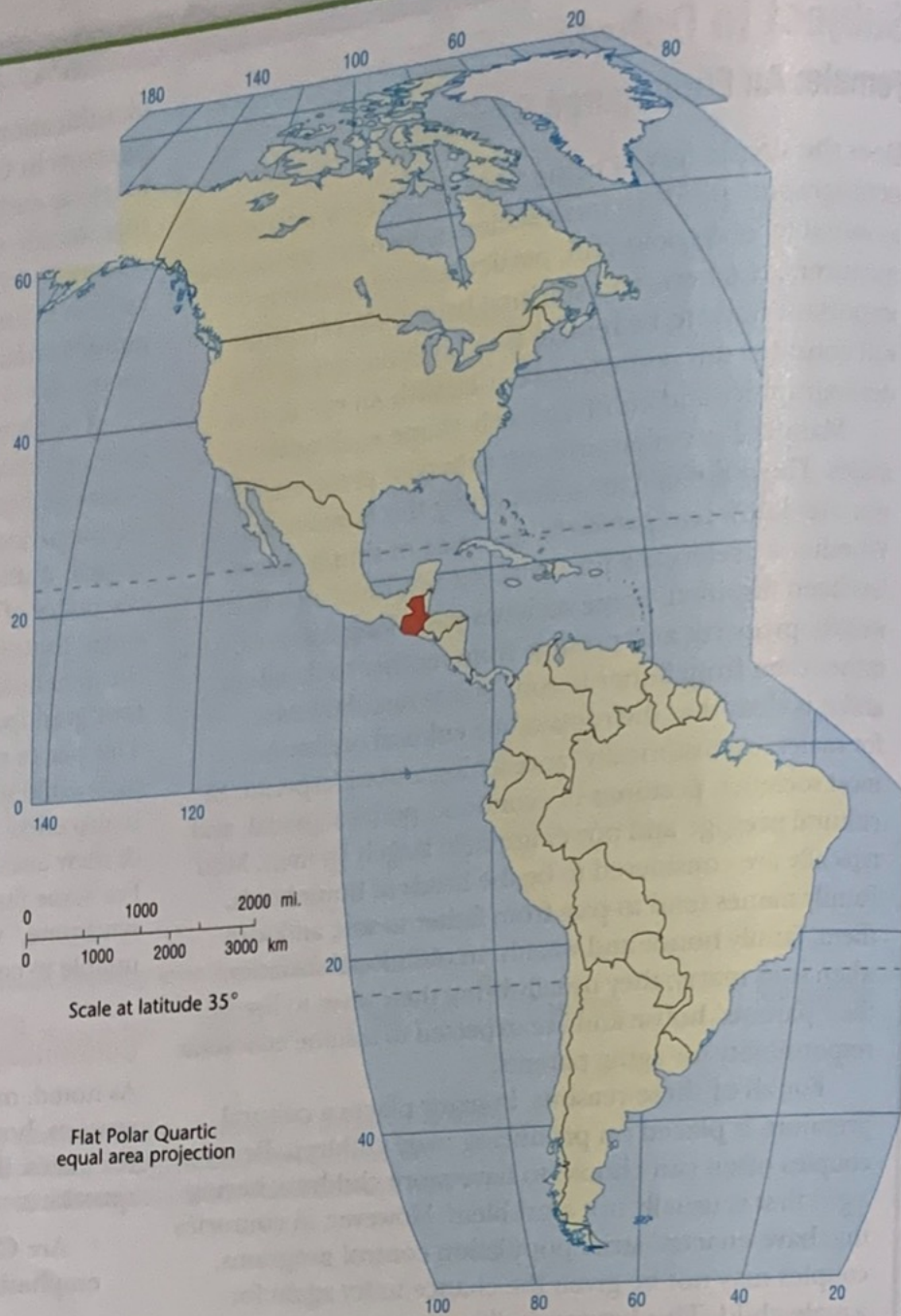
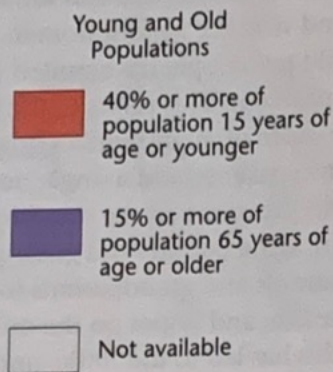


FIGURE 3.10 The world pattern of youth and old age. Some countries have populations with unusually large numbers of elderly people; others have preponderantly young populations. *What issues might be associated with either situation?*

(Source: Population Reference Bureau.)

and more women enter the workplace, for instance, ideas of where women should and should not go slowly become modified. Clearly, gender is an important factor to consider in our exploration of population geography (see also Subject to Debate, page 87, and Patricia's Notebook, page 91).

Standard of Living

Various demographic traits can be used to assess standard of living and analyze it geographically. **Figure 3.16**, pages 94–95, is a simple attempt to map living standards using the **infant mortality rate**: a measure of how many children per

1000 population die before reaching one year of age. Many experts believe that the infant mortality rate is the best single index of living standards because it is affected by many different factors: health, nutrition, sanitation, access to doctors, availability of clinics, education, ability to obtain medicines, and adequacy of housing. A vivid geographical pattern is revealed by the infant mortality rate.

Another good measure of quality of life is the United Nations Human Development Index (HDI), which combines measures of literacy, life expectancy, education, and wealth (see Figure 1.11, pages 14–15). The highest possible

(continued on page 93)

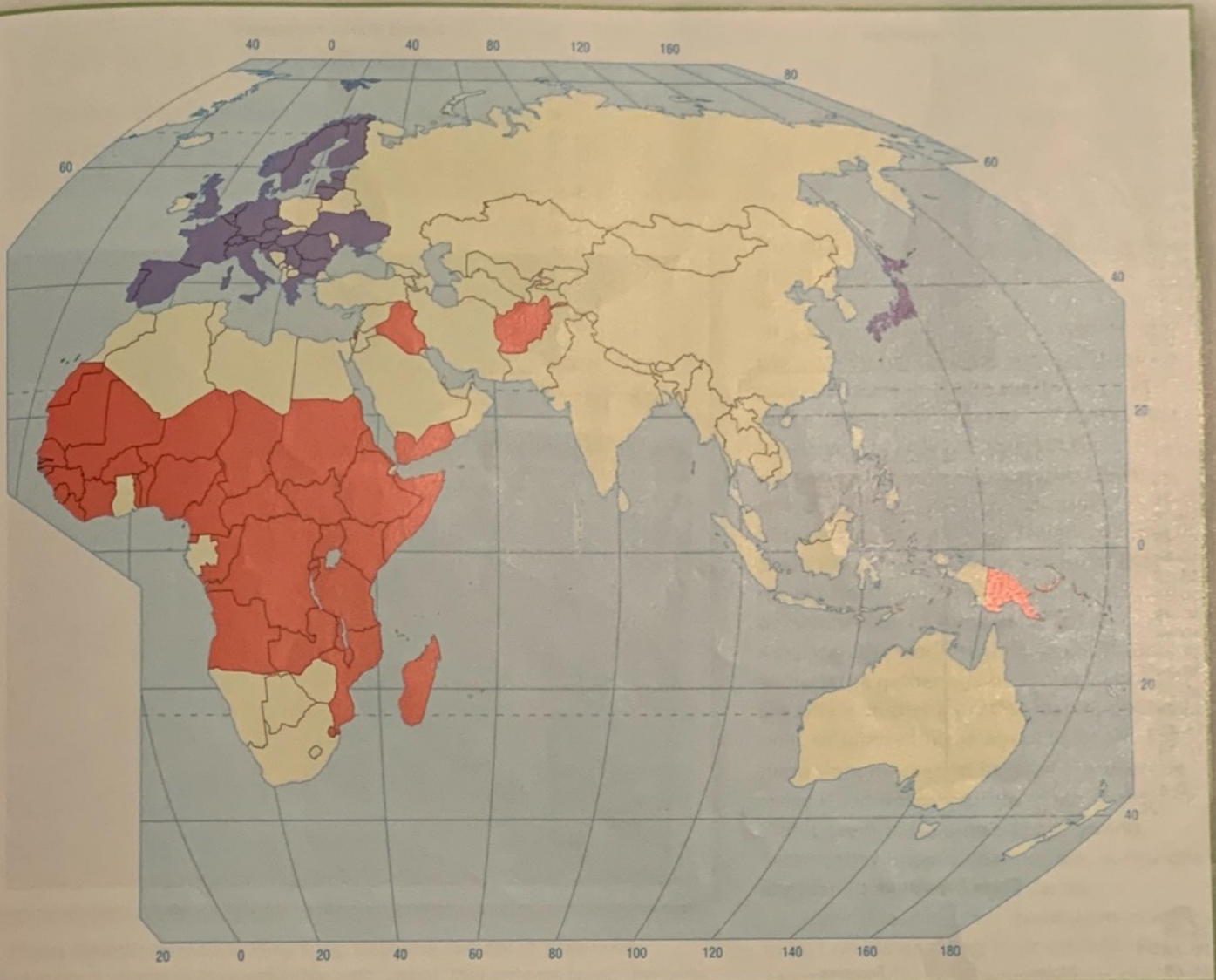


FIGURE 3.11 Residents of Sun City, Arizona, enjoy the many recreation opportunities provided in this planned retirement community, where the average age is 75. (A. Ramey/PhotoEdit Inc.)

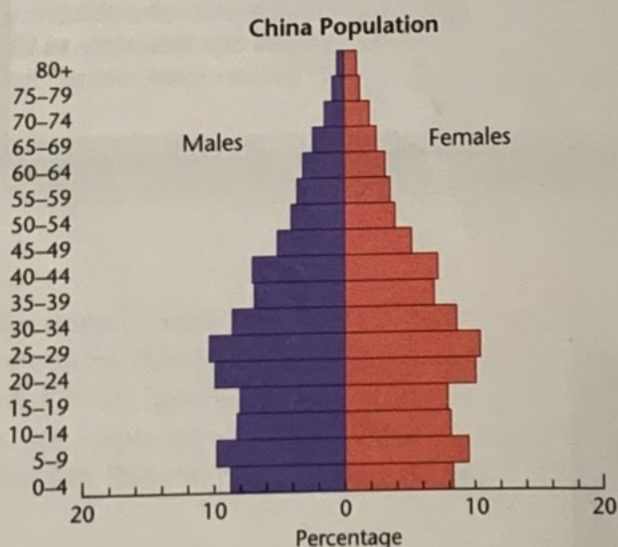
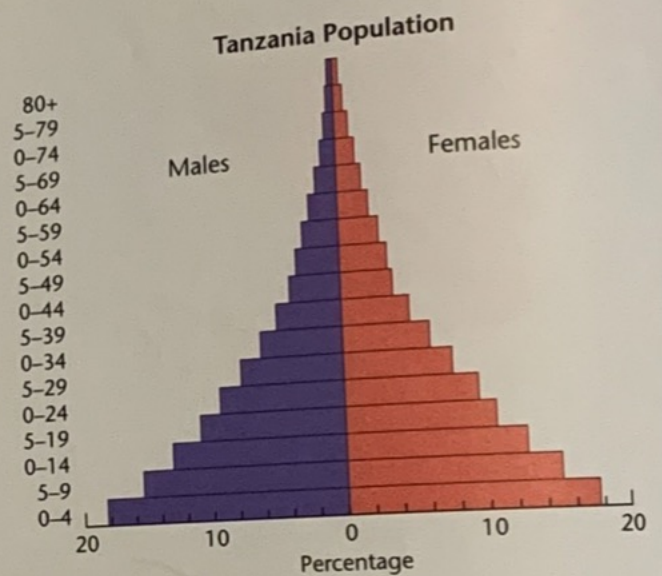
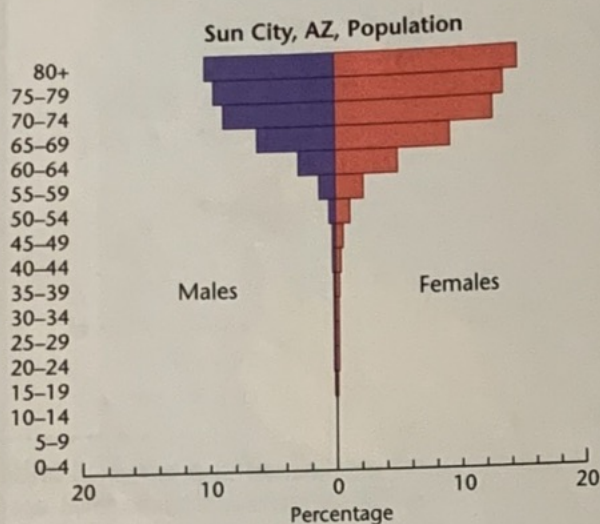
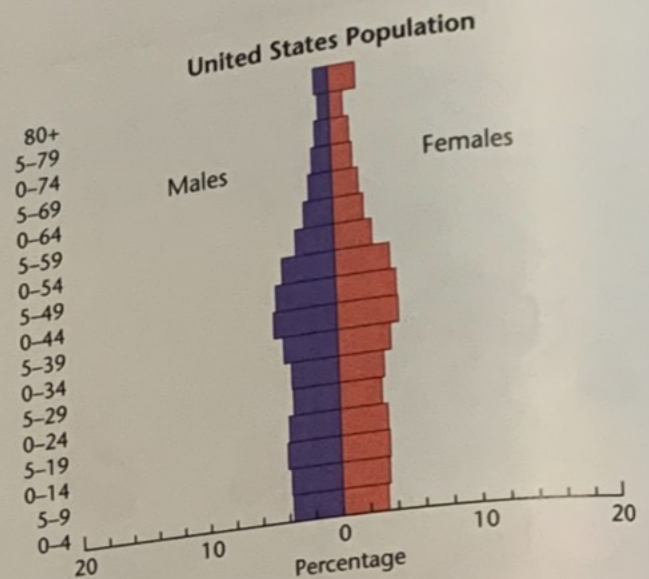
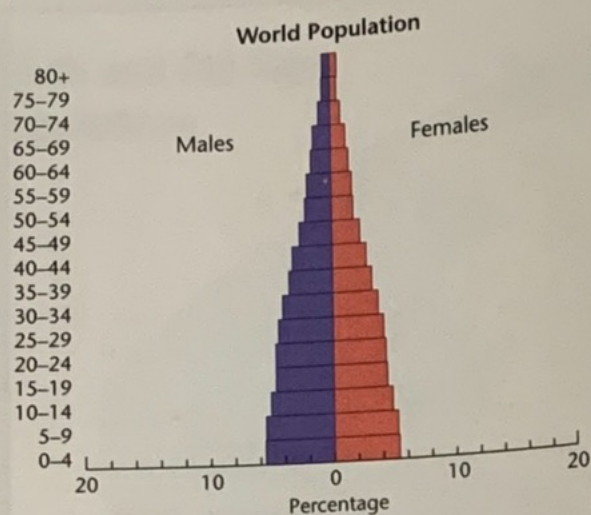


FIGURE 3.12 Population pyramids for the world and selected countries and communities.

Tanzania displays the classic stepped pyramid of a rapidly expanding population, whereas the U.S. pyramid looks more like a precariously balanced pillar. China's population pyramid reflects the lowered numbers of young people as a result of that country's one-child policy. **How do these pyramids help predict future population growth?** (Source: Population Reference Bureau.)

Patricia's Notebook

Demystifying the Sunday Crowds in Hong Kong



Patricia Price



Filipina domestic servants in Hong Kong. On Sunday, their day off, these women congregate in covered walkways and other public spaces. They exchange gossip, play cards, cut each other's hair, and relax. (Courtesy of Patricia L. Price.)

for and looking after the children of the families who hire them. Wages in Hong Kong are much higher than back home in the Philippines: a major pull factor. However, working conditions can be far from ideal, involving hard physical labor and long hours. Reports of abuse of Filipina servants by their employers are numerous. If a servant is fired, she will be deported if she cannot find another job quickly. The stress of long separations from husbands and children back in the Philippines has led to the breakup of families. In addition, some of these women find themselves coerced into Asia's booming sex industry. Knowing this makes me think twice about these happy-looking women. Though being a domestic servant isn't a pleasant or highly paid job anywhere in the world, Filipina maids in Hong Kong certainly seem to face a number of pressures, ranging from labor conditions, family circumstances, and the lack of good job alternatives. While the news coverage of domestic servants in the United States seems to be mostly about their status as documented or undocumented workers, there are obviously additional factors to keep in mind. These factors complicated my picture of these women, who, at first glance, seemed happy and carefree as they enjoyed their day off.

During a recent

trip to Hong

Kong, I was

struck by the dense crowds of women that can be seen on Sundays. Some of these gatherings are in public spaces, such as parks. Others are found in city spaces that are usually heavily trafficked during workdays, such as the steps outside large office buildings. The largest crowd I observed was under the covered walkway of a subway station. Initially, I thought that these women were gathered for a political demonstration of some kind. In Latin America—the world region I'm most familiar with—large gatherings of people almost always mean that a protest march, political rally, or labor strike is about to begin. But there were no men to be seen anywhere in these Hong Kong throngs! In addition, they didn't seem to be protesting anything. Rather, they happily chatted, ate, styled one another's hair, and played cards.

Later, I learned that these women were in fact maids enjoying their day off. For several decades now, women from the Philippines have migrated to Hong Kong to work as domestic servants, doing chores

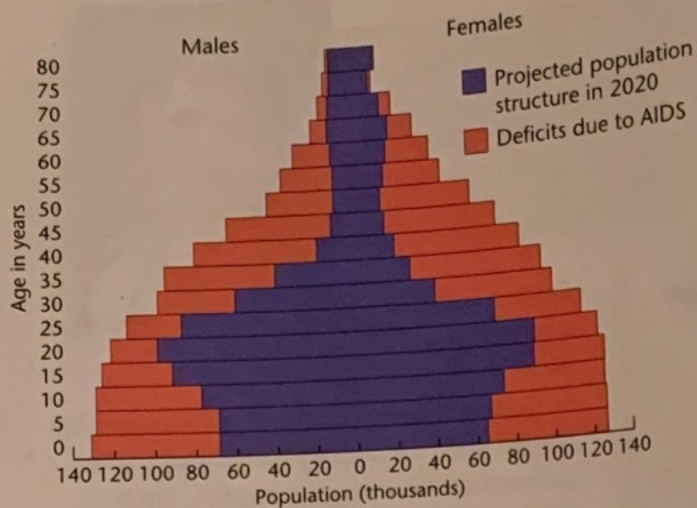


FIGURE 3.13 Projected population structure with and without the AIDS epidemic in Botswana in 2020. (Sources: U.S. Bureau of Census; Food and Agriculture Organization of the United Nations.)

Gender Ratio

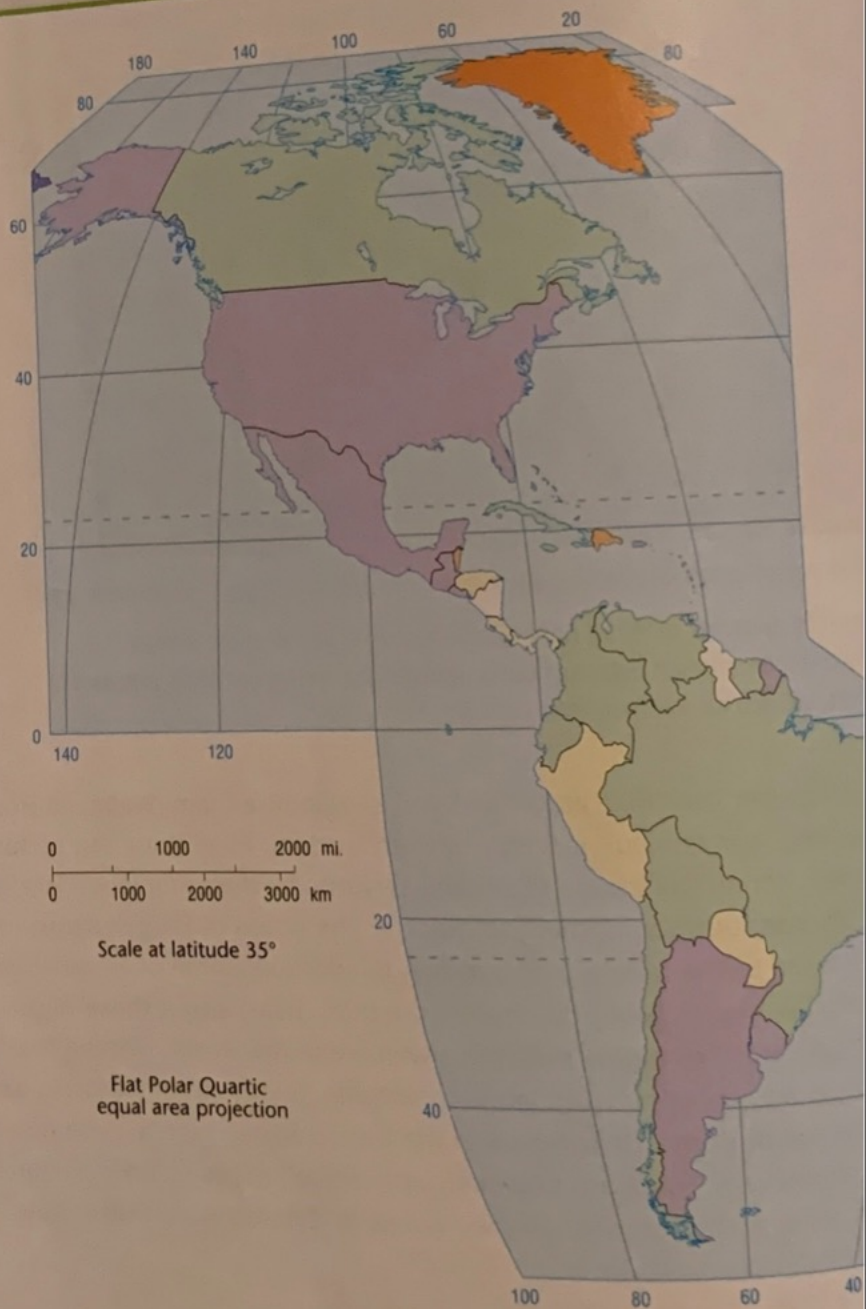
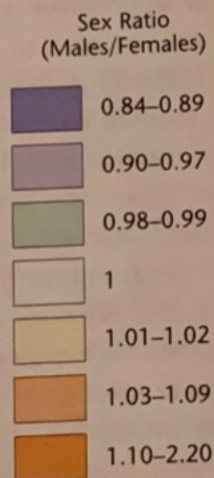


FIGURE 3.14 Females as a percentage of total population. What explanations can you come up with for the gender imbalances shown on this map? (Source: Population Reference Bureau.)

score is 1.000, and the three top-ranked countries in 2009 were Norway, Australia, and Iceland.

Examination of the HDI reveals some surprises. If all countries spent equally on those things that improve their HDI rankings, such as education and health care, then we would expect the wealthiest countries to place first on the list. According to the International Monetary Fund, the United States ranked 9th among 180 ranked nations in wealth as measured by the gross domestic product (GDP) per capita in 2009. Yet it ranked 13th in the world on the HDI. Compare this to Barbados, which ranked 45th by GDP per capita but came in much higher on the HDI at 37th. Why did Barbados rank higher in living standards

than its monetary wealth would indicate, whereas the United States ranked lower? We would have to conclude that the government of Barbados places a relative priority on spending for education and health care, whereas the government of the United States does not.

Even more striking is the low standing of the United States when the Human Poverty Index (HPI) is used. The HPI measures social and economic deprivation by examining the prevalence of factors such as low life expectancy, illiteracy, poverty, and unemployment. Among the world's high-income countries, the United States ranks near the bottom, with only Italy and Ireland having larger numbers of deprived people.

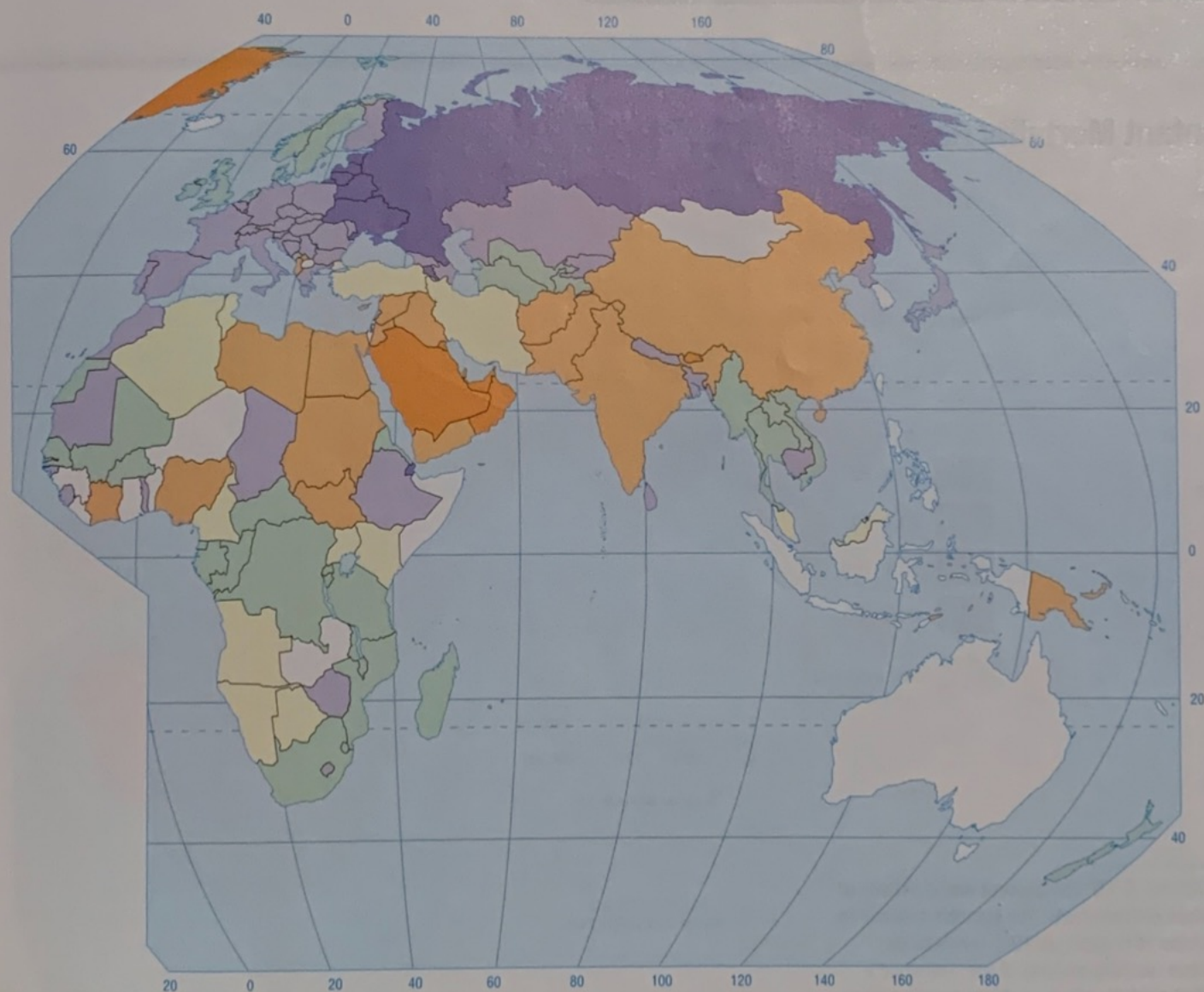




FIGURE 3.15 Segregated beach. This portion of the beachfront along the Israeli city of Tel Aviv allows women and men to swim on separate days. Young children of both genders accompany their mothers, whereas older boys visit with their fathers. Gender-based segregation is important for Israel's orthodox Jews. (Courtesy of Patricia L. Price.)

Infant Mortality Rate

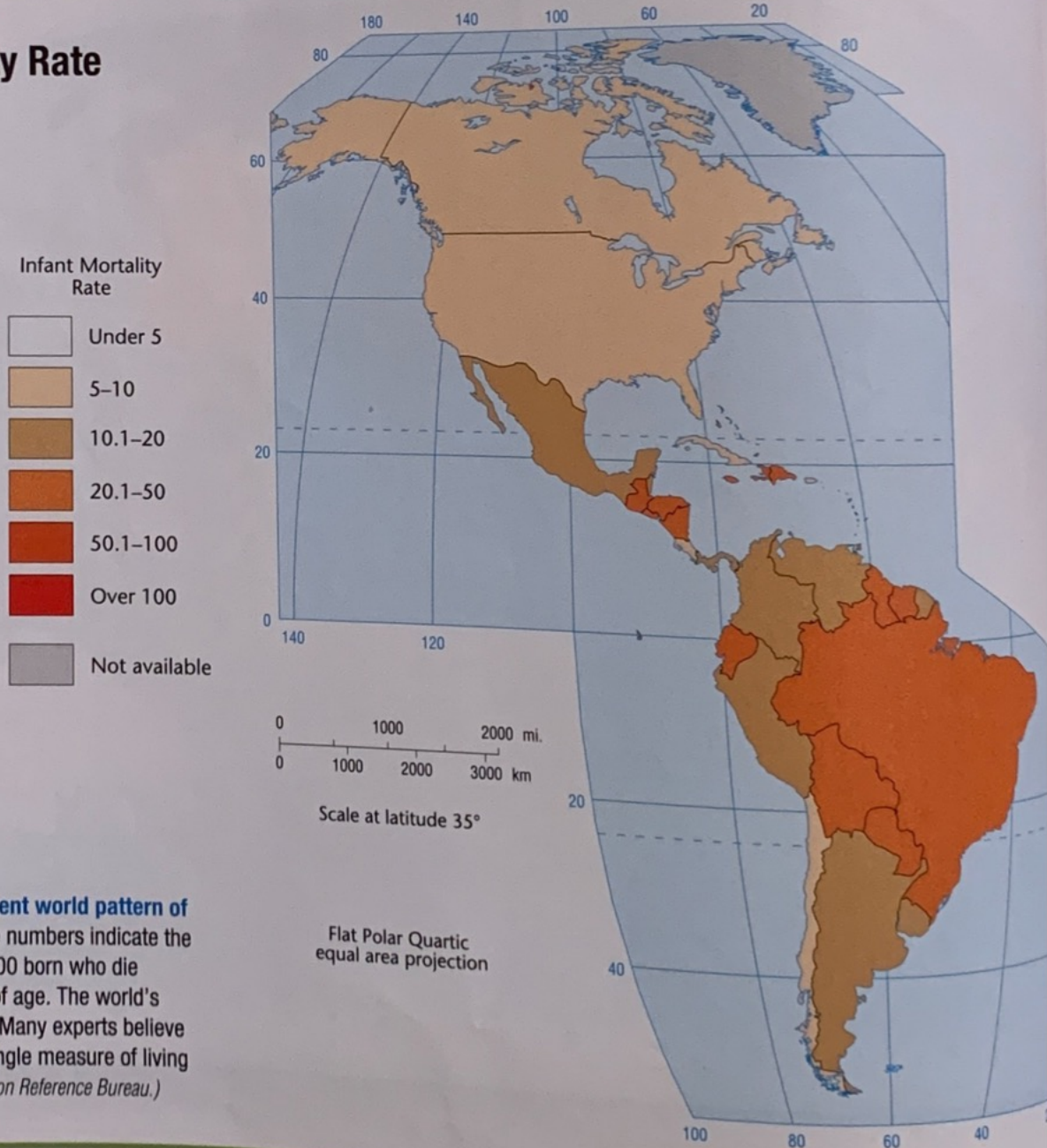


FIGURE 3.16 The present world pattern of infant mortality rate. The numbers indicate the number of children per 1000 born who die before reaching one year of age. The world's infant mortality rate is 44. Many experts believe that this rate is the best single measure of living standards. (Source: Population Reference Bureau.)



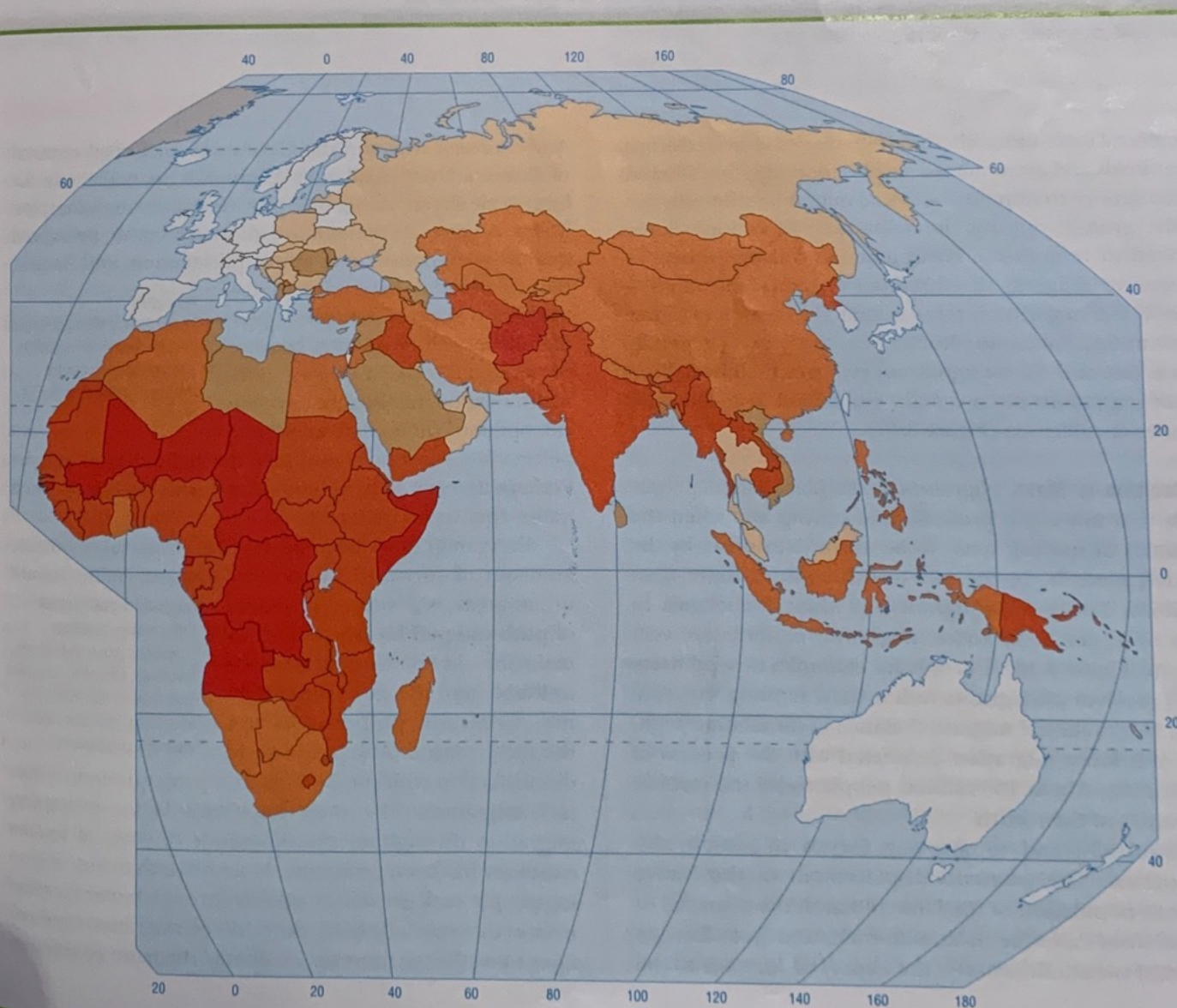
Mobility

How does demography relate to the theme of mobility? After natural increases and decreases in populations, the second of the two basic ways in which population numbers are altered is the migration of people from one place to another, and it offers a straightforward illustration of relocation diffusion. When people migrate, they sometimes bring more than simply their culture; they can also bring disease. The introduction of diseases to new places can have dramatic and devastating consequences. Thus, the spread of diseases is also considered as part of the theme of mobility because diseases move with people.

Migration

Humankind is not tied to one locale. *Homo sapiens* most likely evolved in Africa, and ever since, we have proved remarkably able to adapt to new and different physical environments. We have made ourselves at home in all but the most inhospitable climates, shunning only such places as ice-sheathed Antarctica and the shifting sands of the Arabian Peninsula's "Empty Quarter." Our permanent habitat extends from the edge of the ice sheets to the seashores, from desert valleys below sea level to high mountain slopes. This far-flung distribution is the product of migration.

Early human groups moved in response to the migration of the animals they hunted for food and the ripening seasons of the plants they gathered. Indeed, the



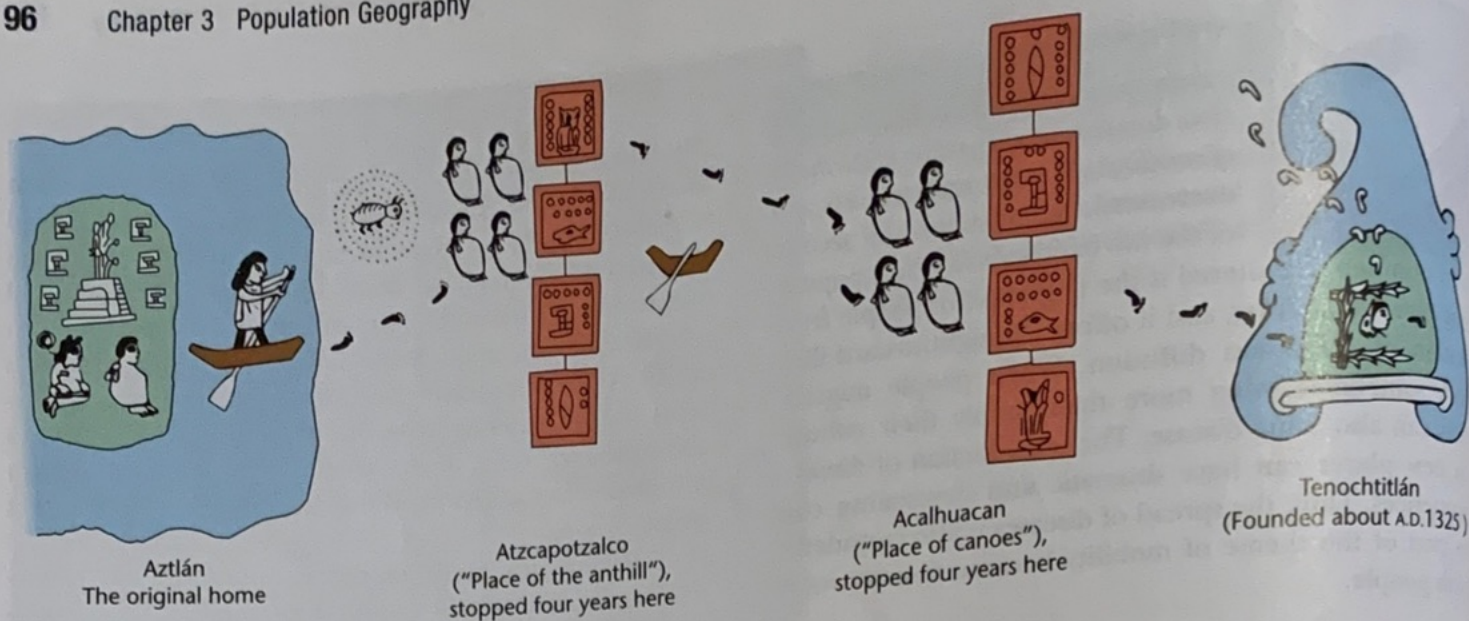


FIGURE 3.17 Segments of an Aztec codex, depicting the prehistoric migration of the ancient Aztecs from an island, possibly in northwestern Mexico, to another island in a lake at the site of present-day Mexico City, where they founded their capital, Tenochtitlán. Clearly, the epic migration was a central event in their collective memory. (After de Macgregor, 1984: 217.)

agricultural revolution, whereby humans domesticated crops and animals and accumulated surplus food supplies, allowed human groups to stop their seasonal migrations. But why did certain groups opt for long-distance relocation? Some migrated in response to environmental collapse, others in response to religious or ethnic persecution. Still others—probably the majority, in fact—migrated in search of better opportunities. For those who migrate, the process generally ranks as one of the most significant events of their lives. Even ancient migrations often remain embedded in folklore for centuries or millennia (Figure 3.17).

The Decision to Move Migration takes place when people decide that moving is preferable to staying and when the difficulties of moving seem to be more than offset by the expected rewards. In the nineteenth century, more than 50 million European emigrants left their homelands in search of better lives. Today, migration patterns are very different (Figure 3.18). Europe, for example, now predominantly receives immigrants rather than sending out emigrants. International migration stands at an all-time high, much of it labor migration associated with the process of globalization. About 160 million people today live outside the country of their birth.

Historically, and to this day, forced migration also often occurs. The westward displacement of the Native American population of the United States; the dispersal of the Jews from Palestine in Roman times and from Europe in the mid-twentieth century; the export of Africans to the

Americas as slaves; and the Clearances, or forced removal of farmers from Scotland's Highlands to make way for large-scale sheep raising—all provide depressing examples. Today, refugee movements are all too common, prompted mainly by despotism, war, ethnic persecution, and famine. Recent decades have witnessed a worldwide flood of **refugees**: people who leave their country because of persecution based on race, ethnicity, religion, nationality, or political opinion (note that economic persecution does not fall under the definition of *refugee*). Perhaps as many as 16 million people who live outside their native country are refugees.

Every migration, from the ancient dispersal of humankind out of Africa to the present-day movement toward urban areas, is governed by a host of **push-and-pull factors** that act to make the old home unattractive or unlivable and the new land attractive. Generally, push factors are the most central. After all, a basic dissatisfaction with the homeland is prerequisite to voluntary migration. The most important factor prompting migration throughout the thousands of years of human existence has been economic. More often than not, migrating people seek greater prosperity through better access to resources, especially land. Both forced migrations and refugee movements, however, challenge the basic assumption

refugees

Those fleeing from persecution in their country of nationality. The persecution can be religious, political, racial, or ethnic.

push-and-pull factors

Unfavorable, repelling conditions (push factors) and favorable, attractive conditions (pull factors) that interact to affect migration and other elements of diffusion.

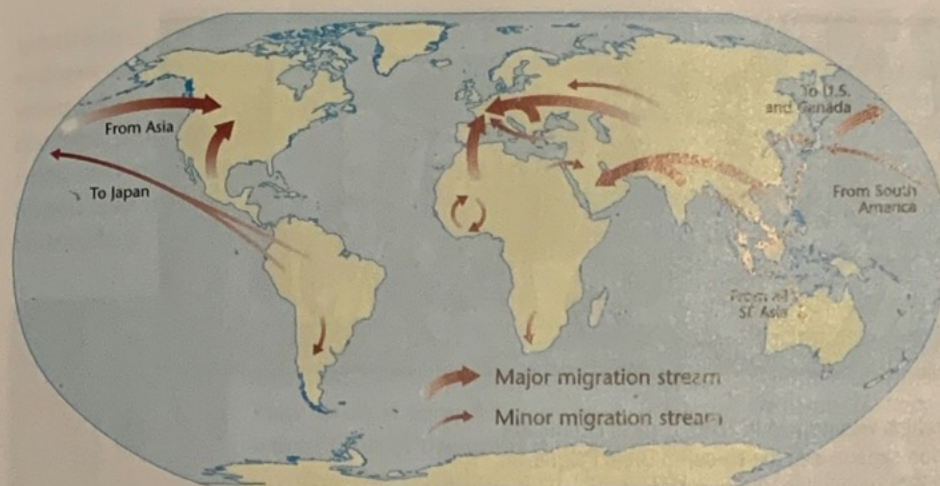


FIGURE 3.18 Major and minor migration flows today. Why have these flows changed so profoundly in the past hundred years? (Source: Population Reference Bureau.)

of the push-and-pull model, which posits that human movement is the result of choices.

Diseases on the Move

Throughout history, infectious disease has periodically decimated human populations. One has only to think of the vivid accounts of the Black Death episodes that together killed one-third of medieval Europe's population to get a sense of how devastating disease can be. Importantly for cultural geographers, diseases both move in spatially specific ways and occasion responses that are spatial in nature.

The spread of disease provides classic illustrations of both expansion and relocation diffusion. Some diseases are noted for their tendency to expand outward from their points of origin. Commonly borne by air or water, the viral pathogens for contagious diseases such as influenza and cholera spread from person to person throughout an affected area. Some diseases spread in a hierarchical diffusion fashion, whereby only certain social strata are exposed. The poor, for example, have always been much more exposed to the unsanitary conditions—rats, fleas, excrement, and crowding—that have occasioned disease epidemics. Other illnesses, particularly airborne diseases, affect all social and economic classes without regard for human hierarchies: their diffusion pattern is literally contagious. Indeed, disease and migration have long enjoyed a close relationship. Diseases have spread and relocated thanks to human movement. Likewise, widespread human migrations have occurred as the result of disease outbreaks.

When humans engage in long-distance mobility, their diseases move along with them. Thus, cholera—a waterborne disease that had for centuries been endemic to the Ganges River region of India—broke out in Calcutta (now

called Kolkata) in the early 1800s. Because Calcutta was an important node in Britain's colonial empire, cholera quickly began to relocate far beyond India's borders. Soldiers, pilgrims, traders, and travelers spread cholera throughout Europe, then from port to port across the world through relocation diffusion, making cholera the first disease of global proportions.

Early responses to contagious diseases were often spatial in nature. Isolation of infected people from the healthy population—known as quarantine—was practiced. Sometimes only the sick individuals were quarantined, whereas at other times households or entire villages were shut off from outside contact. Whole shiploads of eastern European immigrants to New York City were routinely quarantined in the late nineteenth century. Another early spatial response was to flee the area where infection had occurred. During the time of the plague in fourteenth-century Europe, some healthy individuals abandoned their ill neighbors, spouses, and even children. Some of them formed altogether separate communities, whereas others sought merely to escape the city walls for the countryside (**Figure 3.19**, page 98).

Targeted spatial strategies could be implemented once it became known that some diseases spread through specific means. The best-known example is John Snow's 1854 mapping of cholera outbreaks in London, illustrated in **Figure 3.20** (page 98), which allowed him to trace the source of the infection to one water pump. Thanks to his detective work, and the development of a broader medical understanding of the role of germs in the spread of disease, cholera was discovered to be a waterborne disease that could be controlled by increasing the sanitary conditions of water delivery.

The threat of deadly disease is hardly a thing of the past. Today, geographers play vital roles in understanding the diffusion of HIV/AIDS, SARS (severe acute respiratory



FIGURE 3.19 Fleeing from disease. This woodcut, which was printed in 1630, depicts Londoners leaving the pestilent city in a cart. In 1665–1666, London experienced the so-called Great Plague, an outbreak of bubonic plague that killed one-fifth of the city's population. (Bettmann/Corbis.)

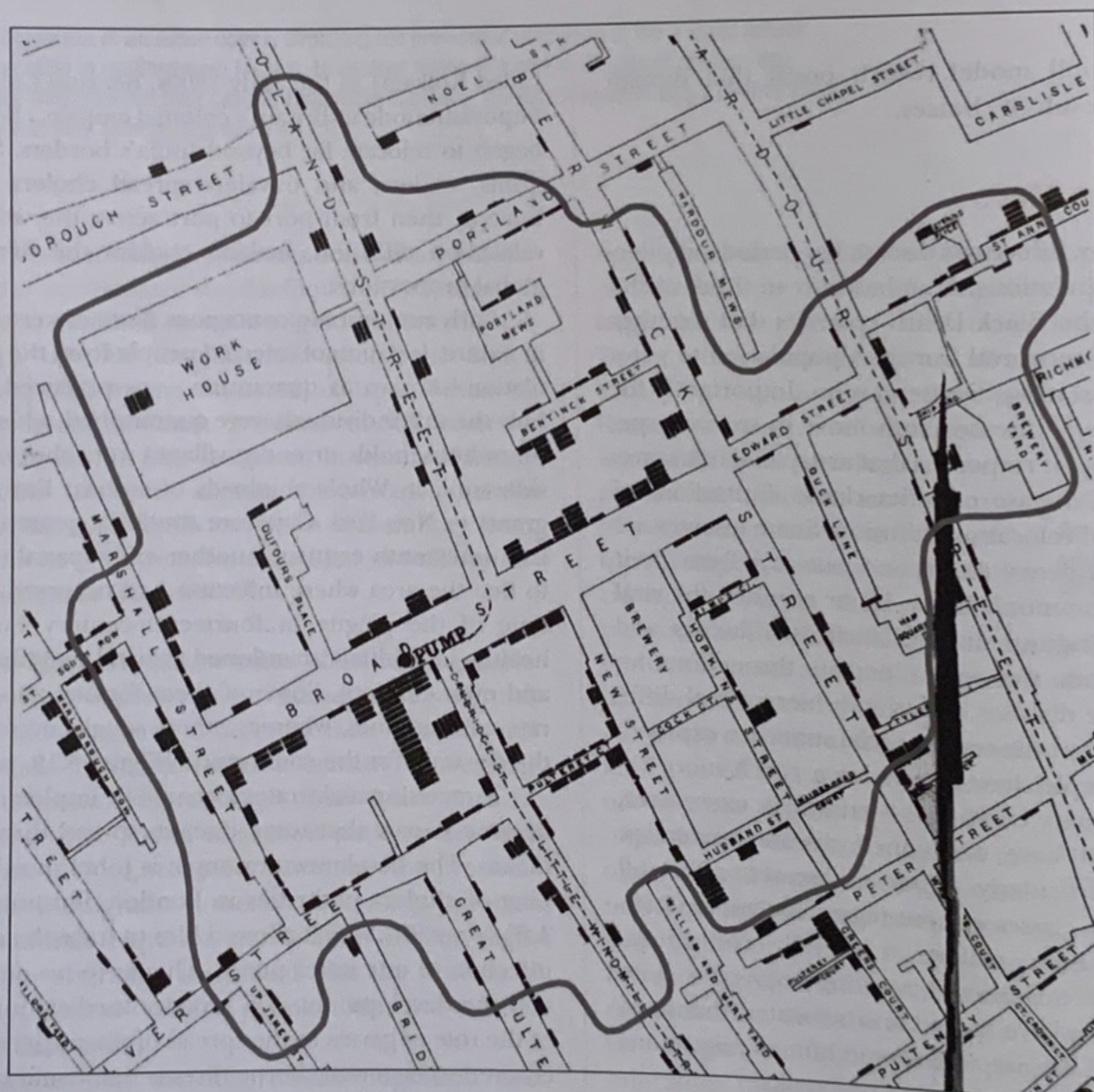


FIGURE 3.20 Mapping disease. This map was constructed by London physician John Snow. Snow was skeptical of the notion that “bad air” somehow carried disease. He interviewed residents of the Soho neighborhood stricken by cholera to construct this map of cholera cases and used it to trace the outbreak to the contaminated Broad Street pump. Snow is considered to be a founder of modern epidemiology. (Courtesy of The John Snow Archive.)

syndrome), and the so-called swine flu in order to better address outbreaks and halt the spread of these global scourges. By mapping the spread of these contemporary diseases, understanding the pathways traveled by their carriers, and developing appropriate spatial responses, it is hoped that mass epidemics and disease-related panics can be avoided.



Globalization

How much is enough? How much is too much? One of the great debates today involves the population of the Earth.

How many people can the Earth support? Should humans limit their reproduction, and who should decide? There are no precise numbers involved in this debate, but these questions are so hotly contested because addressing them in a conscientious way may well determine the long-term fate of the human race.

Population Explosion?

population explosion
The rapid, accelerating increase in world population since about 1650 and especially since about 1900.

One of the fundamental issues of the modern age is the **population explosion**: a dramatic increase in world population since 1900 (Figure 3.21).

The crucial element triggering this explosion has been a steep decline in the death rate, particularly for infants and children, in most of the world, without an accompanying universal decline in fertility. At one time in traditional cultures, only two or three offspring in a family of six to eight children might live to adulthood, but when improved health conditions allowed more children to survive, the cultural norm encouraging large families persisted.

Until very recently, the number of people in the world has been increasing geometrically, doubling in shorter and shorter periods of time. It took from the beginning of human history until A.D. 1800 for the Earth's population to grow to 1 billion people. But from 1800 to 1930, it grew to 2 billion, and in only 45 more years it doubled again (Figure 3.22, page 100). The overall effect of even a few population doublings is astonishing. As an illustration of a simple geometric progression, consider the following legend. A king was willing to grant any wish to the person who could supply a grain of wheat for the first square of his chessboard, two grains for the second square, four for the third, eight for the fourth, and so on. To cover all 64 squares and win, the candidate would have had to present a cache of wheat larger than today's worldwide wheat crop. Looking at the population explosion in another way, it is estimated that 61 billion humans have lived in the entire 200,000-year period since *Homo sapiens* originated. Of these, 6.8 billion (roughly 10 percent) are alive today. One

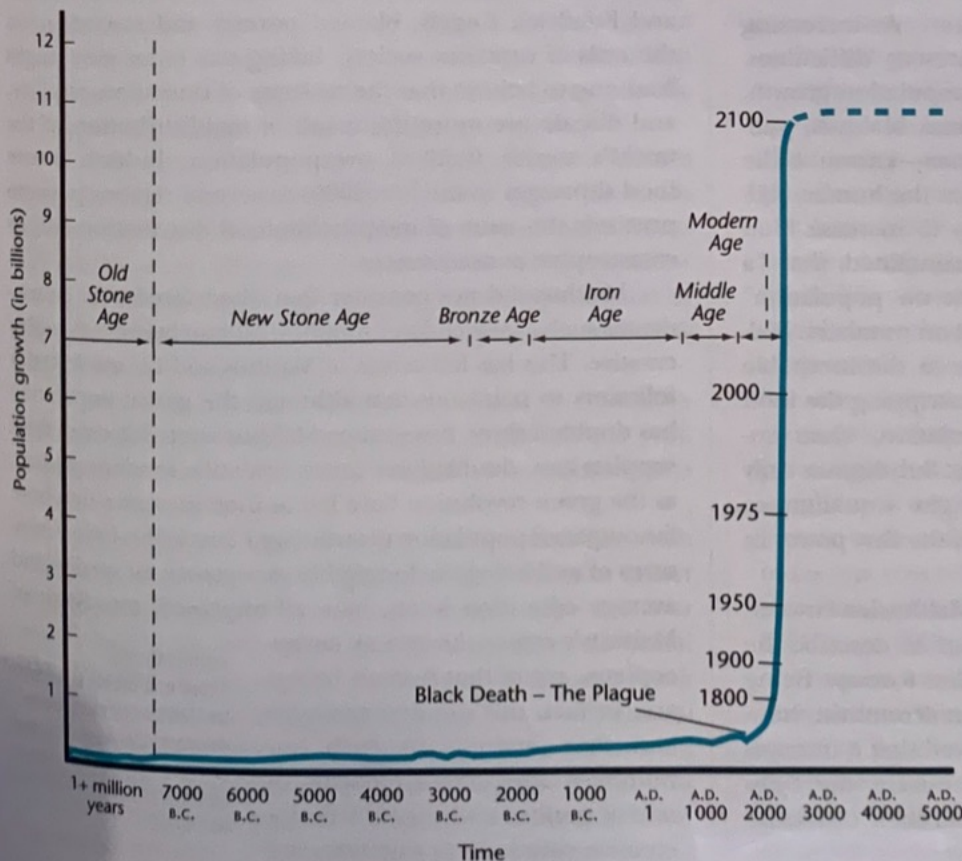


FIGURE 3.21 S-shaped world population curve. Is the global population explosion nearing its end? If this graph is right, the world's population will stabilize at nearly 11 billion by the year 2100. (Adapted from Population Reference Bureau and United Nations, *World Population Projections 2100*, 1998.)

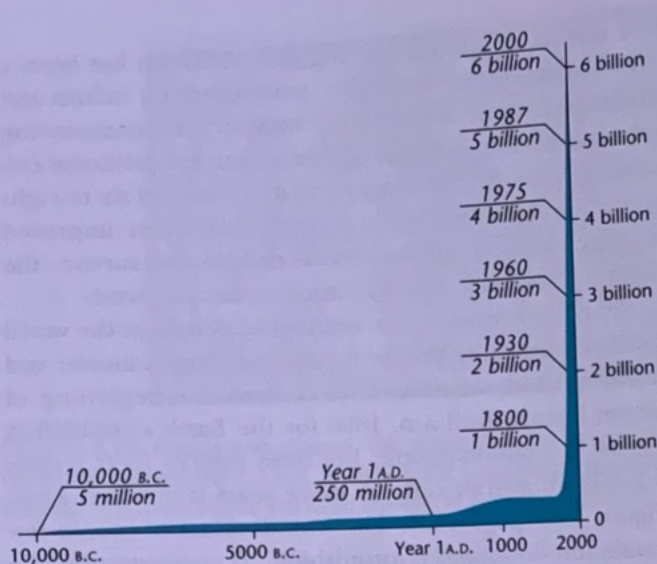


FIGURE 3.22 World population doubling timeline. This graph illustrates the ever-faster doubling times of the world's population. Whereas accumulating the first billion people took all of human history until about A.D. 1800, the next billion took slightly more than a century to add, the third billion took only 30 years, and the fourth took only 15 years. (Adapted from *Sustainablescale.org*.)

of every 10 humans who ever lived on Earth is alive today. If we were to consider only those humans who survived into adulthood, the proportion alive today would come closer to one in five!

Some scholars foresaw long ago that an ever-increasing global population would eventually present difficulties. The most famous pioneer observer of population growth, the English economist and cleric Thomas Malthus, published *An Essay on the Principle of Population*—known as the “dismal essay”—in 1798. He believed that the human ability to multiply far exceeded our ability to increase food production. Consequently, Malthus maintained that “a strong and constantly operating check on population” would necessarily act as a natural control on numbers. Malthus regarded famine, disease, and war as the inevitable outcome of the human population's outstripping the food supply (Figure 3.23). He wrote, “Population, when unchecked, increases in a geometrical ratio. Subsistence only increases in an arithmetical ratio. A slight acquaintance with numbers will show the immensity of the first power in comparison of the second.”

Malthusian

Those who hold the views of Thomas Malthus, who believed that overpopulation is the root cause of poverty, illness, and warfare.

The adjective **Malthusian** entered the English language to describe the dismal future Malthus foresaw. Being a cleric as well as an economist, however, Malthus believed that if humans could voluntarily restrain the “pas-

sion between the sexes,” they might avoid their otherwise miserable fate.

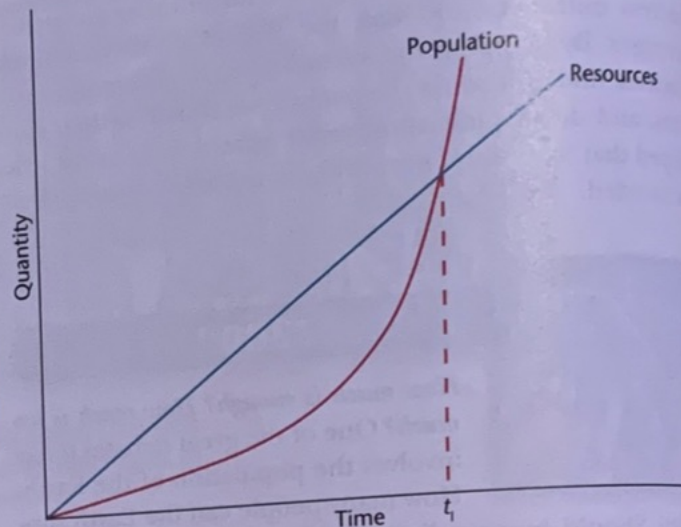


FIGURE 3.23 Malthus's dismal equation. Thomas Malthus based his theory of population growth on the simple notion that resources (food) grow in a linear fashion, whereas population grows geometrically. Beyond time t_1 , population outstrips resources, resulting in famine, conflict, and disease.

Or Creativity in the Face of Scarcity?

But was Malthus right? From the very first, his ideas were controversial. The founders of communism, Karl Marx and Friedrich Engels, blamed poverty and starvation on the evils of capitalist society. Taking this latter view might lead one to believe that the miseries of starvation, warfare, and disease are more the result of maldistribution of the world's wealth than of overpopulation. Indeed, severe food shortages in the late 2000s in several regions point to precisely this issue of inequitable food distribution and its catastrophic consequences.

Malthus did not consider that when faced with conundrums such as scarce food supplies, human beings are highly creative. This has led critics of Malthus and his modern-day followers to point out that although the global population has doubled three times since Malthus wrote his essay, food supplies have doubled five times. Scientific innovations such as the green revolution have led to food increases that have far outpaced population growth (see Chapter 8). Other measures of well-being, including life expectancy, air quality, and average education levels, have all improved, too. Some of Malthus's critics, known as **cornucopians**, argue that human beings are, in fact, our greatest resource and that attempts to curb our numbers misguidedly cheat us out of geniuses who could devise creative solutions to our resource

cornucopians

Those who believe that science and technology can solve resource shortages. In this view, human beings are our greatest resource rather than a burden to be limited.

neo-Malthusians
Modern day followers of
Thomas Malthus.

shortages. Modern-day followers of Malthus, known as **neo-Malthusians**, counter that the Earth's support systems are being strained beyond their capacity by the widespread adoption of wasteful Western lifestyles.

The fact is that the world's population is growing more slowly than before. The world's TFR has fallen to 2.6; one demographer has declared that "the population explosion is over"; and Figure 3.21 (page 99) depicts a leveling-off of global population at about 11 billion by the year 2100, suggesting that the world's current "population explosion" is merely a stage in a global demographic transition. Relatively stable population totals worldwide, however, mask the population declines and aging of the population structure already under way in some regions of the world.

It is difficult to speculate about the state of the world's population beyond the year 2050. What is clear, however, is that the lifestyles we adopt will affect how many people the Earth can ultimately support. In particular, whether wealthy countries continue to use the amount of resources they currently do, and whether developing countries decide to follow a Western-style route toward more and more resource consumption, will significantly determine whether we have already overpopulated the planet.

The Rule of 72

A handy tool for calculating the doubling time of a population is called the Rule of 72: take a country's rate of annual increase, expressed as a percent, and divide it into the number 72. The result is the number of years a population, growing at a given rate, will take to double.

For example, the natural annual growth of the United States in 2007 was 0.6 percent. Dividing 72 by 0.6 yields 120, which means that the population of the United States will double every 120 years. This does not, however, factor in the relatively high levels of immigration experienced by the United States, which will cause its population to double faster than every 120 years.

What about countries with faster rates of growth? Consider Guatemala, which is growing at 2.8 percent per year. Doing the math, we find that Guatemala's population is doubling every 25.7 years!

Percentages such as 0.6 or 2.8 don't sound like such high rates. If we were discussing your bank account rather than the populations of countries, you would hope that your money would double more quickly than every 25 years! (Incidentally, you can apply the Rule of 72 to your bank account or to any other figure that grows at a steady annual rate.) You may be tempted to say, "Look, there are only 12 million people in Guatemala, so it doesn't really matter if its population is doubling quickly. What really matters is that at an annual increase of 1.7 percent, India's 1 billion people

will double to 2 billion in 42 years, and China's 1.3 billion will double as fast as the U.S. population—every 120 years—but that will add another 1.3 billion to the world's population, more than four times what the United States will add by doubling!"

This assessment is partly right and partly wrong, depending on your vantage point. Viewed at the global scale, it does indeed make a significant difference when China's or India's population doubles. But if you are a resident of Guatemala or an official of the Guatemalan government, a doubling of your country's population every 25 years means that health care, education, jobs, fresh water, and housing must be supplied to twice as many people every 25 years. As mentioned in the introduction to this chapter, the scale at which population questions are asked is vital for the answers that are given.

Population Control Programs

Though the debates may occur at a global scale, most population control programs are devised and implemented at the national level. When faced with perceived national security threats, some governments respond by supporting pronatalist programs that are designed to increase the population. Labor shortages in Nordic countries have led to incentives for couples to have larger families. Most population programs, however, are antinatalist: they seek to reduce fertility. Needless to say, this is an easier task for a nonelected government to carry out because limiting fertility challenges traditional gender roles and norms about family size.

Although China certainly is not the only country that has sought to limit its population growth, its so-called one-child policy provides the best-known modern example. Mao Zedong, the longtime leader of the People's Republic of China (1949–1976), did not initially discourage large families in the belief that "every mouth comes with two hands." In other words, he believed that a large population would strengthen the country in the face of external political pressures. He reversed his position in the 1970s when it became clear that China faced resource shortages as a result of its burgeoning population. In 1980, the one-child-per-couple policy was adopted. With it, Chinese authorities sought not merely to halt population growth but, ultimately, to decrease the national population. All over China today one sees billboards and posters admonishing the citizens that "one couple, one child" is the ideal family (Figure 3.24, page 102). Violators face huge monetary fines, cannot request new housing, lose the rather generous benefits provided to the elderly by the government, forfeit their children's access to higher education, and may even lose their jobs. Late marriages are encouraged. In response, between 1970 and 1980, the TFR in China plummeted from 5.9 births per woman to only 2.7, then to 2.2 by 1990,



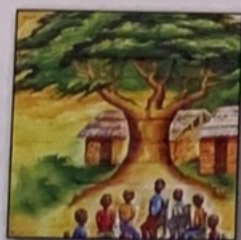
FIGURE 3.24 Population control in the People's Republic of China. China has aggressively promoted a policy of "one couple, one child" in an attempt to relieve the pressures of overpopulation. These billboards convey the government's message. Violators—those with more than one child—are subject to fines, loss of job and old-age benefits, loss of access to better housing, and other penalties. *How effective would such billboards be in influencing people's decisions? Why is one of the signs in English?* (Courtesy of Terry G. Jordan-Bychkov.)

2.0 by 1994, 1.7 by 2007, and 1.5 by 2010 (see Figure 3.3, pages 76–77).

China achieved one of the greatest short-term reductions of birthrates ever recorded, thus proving that cultural changes can be imposed from above, rather than simply waiting for them to diffuse organically. In recent years, the Chinese population control program has been less rigidly enforced as economic growth has eroded the government's control over the people. This relaxation has allowed more couples to have two children instead of one; however, the increase in economic opportunity and migration to cities have led some couples to have smaller families voluntarily. Because of China's population size, its actions will greatly affect the global context as well as its own national one (see Subject to Debate on page 87 for a discussion of the gender implications of strict population control policies).

Reflecting on Geography

Would a global population control policy be desirable or even feasible?



Nature-Culture

Why do human populations form such a diverse mosaic? The reasons are often cultural. Though the differences may have started out as adaptations to given physical conditions, when repeated from generation to generation these patterns become woven tightly into the

cultural fabric of places. Thus, demographic practices such as living in crowded settlements or having large families may well have deep roots in both nature and culture.

Environmental Influence

Local population characteristics are often influenced in a possibilistic manner by the availability of resources. In the middle latitudes, population densities tend to be greatest where the terrain is level, the climate is mild and humid, the soil is fertile, mineral resources are abundant, and the sea is accessible. Conversely, population tends to thin out with excessive elevation, aridity, coldness, ruggedness of terrain, and distance from the coast.

Climatic factors influence where people settle. Most of the sparsely populated zones in the world have, in some respect, "defective" climates from the human viewpoint (see Figure 3.1, pages 72–73). The thinly populated northern edges of Eurasia and North America are excessively cold, and the belt from North Africa into the heart of Eurasia matches the major desert zones of the Eastern Hemisphere. Humans remain creatures of the humid and subhumid tropics, subtropics, or midlatitudes and have not fared well in excessively cold or dry areas. Small populations of Inuit (Eskimo), Sami (Lapps), and other peoples live in some of the less hospitable areas of the Earth, but these regions do not support large populations. Humans have proven remarkably adaptable, and our cultures contain strategies that allow us to live in many different physical environments; as a species, however, perhaps we have not entirely moved beyond

the adaptive strategies that suited us so well to the climatic features of sub-Saharan Africa, where we began.

Humankind's preference for lower elevations is especially true for the middle and higher latitudes. Most mountain ranges in those latitudes stand out as sparsely populated regions. By contrast, inhabitants of the tropics often prefer to live at higher elevations, concentrating in dense clusters in mountain valleys and basins (see Figure 3.1). For example, in tropical portions of South America, more people live in the Andes Mountains than in the nearby Amazon lowlands. The capital cities of many tropical and subtropical nations lie in mountain areas above 3000 feet (900 meters) in elevation. Living at higher elevations allows residents to escape the hot, humid climate and diseases of the tropic lowlands. In addition, these areas were settled because the fertile volcanic soils of these mountain valleys and basins were able to support larger populations in agrarian societies.

Humans often live near the sea. The continents of Eurasia, Australia, and South America resemble hollow shells, with the majority of the population clustered around the rim of each continent (see Figure 3.1). In Australia, half the total population lives in only five port cities, and most of the remainder is spread out over nearby coastal areas. This preference for living by the sea stems partly from the trade and fishing opportunities the sea offers. At the same time, continental interiors tend to be regions of climatic extremes. For example, Australians speak of the "dead heart" of their continent, an interior land of excessive dryness and heat.

Disease also affects population distribution. Some diseases attack valuable domestic animals, depriving people of food and clothing resources. Such diseases have an indirect effect on population density. For example, in parts of East Africa, a form of sleeping sickness attacks livestock. This particular disease is almost invariably fatal to cattle but not to humans. The people in this part of East Africa depend heavily on cattle, which provide food, represent wealth, and serve a religious function in some tribes. The spread of a disease fatal to cattle has caused entire tribes to migrate away from infested areas, leaving those areas unpopulated.

Environmental Perception and Population Distribution

Perception of the physical environment plays a major role in a group's decision about where to settle and live. Different cultural groups often "see" the same physical environment in different ways. These varied responses to a single environment influence the distribution of people. A good example appears in a part of the European Alps shared by German- and Italian-speaking peoples. The mountain ridges in that area—near the point where Switzerland, Italy, and Austria border one another—run in an east-west direction, so that each ridge has a sunny, south-facing slope

and a shady, north-facing one. German-speaking people, who rely on dairy farming, long ago established permanent settlements some 650 feet (200 meters) higher on the shady slopes than the settlements of Italians, who are culturally tied to warmth-loving crops, on the sunny slopes. This example demonstrates how contrasting cultural attitudes toward the physical environment and land use affect settlement patterns.

Sometimes, the same cultural group changes its perception of an environment over time, with a resulting redistribution of its population. The coalfields of western Europe provide a good case in point. Before the industrial age, many coal-rich areas—such as the Midlands of England, southern Wales, and the lands between the headwaters of the Oder (or Odra) and Vistula rivers in Poland—were only sparsely or moderately settled. The development of steam-powered engines and the increased use of coal in the iron-smelting process, however, created a tremendous demand. Industries grew up near the European coalfields, and people flocked to these areas to take advantage of the new jobs. In other words, once a technological development gave a new cultural value to coal, many sparsely populated areas containing that resource acquired large concentrations of people.

Recent studies indicate that much of the interregional migration in the United States today is prompted by a desire for a pleasant climate and other desirable physical environmental traits, such as beautiful scenery. Surveys of immigrants to Arizona revealed that its sunny, warm climate is a major reason for migration. An attractive environment provided the dominant factor in the growth of the population and economy of Florida. The most desirable environmental traits that serve as stimulants for American migration include (1) mild winter climate and mountainous terrain, (2) a diverse natural vegetation that includes forests and a mild summer climate with low humidity, (3) the presence of lakes and rivers, and (4) nearness to the seacoast. Different age and cultural groups often express different preferences, but all are influenced by their perceptions of the physical environment in making decisions about migration.

Reflecting on Geography

What is your ideal climate? Do you now live in a place with such a climate? If not, do you eventually intend to migrate for this reason?

Population Density and Environmental Alteration

People modify their habitats through their adaptive strategies. Particularly in areas where population density is high, radical alterations often occur. This can happen in fragile environments even at relatively low population densities because, as discussed earlier in this chapter, the Earth's

carrying capacity varies greatly from one place to another and from one culture to another.

Many of our adaptive strategies are not sustainable. Population pressures and local ecological crises are closely related. For example, in Haiti, where rural population pressures have become particularly severe, the trees in previously forested areas have been stripped for fuel, leaving the surrounding fields and pastures increasingly denuded and vulnerable to erosion (**Figure 3.25**). In short, overpopulation relative to resource availability can precipitate environmental destruction—which, in turn, results in a downward cycle of worsening poverty, with an eventual catastrophe that is both ecological and demographic. Thus, many cultural ecologists believe that attempts to restore the balance of nature will not succeed until we halt or even reverse population growth, although they recognize that other causes are also at work in ecological crises.

The worldwide ecological crisis is not solely a function of overpopulation. A relatively small percentage of the Earth's population controls much of the industrial technology and consumes a disproportionate percentage of the world's resources each year. Americans, who make up less than 5 percent of the global population, account for about 25 percent of the natural resources consumed globally each year. New houses built in the United States in 2002 were, on average, 38 percent bigger than those built in 1975, despite a shrinking average household size. If everyone in the world had an average American standard of living, the Earth could support only about 500 million people—only 8 percent of the present population. As the economies of large countries such as India and China continue to surge, the resource



FIGURE 3.25 Overpopulation and deforestation. This aerial photograph depicts the border between Haiti and the Dominican Republic. Both nations share the Caribbean island of Hispaniola. Population pressures in Haiti, on the left side of the photograph, have led to deforestation; the Dominican Republic is the greener area to the right. The political border is also an environmental border. (NASA)

consumption of their populations is likely to rise as well because the human desire to consume appears to be limited only by the ability to pay for it. Indeed, in mid-2010, China surpassed the United States to become the world's largest consumer of energy resources.



CULTURAL LANDSCAPE

What are the many ways in which demographic factors are expressed in the cultural landscape? Population geographies are visible in the landscapes around us. The varied densities of human settlements and the shapes these take in different places provide clues to the intertwined cultural and demographic strategies implemented in response to diverse local factors. These clues are evident wherever people have settled, be they urban, suburban, or rural locations. Less visible, but no less important, factors are also at work on and throughout the cultural landscape. In this final part of the chapter we examine the diverse, and often creative, ways in which different places are organized spatially in order to accommodate the populations that live there.

Diverse Settlement Types

Human settlements range in density from the isolated farmsteads found in some rural areas to the teeming streets of megacities such as Kolkata, India (see Seeing Geography, page 112). The size and pattern of human settlements depend in part on the size and needs of the population to be accommodated. Small rural populations and those engaged in subsistence farming don't inhabit large, dense cities. Nomadic peoples require dwellings that can be easily packed and moved, and they tend to have few household possessions (**Figure 3.26**). On the other end of the spectrum, dense cities make more sense for populations employed in the service and information sectors. These people benefit from being as close as possible to their jobs, and higher densities—at least in theory—reduce commuting distances. People in postindustrial societies also tend to have smaller families, which can be more easily accommodated in apartments (**Figure 3.27**).



FIGURE 3.26 Nomadic family moving on. These Mongol herders are nomadic; they move often in search of the best pasture for their livestock. Here, a family packs their yurt, a traditional Mongolian tent structure, and their few household possessions. (Bruno Morand/The Image Bank/Getty Images.)

But there is also a significant cultural aspect at work, such that similar populations may live in settlements that look and feel vastly different from each other. Take rural settlements, for instance.

In many parts of the world, farming people group themselves together in clustered settlements called **farm villages**. These tightly bunched settlements vary in size from a few dozen inhabitants to several thousand. Contained in the

village **farmstead** are the house, barn, sheds, pens, and garden. The fields, pastures, and meadows lie out in the country beyond the limits of the village, and farmers must journey out from the village each day to work the land.

Farm villages are the most common form of agricultural settlement in much

farm villages

Clustered rural settlements of moderate size, inhabited by people who are engaged in farming.

farmstead

The center of farm operations, containing the house, barn, sheds, and livestock pens.



FIGURE 3.27 High-density dwelling in Amsterdam. The Borneo-Sporenburg development provides high-density, low-rise housing to accommodate Holland's small families in an urban setting. Instead of yards, these dwellings feature rooftop terraces. The waterfront also provides a kind of "green space" for residents, who tie their boats up in front of their houses. (© Iain Masterton/Alamy.)

of Europe, in many parts of Latin America, in the densely settled farming regions of Asia (including much of India, China, and Japan), and among the sedentary farming peoples of Africa and the Middle East.

In many other parts of the world, the rural population lives on dispersed, isolated farmsteads, often some distance from the nearest neighbors (Figure 3.28). These dispersed rural settlements grew up mainly in Anglo America, Australia, New Zealand, and South Africa—that is, in the lands colonized by emigrating Europeans.

Why do so many farm people settle together in villages? Historically, the countryside was unsafe, threatened by roving bands of outlaws and raiders. Farmers could better defend themselves against such dangers by grouping together in villages. In many parts of the world, the populations of villages have grown larger during periods of insecurity and shrunk again when peace returned. Many farm villages occupy the most easily defended sites in their vicinity, what geographers call *strong-point settlements*.

In addition to concerns about defense, the quality of the environment helps determine whether people settle in villages. In deserts and in limestone areas, where the ground absorbs moisture quickly, farmsteads are built around the few sources of water. Such *wet-point villages* cluster around oases or deep wells. Conversely, a superabundance of water—in marshes, swamps, and areas subject to floods—often prompts people to settle in villages on available dry points at higher elevations.

Various communal ties strongly bind villagers together. Farmers linked to one another by blood relationships, religious customs, communal landownership, or other similar bonds usually form clustered villages. Mormon farm villages in the United States provide an excellent example of the clustering force of religion. Communal or state ownership of the land—as in China and parts of Israel—encourages the formation of farm villages.

The conditions encouraging dispersed settlement are precisely the opposite of those favoring village development. These include peace and security in the countryside, eliminating the need for defense; colonization by individual pioneer families rather than by socially cohesive groups; private agricultural enterprise, as opposed to some form of communalism; and well-drained land where water is readily available. Most dispersed farmsteads originated rather recently, dating primarily from the colonization of new farmland in the past two or three centuries.

Reflecting on Geography

What challenges might a settlement pattern of isolated farmsteads present for the people who live there?

Landscapes and Demographic Change

Population change in a place can occur rapidly or more slowly over time. Rapid **depopulation** can come about as the result of

sudden catastrophic events, such as natural disasters, disease epidemics, and warfare (Figure 3.29). Or depopulation can take place at a slower pace. For example, places may lose population over time because of the gradual out-migration of people in search of opportunities elsewhere, as a cumulative result of declining fertility rates, or as a response to climate change.

depopulation

A decrease in population that sometimes occurs as the result of sudden catastrophic events, such as natural disasters, disease epidemics, and warfare.

Populations can also grow in more or less rapid fashions. A place might experience an abrupt influx of people who have been displaced from other areas. Population increases commonly occur more gradually, as the result of demographic improvements such as longer life spans or lower infant mortality rates, or the accumulation of steady streams of immigrants to attractive areas over time.

Depopulation in one area and population increase in another are often linked processes. For instance, you could easily envision a scenario in which the same natural disaster victims exiting one place become



FIGURE 3.28 A truly isolated farmstead, in the Vesturland region of western Iceland. This type of rural settlement dominates almost all lands colonized by Europeans who migrated overseas. Iceland was settled by Norse Vikings a thousand years ago.

(© Jay Dickman/Corbis.)



FIGURE 3.29 Refugees flee fighting in eastern Congo. This area of the Democratic Republic of Congo, near the Rwandan border, has experienced the repeated movement of people displaced by civil strife. (Stephen Morris/epa/Corbis.)

the refugees suddenly flooding into a neighboring area. As a longer-term example, you could equally well imagine how broad economic changes or technological innovations could lead to regional population shifts whereby some areas become depopulated and others gain population.

Indeed, shifting economic and technological conditions have influenced the demographic landscape in profound ways. The process of industrialization during the past 200 years has caused the greatest voluntary relocation of people in world history. Within industrial nations, people moved from rural areas to cluster in manufacturing regions (see Chapter 10). Agricultural changes have also influenced population density. For example, the complete mechanization of cotton and wheat cultivation in mid-twentieth-century America allowed those crops to be raised by a much smaller labor force (see Chapter 8). As a result, profound depopulation occurred, to the extent that many small towns serving these rural inhabitants ceased to exist.

Regardless of the reasons, population changes must be accommodated, and these adaptations are invariably reflected in the cultural landscape.

Depopulation in History: Ancient Rome There are as many theories accounting for the decline of the Roman Empire as there are historians theorizing about it. Lead poisoning, overextension of the empire's reach, conquest by Germanic tribes, and at least 200 other theories have been proposed.

Rome, the empire's capital city, suffered this process acutely. For nearly a millennium, Rome had been the

world's wealthiest, most powerful, and most populous city (**Figure 3.30**, page 108). At the close of the first century A.D., Rome's population surpassed 1 million. As the Roman Empire's economic, political, and military might waned across the third, fourth, and fifth centuries, the demographic balance shifted as well. Under the emperor Constantine in A.D. 330, the empire was split into eastern and western halves, and its capital was relocated to Constantinople (now Istanbul, in modern-day Turkey).

As barbarian invasions further weakened the divided empire, Rome's physical infrastructure—its famed roads, bridges, aqueducts, and monumental buildings—crumbled, as did its impressive administrative infrastructure. With no access to former amenities, from running water to educational opportunities, Rome's population had shrunk to around 20,000 by A.D. 550. The Roman landscape had become a ghost of its former glory: dilapidated, uninhabited, and in ruins (see **Figure 3.30**).

Bogotá Rising Dilapidated-looking landscapes can result from population decline, as the previous example of ancient Rome illustrates, but they can also arise from rapid population influx. Many of the world's shantytowns exemplify the sort of chaotic landscape that can result from rapid population increases. Los Altos de Cazucá, a neighborhood in the Colombian capital of Bogotá, is but one example. In this case, the population influx comes mostly from people arriving in the capital after being displaced by armed conflict in the countryside.



FIGURE 3.30 Rome at its height and Rome in ruins. The image on the left, from a nineteenth-century engraving, shows Rome at its height, as seen from Mt. Palatine, one of Rome's seven hills. The image on the right, from a nineteenth-century painting, shows the ruins of the Roman Forum from the Capitoline Hill, another of Rome's seven hills. (Both photos: The Granger Collection, New York/The Granger Collection.)

The United Nations High Commissioner for Refugees (UNHCR) estimates that, by 2009, there were 26 million internally displaced persons (IDPs) due to armed conflict worldwide. Colombia is one of the globe's hotspots for IDPs, alongside Sudan. Colombia's estimated 5 million IDPs have been uprooted largely as the result of ongoing civil warfare between the paramilitary group known as the FARC (Revolutionary Armed Forces of Colombia) and government forces bent on eradicating them. The UNHCR has identified this as the "worst humanitarian crisis in the western hemisphere."

Colombia's armed conflict has depopulated the rural areas where it occurs, forcing its victims into the cities. Terrorized, landless, and impoverished, the mainly indigenous and Afro-Colombian IDPs settle in the outskirts of cities like Colombia's capital, Bogotá.

Los Altos de Cazucá is one of the settlements inhabited by Colombia's internally displaced persons (**Figure 3.31**). Known as shantytowns, areas like Los Altos de Cazucá arise for different reasons, but they exist in all large cities throughout the developing world. Housing is constructed by the residents themselves, using found materials like cardboard, tin panels, and old tires. Some shantytowns are located far away from downtown areas where wealthy people reside and where jobs are, while others are

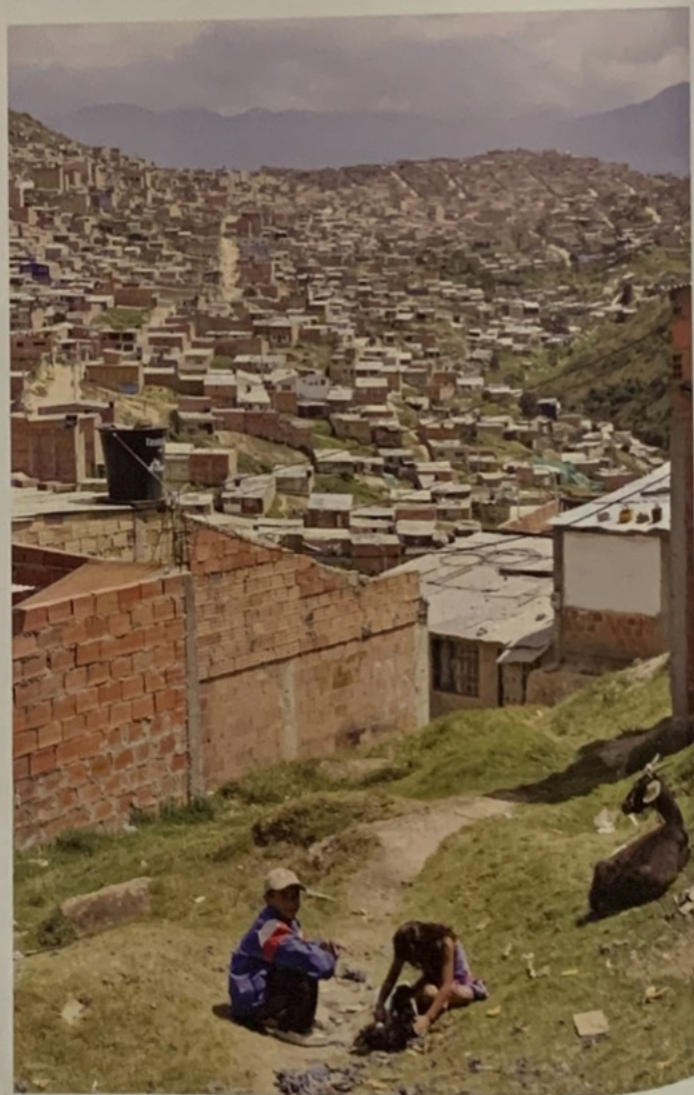


FIGURE 3.31 Los Altos de Cazucá. This is a shantytown on the outskirts of Colombia's capital city, Bogotá. Many of its approximately 50,000 residents are displaced people from other parts of the country. (imagebroker.net/SuperStock.)

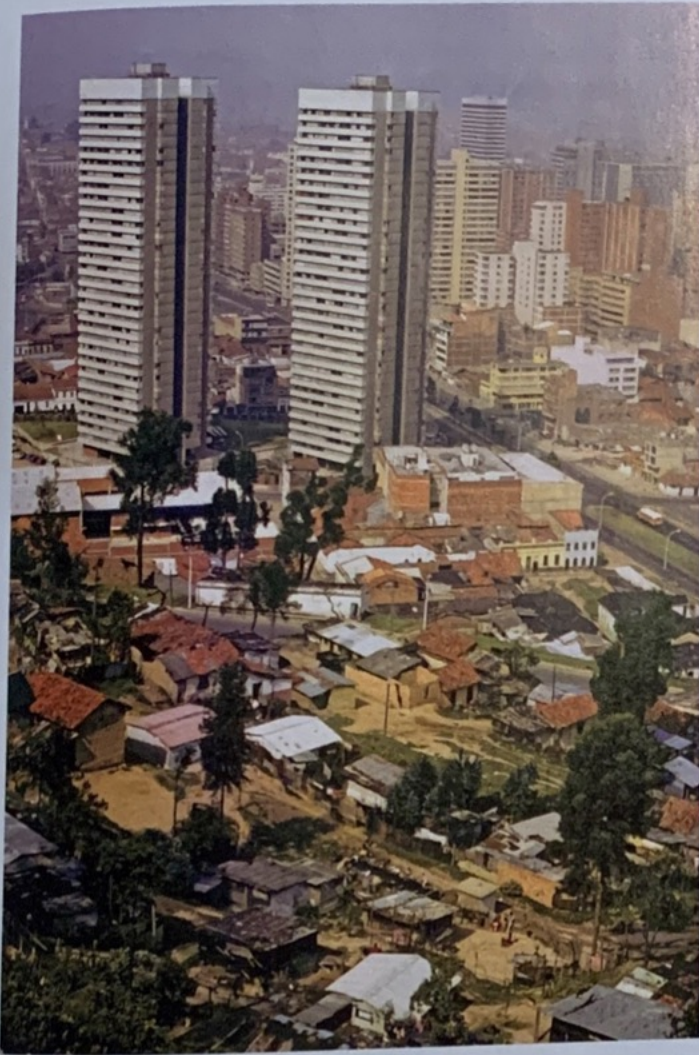


FIGURE 3.32 Landscapes of poverty and wealth. This scene from Bogotá is a common Latin American urban landscape, with wealthy high-rises located next to impoverished shantytowns. (Victor Englebert.)

literally pressed up against wealthier neighborhoods (Figure 3.32).

Most shantytowns arise spontaneously, in order to address population influx to cities that lack the resources to plan systematically for rapid growth. But are shantytowns temporary, disappearing as their residents become incorporated into city life? Hardly. Instead, shantytowns gradually become part of the urban fabric. Indeed, most of the spatial expansion of Latin American cities like Bogotá occurs precisely thanks to growth of the shantytowns surrounding them. Over time, the dwellings are constructed of more-permanent materials such as concrete blocks. Roads are paved and running water installed. Power and phone lines are extended. The once-temporary areas slowly become visually, economically, and culturally integrated into the permanent fabric of the city. New shantytowns then arise beyond their borders, to accommodate recent arrivals.

Reflecting on Geography

Many cities in the United States have seen shantytowns arise in the wake of the home foreclosure crisis of the late 2000s. Are these comparable to Los Altos de Cazucá? In what significant ways are they similar, and in what ways are they different? (Figure 3.33)



FIGURE 3.33 Mortgage foreclosure tent city in Reno, Nevada. Nevada was one of the hardest-hit states during the economic crisis in which many people lost their jobs and their homes; some even became homeless. Similar tent cities could be found in many U.S. cities in the late 2000s. (Max Whittaker/Getty Images.)

CONCLUSION

In our study of population geography, we have seen that humankind is unevenly distributed over the Earth. Spatial variations in fertility, death rates, rates of population change, age groups, gender ratios, and standards of living also exist: these patterns can be depicted as demographic culture regions. The principles of mobility prove useful in analyzing human migration and also help explain the spread of factors influencing demographic characteristics such as disease.

Population geography proves particularly intriguing when scale is taken into account. Although most geodemographic issues are experienced locally, and policies shaping them are usually set at the national level, the important debates about the world's population are truly global in nature.

The theme of nature-culture shows how the natural environment and people's perception of and engagement with it influence demographic factors. Nature-culture interactions shape the spatial distribution of people and sometimes help guide migrations. In addition, population density is linked to the level of environmental alteration, and overpopulation can have a destructive impact on the environment.

The cultural landscape visually expresses the varied ways in which societies accommodate their populations. How people distribute themselves over the Earth's surface finds a vivid expression in the cultural landscape. The look and feel of places are constantly adapting to demographic change.

DOING GEOGRAPHY

Public Space, Personal Space: Too Close for Comfort?

Culture can condition people to accept or reject crowding. Personal space—the amount of space that individuals feel “belongs” to them as they move about their everyday business—varies from one cultural group to another. As the Seeing Geography section for this chapter notes, different people seem to require different amounts of personal space. One's comfort zone varies with social class, gender, ethnicity, the situation at hand, and what one has grown accustomed to over one's life. Some Arabs, for example, consider it appropriate and even polite to be close enough for another to smell his or her breath during conversation. Those from cultures that have not developed a high tolerance for personal contact might experience such closeness as intrusive. Americans conducting business in Japan are often surprised at the level of physical

closeness expected in their dealings. Such closeness might well be interpreted as overstepping one's bounds, literally, in the United States!

In this exercise, you will gather some data on the amount of personal space needed by those around you. Observe and record your findings, and discuss them in class as a group.

Steps to Understanding Personal Space

Step 1: Observe your professors as they lecture in class. Is your class a large one that meets in a lecture hall? If so, where does your professor sit or stand in relation to the students? Does the professor have his or her own designated space in the classroom? Where is it located, and how big is it? Does the professor ever step outside of it? How does this professor's use of space compare to that of other professors you have, and why do you think this is so? If you have a smaller class,



Population densities in parks. These two images depict similarly designed public playgrounds featuring a large sandbox. The park on the top is located in Minnesota in the United States; the park on the bottom is located in Taipei, Taiwan. **Where would you rather play? Why?** (Top: James Shaffer/PhotoEdit; Bottom: Christian Klein/Alamy.)

compare the use of space by that professor. Is it different from the behavior of the professors in large lecture halls? Under what circumstances, if any, do your professors get close to students, and how close do they get?

Step 2: How close can you get to friends? Strike up a conversation with a same-gender friend standing next to you. Discreetly move closer and closer to your friend until he or she moves away or says something about your proximity. How much space separated you when this happened? What do you think would happen if you tried this with a stranger? With a friend or a stranger of a different gender? With a friend or a stranger from a different culture?

Step 3: Discuss your findings. Did all your classmates have similar experiences, or were your findings notably different? Are all students in your class from similar economic or ethnic backgrounds? If not, that may explain some of the differences that emerge.

There has been some talk lately about the future of the ever-huger "McMansions" and sprawling suburban developments that for several decades have characterized middle-class life in the United States. Clearly, both waste resources. McMansions are expensive to heat and cool, and their landscaping is often out-of-step with the local environment. Living in a suburb often means commuting long distances to jobs or school, in cars occupied by just one or two people. But think, too, about the proxemics involved and consider these questions:

- Is there such a thing as too much space?
- Do you know or have you heard of people who have opted out of living large in the 'burbs? Why do you think they made this decision?
- In what ways do planners and architects take culturally diverse preferences about personal space into account when they design cities, streets, buildings, homes, and classrooms?

Key Terms

carrying capacity	p. 74
cornucopians	p. 100
demographic transition	p. 77
depopulation	p. 106
Eurocentric	p. 79
farmstead	p. 105
farm villages	p. 105
gender roles	p. 86
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total fertility rate (TFR)	p. 75
zero population growth	p. 75

Population Geography on the Internet

You can learn more about population geography on the Internet at the following web sites:

Population Reference Bureau, Inc., Washington, D.C.

<http://www.prb.org>

This organization is concerned principally with overpopulation and standard of living. The "World Population Data Sheet" provides up-to-date basic demographic information at a glance, and the "Datafinder" section has a wealth of images on all aspects of global population for use in presentations and reports. Some of the maps in this chapter were adapted from PRB maps.

United Nations High Commissioner for Refugees

<http://www.unhcr.org>

This United Nations web site provides basic information about refugee situations worldwide. The site includes regularly updated maps showing refugee locations and populations as well as photos of refugee life.

U.S. Census Bureau Population Clocks

<http://www.census.gov/main/www/popclock.html>

Check real-time figures here for the population of the United States and the population of the world. The main web site, <http://www.census.gov>, hosts the most important and comprehensive data sets available on the U.S. population.

World Health Organization, Geneva, Switzerland

<http://www.who.int/en>

Learn about the group that distributes information on health, mortality, and epidemics as it seeks to improve health conditions around the globe. The "Global Health Atlas" allows you to create detailed maps from WHO data.

Worldwatch Institute, Washington, D.C.

<http://www.worldwatch.org>

This organization is concerned with the ecological consequences of overpopulation and the wasteful use of resources. It seeks sustainable ways to support the world's population and brings attention to ecological crises.

SEEING GEOGRAPHY Street in Kolkata, India

Would you feel comfortable walking here? If not, why not?



A street scene in the large city of Kolkata, India.

Do you need your “personal space”? Most Americans and Canadians do. If so, Kolkata (formerly Calcutta), India, is a place you might want to avoid. West Bengal state, where Kolkata is located, has the highest population density in the country.

Why do people form such dense clusters? The theme of cultural interaction would tell us of push factors that encourage people to leave their farms and move to the city. Some can no longer make a living or feed their families with the food provided by the tiny plots of land they work. Others are forced off the land by landlords who want to

convert their farms to use mechanized Western methods of agriculture that use far less labor (see Chapter 8). But cultural interaction also tells us of pull factors exerted by cities such as Kolkata—the hope or promise of better-paying jobs, the encouragement of friends and relatives who came to the city earlier, or the greater availability of government services. And so, pushed and pulled, they come to the teeming, overcrowded city, to jostle and elbow their way through the streets.

But it is not only cities in the developing world that become so dense. If you have ever visited, or lived in, Manhattan, New York, you are all too familiar with dense crowds of people. In fact, there are some who grow up in these environments and find that the relative solitude of rural areas verges on terrifying. They prefer the bustle of activity and the sounds of the city, and they feel at home in a crowd.

Being a woman is another reason that you might feel uncomfortable in this Kolkata street environment. Notice the nearly complete absence of women in this crowd. Many societies have strict norms that dictate where women, and men, may and may not go. Harassment or even violence may be the result of violating these norms.

The study of the size and shape of people’s envelopes of personal space is called **proxemics**. Anthropologist Edward T. Hall, whose book *The Hidden Dimension* is listed in Ten Recommended Books on Population Geography at the end of the chapter, is the founder of this science. Urban planners, architects, psychologists, and sociologists, as well as geographers, use proxemics to explain why some people need more space than others and how this varies culturally.

proxemics

The study of the size and shape of people’s envelopes of personal space.

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